

Northern Archaeological Associates

**MELTON, NEAR BROUGH
EAST YORKSHIRE**

PROPOSED WASTE WATER TREATMENT WORKS

**ARCHAEOLOGICAL TRIAL TRENCHING
FINAL REPORT**

prepared for

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on behalf of

YORKSHIRE WATER SERVICES LTD

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Summary

Sixteen evaluation trenches were excavated within the area of the proposed wastewater treatment works at Melton near Brough in the East Riding of Yorkshire which confirmed the presence of Romano-British settlement and associated enclosures. The trial trenching established that the areas of archaeological activity suggested by an earlier geophysical survey represent a relatively accurate picture of the extent of the site, though a number of additional features were identified during excavation. The evaluation identified a concentration of settlement activity including some structural evidence located on a gravel ridge which extended north beyond the limit of the proposed development area, with peripheral features comprising associated boundary, trackway and drainage ditches within the surrounding alluvial deposits. At the highest point upon the gravel ridge archaeological features were encountered at a depth of 0.3m below present ground level, while peripheral features were recorded at a depth of 0.8m to 1.4m cut into alluvial deposits. The projected zone of settlement occupation covers approximately 0.4ha with an area of peripheral activity (ditched enclosures and trackways) covering a further 0.5ha.

A quantity of Romano-British pottery, a fragment of quern, and well-preserved animal bone was recovered during the excavations. The pottery assemblage indicates that the settlement was occupied from the late 1st to early 3rd century AD. Palaeoenvironmental evidence has shown that the occupation of the area of settlement within the proposed development area was for a relatively short period of time between periods of flooding and may represent the expansion and subsequent retreat, due to changing sea levels, of a more extensive settlement to the north of the development area. This southward expansion over time is supported by ceramic dating evidence. Some of the features were intercutting indicating more than one phase of settlement plan within the area of investigation. No evidence was recovered for agricultural processing or industrial activity within the area of trial trenching. However, there were indicators that both agricultural and industrial activities were being undertaken nearby, probably in the remainder of the settlement to the north. The purpose of settlement extension southwards into the proposed development area may have been to enable access via the larger ditch channels to exploit the resources of the Humber estuary. No activity of either prehistoric or medieval date was recorded or identified during the evaluation.

On the basis of the results of the evaluation the location and extent of the proposed wastewater treatment works has been redesigned to avoid both the area of settlement and the area of peripheral activity. A watching brief should be undertaken of all excavation within the area of the revised wastewater treatment works. If future development were to encroach upon the area of the ladder settlement then it is considered the appropriate mitigation would be archaeological excavation of the surviving remains (preservation by record) in accordance with a scheme of works agreed with the planning authority.

1.0 INTRODUCTION

- 1.1 This report presents the results of archaeological evaluation of the site of a proposed new wastewater treatment works at Melton near Brough in the East Riding of Yorkshire (planning reference DC/02/01301/STPLF/STRAT; SMR/2002/167). The evaluation comprised excavation of sixteen trial trenches and was carried out by Northern Archaeological Associates (NAA) for Brown & Root in association with Scott Wilson on behalf of Yorkshire Water Services Ltd. The evaluation was part of a phased programme of archaeological work, including the preparation of an appraisal (NAA 2002a) which formed part of an environmental appraisal of the development (Brown & Root in association with Scott Wilson 2002), together with subsequent fieldwalking and geophysical surveys (NAA 2002b; GSB Propection 2002). The trial trenching was undertaken over a three week period during May 2002.
- 1.2 Melton is located some 3km to the east of Brough and some 13km to the west of the centre of Kingston-upon-Hull in the East Riding of Yorkshire (Figure 1). The original proposed location for the wastewater treatment works is in the area of Melton Common some 1.5km to the south of Melton village, some 2km to the west of North Ferriby and 0.5km to the north of the Humber estuary near Redcliff Channel (SE 968 251). The original extent of the proposed site at the time of trial trenching was located within parts of two adjoining fields on the west side of Gibson Lane to the north of Old Drain and extended to an area of some 3.8ha, measuring approximately 280m east to west by 130m north to south.
- 1.3 Proposed trench locations were predetermined by NAA, based mainly on the results of a geophysical survey (Figure 2) undertaken by GSB Propection (GSB Propection 2002) and agreed with the Humber Archaeology Partnership, archaeological advisors to the East Riding of Yorkshire Council (NAA 2002c). However, actual trench dimensions were dependant upon the nature of archaeological features identified during the evaluation and a number of trenches were extended in order to determine the limit of the archaeology. An interim report was prepared on the results of the evaluation during June 2002 (NAA 2002d).

2.0 BACKGROUND

- 2.1 Settlement sites of later Iron Age or Romano-British date are known in the vicinity of the proposed wastewater treatment works. These include the site on the Humber bank at Redcliff (SMR site 960), which appears principally to have served as a trading station in the immediate pre-Roman Iron Age and which did not survive long after the Roman occupation of eastern Yorkshire. A number of other sites of probable late Iron Age or Romano-British date are recorded on slightly higher ground (around the 10m contour or above) in the vicinity of Melton itself and include a 'ladder' settlement on South Lawn consisting of an extensive cropmark complex of enclosures and associated trackways which has been dated to between the late pre-Roman Iron Age and the 2nd century AD (SMR site 8241; Bishop 1999). A field system of unknown date to the south (SMR site 18087) and further enclosures and trackways to the west have been recorded as cropmarks and may indicate further more extensive settlement and field systems of similar date in the vicinity. Possible enclosures and field systems are also recorded further to the west (SMR site 6654) and the recovery of coins of Roman date

in the vicinity (SMR sites 17690 and 17698) would also suggest a Romano-British date for at least some of these features. The Roman town of *Petuaria* at Brough, which served as the *civitas* capital of the Parisi during the Roman period, is located some 3km to the west of the location of the proposed treatment works.

- 2.2 The geophysical survey of the evaluation area (GSB 2002) identified a single settlement complex consisting of enclosures with associated trackways and field ditches (Figure 2). The focus of the settlement appeared to be on an area of slightly higher ground towards the north-western part of the proposed development site, and indicated a series of rectilinear enclosures and drainage channels adjoining a north to south orientated ditched trackway.
- 2.3 A rapid fieldwalking survey had previously been undertaken in the area of evaluation by Northern Archaeological Associates (NAA 2002b). No artefacts of a Roman or medieval date were recovered during the rapid fieldwalking survey. On the basis of the results from the trial trenching this was shown to be due to the depth of alluvium covering the archaeological horizon.

3.0 METHODOLOGY

- 3.1 A series of sixteen trenches was excavated in accordance with the Project Design (NAA 2002a) as agreed with Humber Archaeology Partnership (archaeological advisors to the East Riding of Yorkshire Council). The location and dimension of the trenches was designed to evaluate specific anomalies of potential archaeological significance recorded by the geophysical survey (Figure 2). The trenches also targeted blank areas within the geophysical survey to confirm the actual extent of the archaeology. All trenches were excavated by machine under constant archaeological supervision until archaeological features or natural deposits were exposed. Those trenches in which significant concentrations of archaeological features were identified, were extended in order to quantify the extent and nature of the latter. Where no archaeological features were identified an additional sondage through the natural deposits was undertaken to confirm that this was indeed so. Trench 4 was not excavated for reasons of health and safety. The total area excavated amounted to some 800m².
- 3.2 Excavation of identified archaeological features was undertaken by hand where feasible. However, due to the depth of some of the trenches and the instable nature of the alluvial deposits it was not possible to work within the trenches due to health and safety reasons. In these cases a photographic survey and sketch plan was made from without the trench, and levels taken of the excavated depth. The water table was encountered at a depth of 0.9m-0.7m below the present ground surface and appeared to be tidally affected.
- 3.3 Trenches were located with an EDM on the basis of the geophysical survey and tied into Ordnance Datum. All archaeological features were photographed and recorded by means of both plans and sections and written descriptions.
- 3.4 Finds were recorded on the basis of set procedures and sampling of archaeological deposits undertaken in accordance with a strategy agreed on-site with the

Environmental Archaeology Unit (Dr Allan Hall). Site visits were also undertaken by Peter Didsbury (Romano-British pottery specialist) and Dr Benjamin Gearey (Wetland Archaeology and Environments Research Centre, University of Hull). Samples were taken for analysis of phosphate levels. However, it has not been possible to undertake the chemical analysis of these samples. The analysis will form part of the further work prior to publication.

- 3.5 The site code for the evaluation was MTW02 (Melton Treatment Works 2002). Context numbers were allocated in respective hundred blocks per trench (e.g. Trench 3 – 300-399 etc).

4.0 RESULTS OF EXCAVATION

- 4.1 A description of the results of the excavation of each trench is provided below. Trenches containing archaeological features have been illustrated (Figures 3 - 13). Finds are referred to where relevant, and are listed in the attached context and finds catalogue (Appendix A). A more complete assessment of the finds is presented in the specialist reports (Appendices B - H).
- 4.2 Ceramic field drains were encountered throughout all of the trenches. Archaeological features were sealed by subsoil and alluvial deposits at a depth of between 0.3m and 1.4m.

Trench 1

- 4.2 This trench measured 35m by 2m and was located to evaluate some of the many positive and negative anomalies recorded by the geophysical survey within this area and which are considered to reflect natural variations within the subsoil. No archaeological features or finds were identified within this trench. The trench was machine excavated until gravel was encountered at a depth of 2.1m. Palaeoenvironmental samples were taken on site by Dr Benjamin Gearey (WAERC) from the exposed section (Figure 3).
- 4.3 The palaeoenvironmental assessment (Appendix G) indicated that after the deposition of the post-glacial gravels (105) the area was relatively dry and a basal peat (104) 0.2m thick was formed during the Bronze Age. This was followed by a period of freshwater flooding during which 0.66m depth of clayey silt (103) built up. This silty layer was sealed by 0.28m crumbly grey-brown clay (102) which contained highly humified organics typical of a reedswamp environment and that represents a further change in the local conditions back to semi-terrestrial conditions. This layer was in turn sealed by a silty clay layer (101) 0.5m thick, which represents a further inundation of the site prior to reclamation and drainage of the area. The archaeological horizon was sealed by the grey-brown clay layer (102), a deposit identified in the majority of the evaluation trenches.

