

**AN ARCHAEOLOGICAL WATCHING BRIEF
ON THE SILVERTON SEWAGE TRANSFER MAIN**

by
J. C. Austin and J.P. Salvatore
with a contribution by Tim Gent

Exeter Archaeology

Report No. 10.85

Project No. 6477

**November 2009
Amended December 2010**

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Summary

A watching brief was undertaken by Exeter Archaeology in April 2008 during the works associated with the insertion of a new pipeline between Silverton Mill and the Silverton Sewage Treatment Works.

The area through which the pipeline runs was known to be archaeologically sensitive and adjustments were made to the original pipeline route in order to avoid suspected concentrations of archaeological features notably in Field 4 where aerial photography has revealed crop-mark evidence of suspected prehistoric enclosures.

The re-routed pipeline trench was observed to cut through a number of ditches and pits (predominantly in Field 4) of unknown date.

Quantities of worked flint recovered during topsoil stripping of the easement for the pipetrench confirmed the presence of prehistoric activity notably in fields 1 and 4 with the greatest number of flints recovered from Field 4.

1. INTRODUCTION

This report has been commissioned by Pell Frischmann Engineering Ltd on behalf of South West Water Ltd and presents the results of an archaeological watching brief maintained by Exeter Archaeology (EA) in April 2008 during groundworks associated with the provision of a new transfer sewage pumping main between Silverton Mill (SS 95963 02538) and the Silverton Sewage Treatment Works (SS 97659 01036). The work was required by the Devon County Council Historic Environment Services (DCHES) under reference Arch/dc/md/12224.

2. THE SITE

The pipeline route (Fig. 1) extends for approximately 3.5 km. from the new pumping station at Silverton Mill via the new Ellerhayes pumping station to the existing Silverton treatment works. The pipeline traverses mixed pasture and arable farmland.

3. AIMS

The main aim of the project was to observe, investigate and record any archaeological features, deposits or palaeoenvironmental deposits along the route of the pipeline and to recover and record any surviving archaeological artefacts.

The area through which the pipeline runs is known from aerial photography to contain cropmarks which give a clear indication of the presence archaeological features. In addition, the flood plain area north of Silverton Mill and south of the railway line was identified as an area with potential for waterlogged palaeo-environmental deposits. It was intended that appropriate sampling and paleoenvironmental analysis would be undertaken if such deposits were uncovered.

4. METHOD

Monitoring was undertaken in accordance with a brief produced by the DCHES. In order to facilitate recording, the fields crossed by the pipeline north of the railway line were numbered 1-9 and those south of the railway numbered 10-11 (Fig. 1). Topsoil was removed from the route of the pipeline in fields 1-9 using a 360° tracked excavator fitted with a toothless bucket, to produce an easement with a width usually of between 6–8m. Where the topsoil strip was not taken to a sufficient depth to reveal potential archaeological deposits then the field was monitored during the excavation of the pipe trench. This trench, 0.3m wide and 1.1m deep, was also excavated using a toothless bucket. A short section of pipeline between fields 6 and 7 was tunnelled using directional drilling equipment. The fields to south of the railway (Nos. 10 and 11) were not stripped (see Fig.1). Along this section the new pipe was inserted into a redundant pipeline with two facilitating pits at either end of the insertion being dug (only one of which was observed). The entire route of the pipeline was observed with the exception of those sections undertaken by directional drilling.

The pipeline route utilised existing gateways in extant field boundaries where possible.

Within Silverton Mill itself the concrete or tarmac hardstanding was cut and removed by machine. The trench was then dug using a 0.3m wide toothless bucket.

All archaeological deposits were cleaned and investigated by hand. Stratigraphic information was recorded in accordance with standard EA procedures. A written record was produced on EA single context and watching brief record sheets. Sections and plans were drawn at scales of 1:10, 1:20 and 1:50 as appropriate, and a photographic record compiled in digital and black-and-white print media.

5. ARCHAEOLOGICAL BACKGROUND

The route of the pipeline cuts through an area of known archaeological potential (see Fig. 1 which shows the position of some of the revealed by crop-marks together with their The Devon County Historic Environment Record (DCHER) has numerous records for the area including those obtained from aerial photography where crop and soil marks seen from the air have provided evidence of suspected significant features including enclosures and funerary monuments of probable prehistoric date, situated to either side of the pipeline (see Fig 1 where the DCHER references and putative interpretations are shown).

Of particular significance were the crop marks in field 4 showing what appears to be an irregular ditched enclosure, or enclosures, with adjacent linear features (Fig. 2). The main enclosure (SX 96899 01887) is 40m in diameter and situated in a slight hollow at the end of a south facing spur (DCHER 56073).

