M25 J1b-3
Rapid Widening Scheme
Treatment Pond 3

Archaeological Evaluation Report

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Client: Constain Ltd
Jacobs Babtie

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M25 J1b toJ3 Rapid Widening Scheme
Treatment Pond 3

NGR : TQ 549 711

ARCHAEOLOGICAL EVALUATION REPORT

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SUMMARY

Oxford Archaeology (OA) carried out a field evaluation at the proposed site of a new treatment pond on the M25 J1b to J3 Rapid Widening Scheme. The fieldwork was carried out from 30th April to 2nd May 2007 and was instructed by Jacobs Babtie on behalf of Costain Ltd working for the Highways Agency. A total of 200 meters of trenching divided between 5 individual trenches was excavated on the 0.3ha site. The evaluation demonstrated the presence of 5 features in the southwest half of the site. A curvi-linear gully, two ditches which probably constitute field boundaries and two pits were all dated to the late Iron Age / early Roman period by pottery evidence and raise the possibility of a nearby settlement. Flints possibly dating to the Neolithic or Bronze Age periods were also recovered from the features indicating activity in the area during the prehistoric period although no related features were recorded.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 Between the 30th of April and the 2nd of May 2007 Oxford Archaeology carried out a field evaluation at the location of a proposed new treatment pond. The site is located to the south of the Junction of the A2, A282 and M25 in Dartford, Kent at chainage 2250-2350 (NGR TQ 549 711). (Fig. 1). The work was instructed by Jacobs Babtie on behalf of Costain Ltd working for the Highways Agency and forms part of the archaeological works on the M25 Junction 1b to 3 Rapid Widening Scheme. The new pond covers an area of 4050 m², and will be excavated to a depth of 5 m. A brief outlining a requirement for 200 meters of archaeological trial trenching representing a 5% sample of the site was supplied by Jacobs Babtie (Specification for Archaeological Trial Trenching Treatment Pond Area) and agreed with Simon Mason from Kent County Council Heritage Conservation Group.

1.2 Geology and topography

1.2.1 The bedrock geology across the site area is Cretaceous Chalk, although this is overlain by terrace deposits (British Geological Survey, Sheet 271). The site slopes gently down to the northwest from 22 m to 18 m OD.

1.3 Archaeological background

1.3.1 The archaeological background to the evaluation is reproduced here from the Archaeological Desk Based Assessment for the project (Chris Blandford Associates 2005). Numbered sites referred to below are referenced in that Archaeological Desk Based Assessment. The site itself has produced no known archaeological evidence.

1.3.2 The proposed pond lies close to two known cultural heritage sites. The closest cultural heritage sites (29, 88) lie on the opposite side of the M25, approximately 100m from the pond. Sites 107 and 148, on the western side, are approximately 400m

from the pond and located close to the edge of the study area. Site 29 is a gravel quarry that dates to the 19th century. Site 88 is the find spot of an Acheulian Lower Palaeolithic handaxe, however, the actual location of this find is uncertain and it is therefore more likely to indicate general Palaeolithic activity in the area rather than the presence of a definite site. Palaeolithic material has been identified all along the route of the M25 from Junction 1b-3. Site 107 is a rural lane, of local importance. Site 148 is a small circular crop mark. None of these sites will be directly impacted by the creation of the pond, however, finds/features associated with sites 88 and 148 may extend into the area of the proposed pond.

2 EVALUATION AIMS

2.1.1 Based on the results of consultation with Kent County Council Heritage Conservation Group, the general aims of the evaluation programme are to obtain information which will contribute to an understanding of the archaeological potential of the area and which will enable the need for, nature and scope of any mitigation measures to be determined.

More specific aims and objectives are as follows:

- to identify, investigate and record any such archaeological remains to the extent possible by the methods put forward in the Specification;
- to determine the extent, condition, nature, character, quality and date of any archaeological remains present;
- to determine (so far as possible) the stratigraphic sequence and dating of the deposits or features identified;
- establish any ecofactual and environmental potential of archaeological deposits and features;
- make an assessment of the impact of the scheme on any significant remains or deposits encountered to enable a suggested mitigation strategy; and
- to disseminate the results through deposition of an ordered archive at the local museum, the deposition of a detailed report at the Sites and Monuments Record, and publication at a level of detail appropriate to the significance of the results.