Trench 2

- 4.4 This trench measured 25m by 2m and was located to evaluate anomalies that include part of the probable trackway within the northern part of the survey area together with

an adjoining enclosure to the west (including the interior). Two large ditches (202 and 204) orientated north to south, each approximately 3.5m wide by 1m deep, were identified in the eastern end of the trench (Figure 3 and Plate 1). They were filled with mid brown grey silty clay, which contained plant remains typical of a wet ditch habitat (Appendix H). These represented possible droveway ditches identified by the geophysical survey, the droveway would have been approximately 2m wide. Two fragments of bone were recovered from one of the ditches. No features were identified related to the possible double ditched enclosure suggested by the geophysical report within the western limit of the trench.

- 4.5 The ditches were sealed by a dark brown grey humic soil (207), this in turn was sealed by a layer of laminated orange and grey clay (206) which was beneath a subsoil (201) directly below the topsoil (200). The archaeological horizon was approximately 0.4m below the present ground level.

Trench 3

- 4.6 This trench measured 25.5m by 2m and was located to evaluate ditch-type anomalies that represent a probable extension to the south of the trackway identified in Trench 2. Two ditches (301 and 303) orientated north to south were identified (Figure 4 and Plate 2) in alignment with those ditches identified in Trench 2. Ditch 301 was 1.5m wide and ditch 303 was 2.1m wide. They defined a trackway 2.5m wide and were both filled with the same mid brown silty clay as 202 and 204. A probable fence slot (305) linked the two ditches, which could represent a temporary boundary for stock control along the droveway. A further east to west aligned ditch (307) was identified joining the enclosure at right angles which may represent part of the boundary of an enclosure adjoining the trackway. Features were identified and recorded by photograph and sketch plan but excavation was unsafe as the sides of the trench were unstable. The archaeological horizon was approximately 0.8m below the present ground level.

Trench 4

- 4.7 Based on the results of excavation within Trenches 3, 9 and 10 and the anticipated depth of features, Trench 4 was not excavated for reasons of health and safety. This trench would probably have contained a continuation of the droveway ditches recorded within Trench 3, as suggested by the geophysical survey, at a depth which would have been unsafe to excavate within the confines of an evaluation trench.

Trench 5

- 4.8 This trench measured 21m by 2m and was located to evaluate a large north to south orientated linear trend. A single large ditch or palaeochannel (505) aligned north to south was recorded in the centre of the trench (Figure 5). This ditch may be a continuation of one, or indeed both, possible droveway ditches identified in Trenches 2 and 3 and identified by the geophysical survey. The ditch measured 3.6m wide by 1.06m deep and contained three fills. Environmental remains from the primary fill (508) indicated that the ditch had been filled with water and naturally silted up (Appendix H). It probably acted as an outlet drain or channel from the settlement and the droveway ditches eventually running into the Humber. The channel may have been

navigatable by small river craft and provided access to the large Humber estuary. The archaeological horizon was approximately 1.2m below the present ground level.

Trench 6

- 4.9 This trench measured 27m by 2m and was located to evaluate both ditch and pit-type anomalies that represent a possible enclosure. Five ditches (605, 609, 616, 620 and 622) were identified on a broadly north to south orientation (Figure 6), some of which corresponded with the geophysical trends. Three of the ditches were intercutting demonstrating more than one phase of activity in this area. One further east to west ditch (611) and two pits (602 and 618) were also excavated.
- 4.10 Ditch 605 was 2m wide by 1.2m deep and was cut by ditch 609. Ditch 605 was filled with three layers of yellowish brown silty sand. A large quantity of pottery (110 sherds) was recovered from its fill, all but two of the sherds from the primary fill (608). The earliest material was of native hand made jars typical of late Iron Age assemblages from the 1st century BC and AD. However, the majority of the sherds were of Roman greywares indicating a 2nd century closure for the ditch deposit. A large quantity of elder seeds was recovered from the environmental samples, and the ditch produced the largest single assemblage (48 pieces) of animal bone recovered from any of the trenches. Ditch 611 may have joined ditch 605, though the relationship was truncated by ditch 609 which cut both ditches 605 and 611. Ditch 611 only appeared in the very corner of the trench and was filled with a yellow grey silty sand, no finds were recovered from this ditch. Ditch 609 measured 1.5m wide by 0.6m deep, and was filled with dark grey brown silty sand, three sherds of native hand made pottery, three bone fragments and a piece of slag were recovered from its fill.
- 4.11 The ditches at the northern end of the trench (620 and 622) were both orientated north to south and were of a similar width of 1.7m while ditch 620 was 0.6m deep. Ditch 622 was 0.2m deep. They were both filled with dark orangey grey sandy silt which was heavily disturbed by roots. This root action was apparent in the northern half of the trench as a grey mottling in the natural deposits. A possible single shaft fragment from a human infant was recovered from ditch 620, as well as two sherds of Roman greyware and 15 sherds of native hand made pottery, 11 pieces of animal bone, a fragment of daub, and a piece of slag. There were no finds recovered from ditch 622.
- 4.12 Ditch 616 measured 1.1m wide by 0.3m deep filled with a mid yellow brown sandy silt. The ditch became shallower and narrower at its southern limit within the trench which may represent a terminus. A sherd of Roman greyware pottery and two sherds of native hand made pottery were recovered from the ditch.
- 4.13 Feature 602 was 1.1m wide and went beyond the limit of excavation. The feature was 0.39m deep and was filled with an orangey brown sandy silt. It may represent the remains of either a pit or the terminus of a ditch parallel with ditch 616. Four sherds of hand made pottery dated to the late Iron Age or early Roman periods were recovered from its fill, as well as four fragments of bone and three pieces of worked flint. The feature had been re-cut (613) and was filled with a dark brown sandy clay. A shallow pit (618) was also identified. Pit 618 measured 0.7m by 0.5m and was 0.2m deep filled with a mid yellow brown sandy silt.

- 4.14 All of the features in this trench were sealed by a mid brown clayey loam (601) which represents a buried soil horizon. Within this deposit 26 fragments of pottery were found including later Iron Age and Roman greyware sherds. The archaeological horizon was approximately 0.3m below the present ground level.

Trench 7

- 4.15 This trench measured 13.5m by 2m and was located to evaluate a ditch-type geophysical anomaly. A single ditch (705), orientated north to south was identified (Figure 7) exactly on alignment with the anomaly. The ditch measured 1.42m wide by 1.2m deep, one sherd of hand made native ware and one of Roman greyware pottery were found within the fill of the ditch. This ditch truncated a shallow pit (707) which was approximately 1m across by 0.13m deep. Two sherds of pottery from a carinated Roman grey ware bowl were recovered from the pit, which are thought to date to a period earlier than the mid 3rd century. A number of post-holes aligned east to west were also identified within the trench (702, 708, 710, 712 and 718) which may represent a past fence line. All of the archaeological features within the trench were filled with a mid grey brown silty clay. The archaeological horizon was approximately 0.6m below the present ground level and was sealed by an mid brown grey silty clay alluvial layer (716).

Trench 8

- 4.16 This trench measured approximately 20m by 2m and was located to evaluate anomalies that may have represented an east to west aligned trackway as well as parts of enclosures to the north and south. A deposit of peat was identified within a palaeochannel (827) at the northern end of the trench and a number of ditches, slots and post-holes were also recorded (Figure 8). Samples from the peat indicated the contemporaneous vegetation was of tall herbaceous plants typical of a ditch bank. The upper fill (805) of the palaeochannel comprised a deposit of gravely clay sand which sealed the peat. The channel predated the settlement, as was indicated by a small ditch (802) which was cut into the upper fill.
- 4.17 Ditches 802 and 824 were recorded at the north and southern ends of the trench respectively. They were both orientated roughly east to west and were filled with a mid brown grey silty clay. Ditch 802 measured 1.1m wide by 0.24m deep and contained no finds. Ditch 824 measured 2.9m wide by 0.65m deep, one sherd of hand made pottery and a fragment of bone were recovered from its fill. A narrower ditch (813), which measured 0.5m across and 0.29m deep, aligned north-east to south-west, was found between ditches 802 and 824. It was filled with a mid grey sandy silt (814) which contained three sherds of native hand made pottery and a bone fragment. Environmental samples of this deposit were suggestive of the burning of turves in the vicinity.
- 4.18 Two slots (819 and 822) and some post-holes (807, 809, 811, 817 and 823) were the only other archaeological features found in the trench. They were all filled with sandy silt deposits ranging from a dark brown grey colour to a mid grey. Slot 819 was 0.55m wide by 0.22m deep, slot 822 was 0.15m wide by 0.08m deep. Although both slots may have had a structural function there was no discernable pattern to the distribution of slots and post-holes to indicate the plan of any possible structure. The slots may

represent fence lines within the settlement. Burnt animal bone was recovered from slot 819 and post-hole 817. The main archaeological horizon was approximately 0.9m below the present ground level.

Trench 9

- 4.19 This trench measured approximately 23.5m by up to 4m and was located to evaluate the interior of an enclosure, which contained a number of linear trends. Four inter-cutting ditches were identified within this trench representing more than one phase of activity (Figure 9). The earliest of these ditches (922) was orientated north-west to south-east and was cut by ditch 903 at right angles. The latest ditch (927) was almost parallel to ditch 903. Ditch 922 measured 1m wide by 0.3m deep, ditch 903 measured 1.8m wide by 0.4m deep and ditch 927 measured 1m wide by 0.15m deep. They were filled with sandy silts ranging from dark grey to a dark orangey grey. Ditch 915 was at the eastern end of the trench and ran approximately parallel to ditch 922, it measured 1m wide by 0.3m deep and contained a single sherd of native hand-made pottery.
- 4.20 A large post-hole (921, 0.48m in diameter) and three pits (917, 919 and 924) were recorded in the western third of the trench. Pit 917 was 0.5m in diameter by 0.2m deep and was filled with a dark silty deposit containing a large amount of bone. Pit 919 measured 0.95m in diameter by 0.23m deep and was filled with five layered deposits, some of which were very charcoal rich. Pit 924 measured 0.5m in diameter by 0.07m deep a charcoal rich lower fill beneath a silty clay upper fill. Charcoal fragments of oak, and possibly willow or poplar, were recovered from pits 917 and 924. The archaeological horizon was approximately 0.9m below the present ground level.