Silverton Mill is currently owned by the St. Regis Paper Company. The mill has been in existence since at least the early 16th-century, used first as a fulling mill and then a grist mill. It was destroyed by fire in *c.* 1740 and rebuilt in 1760. William Mathews took control in 1783 and was the first to run it as a paper mill. The mill continued to manufacture paper, under various owners until 2000.

6. RESULTS

Topsoil varied in depths along the route from 0.1m (field 6) to 0.54m in the lower parts of field 5, with depths of *c.* 0.3m being usual. River gravels and alluvial clays represented the underlying geology at the southern end of the (fields 1-3 and 10-11). The geology across the remainder of the route was variable compacted yellowish red and red sands, stony sands and yellow clay.

The results are described following the course of the pipe-line from south to north beginning at Silverton Paper Mill and ending at Silverton SWT. Fields north of the railway line are numbered 1-9 and those south of the line are 10 and 11 (Fig. 1). Fields 1-3, 5 and 7-9 contained no significant archaeological features; post medieval and modern field drains were observed but recorded only with the context archive.

Silverton Paper Mill

The pipeline works were undertaken in two distinct areas within the mill complex. Trenches 1, 2, 3 and 5 were located in the car park and trench 4 in the lorry park (Fig.1a).

Trenches 1, 2 and 3 were positioned in order to divert existing services into the new pumping station. In trenches 1, 2 and 5 a ditch (0105) was picked up in the trench

sections on a NW-SE alignment. The ditch, which had a broad U-shaped profile, was seen to extend at least 30m with a width of between 0.42 and 1.06m and a depth of 0.34m

Trench 4 in the lorry park was dug to a depth of 1.3m. The section of trench 4 was cut through modern demolition and levelling deposits and did not reach the natural subsoil. A post-medieval wall of limestone and brick (0111), believed to be a former roadside wall, was revealed where the trench met Bridge Lane.

Trench 5 (pipeline trench) accessed the car park in the northwest corner. It headed south for approximately 12m before turning east for approximately 17m terminating in the new pumping station.

Summary

Within the car park area an undated ditch (0105) was found. It is possible that this ditch represented a post-medieval boundary. Although the ditch was sealed by a levelling spread (0102) containing 19th and 20th century pot sherds, a modern defunct cast-iron water-pipe utilised the same alignment and ran along the length of the infilled ditch; the boundary is likely therefore to have been visible or known when the water-pipe was inserted. No early structural remains relating to the mill were found.

Field 11

The thrust pit for the purposes uncovering a redundant sewage pipe in field 11 was not seen.

Field 10

A thrust-pit was excavated in front of the old pump house, 2.5m from the north east bank of the drain in order to uncover the bored pipe from field 11 where the old sewage pipe was to be used as a sleeve for the new pipe (approximate location shown in Fig.1). No archaeological features were found although the deposit sequence was recorded as follows:

0.0-0.28m	Topsoil. Dark black silty clay, 65% clay
0.28-0.6m	Natural. Yellowish brown mottled clay. Alluvial deposit
0.6-1.55m	Natural. Orangey red clay
1.55-2.1m	Natural. Blueish alluvial clay
2.1m -	Natural. River gravels

The above deposits were unsuitable for paleoenvironmental samples.

Field 1

The twin ditches of a removed north-south aligned hedgebank were exposed 115m to the west of the road. The ditches were 1.5m wide and 0.4m deep and 2.03m apart. The hedgebank (still shown on modern OS maps) was removed in 1993.

Multiple NW-SE aligned ceramic field drains were also exposed.

The pipeline breached a hedgebank to access into field 2. This is an earth revetted hedgebank on a north-south alignment. The ditch to the east is 1.4m wide and 0.6m deep, and contains a small stream. The bank is 2.3m wide and 0.5m high and its core

comprised of a light orangey yellowish brown silty clay with occasional sub angular stone inclusions.

Finds

A total of 22 worked flints were recovered from the topsoil including one barbed and tanged arrowhead. These were concentrated more to the eastern side of the field.

Field 2

Only multiple post medieval field drains were exposed. Access to field 3 was through an existing gateway.

Finds

A total of 7 worked flints were recovered from the topsoil.

Field 3

The boundary between fields 3 and 4 was a wire fence supported by concrete posts.

Finds

Two worked flints were recovered from the topsoil.

Field 4 (Fig. 2)

The original pipeline route was diverted to the west in order to avoid the enclosure and other crop-marks suspected to indicate features of prehistoric origin identified within field 4 (see Fig. 2 and section 5 above).