3 EVALUATION METHODOLOGY

3.1 Scope of fieldwork

3.1.1 It was originally anticipated that four 25m trenches would be excavated, however, due to an overhead cable one trench was divided and a section relocated and another moved 5 m to the northwest. Therefore during the evaluation five trenches were recorded (Fig. 2). The trenches measured between 10 m and 26 m long and were 1.6 wide.

3.2 Fieldwork methods and recording.

3.2.1 The trenches were excavated under archaeological supervision in spits of 0.1 m by a JCB fitted with a toothless bucket. Machining stopped at the top of the natural geology, or the first significant archaeological deposit, whichever was observed first. All features observed in the evaluation were sample excavated by hand.

3.2.2 All deposits were issued with a unique context number. Context recording followed procedures laid down in the OA Fieldwork Manual (OA 1992). Trenches where appropriate were drawn at a scale of 1:50. Section drawings were drawn at a scale of 1:20. Trenches and features were photographed using colour slide and black and white print film.

3.3 Finds

3.3.1 Finds were recovered by hand during the course of the evaluation and bagged by context.

3.4 Environmental evidence

3.4.1 No deposits suitable for environmental sampling were encountered during the evaluation.

3.5 Presentation of results

3.5.1 The results of the evaluation are presented below with the stratigraphic accounts of each trench described individually, followed by an overall discussion and interpretation. Individual context details are presented in Appendix 1.

4 RESULTS:

4.1 Description of deposits

Trench 1 (Fig. 3)

4.1.1 Trench 1 was located at the southwest end of the site. It was orientated NW-SE and measured 26 m x 1.6m.

4.1.2 The trench was excavated to a maximum depth of 0.8 m (21.03 m SE - 19.69 m NW OD) onto natural geology consisting of gravel within a sandy clay matrix. The natural was overlain by a colluvial type deposit (101) 0.3 m thick consisting of silty clay with grains of chalk. This colluvium was overlain by a modern topsoil (102) 0.2 m thick.

4.1.3 Cutting the natural were four features. At the northwestern end of the trench was ditch 103. This feature was 2 m wide and 0.65 m deep with gradually sloping sides and a concave base. Its principal fill 104 consisted of sandy silt and contained finds of pottery, bone and flint.

4.1.4 Southeast of ditch 103 was pit 110, a sub-circular feature, 1.2 m in diameter and 0.24m deep. Pit 110 contained two fills of which the upper fill 111 contained pottery.

4.1.5 A possible ring gully 107 was also recorded 7.5 m from the southeastern end of the trench. This V-shaped gully was 0.37 m wide by 0.35 m deep and it curved from the northeast to the south. It contained a single silty fill from which pottery was recovered.

4.1.6 Immediately to the north west of pit 107 a probable tree throw hole 109 was also excavated. This shallow and irregular feature also produced pottery.

Trench 2 (Fig. 4)

4.1.7 Trench 2 was orientated NE-SW and measured 26 m x 1.6 m. Natural sandy clay and gravel (202) was observed at c 0.5 m below ground level (20.16 m OD). Overlaying (202) was a firm light grey brown silty clay sub-soil (201). This deposit had a thickness of c 0.12 m. Sealing Trench 2 was a tenacious dark greyish black clayey silt topsoil 0.3 m thick (200).

4.1.8 Pit 205 was recorded at the northeastern end of the trench. This rectangular feature was 1.8 m long and 0.45 m wide. Its irregular sides and uneven base indicate this feature may have been a tree throw hole possibly reused as a rubbish pit. Primary fill 204 contained finds of pottery, bone, flint, burnt stone and daub. This fill is very similar to fill 111 within pit 110 and it is possible that these two features are contemporaneous and have similar functions.

Trench 3 (Fig. 4)

4.1.9 Trench 3 was located in the centre of the site and was orientated NW-SE, measuring 25 m x 1.6 m. The trench was excavated to a depth of 0.42 m (20.25 m SE - 18.58 m NW OD) on to natural consisting of a firm orange gravel with sandy clay. Sealing the natural was a subsoil of mid grey brown silty clay 0.15 m thick, which in turn was overlain by a 0.3 m thick topsoil.