Trench 10

- 4.21 This trench measured approximately 34m by 2m and was located to evaluate both ditch and pit-type anomalies that represent a possible enclosure. A number of features were identified (Figure 10), though excavation of this trench by hand was impossible as the sides were unstable and the trench increased in depth towards the southern end. However, at the northern end ditch 1015 was excavated by hand. The ditch measured 0.23m wide by 0.12m deep. A single sherd of native hand made pottery was found in the fill.
- 4.22 The largest of the ditches (1011) had a section excavated through it by machine. Ditch 1011 measured 2.1m wide by 1.05m deep. An environmental sample taken from the primary fill contained good preservation of organic remains and small fragments of animal bone. The remains included duckweed and pondweed, indicative of waterlogged conditions, as well as some salt march plant remains, which may suggest the ditch was tidal. Insect remains confirmed the aquatic nature of the deposit, and the presence of dung beetles and stinging nettles indicate nearby grazing.
- 4.23 The remaining four ditches (1003, 1005, 1007 and 1009) were identified and recorded by photograph and sketch plan. Ditches 1005, 1009 and 1015 measured 0.3m, 0.6m and 0.5m wide respectively and were parallel on an east-west orientation. Ditch 1007, which measured 0.5m wide, was perpendicular to these ditches. All of the ditches had dark grey silty clay fills, except 1003, which was filled with a light orangey grey sandy

clay. The archaeological horizon was up to 1.4m below the present ground level and was sealed by a peaty silty clay layer (1002) approximately 0.7m deep.

Trench 11

- 4.24 This trench measured approximately 24m by 2m and was located to evaluate both ditch and pit-type anomalies that represent a possible enclosure. No archaeological features or layers were identified in this trench.

Trench 12

- 4.25 This trench was L-shaped and measured approximately 36m by 2m (north to south) and 26m by 2m (east to west) and was located to the east of the main complex of enclosures in an area largely devoid of geophysical anomalies, but was positioned both to evaluate linear trends that may reflect an extension to a possible trackway to the west and establish whether other archaeological features survived within this area. Within the original proposed trench limits settlement-type archaeology, and features of more than one phase, were encountered (Figure 11). The trench was therefore extended both to the south and east to ascertain the limit of these features.
- 4.26 At the corner of the L-shaped trench part of an interrupted curvilinear gully (1222, 1224 and 1280) was identified which represents the remains of a roundhouse (Plate 3). If extrapolated the roundhouse would have measured approximately 7.2m in diameter. The gully contained a number of post-holes (1251, 1253, 1255, 1257, 1263, 1265 and 1287) which would have formed a wall slot for the structure. The gully segments were generally 0.5m-0.6m wide by 0.1m-0.15m deep, filled with brown grey silty clays. The fills of the post-holes were more sandy and with a orangey hue. A total of 32 sherds of solely Roman pottery, representing at least seven distinct vessels, were recovered from the gully. The sherds included white fired wares (body sherds), the base of a white flagon, a number of greywares including a jar with a lug handle, and a globular jar with everted rim. Only three sherds were recovered from the remainder of the trench.
- 4.27 There were two pits (1230 and 1228), five post-holes (1226, 1289, 1284, 1282 and 1247) and two possible slots (1259 and 1261) within the area enclosed by the roundhouse gully, which could relate to the internal structure of the roundhouse. All of the internal features were filled with silty clays, the only finds in these features were fragments of burnt bone from pit 1228 and a single bone fragment from post-hole 1284. The quantity of pottery within the roundhouse gully, and the presence of burnt animal bone, are suggestive of domestic occupation within the structure.
- 4.28 The roundhouse was set within an enclosure defined by ditches (1220 and 1236). Ditch 1220 measured 2.9m wide by 0.6m deep and was filled with a brown grey silty clay. The ditch had a re-cut (1267) that was slightly narrower and was filled with two layers of silty clay. A fragment of bone and a single sherd of greyware were found in the upper fill of the re-cut. Ditch 1236 measured 0.8m wide by 0.4m deep and was filled with dark grey brown silty clay.
- 4.29 Three boundary ditches (1270, 1272 and 1276) and one slot (1238) were identified to the south-western limit of the trench all of which were filled with silty clays of varying

hues of brown. Both ditches 1272 and 1276 were cut by ditch 1270. Ditch 1272 measured 1m wide by 0.3m deep while ditch 1276 measured 1.2m wide by 0.2m deep. Ditch 1270 was curvilinear and measured 1.2m wide by 0.28m-0.6m deep. An environmental sample taken from the fill indicated it was a water filled ditch. Bone fragments were found in ditches 1272 and 1276. The ditches may have functioned as both internal boundaries and drainage ditches within the settlement. A small slot (1238) was recorded to the north of these ditches which measured 0.2m wide by 0.2m deep and was filled with bluish grey silty clay.

- 4.30 At the south-eastern limit of the trench a narrow T-junction slot (1208 and 1210) was identified. Both slots measured approximately 0.2m wide by 0.2m deep and were filled with blue grey silty sand, similar to slot 1238 (above). These narrow slots are likely to represent the remains of fence lines within the settlement. To the west of slot 1208 were two further ditches (1212 and 1214) which were orientated roughly east to west and converged just outside the trench. These ditches may also have functioned as boundary or drainage features. Ditch 1212 measured 0.98m wide by 0.29m deep; ditch 1214 measured 0.76m wide by 0.15m deep. The fill of these two ditches was brown grey silty clay. A residual re-touched flint and a single sherd of Roman greyware pottery were recovered from ditch 1212.
- 4.31 A possible fence line of post-holes (1216, 1218, 1249 and 1245) orientated east to west was recorded cutting through the gully and enclosure ditches. The post-holes were between 0.32m-0.49m in diameter and up to 0.25m deep. One of the post-holes (1218) contained 62 fragments of bone, a piece of slag and a sherd from a small upright hand made jar rim. The archaeological horizon within the trench was approximately 0.8m below the present ground level.

Trench 13

- 4.32 This trench measured approximately 24m by 2m and was located in an area largely devoid of geophysical anomalies, but was positioned both to evaluate a linear trend and establish whether other archaeological features survived within this area. Only two small isolated post-holes were identified within the trench (Figure 12). Post-hole 1304 measured 0.26m in diameter by 0.07m deep. Post-hole 1306 measured 0.3m in diameter by 0.06m deep. Both post-holes were filled with a slightly gravelly light grey brown clayey silt and no finds were recovered from either one. The archaeological horizon was approximately 1.1m below the present ground level and was sealed by a layer 0.26m deep of grey brown clayey silt (1302).

Trench 14

- 4.33 This trench measured 26m by 2m and was located to examine the southern extent of a broad amorphous geophysical response, the strength and form of which suggested a natural origin indicative of a palaeochannel. No archaeological features or layers were identified in this trench.

Trench 15

- 4.34 This trench was T-shaped and measured approximately 24m by 2m (east to west) and 18.5m (north to south) and was located to examine an area beyond the limits of the

geophysical survey. A T-junction slot (1505 and 1507) and two post-holes (1510 and 1512) were identified at the junction of the trench (Figure 13). The slots measured 0.2m-0.25m wide by up to 0.07m deep and were filled with a grey silty loam, very similar to slots 1212, 1214 and 1238 in Trench 12. One of the post-holes (1512) cut the 'T' of the slot and was filled with a dark brown grey silty clay. All of the features were very shallow, the deepest being 1512 which was 0.08m deep.

- 4.35 A pattern of ephemeral criss-cross marks (1509) bounded by the slot was recorded by photograph (Plate 4). These may represent cultivation scores in the subsoil, possibly made by an ard. The marks were 0.02m and 0.03m wide and up to 0.03m deep. The small slots identified in this trench, like those in Trench 12, may represent fence lines which further divided the land into small plots, or allotments, for hand cultivation or stock enclosures. The archaeological horizon was approximately 0.8m below the present ground level and was sealed by alluvial layers 1503 and 1502.

Trench 16

- 4.36 This trench measured 18m by 2m and was located to the east of New Drain, an area largely devoid of anomalies of potential archaeological interest. Its purpose was to evaluate the possibility of any such features existing in this area that had not shown up in the geophysical survey. No archaeological features or layers were recorded in this trench.

Trench 17

- 4.37 This trench measured 18m by 2m and was located to the east of New Drain, an area largely devoid of anomalies of potential archaeological interest. Its purpose was to evaluate the possibility of any such features existing in this area that had not shown up in the geophysical survey. No archaeological features or layers were recorded in this trench.

5.0 DISCUSSION

- 5.1 The evaluation trenches have confirmed the presence, and defined the southern extent, of a Romano-British rural settlement within the area of the wastewater treatment works originally proposed at Melton. The settlement extends north beyond the development area. The results have illustrated the ability of the geophysical survey to identify the larger enclosure and trackway ditches throughout the development area, and therefore the principal areas of archaeological activity. However, due to the overlying depth of alluvial deposits the results of the geophysical survey were not wholly accurate and did not identify medium or small sized ditches where the overlying deposits were greater than 0.75m in depth.
- 5.2 The evaluation trenches indicate that the area of archaeological settlement activity was restricted to the marginally higher ground within the site of the proposed development where the post-glacial gravel deposits were less than 0.8m below ground level. Ditches, relating to enclosures, trackways or drainage, were encountered in the surrounding area to the settlement at depths of up to 1.4m below the present ground surface. The projected zone of settlement occupation covers approximately 0.4ha with

an area of peripheral activity (ditched enclosures and trackways) covering a further 0.5ha with the archaeological horizon surviving at depths of between 3.40m - 1.35m OD.