Topsoil to a depth of 0.34-0.40m was removed. In some areas the natural geology was exposed but in general the topsoil stripping was of insufficient depth to reveal potential archaeological deposits. However, the trenching for the pipeline was also monitored and the following features were recorded:

Ditch 04003 (Fig. 2 and Fig. 4 plan and sections 1-3)

Ditch 04003 was exposed in the pipeline cutting 40m to the south of the northern field boundary of field 4. The ditch was broadly V-shaped in profile with evidence of a possible 'scouring slot' in its base. It was cut into the natural subsoil on an east-west alignment, and the exposed section was 5.7m long, 0.68m wide and 0.4m deep (from the surface of the natural). The single fill (04004) of mid to light reddish-brown silty clay was very clean; no finds were recovered from the fill.

The feature is interpreted as a boundary ditch of unknown date.

Pit 04005 (Fig. 2 and Fig. 4 plan and sections 4)

Pit 04005 was exposed *c.* 12m to the north of ditch 04003. It was sub-square in plan, 0.86m wide and 0.16m deep with a bowl-shaped profile. The fill (04006) of mid to light reddish-brown silty clay was stony and clean and produced no finds.

The feature was interpreted on site as a pit of unknown date.

Ditch 04007 (Fig. 2 and Fig. 3 section 1)

Ditch 04007 was exposed only in section *c.* 20m to the south-east of the northern field boundary of field 4. The observation suggested a possible NE-SW alignment. It was 1.4m wide and 0.36m deep, with a single fill (04008) of mid to light reddish-brown silty clay which produced no finds. An 1889 OS map shows a field boundary (now removed) in this vicinity but ditch 04007 was recorded to the north west of the digitised transposition of the 1889 field boundary (see Fig. 2) and may therefore be a separate and perhaps earlier feature.

The feature is interpreted as a boundary ditch of unknown date.

Ditch 04009 (Fig. 2 and Fig. 3 section 2)

Ditch 04009 was exposed *c.* 17m to the south of ditch 04003. It was aligned NE-SW. It was 0.7m wide and 0.27m deep, with a single fill (04010) which produced no finds. The feature is interpreted as a boundary ditch of unknown date.

Feature 04011 (Fig.2 and Fig. 3 section 3)

Feature 04011 was exposed in section only *c.* 3m to the north of pit 4005. It was 2.42m wide and 0.52m deep. A single fill (04012) produced no finds. Interpretation of the feature is uncertain; it is undated.

Finds

A total of 99 worked flints, a Late Roman flanged greyware bowl rim, and a sherd of South Somerset coarseware bodysherd of 17/18th-century date were recovered from the topsoil. A single piece of tap slag was also recovered.

Field 5

The removal of topsoil was insufficient to reveal archaeological deposits. As a result, the excavation of the pipe trench was monitored.

The pipeline breached a hedgebank to access field 6. This was an earth revetted bank on a NNE–SSW alignment. On the northern side of the bank is a ditch, 1.2m wide and 0.5 deep. The bank was 2.5m wide and 0.5m high (above natural). The core was comprised of an orange-brown silty clay, containing occasional sub angular stones.

Finds

A total of 11 worked flints were recovered from the topsoil

Field 6

Only two thirds of the field was stripped (approximately 147m) as the pipeline was bored from field 7 in to field 6. Topsoil was stripped to a depth of 0.22m to expose the subsoil. This was of insufficient depth to reveal archaeological deposits. Topsoil stripping and trenching exposed a deposit sequence of:

- 0.00-0.22m Topsoil. Mid to dark reddish-brown silty clay.
- 0.22-0.39m Subsoil. Mid to light greyish-brown silty clay - alluvial deposit.
- 0.39-1.49m Natural. Compact orange clay.

A number of field drains were exposed on the eastern side of the field; all aligned either N-S or NE-SW. Two drains (06003 and 06007) contained over-fired brick waster fragments, dating approximately from the 1840's. Other drains, where exposed were found to be modern.

Finds

A total of 6 worked flints and a sherd of South Somerset coarseware of 15/16th-century date were recovered from the topsoil

Field 7

The pipeline was bored from this field under the road.

Finds

A total of 9 worked flints were recovered from topsoil in this the field

Field 8

The pipeline breached the hedgebank between fields 8 and 9. This was an earth revetted hedgebank on a NNW-SSE alignment. The ditch on the southern side is 1.3m wide and 0.3m deep. The bank is 2m wide and 1m high. The core comprises of an orangey brown silty clay, with rare sub angular stone inclusions.

Field 9

The pipeline accessed the treatment plant at the northern end of the field. No archaeology was exposed.

7. FINDS*Lithics*

All of the worked lithics (156 in total) were recovered as surface finds in the vicinity of the pipe-trench. The majority have been struck from a mid-grey mottled flint often seen in Devon. Fifteen pieces are chert, usually either mid- or dark-brown in colour; five recovered from Field 2. Evidence of the primary reduction of flint and chert nodules is provided by 5 cores, a core trimming flake, 13 primary flakes and 24 secondary flakes, some of the latter reused, one to produce a side-scraper. Only four flints display evidence of a river or beach origin, although this includes one of the cores.