4.1.10 Cutting the natural and sealed by the subsoil was ditch 305. Orientated E-W this ditch was 1 m wide and 0.38 m deep and had a u-shaped profile. Its upper silty fill (303) produced pottery. Primary fill 304 consisted of eroded natural and contained finds of pottery, bone and flint.

Trenches 4 and 5

4.1.11 Due to overhead cables Trench 4 had to be divided and a 15 m section relocated 15 m to the northwest and renumbered Trench 5. Neither trench revealed any archaeological features. Both trenches were excavated to a depth of approximately 0.6 m (Trench 4 19.3 m OD, Trench 5 17.90 m OD) onto a gravel and sandy clay natural although at the northeastern end of Trench 5 natural chalk was also seen.

5 FINDS

5.1 Pottery by Edward Biddulph

Context	Count	Weight (g)	Comments	Spot-date
104	14	149	Grog-tempered ware; Patchgrove ware; flint-tempered ware	AD40-70
106	6	7	Thameside grey ware; ?grog-tempered ware	AD40-100
108	1	5	Grog-tempered ware	50BC-AD70
111	63	610	Shell-tempered ware (storage jar Mon type 3D1, platter); North Kent white-slipped ware flagon; Thameside grey ware; sandy buff ware	AD40-100
203	3	11	North Kent oxidised ware; coarse grog-tempered ware	AD70-200
204	1	17	Grog-tempered ware	50BC-AD70
303	3	5	Grog-tempered ware; Thameside grey ware (?beaker); shell-tempered ware	AD40-70
304	10	42	Grog and shell-tempered ware; fine buff ware (globular beaker Mon type 2H3)	AD40-100

5.1.1 The pottery assemblage recovered during the evaluation was sorted into context groups and quantified by sherd count and context-group weight, producing a total of 101 sherds weighing 846 g. The pottery was rapidly scanned to identify diagnostic fabrics and forms (with reference to Monaghan's North Kent type series (Monaghan 1987)), allowing context groups to be spot-dated.

5.1.2 The pottery spans the late Iron Age to early Roman period. Grog-tempered ware - introduced to the region during the late 1st century BC and current up to *c* AD 70, was mainly found in association with Roman-period wares, suggesting that all occurrences were post-conquest. Shell-tempered ware was common, as would be expected at any early Roman North Kent site, and a storage jar, belonging to the second half of the 1st century and first half of the 2nd, was recognised. Like the shell-tempered ware, the oxidised and white-slipped wares were of local origin. Of particular interest was a flagon, present as a body and base sherd, and a 1st or early 2nd century globular beaker with barbotine-dot decoration. Thameside grey ware was relatively poorly represented, which, given the more abundant grog-tempered pottery, may help to limit the date of the assemblage to around AD 70.

5.1.3 Assemblage condition was mixed. Sherds were generally small (the average sherd weight was 8 g), but individual vessels were represented by multiple sherds, suggesting that the assemblage was coherent and deposited reasonably close to the area of use and initial discard.

5.2 Fired clay and tile by Edward Biddulph

Context	Count	Weight (g)	Comments
111	17	895	Daub (one piece with wattle impressions); roof tile (tegula)
204	7	239	Probably daub

5.2.1 The presence of daub and a tegula suggests that a Roman-period building with timber-framed walls and a tiled roof existed in the vicinity of the evaluation area.

5.3 Flint and burnt unworked flint by Hugo Lamdin-Whymark

5.3.1 A total of 9 flints and 24 pieces/894 g of burnt unworked flint was recovered from the evaluation.

Context	104	106	111	204	304	Grand total
Flake	2	1	3		2	8
Retouched flake					1	1
Grand total	2	1	3		3	9

Burnt unworked flint No./wt. in g	1/3	23/891	24/894

Methodology

5.3.2 The artefacts were catalogued according to broad artefact/debitage type, general condition noted and dating attempted where possible. Unworked burnt flint was quantified by weight and number.

Raw material and condition

5.3.3 The raw material was, with one exception, a locally available flint from river gravels. The flint varied in colour from beige to grey and exhibited an abraded cortex. A flake from context 304 exhibited an olive green cortex with a distinctive underlying orange band; this originates from the Bullhead Bed at the base of the Reading Beds and is also available locally.