- 5.3 The majority of archaeological features associated with settlement activity were concentrated in Trenches 6, 7, 8, 9, the northern end of Trench 10 and Trench 12. Peripheral features comprising boundary ditches and isolated post-holes and slots were recorded within Trenches 2, 3, 5, 10, 13 and 15. All of the features recorded consisted of negative cuts into the alluvial deposits and post-glacial gravels. A number of features were intercutting indicative of more than one phase of activity. However, due to the nature of discrete 2m wide evaluation trenches it was not possible to phase the features across the whole site into chronological periods of activity.
- 5.4 Palaeoenvironmental evidence (Appendix G) indicates that the occupation of the area of settlement within the proposed development area was for a relatively short period of time between periods of flooding and may represent the expansion and subsequent retreat, due to changing sea levels, of a more extensive settlement to the north of the development area. This later episode of flooding removed any associated layers or surfaces of the settlement.
- 5.5 Environmental evidence of flora and fauna (Appendix H) comprised mainly natural or wild plant remains indicative of a natural and semi-natural environment with vegetation typical of lowland wetland traversed by ditches and with the sea nearby. The evidence suggests that there was no arable cultivation or crop processing undertaken within the area of investigation, however, occasional cereal grains were recovered suggestive of an agricultural industry nearby. This supports the theory that the area investigated represents a peripheral part of a larger rural settlement. The focus of the part of the settlement investigated may have been to exploit the Humber river estuary, with some of the larger water filled ditches, such as the ditch in Trench 5, possibly being navigable by small craft such as canoes.
- 5.6 The trackway ditches recorded in Trenches 2 and 3 may be part of a droveway alongside which the ladder settlement was based. The possible fence slot identified in Trench 3 may have functioned to corral stock into adjoining enclosures. The only recognisable structure was identified within Trench 6, a roundhouse which would have had a circumference of approximately 7.2m. A large quantity of pottery and burnt animal bone recovered from the roundhouse gullies and internal features support the interpretation that this was a structure used for domestic occupation.
- 5.7 The earliest artefactual evidence found comprised native handmade wares typical of the late Iron Age but which continued to be used well into the Roman period (Appendix B). These were generally found in deposits alongside Roman greywares, or in such small quantities that the pottery could not be relied upon as a suitable variable to phase the features upon. However, the distribution of native handmade wares would suggest the earliest activity was concentrated in Trenches 6 and 8, at the northern end of the area of investigation. This would support the theory that a larger settlement to the north expanded southwards over time, with the roundhouse in Trench 12 being towards the southern limit of settlement activity containing solely pottery sherds of Roman fabrics. The latest diagnostic material is the carinated jar from Trench 7, and this is the only pottery from the site which suggests activity possibly continuing into

the earlier 3rd century. The remaining material from the site suggests activity from the late 1st to an unknown point in the 2nd century, with the likelihood that the optimum “spot-date” for much of it is “early to mid 2nd century”.

- 5.8 The excavations have identified the southern extent of a rural settlement of regional importance. The settlement is one of a number of late Iron Age and Romano-British ladder settlements within the region. Other than villas, ladder settlements represent the most important settlement form in the Roman landscape of East Yorkshire. The closest parallel is located south-east of Melton on South Lawn, 200m north-east of the proposed treatment works, where the remains of a ‘ladder’ settlement were excavated (SMR site 8241; Bishop 1999). The site on South Lawn also dated to between the late pre-Roman Iron Age and the 2nd century AD. Given its location the site within the area of the treatment works may have produced an agricultural surplus to supply the nearby Roman town of *Petuaria* at Brough, some 3km to the west. Ladder settlements have been identified in large numbers in the surrounding lowland areas (e.g. the Foulness valley and Hull valley) through cropmarks as well as on the high chalk Wolds, with over 125 recorded, ranging in length from a few hundred metres to more than 1.5km (Stoertz 1997). Excavations at several such settlements at Shiptonthorpe and Hayton, on the Roman road from Brough to York, and Elmswell indicate that they were founded during the 1st century BC and continuously occupied through the Roman period.

6.0 IMPACT OF PROPOSED DEVELOPMENT

- 6.1 Based on the results of the trial trenching the proposed development has been re-designed to avoid the projected area of settlement and peripheral activity (Figure 14). The revised location for the proposed wastewater treatment works is on the eastern side of New Drain, where Trenches 16 and 17 were located. The area of settlement and peripheral activity is some 80m the west of the drain. No archaeological features were encountered within either Trench 16 or 17 and no anomalies were identified by geophysical survey in this area.
- 6.2 The proposed development will have no impact on any known archaeological remains. However, due to the proximity of a known Romano-British settlement site an archaeological watching brief should be undertaken of all ground excavation during construction works of the proposed wastewater treatment works as a precautionary measure to enable any features or finds to be recovered.

7.0 POTENTIAL FOR FURTHER ANALYSIS

- 7.1 The excavations at Melton have confirmed the presence of a previously unknown Romano-British ladder settlement of regional significance. The results of the evaluation warrant publication in a regional archaeological journal. There are some recommendations for further work on the artefactual assemblages and biological remains which should be undertaken, the results of which should be included in any publication.

- 7.2 Any publication report would also incorporate the results from the watching brief to be undertaken within the revised area for the treatment works.
- 7.3 Specialist's recommendations for further work
- **Pottery** Several of the vessels examined should be illustrated for inclusion in the publication report. There is also potential for examination of the food residues on both wheel-thrown and hand-made vessels.
 - **Plant and invertebrate remains** Plant and invertebrate remains from the richer deposits should be analysed in detail. Samples from additional features, which have not been assessed at this stage, should be processed and included in this further stage of analysis.
 - **Vertebrate remains** An archive report should be made of all well dated vertebrate material. Data from this assemblage could be used to provide a valuable contribution to any synthetic projects carried out in the region.
 - **Phosphate analysis** Analysis of soil samples to determine whether there are different phosphate levels across the settlement and within the driveway should be undertaken to aid determining spatial function within the site.
- 7.4 The stratigraphic record should be re-examined in respect of the further work outlined above. This report should be amended accordingly, the results placed within a regional context, and a publication text produced.
- 7.5 Formal arrangements for the storage of the archive and the deposition of any finds will be made with the East Riding of Yorkshire Museums Service, dependent upon the agreement of the landowner. The Museum Service has been contacted and a site code allocated (ERYMS 2002/29). Deposition of the archive would be in accordance with the East Riding of Yorkshire Council Museum Service guidelines (2000).
- 7.6 In addition to the deposition of the archive copies of all relevant reports would also be deposited with both the Humber Sites and Monuments Record (SMR) and National Monuments Record (NMR).

8.0 CONCLUSION

- 8.1 The trial trenching undertaken within the proposed wastewater treatment works at Melton has identified the southern end of a more extensive Romano-British ladder settlement which is considered to be of regional significance. The Romano-British ladder settlement can be divided into two areas - a zone of occupation and an area of associated boundary and trackway features. The archaeological horizon was ascertained to vary from 0.3m to 1.4m (3.40m - 1.35m OD) below the present ground surface, with the zone of settlement occupation on slightly higher ground and therefore at a shallower depth below the existing ground level. There was good preservation of ceramics and environmental remains.
- 8.2 The revised location and extent of the proposed development has been designed to avoid the areas of known settlement archaeology. There will therefore be no impact on any known archaeological remains. However, due to the proximity of a known Romano-British settlement site an archaeological watching brief should be undertaken

of all ground excavation during construction works of the proposed wastewater treatment works. A proposed scheme of archaeological works will be agreed in writing with the planning authority in advance of any commencement of site construction.

- 8.3 Should future development encroach upon the zone of occupation it would be necessary to undertake open area excavation (preservation by record) in advance of construction. If development were to be undertaken within the area of enclosure and trackway ditches it would be necessary to carry out targeted sample excavation where depths of proposed construction would truncate the archaeological horizon. In addition a watching brief should be undertaken of any deep excavation within the whole development area. A proposed scheme of archaeological works should be agreed in writing with the planning authority in advance of the commencement of any site construction.

Northern Archaeological Associates
October 2002
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Text: Philip Neal
Illustrations: Andrew Durkin and Damien Ronan

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Appendix A

CONTEXT AND FINDS CATALOGUE

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe flint	pottery	slag	stone
1	100	layer (topsoil)								
1	101	layer (subsoil)								
1	102	layer (peat)								
1	103	layer (alluvium)								
1	104	layer (peat)								
1	105	natural deposit								
2	200	layer (topsoil)								
2	201	layer (subsoil)								
2	202	ditch cut								
2	203	fill of ditch 202	2							
2	204	ditch cut								
2	205	fill of ditch 204								
2	206	layer (subsoil)								
2	207	peat horizon 1								
2	208	layer (subsoil)								
2	209	natural deposit								
2	210	layer (subsoil)								
2	211	layer (subsoil)								
3	300	layer (topsoil)								
3	301	ditch cut								
3	302	fill of ditch 301								
3	303	ditch cut								
3	304	fill of ditch 303								
3	305	gully cut								
3	306	fill of gully 305								
3	307	ditch cut								
3	308	fill of ditch 307								
3	309	layer (alluvium)								
5	500	layer (topsoil)								
5	501	layer (subsoil)								
5	502	layer (alluvium)								
5	503	layer (peat)								
5	504	layer (alluvium)								
5	505	ditch cut								
5	506	upper fill of ditch 505								
5	507	secondary fill of ditch 505								
5	508	primary fill of ditch 505								
5	509	layer (alluvium)								
5	510	layer (peat)								
6	600	layer (topsoil)	1							
6	601	layer (subsoil)	6		2		1	26		
6	602	pit cut								
6	603	upper fill of pit 602								
6	604	primary fill of pit 602	4				3	4		
6	605	ditch cut								
6	606	upper fill of ditch 605								
6	607	secondary fill of ditch 605	2					2		
6	608	primary fill of ditch 605	48				1	107		
6	609	ditch cut								

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe	flint	pottery	slag	stone
6	610	fill of ditch 609	3						3	1	
6	611	ditch cut									
6	612	fill of ditch 611									
6	613	possible re-cut for pit 602									
6	614	natural deposit									
6	615	natural deposit									
6	616	ditch cut									
6	617	fill of ditch 616							3		
6	618	pit cut									
6	619	fill of pit 618									
6	620	ditch cut									
6	621	fill of ditch 620	12			1			17	1	
6	622	ditch cut									
6	623	fill of ditch 622									
7	700	layer (topsoil)									
7	701	layer (subsoil)									
7	702	post-hole cut									
7	703	fill of post-hole 702									
7	704	fill of ditch 705							2		
7	705	ditch cut									
7	706	fill of pit 707					1		2		
7	707	pit cut									
7	708	post-hole cut									
7	709	fill of post-hole 708									1
7	710	post-hole cut									
7	711	fill of post-hole 710									
7	712	post-hole cut									
7	713	fill of post-hole 712									
7	714	pit cut									
7	715	fill of pit 714									
7	716	layer (alluvium)							3		
7	717	natural deposit									
8	800	layer (topsoil)									
8	801	layer (subsoil)									
8	802	ditch cut									
8	803	fill of ditch 802									
8	804	natural deposit									
8	805	natural deposit									
8	806	layer (peat)									
8	807	post-hole cut									
8	808	fill of post-hole 807									
8	809	post-hole cut									
8	810	fill of post-hole 809									
8	811	post-hole cut									
8	812	fill of post-hole 811									
8	813	ditch cut									
8	814	primary fill of ditch 813	1						3		
8	815	secondary fill of ditch 813									
8	816	upper fill of ditch 813									
8	817	post-hole cut									
8	818	fill of post-hole 817									
8	819	gully cut									
8	820	primary fill of gully 819									