Perhaps not surprisingly, in light of the aerial photographic evidence, the vast majority of the flint assemblage was recovered from Field 4 (99 in total) Three of the five cores, including a large piece of mottled grey flint, came from this collection. Ten flints, including one of seven scrapers, had been burnt.

Two thumbnail scrapers of a type associated with production at the end of the Neolithic and early Bronze Age were recovered from Field 4. The smallest was struck from a clean, slightly brownish, grey flint. A very similar material had been used to produce a tanged and barbed arrowhead, found in Field 1. This distinctly Bronze Age piece has lost one of its two barbs, but the remainder is long and narrow, and the arrowhead, the product of fine craftsmanship, represents a type not often seen in Devon. The remainder of the assemblage is not easily dated, although a reasonably high proportion of blades, or the remains a blade technology, including two small blade cores, may suggest an earlier Neolithic, or possibly a Mesolithic, presence in the area.

Total Lithics recovered: 156

Field 1

Lithics: x 22. wgt. 89g. (inc arrowhead).

Field 2

Lithics: x 7. wgt 100g.

Field 3

Lithic: x 2. wgt 4g.

Field 4

Lithics: x 77. wgt 534g. (inc 2 thumbnail scrapers).
x 22. wgt 99g.

Field 5

Lithics: x 11. wgt 36g.

Field 6

Lithics: x 6. wgt 15g.

Field 7

Lithics: x 9. wgt 28g.

8. DISCUSSION

The unstratified flints indicated two zones of activity one centred in field 1 and one centred on field 4. The activity in field 1 is perhaps within the outer zone of a suspected prehistoric enclosure located further to the east on the opposite side of the road (see Fig 1.) whilst the activity associated with field 4 is almost certainly related to the significant evidence for prehistoric settlement derived from aerial photography seen within the same field (Fig. 2). Some Roman activity in the area may be indicated from the presence of a single late Roman pot sherd in the topsoil in field 4.

Pit-type features of unknown date were recorded within the pipeline trench and easement on the eastern side of field 4. Some of these could be outliers to the copses and hedgelines shown on an OS plan of 1889 and therefore related to tree-planting of probable post medieval date although other interpretations are equally possible and a prehistoric origin cannot be ruled out. The linear features observed in the same field are suspected to be boundary ditches of unknown date which may or may not relate to the crop-mark enclosures further to the west within field 4. No charcoal (suitable for sampling purposes and C¹⁴ dating) was observed in any of the features.

There was nothing of archaeological significance to report from the associated watching brief at Silverton Mill where trenches were dug through modern surfaces and made ground.

9. PROJECT ARCHIVE AND 'OASIS' REPORT

A fully integrated project archive has been compiled and will be deposited at the Royal Albert Memorial Museum, under museum accession number 236/2010.

A report of the evaluation (including a pdf version of this document) will be submitted to the on-line database OASIS (On-line AccesS to the Index of archaeological investigationS), under OASIS ID: exeterar1-61123.

ACKNOWLEDGEMENTS

The field work was undertaken by Jerry Austin of EA. Stephen Reed (DCHES) and Tim Gent (EA) offered comment during the course of the field work and Tim Gent provided comment on the lithics found. The illustrations were prepared and drawn by Tony Ives and Sarnia Blackmore. Additional material for this report was supplied by John Pamment Salvatore.