5.3.4 The condition of the flint was variable. Three flints from context 304 were in relatively fresh condition, but other flints exhibited some post-depositional edge-damage. The flint was uncorticated.

The assemblage

5.3.5 The flint assemblage comprises eight flakes and an edge-retouched flake. The flakes were struck from unspecialised flake cores with only occasional preparation of the platform edge. The edge-retouched flake exhibits a small area of abrupt retouch along the distal edge. The technological attributes are relatively unrevealing regarding the date of the flint, but a later Neolithic or Bronze Age date is most

probable considering the general flake morphology. The fresh condition of the flint from context 304, indicates it may be contemporary with the archaeological feature. Flint from the Bullhead Bed is most commonly used in the Neolithic; it is, therefore, possible context 304 is Neolithic, rather than Bronze Age.

5.4 Animal bone by Lena Strid

5.4.1 A total of 25 animal bones were recovered from this site. Most bones were in a poor condition, with little - if any - of the bone surface remaining. No traces of burning, gnawing, butchery or pathology were found. Cattle was the only species identified. The 4 cattle bones identified derived from sub-adult or adult animals and consisted of a tooth, radius, ulna and femur.

5.4.2 No further information can be gained from such a small sample of bones.

Context	Species	No. of bones	Total weight (g)
104	Indeterminate	9	7
204	Cattle	2	37
	Indeterminate	6	
303	Cattle	1	3
305	Cattle	1	80
	Indeterminate	6	

6 DISCUSSION AND INTERPRETATION

6.1 Reliability of field investigation

6.1.1 There was no intrusion by modern features such as services and land drains and the site does not appear to have been truncated by landscaping associated with the adjacent motorway. Archaeological features were readily identified within the natural clay and gravel drift geology. The percentage sample, and distribution of the evaluation trenches have given a good understanding of the overall archaeological potential of the site.

6.2 Overall interpretation

6.2.1 The evaluation revealed five archaeological features located in the south western half of the site. All archaeological features were excavated and all produced dating evidence.

6.2.2 Within Trench 1 a linear ditch and a possible ring gully, (103 and 107), were excavated. Ditch 103 possibly relates to a field system or enclosure associated with settlement activity which could be evidenced by gully 107. The amount of pottery together with animal bone recovered from these features would seem to point to domestic activity in the area.

6.2.3 A pit (110) was also investigated in Trench 1. This feature and a very similar feature in Trench 2 (205) are probable rubbish pits and further support the presence of settlement activity.

6.2.4 A final linear feature (305) within Trench 3 is also likely to be part of an enclosure or field system and could possibly be a continuation of the ditch in Trench 1 (103).

6.2.5 Dating evidence in the form of pottery was obtained from all the features excavated and presents a consistent picture. The features date to the late first century AD and can be viewed as broadly contemporaneous.

6.2.6 Flints retreived from the site which probably date to the Neolithic or Bronze Age periods have been redeposited in the features but do indicate prehistoric activity in the general area.

APPENDICES

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

Trench	*Ctxt No*	*Type*	*Width (m)*	*Thick. (m)*	*Comment*	*Finds*	*Date*
001	100	Layer		0.38	Modern topsoil	NA	
	101	Layer		0.25	Subsoil	NA	
	102	Layer		-	Natural	NA	
	103	Cut	1.9	0.64	Ditch	NA	
	104	Fill		0.56	Ditch Fill	Pot, Bone, Flint	AD40-70
	105	Fill		0.06	Ditch Fill		
	106	Fill		0.35	Gully Fill	Pot, Flint	AD40-100
	107	Cut	0.37	0.35	Gully		
	108	Fill		0.08	Tree Throw Fill	Pot	50BC-AD70
	109	Cut	0.6	0.08	Tree Throw		
	110	Cut	1.2	0.24	Pit		
	111	Fill		0.18	Pit Fill	Pot, Flint, Burnt Stone	AD40-100
	112	Fill		0.04	Pit Fill		
002	200	Layer		0.32	Modern Topsoil	NA	
	201	Layer		0.12	Subsoil	NA	
	202	Layer			Natural	NA	
	203	Fill		0.16	Pit Fill	Pot	AD70-200
	204	Fill		0.14	Pit Fill	Pot, Bone, Flint, Burnt Stone, Daub	50BC-AD70
	205	Cut	0.45	0.3	Pit		
003	300	Layer		0.25	Modern Topsoil	NA	
	301	Layer		0.13	Subsoil	NA	
	302	Layer			Natural	NA	
	303	Fill		0.23	Ditch Fill	Pot, Bone	AD40-70
	304	Fill		0.2	Ditch Fill	Pot, Bone, Flint	AD40-100
	305	Cut	1	0.38	Ditch		