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe	flint	pottery	slag	stone
8	821	upper fill of gully 819									
8	822	gully cut									
8	823	post-hole cut									
8	824	ditch cut									
8	825	primary fill of ditch 824	2						1		
8	826	fill of post-hole 823									
9	900	layer (topsoil)									
9	901	layer (subsoil)									
9	902	layer (alluvium)									
9	903	ditch cut									
9	904	fill of ditch 903									
9	905	ditch cut									
9	906	upper fill of ditch 905									
9	907	void									
9	908	void									
9	909	upper fill of ditch 927									
9	910	secondary fill of ditch 927									
9	911	secondary fill of ditch 905									
9	912	tertiary fill of ditch 927									
9	913	fourth fill of ditch 927									
9	914	natural deposit									
9	915	ditch cut									
9	916	fill of ditch 915							1		
9	917	pit cut									
9	918	fill of pit 917									
9	919	pit cut									
9	920	upper fill of pit 919									
9	921	post-hole cut									
9	922	ditch cut									
9	923	fill of ditch 922									
9	924	pit cut									
9	925	upper fill of pit 924									
9	926	primary fill of pit 924									
9	927	ditch cut									
9	928	primary fill of ditch 927									
9	929	primary fill of pit 919									
9	930	tertiary fill of pit 919									
9	931	secondary fill of pit 919									
9	932	fill of pit 919 (same as 930)									
9	933	fill of post-hole 921									
10	1000	layer (topsoil)									
10	1001	layer (subsoil)									
10	1002	layer (peat)									
10	1003	ditch cut									
10	1004	fill of ditch 1003									
10	1005	ditch cut									
10	1006	fill of ditch 1005									
10	1007	ditch cut									
10	1008	fill of ditch 1007									
10	1009	ditch cut									
10	1010	upper fill of ditch 1009									
10	1011	ditch cut									
10	1012	fill of ditch 1011									

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe	flint	pottery	slag	stone
10	1013	tree bole cut									
10	1014	fill of tree bole 1013									
10	1015	ditch cut									
10	1016	fill of ditch 1015							1		
10	1017	natural deposit									
10	1018	secondary fill of ditch 1009									
11	1100	layer (topsoil)									
11	1101	layer (subsoil)									
11	1102	layer (peat)									
11	1103	layer (peat)									
11	1104	natural deposit									
12	1200	layer (topsoil)									
12	1201	layer (subsoil)									
12	1202	layer (alluvium)									
12	1203	layer (alluvium)									
12	1204	layer (alluvium)									
12	1205	void									
12	1206	natural deposit									
12	1207	natural deposit									
12	1208	slot cut									
12	1209	fill of slot 1208									
12	1210	slot cut									
12	1211	fill of slot 1210									
12	1212	ditch cut									
12	1213	fill of ditch 1212					1		1		1
12	1214	ditch cut									
12	1215	fill of ditch 1214									
12	1216	post-hole cut									
12	1217	fill of post-hole 1216									
12	1218	post-hole cut									
12	1219	fill of post-hole 1219									
12	1220	ditch cut									
12	1221	fill of ditch 1220									
12	1222	curvilinear gully cut									
12	1223	fill of gully 1222	12				1		32		
12	1224	curvi-linear gully cut									
12	1225	fill of gully 1224									
12	1226	pit cut									
12	1227	fill of pit 1226									
12	1228	post-hole cut									
12	1229	fill of post-hole 1228									
12	1230	pit cut									
12	1231	fill of pit 1230									
12	1232	post-hole cut									
12	1233	fill of post-hole 1232									
12	1234	post-hole cut									
12	1235	fill of post-hole 1234									
12	1236	ditch cut									
12	1237	fill of ditch 1236	15	1							
12	1238	ditch cut									
12	1239	fill of ditch 1238									
12	1240	slot cut									
12	1241	fill of slot 1240									

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe	flint	pottery	slag	stone
12	1242	group number									
12	1243	void									
12	1244	void									
12	1245	post-hole cut									
12	1246	fill of post-hole 1245									
12	1247	post-hole cut									
12	1248	fill of post-hole 1247									
12	1249	post-hole cut									
12	1250	fill of post-hole 1249									
12	1251	post-hole cut									
12	1252	fill of post-hole 1251									
12	1253	post-hole cut									
12	1254	fill of post-hole 1253									
12	1255	post-hole cut									
12	1256	fill of post-hole 1255									
12	1257	post-hole cut									
12	1258	fill of post-hole 1257									
12	1259	gully cut									
12	1260	fill of gully 1259									
12	1261	gully cut									
12	1262	fill of gully 1261									
12	1263	post-hole cut									
12	1264	fill of post-hole 1263									
12	1265	post-hole cut									
12	1266	fill of post-hole 1265									
12	1267	re-cut for ditch 1220									
12	1268	upper fill of ditch 1267	1						1		
12	1269	primary fill of ditch 1267	4								
12	1270	ditch cut									
12	1271	fill of ditch 1270									
12	1272	ditch cut									
12	1273	fill of ditch 1272	6								
12	1274	ditch cut (same as 1270)									
12	1275	fill of ditch 1274									
12	1276	ditch cut									
12	1277	fill of ditch 1276	3								
12	1278	post-hole cut									
12	1279	fill of post-hole 1278									
12	1280	curvi-linear gully cut									
12	1281	fill of gully 1280									
12	1282	post-hole cut									
12	1283	fill of post-hole 1282									
12	1284	post-hole cut									
12	1285	fill of post-hole 1284	1								
12	1286	layer (alluvium)									
12	1287	post-hole cut									
12	1288	fill of post-hole 1287									
12	1289	post-hole cut									
12	1290	fill of post-hole 1289									
12	1291	pit cut									
12	1292	fill of pit 1291									
13	1300	layer (topsoil)									
13	1301	layer (subsoil)									

Trench	Context	Description	Bone	cbm	ceramic	daub	Fe	flint	pottery	slag	stone
13	1302	layer (alluvium)									
13	1303	fill of post-hole 1304									
13	1304	post-hole cut									
13	1305	fill of post-hole 1306									
13	1306	post-hole cut									
13	1307	natural deposit									
14	1400	layer (topsoil)									
14	1401	layer (subsoil)									
14	1402	layer (peat)									
14	1403	layer (alluvium)									
14	1404	layer (peat)									
14	1405	natural deposit									
15	1500	layer (topsoil)									
15	1501	layer (subsoil)									
15	1502	layer (alluvium)									
15	1503	layer (alluvium)									
15	1504	natural deposit									
15	1505	slot cut									
15	1506	fill of slot 1505									
15	1507	slot cut									
15	1508	fill of slot 1507									
15	1509	ard mark									
15	1510	post-hole cut									
15	1511	fill of post-hole 1510									
15	1512	post-hole cut									
15	1513	upper fill of post-hole 1512									
15	1514	primary fill of post-hole 1512									
16	1600	layer (topsoil)									
16	1601	layer (subsoil)									
16	1602	layer (peat)									
16	1603	layer (alluvium)									
16	1604	layer (peat)									
16	1605	natural deposit									
17	1700	layer (topsoil)									
17	1701	layer (subsoil)									
17	1702	layer (peat)									
17	1703	layer (alluvium)									
17	1704	layer (peat)									
17	1705	natural deposit									
		TOTAL	162	1	2	1	1	4	230	2	2

Appendix B

FLINT

P Makey

1.0 INTRODUCTION

The trial trenching only produced four, struck or utilised flints (25.1g). Three of these came from Trench 6, the remaining piece came from Trench 12. A further three pieces of flint were recovered but on examination these were found to be rolled natural. Trench 6 produced a very fine, un-patinated, fresh tertiary flake from the subsoil (601) plus, a crude tertiary blade and a miscellaneous retouched natural cortical chunk, from the fill of pit 602. Trench 12 also produced a miscellaneous retouched chunk from a tertiary stage of lithic reduction.

2.0 TRAITS AND RAW MATERIAL

Other than the flake from context 601 the remaining three struck pieces and the natural all possess extensive abrasion, consistent with the pieces having been rolled in a fluvial environment. Both of the miscellaneous retouched pieces have been used to a light to moderate degree. However the nature of the use wear has been masked by edge abrasion. The flint from pit 602 and ditch 1212 possesses a slight white-grey patina. The nature and degree of the patination differs spatially and this differentiation is also present with regard to the natural. The material from pit 602 and ditch 1212 is clearly residual and has been re-deposited prior to its incorporation into the features.

Despite the small size of the assemblage, a variety of local raw materials appear to have been exploited. Flint was obtained from the banks of the Humber, the gravel ridge and till deposits. These sources produce flint of different knapping qualities. The miscellaneous retouched chunk from pit 602 has been manufactured on an un-struck piece of flint obtained from the Humber estuary. The flint used for the manufacture of the miscellaneous retouched chunk from ditch 1212, probably came from the gravel bank. The flake from subsoil 601 appears to have been struck from a nodule of high quality till flint. This flake also possesses a prepared platform and evidence of fine trimming, however the knapping of the remaining three pieces is rather crude.

3.0 CHRONOLOGY AND POTENTIAL

The lithic assemblage appears to represent an opportunistic procurement or knapping of flint. Due to the opportunistic nature of the retouched flint and the small assemblage size, it is not possible to date any of the material beyond saying that it is prehistoric. The material from the features is residual, but the flake from Trench 6 indicates at least one probable knapping event in the locality. It is notable that all the struck pieces came from an area of c.30m². This area is defined by the eastern third of Trench 6 and the middle section of the eastern arm of Trench 12.