REFERENCES

Published sources

OS Ordnance Survey maps
1:10560 map, 1889

1: 2500 map Sheet SS 9601

HER Devon County Council Historic Environment Record
Various

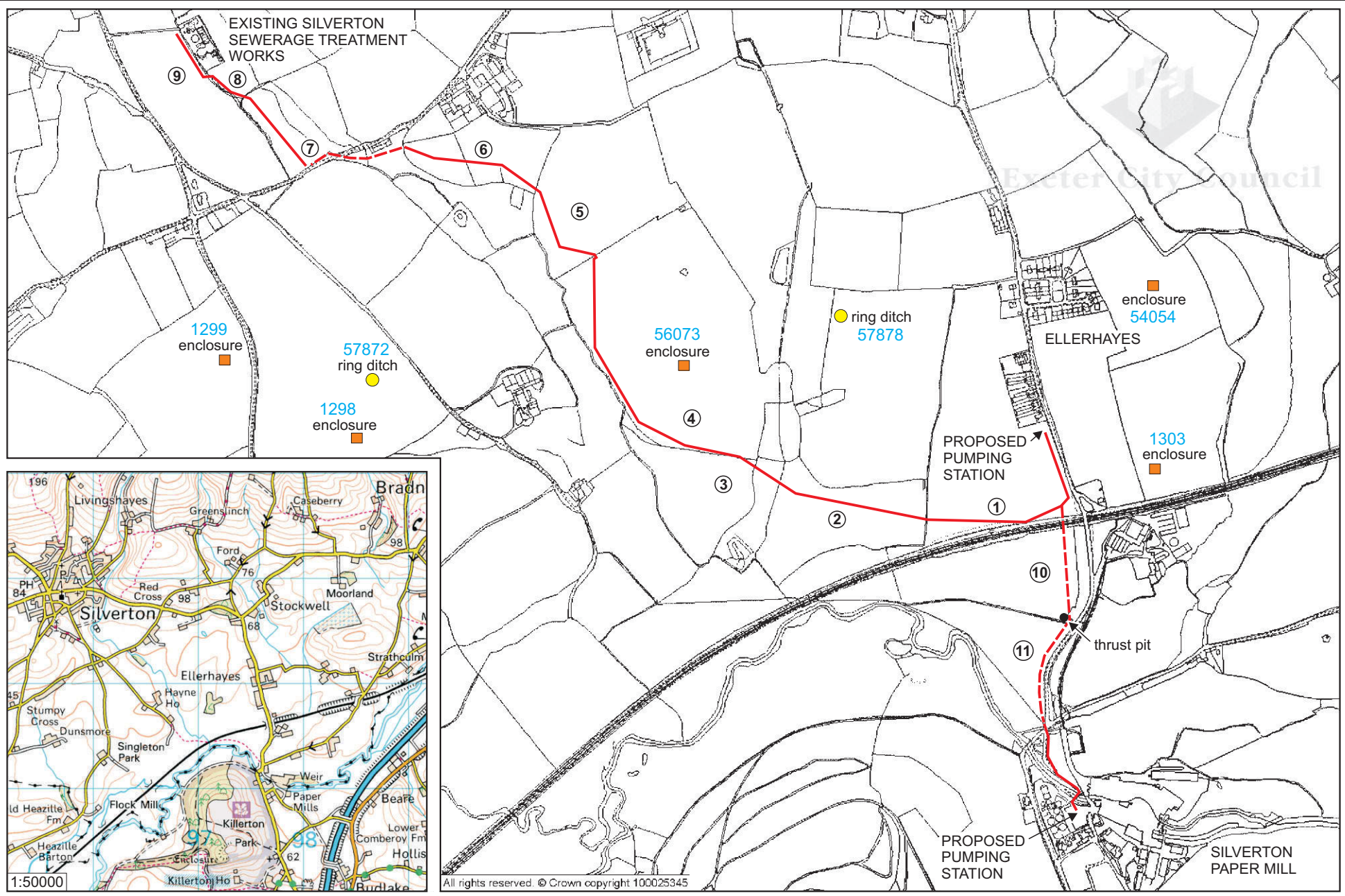


Fig. 1 Location of pipeline route in red (tunnelled sections in dashed line). Suspected prehistoric features with DCHER numbers in blue.