004	400	Layer		0.3	Modern Topsoil	NA	
	401	Layer		0.18	Subsoil	NA	
	402	Layer			Natural	NA	
005	500	Layer		0.40	Modern Topsoil	NA	
	501	Layer		0.3	Subsoil	NA	
	502	Layer			Natural	NA	

APPENDIX 2 REFERENCES

British Geological Survey. 1998. *Dartford: England and Wales Sheet 271, Solid and Drift Geology, 1:50,000. British Geological Survey, Keyworth, Nottingham.*

Chris Blandford Associates 2005 *Rapid Widening M25 junction 1B-3 -Archaeological Desk Based Assessment (Draft) June 2005.*

Monaghan, J, 1987 *Upchurch and Thameside Roman Pottery: a ceramic typology for northern Kent, first to third centuries AD*, Brit. Archaeol. Rep. **173**, Oxford

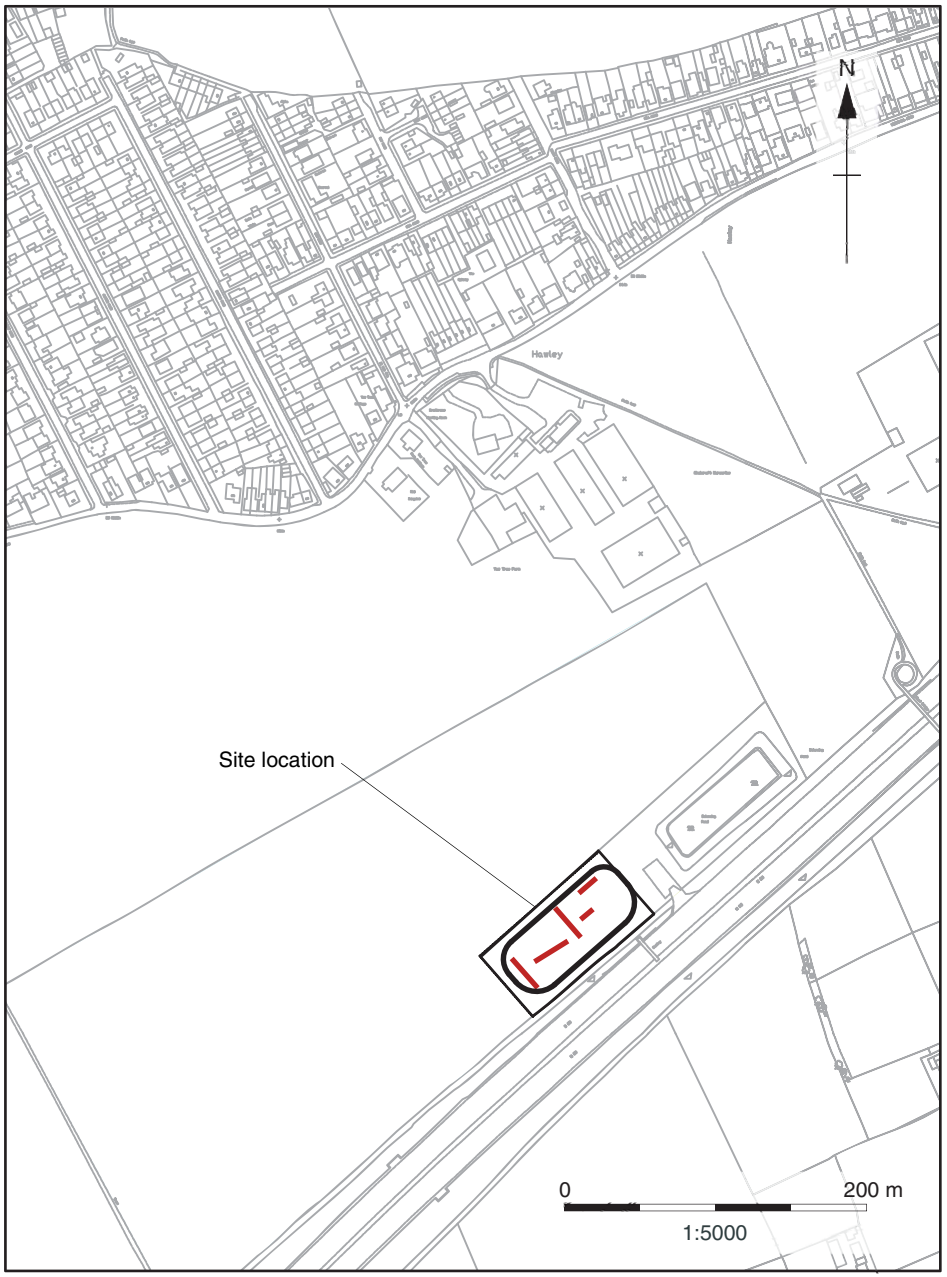
OA 1992, *Fieldwork Manual* (ed. D Wilkinson, first edition, August 1992)