Illustration: None of the current pieces warrants illustration.

Appendix C
STONE AXE FLAKE
T G Manby
(East Riding Archaeological Trust)

1.0 INTRODUCTION

A single flake from a stone axe was recovered from fill 1212 of ditch 1213.

2.0 DESCRIPTION

A broad parallel-sided flake, 45mm long by 20mm wide. The ventral surface has well developed rings and bulb of percussion at the narrower end. Upper surface is a smooth ground convex surface meeting a flattish facet at a slightly rounded angle. Identifiable as coming from the lateral side of a 'Cumbrian' type axe.

Material: Macroscopically identifiable is a fine grain tuff. Surfaces pale greyish green, a lighter band crossing the width of the flake.

Date range: Early to Late Neolithic period 3000 to 2500 BC

3.0 DISCUSSION

Visually identified as a common stone axes material in Yorkshire, this greenish tuff originated as volcanic ash forming the Borrowdale Volcanic series of the Langdale-Scafell area of the central Lake District. This easily flaked rock was utilised early in the Neolithic Period and became the largest source of stone axe production in the British Isles. Designated Petrology Group VI; after flaking to shape the axes were finished by surface grinding, aided by sand and water, to a final shape for haft mounting and use. Ground to standard shapes, large axes with characteristic flat side facets and exceeding 15cm in length are classified as 'Cumbrian' type.

A large proportion of this stone axe production was imported into eastern Yorkshire, where stone axes of Langdale-Scafell tuff make up some 25% of stone axes preserved in local museum collections.

This axe flake long pre-dates the site's Romano-British ditch system; it is a residual artefact, an indicator of some kind of Neolithic activity in the area. Such flakes were accidentally fractured off axeheads during their use, or were a by-product of the deliberate re-shaping of a large axe damaged in use. Coming from the side of the axehead the shape of the flake, that has a broad bulb of percussion, is consistent with the reshaping of a large axehead broken in half. Search should be made for flint implements and burnt stones in this area that would be a residue indicator of an actual occupational episode.

Appendix D

POTTERY

Peter Didsbury

1.0 INTRODUCTION AND METHODOLOGY

1.1 A total of 230 sherds, weighing 5748g, and having an average sherd weight (hereafter ASW) of 25.0g, was recovered from the excavations. All material was quantified by the two measures of number and weight of sherds, according to fabric category within archaeological context. Data was entered on an Access database, which is supplied as an integral part of this report.

Fabric nomenclature

1.2 The material recovered consisted of hand-made sherds in regional Late Iron Age to Early Roman tempering traditions, and wheel-thrown material of Roman date in greyware and other fabrics. The overall date range is from the Later Iron Age of the 1st centuries BC or AD, to the early to mid 3rd century AD. The following fabric/ware groups have been recognised. The accompanying codes are employed in both the database and the body of this report.

H1 Hand-made material tempered with calcareous filler, predominantly limestone containing fossil shell

H2 Hand-made material tempered with non-soluble stone grits, principally quartz

It may be noted that both the hand-built categories accommodate vessels which may have wheel-thrown rims with hand-built bodies.

RFLAG Roman flagon fabric

RG Roman wheel-thrown greywares

RO Roman wheel-thrown oxidised wares

RSH Roman wheel-thrown shell-tempered ware

The proportional distribution of these fabrics in the whole site assemblage is given in Table 1.

Table D1. Distribution of fabrics in the whole site assemblage.

Fabric	% no. of sherds (n = 230)	% weight (n = 5748)	ASW (g)
H1	60.0	60.6	25.2
H2	2.6	9.2	61.5
RFLAG	1.3	3.3	63.7
RG	33.5	24.6	18.4
RO	2.2	1.4	15.8
RSH	0.4	0.9	53.0
TOTALS	100.0	100.0	

2.0 THE ASSEMBLAGES

Pottery was recovered from contexts in Trenches 6, 7, 8, 9, 10 and 12. These are dealt with in Trench order below.

2.1 Trench 6

- 2.1.1 A total of 162 sherds was recovered from this trench, being 70.4% of the site total, by number of sherds. Material was recovered from subsoil 601; pit 602 (primary fill 604); ditch 605 (primary and secondary fills 608 and 607); ditch 609 (fill 610); ditch 616 (fill 617); and ditch 620 (fill 621).

Pit 602

- 2.1.1 The feature contained only four body sherds of H2.

Ditch 605

- 2.1.2 The largest amount of material from the trench (110 sherds) came from ditch 605, all but two sherds from primary fill 608. A relatively small number of vessels was represented, some by several sherds, and ASW was relatively high, at 30.1g. The feature may well have functioned as a place of secondary rubbish disposal. The earliest material is the rim of a jar in H1, which has a sharply everted square sectioned rim with a marked internal angle, and is decorated with stick impressions on the outer edge. The basic form is common in regional Iron Age assemblages of the 1st century BC and AD, and belongs to a Late La Tène horizon of plastic decoration identified by Challis and Harding (1975). Similar vessels may be noted from Garton Slack and Ousethorpe (op. cit. fig. 33, no. 5; fig. 35, no. 5). The remaining material, however, would seem to be appreciably later. About 25% of the total H1 fabric component consists of sherds from a wide-mouthed bowl, possibly showing some evidence of the use of the wheel. A similar vessel was found at Brough (Wacher 1969, no. 179), from one of the layers sealed by the Late Antonine rampart. These deposits contain a range of material from the Flavian period through to the end of the 2nd century. Also in H1 is a stubby bowl rim fragment, also possibly wheel-thrown, and suggestive of a similar date range.

- 2.1.3 The Roman greywares suggest a 2nd century closure for the ditch deposit. Two barrel jars with curved everted rims, and shoulder grooves, are of the kind noted as having a Flavian to Late Antonine date range at Dragonby (May 1996, 520). The fabric is dark and coarse sand-tempered, with occasional large fragments of fossil shell. A small globular jar with everted rim is in a sandy native style fabric but very finely potted, and highly burnished on the exterior and inside the rim. The globularity tends to suggest an early date, and jars of very similar shape were often rusticated, cf. Dragonby 861. Similar vessels occur at Dragonby Kiln 4 (Hadrianic-Early Antonine), and in pit F 2567 at Dragonby, (Trajanic - Early Hadrianic). Finally, there is a jar rim in dark greyware, in quartz greensand fabric, common in North Lincolnshire in the 2nd century. No parallel can at present be cited for this vessel, which has a slightly everted rim, collared on the exterior, and slightly dished on the interior.

- 2.1.4 A single jar rim and shoulder in RSH, should be grouped with the RG barrel jars mentioned above. It closely resembles the Antonine lid-seated jar Roxby Form A (Rigby and Stead 1976), made in sand-tempered fabric.

Ditch 609

- 2.1.5 The feature contained two body sherds of H1, and a rim sherd from a stubby-rimmed jar in H2, cf. May 1996, no. 609, from Dragonby. The form was made throughout the Iron Age phases at Dragonby and extended into the Roman period.

Ditch 616

- 2.1.6 The assemblage consisted of two sherds of H1 and one of RG. The H1 included a jar with simple everted rim, perhaps comparable to Rigby 1980, no. 41, from Rudston, of 2nd-century date. The RG is a jar/bowl with horizontally outbent rim, for which no parallel can presently be cited.

Ditch 620

- 2.1.7 The assemblage consisted of two sherds of RG, one a sherd from a large vessel in fairly coarse fabric; and 15 sherds of H1, representing several vessels. A jar rim and shoulder is reminiscent of a late 1st- or 2nd-century vessel from Rudston (Rigby 1980, no. 14 and quoted parallels), and a 2nd, in similar fabric, has a simple upright, flat-topped rim.

Subsoil 601

- 2.1.8 The subsoil yielded 16 sherds of H1, principally tempered with fossil shell, and nine of RG. The hand-made material included rims and rim fragments from *c.* five jars. An upright, flat-topped rim, externally expanded, is a common later Iron Age regional form, cf. Challis and Harding fig. 33 no. 9 etc., from Garton Slack. A variant form with a grooved upper surface to the rim, internal dishing and slashed leading edge, can be paralleled at Ousethorpe and South Cave (*op. cit.* figs 35, 36). This form is similar to that already discussed from ditch 605. There is also a similar undecorated example. A smaller jar with curved everted rim, appears more Romanising. Two heavy rounded fragments, undiagnostic, possibly come from a single jar.
- 2.1.9 Five RG bodies include one with possible faint burnished lattice, and one from the shoulder of a small thin-walled jar with stab decoration. The latter is of late 1st or 2nd-century date, cf. vessels from Horizons II and III at Dragonby (May 1996). The remaining RG material includes a simple rim fragment of uncertain form, possibly a lid; an everted rim fragment from a jar/bowl; and a rim sherd from a lipped dish/bowl, with lattice on body. The latter form is also common throughout Horizons II and III at Dragonby.

2.2 Trench 7

- 2.2.1 Small amounts of material were recovered from ditch 705 (fill 704) and pit 707 (fill 706). The ditch contained single undiagnostic body sherds of H1 and RG. The pit yielded two joining sherds of a carinated RG bowl, *c.* three-quarters of the profile extant. It is in fine, burnished blue-grey ware, and has a burnished scroll on a matt band in the centre of the upper body. Very similar examples are found at Rudston (Rigby 1980, nos. 182, 183), in a group which Rigby suggests need not post-date the mid 3rd century.

2.3 Trench 8

- 2.3.1 Small amounts of material came from ditches 813 and 824 (primary fills 814 and 825). The total assemblage from the trench amounted to four body sherds in H1 and H2 fabrics.

2.4 Trench 9

- 2.4.1 A single body sherd of H1 was recovered from ditch 915 (fill 916).

2.5 Trench 10

- 2.5.1 A single body sherd of H1 was recovered from ditch 1015 (fill 1016).

2.6 Trench 12

- 2.6.1 Pottery was recovered from ditch 1212 (fill 1213); post-hole 1219; gully 1222 (fill 1223); and ditch 1267(upper fill; 1268).

Ditch 1212

- 2.6.2 A single sherd of RG was recovered, being the base of a beaker or small jar, in burnished blue-grey ware. The base is grooved, turned and burnished on the underside. The fabric would suggest a 2nd-century date, and probably a Lincolnshire source.