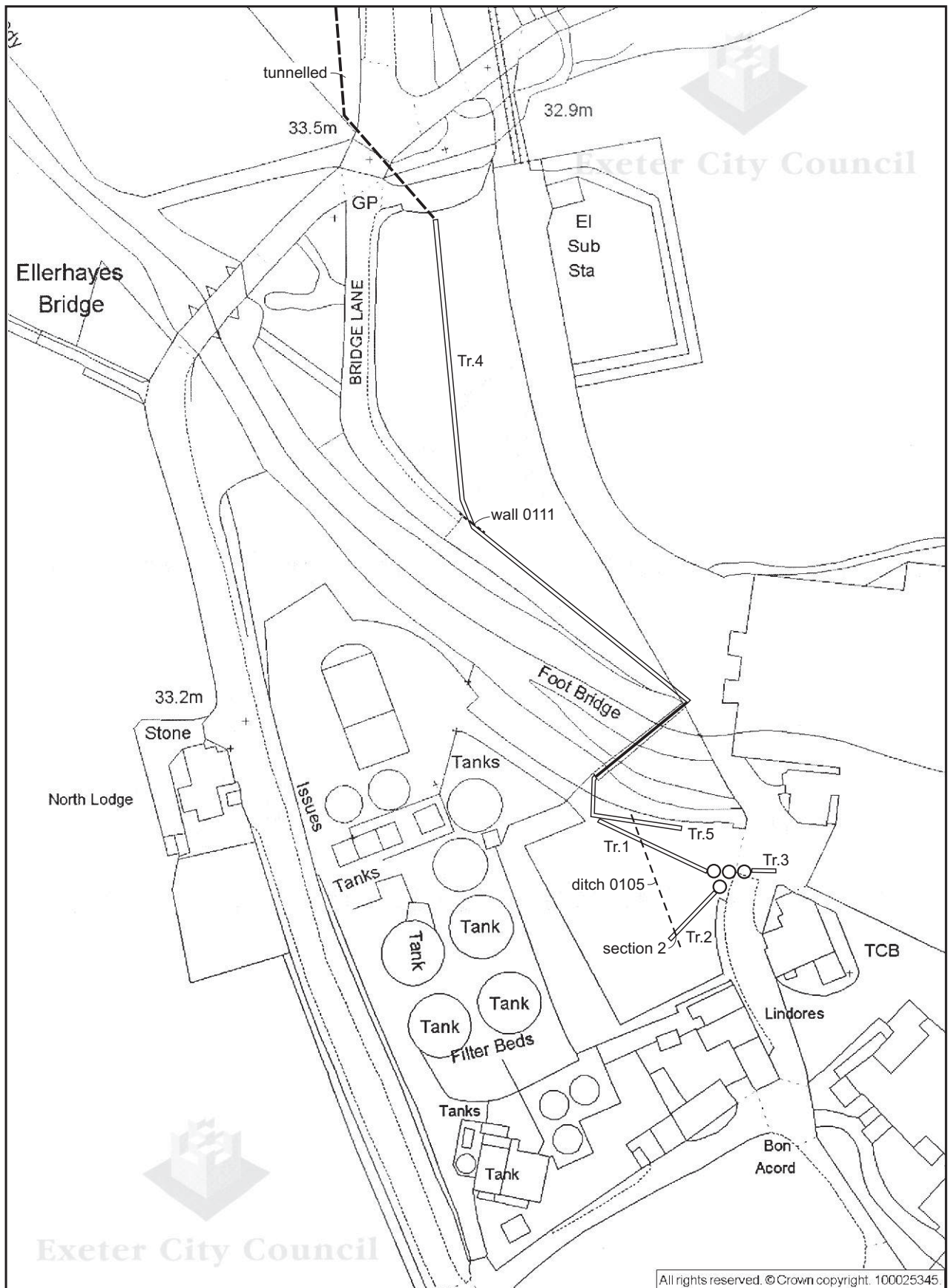


Fig. 1a Location of trenches and features in the Silverton Mill complex. Scale 1:1,250.