APPENDIX 3 SUMMARY OF SITE DETAILS

Site name: M25 Rapid Widening Scheme J1b to J3
Site code: M25RAW 07
Grid reference: NGR: TQ 554900 171100
Type of evaluation: Five trenches ranging from 10 m to 26 m
Date and duration of project: 30th April - 2nd May 2007
Area of site: 0.3 Hectares
Summary of results: 1 gully 2 ditches and two pits dating to the late Iron Age / early Roman period.
Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with an appropriate museum in due course.

Scale: 1:50,000

Figure 1: Site location



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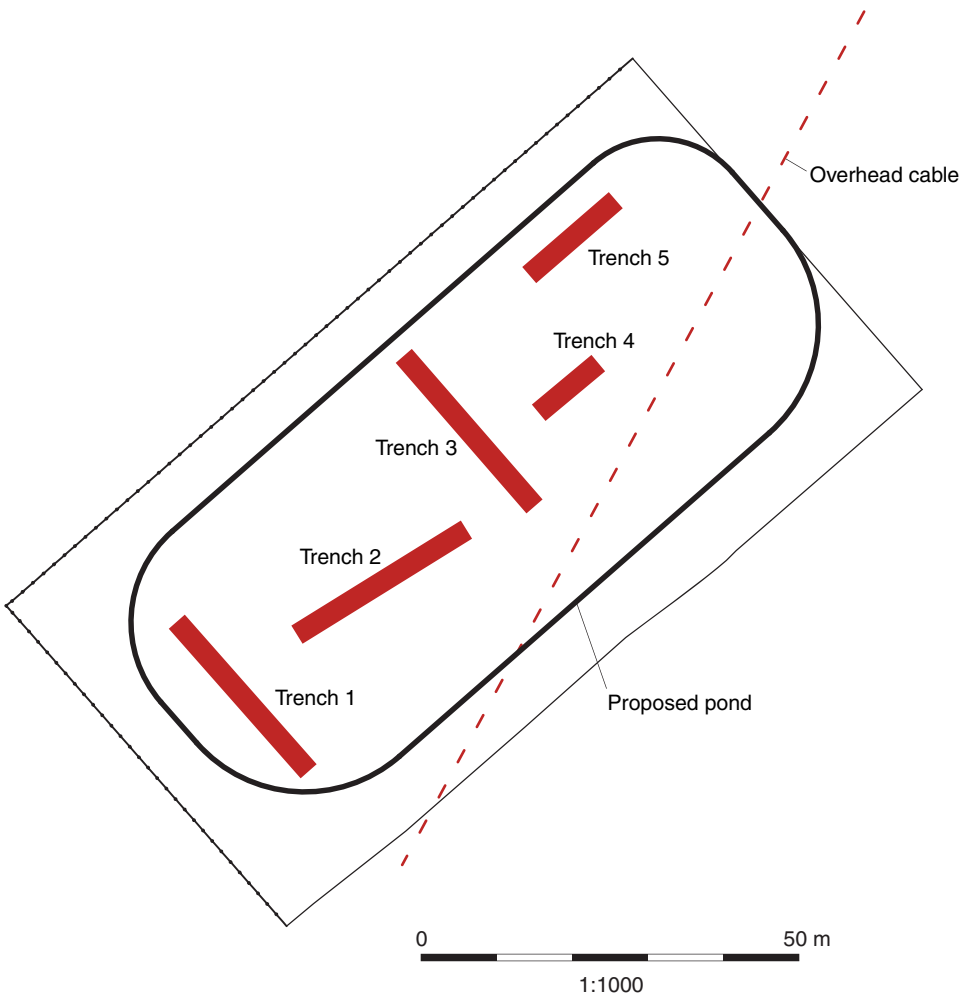