Post-hole 1219

- 2.6.3 The feature contained a small upright jar rim in H2. It resembles some of the smaller jars from Rudston West Site Feature 8 (Rigby 1980, no. 20). The latter are of later 1st- or earlier 2nd-century date.

Gully 1222

- 2.6.4 The feature contained 55 sherds, all in Roman fabrics.
- 2.6.5 A flagon (RFLAG) was represented by three joining base/lower body sherds in a buff fabric. The vessel appears very worn.
- 2.6.7 RG amounted to 47 sherds, from six vessels, as follows:

1 (12 sherds). A fine, thin-walled jar, with high globular shoulder and short slightly everted rim. The globularity suggests an early date, and very similar jars were often rusticated, cf. May 1996, no. 861, from Dragonby. Similar vessels occur at Dragonby Kiln 4 (Hadrianic-Early Antonine), and in pit F 2567 (Trajanic - Early Hadrianic) at the same site (May 1996). Sandy fabric.

2 (11 sherds). Jar body sherds and a countersunk handle, in similar fabric to the above. Light burnishing in parts. Traces of incised acute-angled lattice at handle level.

3 (10 sherds). Rim and upper body sherds of a jar in similar but much coarser fabric to the above. The vessel has a moulded, undercut rim, and a high sloping shoulder, apparently carinated. It somewhat resembles jars with rusticated decoration made at Roxby, cf. Rigby and Stead 1976, fig. 66, nos. 26, 27. The fabric is also of "Roxby-type".

4 (12 sherds). Bodies only, coarser and thicker-walled. Similar fabric to (3) but thicker walls and probably a separate vessel.

5 (1 sherd). Globular jar body in hard, fine, dark grey ware, unburnished.

6 (1 sherd). Short upright jar rim, wheel-formed, burnished surfaces. Dark fabric, moderate light-coloured non-calcareous inclusions up to c.2mm.

- 2.6.8 RO was represented by five sherds, being from the rim and upper body of a globular jar with short outbent rim, similar to RG vessel (1) discussed above. The fabric is red, with a pale buff slip, smoothed or burnished on the exterior. There are two girth grooves on shoulder. Micaceous surfaces. Cf. May 1996, no. 1433, from Kiln 4 at Dragonby.

Ditch 1267

- 2.6.9 The feature contained a single sherd of greyware, a countersunk jar handle. It is in a similar sandy fabric to those of the RG in 1223.

3.0 CONCLUSIONS AND RECOMMENDATIONS

- 3.1 The possible overall date-range of the pottery has already been noted. The only material which may be Iron Age *sensu stricto* comes from Trench 6, where it is found in ditch 605 and subsoil 601, in both cases with undoubted Roman products. The material from Trenches 8, 9 and 10, consists entirely of hand-made wares, but the assemblages are small, and hand-built vessels in “native” style fabrics dominate rural assemblages from non-nucleated sites throughout the 2nd century in eastern Yorkshire. The latest diagnostic material is the carinated jar from Trench 7, and this is the only pottery from the site which suggests activity possibly continuing into the earlier 3rd century. The remaining material from the site suggests activity from the late 1st to an unknown point in the 2nd century, with the likelihood that the optimum “spot-date” for much of it is “early to mid 2nd century”. It is of some interest that the fairly large assemblage from ditch 1222 is comprised entirely of Roman material, though it is difficult to suggest an explanation for this. A relatively large proportion (c.30-37%) of the site assemblage consists of fully Romanised vessels, and this possibly reflects site location, rather than status or any particular Romanising dynamic operating upon its material culture. Wheel-thrown Roman pottery in south-east Yorkshire at this period seems mainly to have been acquired from northern Lincolnshire, and the site’s proximity to the Humber probably facilitated acquisition of such material. Apart from a flagon base from Trench 12, there are no signs in the ceramic assemblage of a community adopting a Romanising lifestyle. The assemblage is heavily jar-dominated, and signs of normal “domestic” use, as evidenced by external carbonised deposits, and internal residues, are widespread on both the Roman and “native” wares. There is also a complete absence of samian ware, which might reasonably have been expected in an assemblage of this size in the earlier 2nd century.
- 3.2 The site assemblage is of some interest in furthering our knowledge of ceramic use on rural sites in the region in the early Roman period. All material should be retained. Several of the vessels examined here have illustration potential in any future publication. There is also potential for examination of the food residues on both wheel-thrown and hand-made vessels.

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Appendix E
CONSERVATION

Erica Paterson
(York Archaeological Trust)

1.0 AIMS AND OBJECTIVES

This report aims to meet the requirements of MAP2 (English Heritage, 1991) to produce a stable site archive (Phase 2: Fieldwork). This has involved X-radiography and an assessment of the condition, stability and packaging of the finds. The potential of the assemblage for further analysis and research is also discussed (MAP2 Phase 3: Assessment).

2.0 PROCEDURES

Only one iron object was recovered and assessed. It was X-rayed using standard YAT procedures and equipment. The plate was given a reference number in the YAT conservation laboratory series and the X-ray number written on the finds bag. The radiograph was labelled with the recorded finds number. The plate was packaged in an archival polyester pocket. The find was examined under a binocular microscope at X20 magnification. The material identification were checked and observations made about the condition and stability, recorded in section 4 below.

3.0 QUANTIFICATION

One iron find was assessed and one X-ray plate produced.

4.0 ASSESSMENT

X-ray No	Context No	Assessment
5628	706	"Fe nail". In one piece with a small flat head, possibly broken at tip. Condition: Sandy soil combined with orange/brown iron corrosion products obscure any surviving surface detail. No active corrosion visible. The X-ray reveals complete mineralisation and voiding of the metal core, resulting in a considerably weakened object. Proposed treatment: Dry storage <15% RH is essential

5.0 CONDITION

Iron

Covered in sand and silt above bulky orange corrosion. In poor condition, suggesting a burial environment aggressive to metal finds. The excavated iron will require dry storage at less than 15% RH for the long term.

6.0 STATEMENT OF POTENTIAL

Indicators of preservation: Metallic corrosion was extensive, suggesting that the area excavated provided an aggressive environment for metals. The absence of any other categories of material may indicate an environment which does not favour the preservation of more fragile materials such as organics.

7.0 RECOMMENDATIONS

No recommendations for further conservation or specialist support have been recommended at this stage. The metalwork had been packed in a perforated mini-grip bag within in a desiccated plastic box appropriate for long term storage. An indicator strip can be viewed through the plastic. If any part of the strip turns pink the box is no longer desiccated sufficiently and the gel will need to be regenerated.

8.0 RESOURCE REQUIREMENTS

No further conservation costs have been identified at this stage.

REFERENCES

English Heritage (1991) *Management of Archaeological Projects*

Appendix F
SLAG AND ASSOCIATED FINDS ASSESSMENT
Jane Cowgill

1.0 INTRODUCTION

Four items were submitted for assessment. The results of which are set out in Table 1.

2.0 RESULTS

Table F1

Context	Type	Quantity	Weight	Comments
610	Slag	1	46g	Post-medieval industrial slag probably not from a blast furnace
621	Slag	1	18g	Leached and ?abraded; hearth lining inclusions; high silica content. Iron smithing??
621	Fired clay	1	4g	Oxidised; no visible temper
1219	Concretion	1	6g	Iron rich with high charcoal content

3.0 DISCUSSION

This is a small group of unrelated finds which may indicate smithing in the vicinity. However, it is not possible to draw any conclusive interpretation for such a small assemblage. No further work is required.

Appendix G

PALAEOENVIRONMENTAL ASSESSMENT

Dr Benjamin R Gearey

(Wetland Archaeology and Environments Research Centre, University of Hull)

1.0 INTRODUCTION

Sediment samples were collected from Trench 1 for palynological analyses. The stratigraphy of Trench 1 was described as follows:

0.0-0.40m	Ploughsoil
0.40-0.90m	Smooth, homogeneous orange-grey clay with a little silt
0.90m-1.15m	Dark grey-brown crumbly clay with some silt and very highly humified organics (Sample 1)
1.15m-1.78m	Smooth light orange-grey clayey silt with crumbly clasts and occasional fine rootlets
1.78-1.93m	Dark grey-black well humified silty peat with some sand. Occasional wood fragments and monocotyledonous remains (Sample 2)
1.93m-n/b	Coarse grey sand with angular pebbles and flints

Samples were prepared for pollen analysis using standard techniques (Moore *et al*, 1991). Counting was carried out on a Leica DMLB at a magnification of x400 until at least 100 grains had been counted.

2.0 RESULTS

2.1 Sample 1 - 0.90-0.92m: High concentrations of well-preserved pollen were present in this sample. The spectrum is dominated by herb pollen, with Cyperaceae (sedges) and Poaceae (wild grasses) well represented. Other herbs including Apiaceae (carrot family), Lactuceae (Asteroideae) (thistles etc.), Lactuceae undiff. (dandelions etc.), Chenopodiaceae (fat hen family) and *Plantago major/media* (plantains) are also recorded. Aquatic taxa in the form of *Typha latifolia* (reedmace) and *Sparganium*-type (burweed) were present. Tree and shrub pollen is present but in relatively low frequencies; *Corylus avellana*-type (hazel) is the best represented with lower counts for *Quercus* (oak), *Alnus* (alder) and *Betula* (birch).

2.2 Sample 2 - 1.80m: Moderate concentrations of adequately preserved pollen were present in this sample. *Alnus* dominates the spectrum, with *Corylus avellana*-type, *Quercus*, *Betula* and *Pinus sylvestris* (pine) also present. Herb pollen is less well represented although Poaceae, Chenopodiaceae, Lactuceae undiff. and *Artemisia*-type (mugwort) were all identified in low frequencies. Spores including *Pteridium* (bracken) and Pteropsida (monolete) indet. (ferns) are well represented.