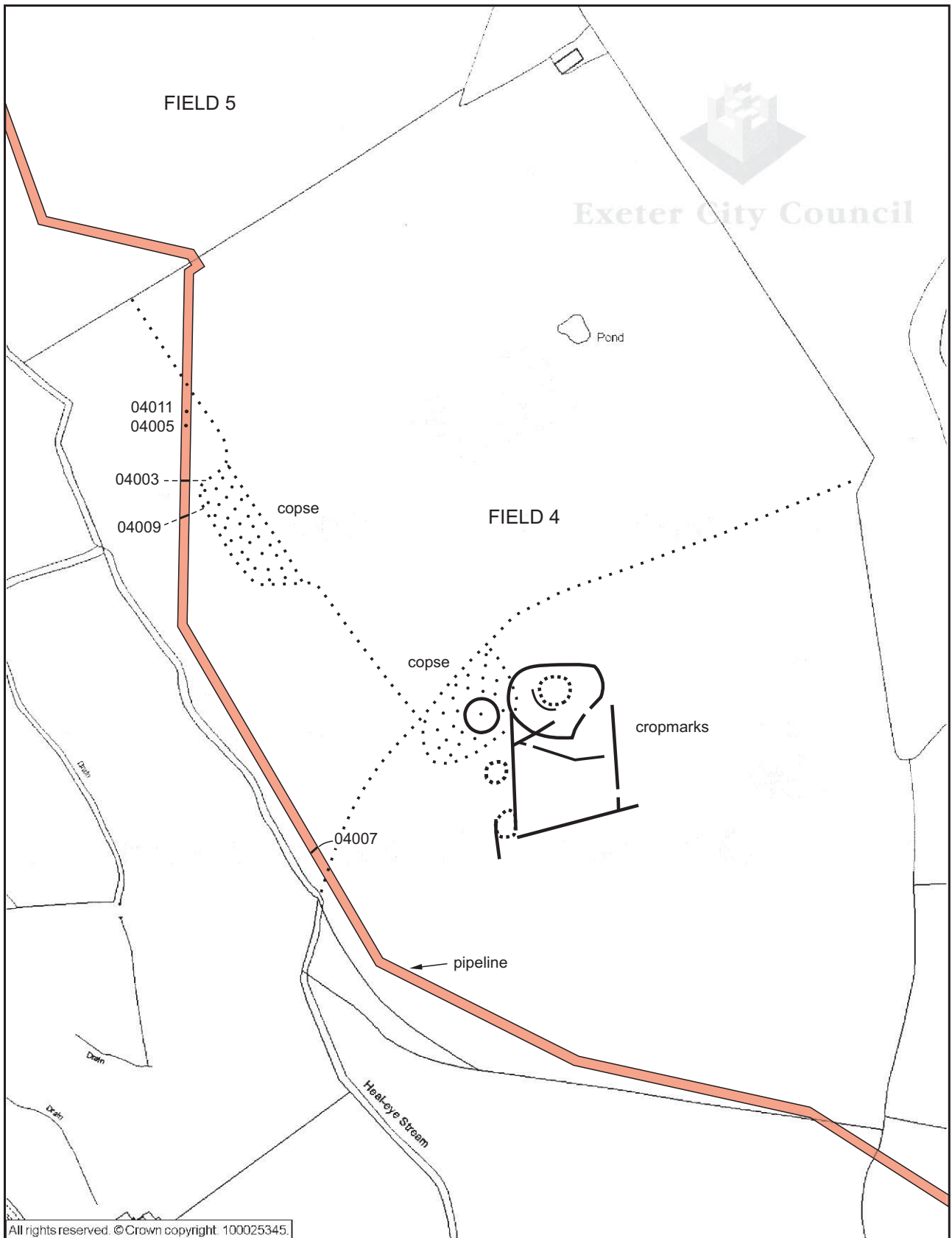


Fig. 2 Location of pipeline route and features in Field 4. OS 1889 1st edition field boundaries and wooded areas (dotted). Scale 1:2,500.