Figure 2: Trench locations

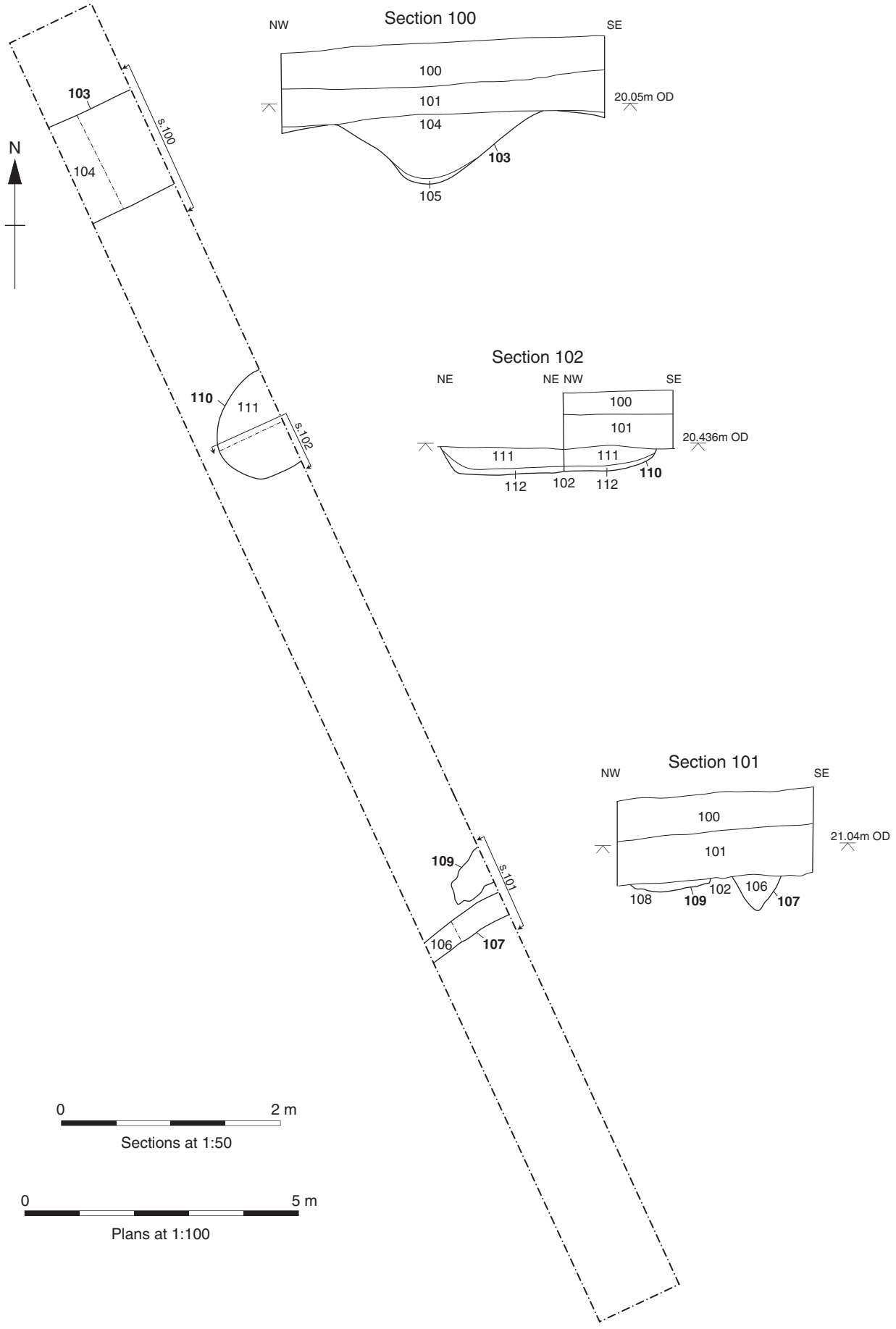

Figure 3: Trench 1 plan and sections