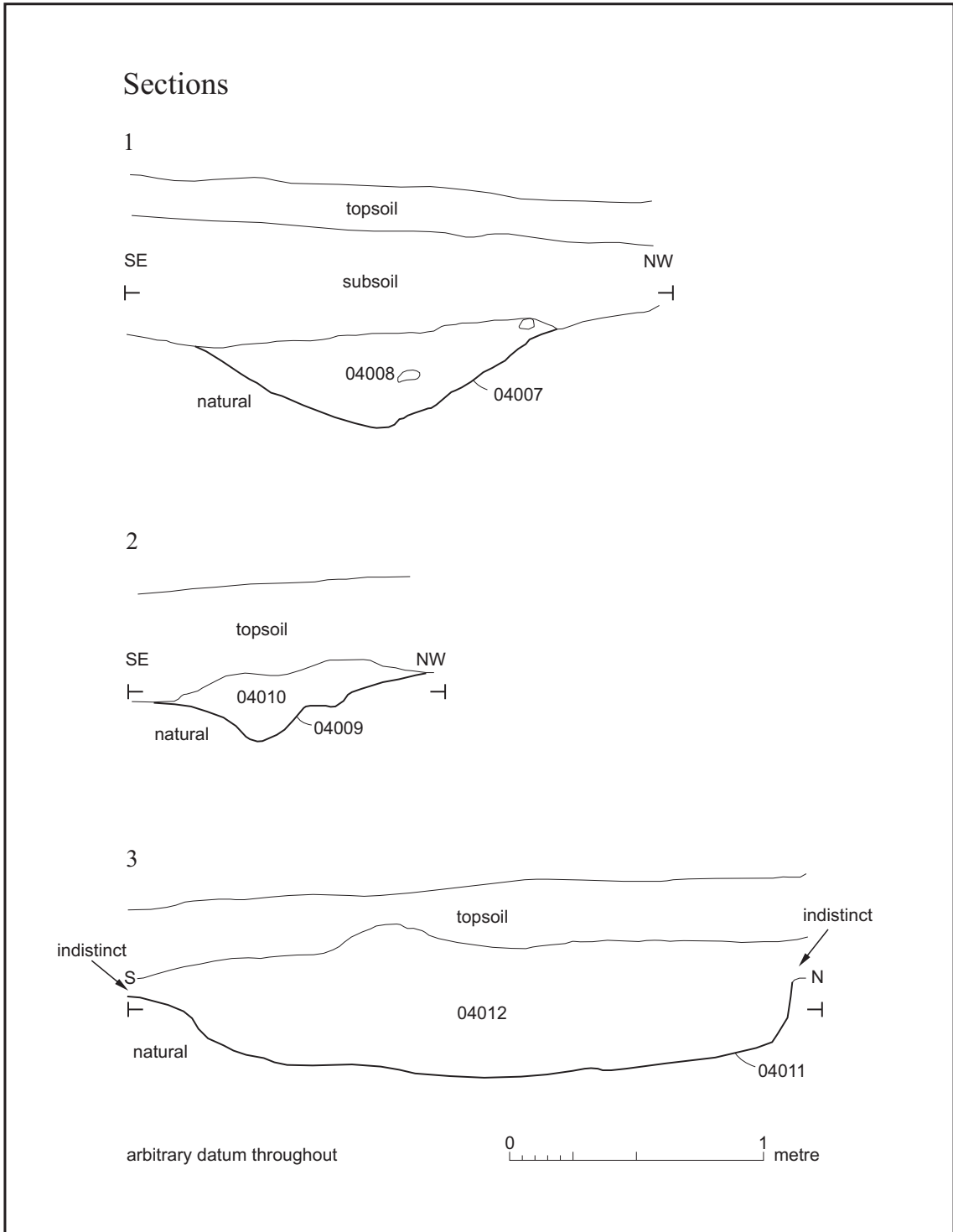


Fig. 3 Field 4, sections.

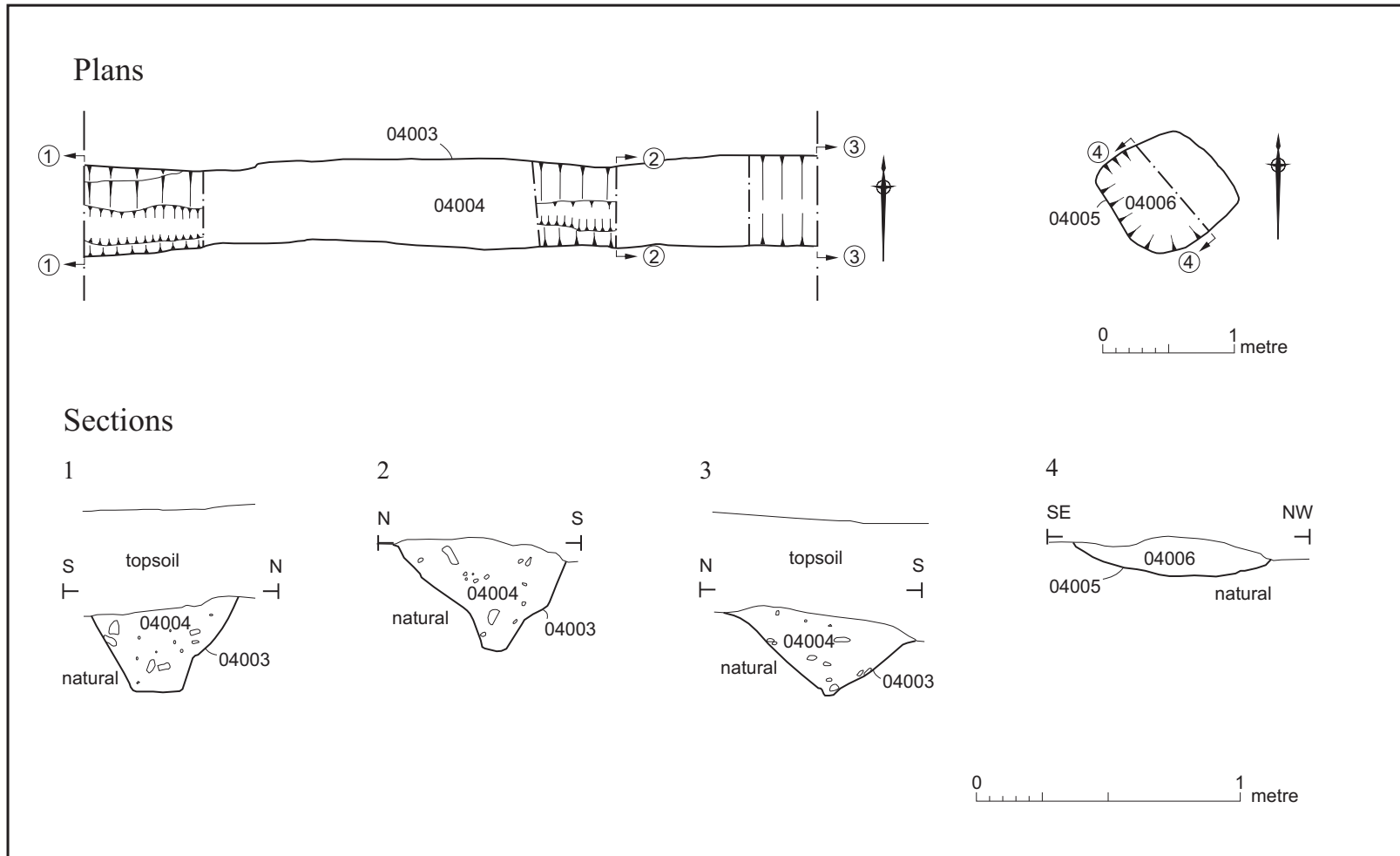


Fig. 4 Field 4 plans and sections.