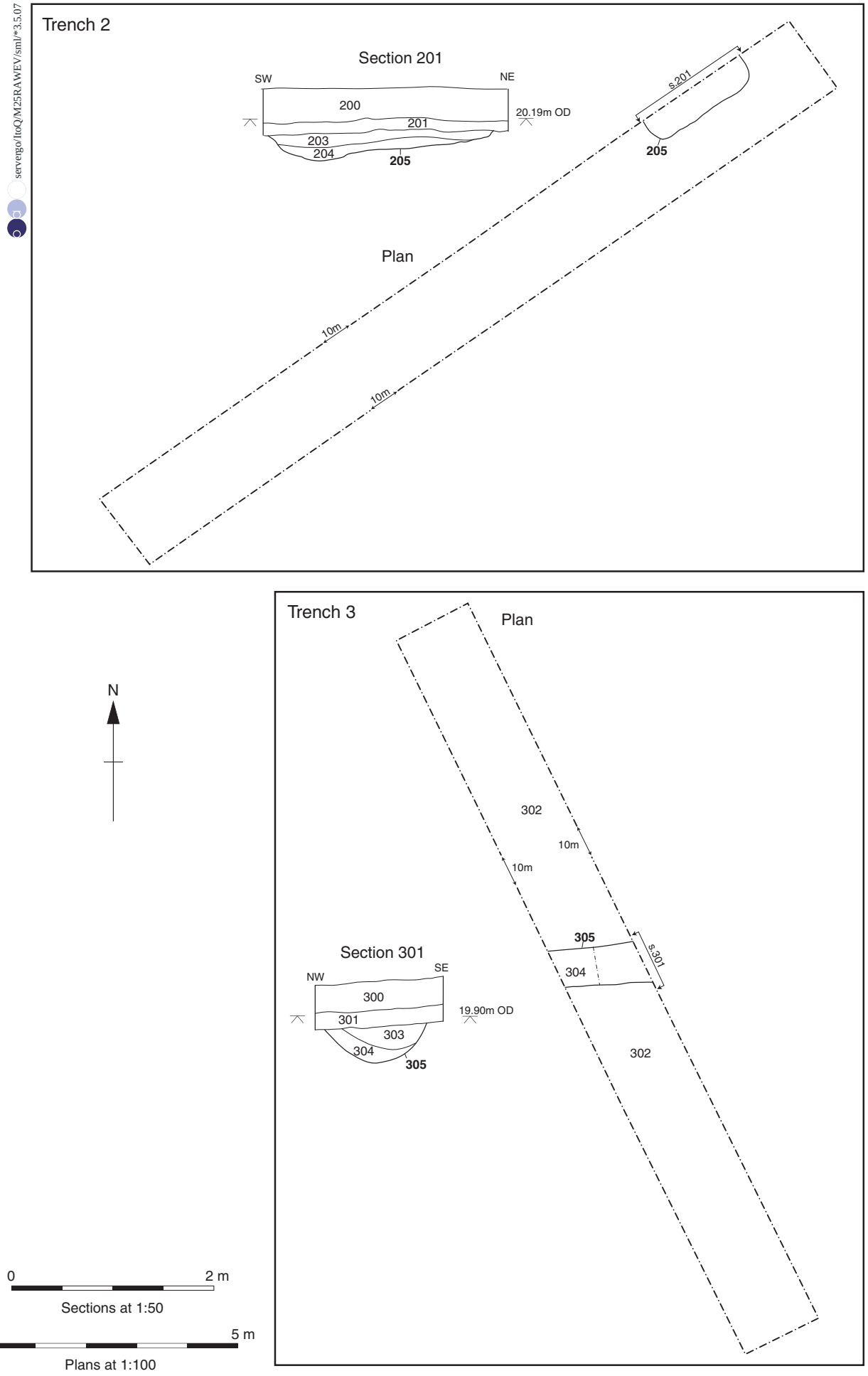

Figure 4: Trenches 2 and 3 plans and sections