3.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

The basal peat probably represents the effects of the elevation of watertable ahead of relative sea level rise, leading to paludification of the sands. The presence of *Alnus* and *Quercus* suggests that the peat was forming under the influence of freshwater in an alder carr environment. Traces of taxa such as Chenopodiaceae and *Artemisia*-type might reflect salt

marsh environments some way from the sampling site. The capping clayey silt represents the inundation of this semi-terrestrial environment by the continued rise in relative sea level. This lower peat is quite probably the same unit investigated by Long *et al* (1999) at nearby East Clough, the base of which was dated to 3640±45BP. The high representation of Cyperaceae and Poaceae, with *Typha latifolia* also present, suggest that the crumbly grey-brown clay between 0.90-1.15m represents a reedswamp environment or transitional community. This indicates a further change in the local depositional regime back from open water to semi-terrestrial conditions. This upper clay cannot be securely dated on the basis of the pollen, but as this horizon seals the site, a *terminus post quem* of the Romano-British period is available. The layer of orange-grey clay above this unit would seem to reflect a further inundation of the site prior to reclamation and drainage of the area.

The preliminary analyses suggest no further work on this sequence would be necessary. However, if there were future excavations within the same area it would be worthwhile to obtain more extensive samples and undertake further geoarchaeological/palaeoenvironmental investigation with radiocarbon dating where appropriate.

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Appendix H

BIOLOGICAL REMAINS

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(Palaeoecology Research Services and Environmental Archaeology Unit)

1.0 SUMMARY

Forty-four sediment samples and a small quantity of hand-collected bone, recovered from excavations of deposits of later Iron Age to Roman date at the site of the proposed wastewater treatment works at Melton, East Riding of Yorkshire, were submitted to Palaeoecology Research Services (PRS) for an evaluation of their bioarchaeological potential.

Charred plant material, other than charcoal, was limited to very small amounts of cereal grain, never in sufficient quantity to merit further investigation. One context (1271) gave a moderate concentration of wheat chaff, and five others gave some hints of the presence of burnt material from peat or turves (contexts 814, 818, 820, 920 and 1012). Preservation of invertebrates varied, but the remains were often chemically changed, usually pale.

Despite the evidence for human occupation at this site, the plant remains largely indicate a landscape with rather little disturbance. Apart from the seeds and fruits of a few weeds and the charred cereal remains, most of the remains suggest natural or semi-natural vegetation typical of an area of lowland wetland traversed by ditches and with the sea close by. There were indications of grazing land from dung beetles, and very little to suggest the presence of trees or shrubs. Synanthropic insects were very rare, with no evidence for buildings nearby or for waste disposal. A small assemblage of vertebrate remains, amounting to half a box of hand-collected bone, was recovered from a number of ditch, pit and gully fills. Cattle and caprovid remains predominated, with horse and pig fragments also identified. Part caprovid skeletons, which may represent ritual deposits were recorded from Trenches 9 and 12.

Providing dating is refined (if necessary by AMS assay), plant and invertebrate remains from the richer deposits should be analysed in detail to amplify the ecological reconstruction and further explore the evidence for human activity in the environs. Where further samples from similar deposits at the site exist which have not yet been examined, they should be included in any further stage of analysis. The usefulness of the vertebrate assemblage in providing large datasets is limited by its small size and variable preservation. However, the scarcity of remains from rural settlements of this date warrants the production of a basic archive (including biometrical data).

2.0 INTRODUCTION

An archaeological excavation was carried out by Northern Archaeological Associates at the site of the proposed wastewater treatment works at Melton, East Riding of Yorkshire (NGR SE 968 251), during May 2002.

Forty-four sediment samples ('GBA'/'BS' *sensu* Dobney *et al* 1992), and a small quantity of hand-collected bone (amounting to approximately half a box), were recovered from the deposits. All of the samples and the hand-collected material were submitted to PRS for an evaluation of their bioarchaeological potential.

Only small quantities of pot were recovered at the site but these indicated a date range of later Iron Age (1st centuries BC or AD) to Roman (early to mid 3rd century AD) for the deposits.

3.0 METHODS

All of the 44 submitted sediment samples were inspected in the laboratory. Twenty-two were selected for assessment and their lithologies were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al* (1980; 1986), for recovery of plant and invertebrate macrofossils. One sample was sieved to 1mm to recover animal bone.

The flots and washovers resulting from processing were examined for plant and invertebrate macrofossils. The residues were scanned for larger plant macrofossils, bone, and other biological and artefactual remains.

Insect preservation was recorded using the scale of Kenward and Large (1998).

For the hand-collected vertebrate remains records were made concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as fragment size, dog gnawing, burning, butchery and fresh breaks, was noted, where applicable.

Fragments were identified to species or species group using the PRS modern comparative reference collection. The bones which could not be identified to species were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid) and totally unidentifiable.

4.0 RESULTS

4.1 Sediment samples

The results of the examinations of the samples are presented in context number order by trench. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample numbers (derived from the context numbers by PRS for internal record keeping purposes).

4.2 Trench 2

Context 203 (fill of ditch 202)

Sample 20301/T (3kg sieved to 300 microns with paraffin flotation and washover; approximately 25 litres of unprocessed sediment remains)

Moist, mid grey-brown to mid grey (orange-brown in places – ?oxidation), crumbly and slightly sticky (working soft), ?slightly humic, slightly sandy clay silt, with some stones (2mm to 60mm) present.

This subsample yielded a washover of about 50cm³ of fine uncharred herbaceous plant detritus with a few moderately well or well preserved seeds and fruits of taxa typical of a wet ditch and its banks: the most abundant were duckweed (*Lemna*) with moderate numbers of silverweed (*Potentilla anserina* L.), celery-leaved crowfoot (*Ranunculus sceleratus* L.) and stinging nettle (*Urtica dioica* L.). With these remains was a little charcoal (to 5mm in maximum dimension) and very decayed uncharred bark. The weeds in this assemblage point to some disturbance, though there appear not to have been any well-developed weed communities in the vicinity as

this deposit formed. Traces of elder (*Sambucus nigra* L.) and blackberry (*Rubus fruticosus* agg.) seed were the only evidence for possible successional scrub. The small residue consisted of about 150cm³ of sand and gravel; the small flot contained only a few earthworm egg capsules and traces of what may have been very decayed insect cuticle.

4.3 Trench 5

Context 508 (primary fill of ditch 505)

Sample 50801/T (1kg sieved to 300 microns with paraffin flotation; approximately 8 litres of unprocessed sediment remains)

Moist, silty ?peat, with some stems of monocotyledonous plants, and some patches (to 25mm) of light to mid brown clay silt.

There was a very large residue of about 1 litre of uncharred herbaceous plant detritus containing what was apparently a wholly natural uncharred plant assemblage, mainly plants of wet places (typical for a ditch) – primarily sedges (*Carex*) and water crowfoot (*Ranunculus* Subgenus *Batrachium*) with a hint of maritime influence (a single seed of sea milkwort, *Glaux maritima* L.). A single alder (*Alnus glutinosa* (L.) Gaertner) fruit was the only evidence for woody vegetation.

The flot was small and contained modest numbers of invertebrate remains. Preservation was generally not good, but was variable (E 2.5-4.5, mode 3.5 weak; F 2.0-4.0, mode 3.0, weak; trend to pale 1-3, mode 2, weak). A mixture of aquatic and terrestrial beetles was present, with evidence that there was open water with aquatic and marginal vegetation in the ditch and at least some dead wood on land.

Although the invertebrate remains would be difficult (but by no means impossible) to identify, detailed analysis of a larger (3-5kg) subsample should provide a clearer view of conditions in and around the ditch, and further work is desirable in view of the subjectively rather unusual nature of the recovered assemblage. Re-examination of plant remains from the present subsample will probably suffice to provide an adequate record of the fossil flora and explore further its implications.

4.4 Trench 6

Context 603 (upper fill of pit 602)

Sample 60301/T (3kg sieved to 300 microns with washover; approximately 15 litres of unprocessed sediment remains)

Moist, mid grey-brown, crumbly to unconsolidated (working soft), moderately stony (stones of 6 to 60mm were present, and of 2mm to 6mm common) sandy clay silt, with a little ?rotted charcoal.

This subsample yielded a small washover of a few cm³ of charcoal (to 10mm); the very large residue of 800cm³ was of gravel (including chalk and flint to 25mm) and some sand.

Context 604 (primary fill of pit 602)

Sample 60401/T (3kg sieved to 300 microns with washover; approximately 25 litres of unprocessed sediment remains)

Just moist, light to mid grey-brown, crumbly to unconsolidated (working soft), stony (stones 2mm to 60mm were common), silty sand.

There was a tiny washover with a few scraps of fine (<5mm) charcoal; the very large residue of about 900cm³ consisted of sand and gravel (including flint and chalk to 35mm).

Context 608 (primary fill of ditch 605)

Sample 60801/T (3kg sieved to 300 microns with washover; approximately 37 litres of unprocessed sediment remains)

Waterlogged, light to mid grey-brown, sticky (working soft and slightly sticky), slightly clay silty sand (mostly fine sand of less than 300 microns). Stones (2mm to 20mm), charcoal, elder seeds, large mammal bone and fragments of unidentified land snail, were present.

This subsample yielded a small washover of about 50cm³ of uncharred plant detritus, almost entirely elder seeds (including many fragments) with traces of charcoal (to 5mm). The large residue of about 550cm³ of sand and gravel (to 35mm), a single piece of oak (*Quercus*) charcoal, and some pot sherds.

4.5 Trench 7

Context 709 (fill of post-hole 708)

Sample 70901/T (3kg sieved to 300 microns with washover; approximately 10 litres of unprocessed sediment remains)

Waterlogged, light to mid grey-brown, unconsolidated and slightly sticky, clay silty sand, with some stones (2mm to 20mm) present.

There was a very small washover of a few cm³ of fine charcoal and modern rootlets; the large residue consisted of about 400cm³ of sand, gravel (to 8mm) and iron-concreted sediment and a trace of coarser (to 10mm) charcoal.

4.6 Trench 8

Context 806 (layer - ?peat)

Sample 80601/T (1kg sieved to 300 microns with paraffin flotation and washover; approximately 5 litres of unprocessed sediment remains)

Moist to wet, mid grey-brown, brittle (working sticky), slightly silty ?peat with stones (primarily chalk and flint of 2mm to 60mm) common.

The large residue of about 450cm³ contained 150cm³ gravel (to 35mm) with a little sand. The washover was mainly uncharred herbaceous detritus with traces of charcoal; there were abundant, mostly well-preserved fruits and seeds, including an unusual concentration of bur chervil (*Anthriscus caucalis* Bieb.) as well as abundant hemlock (*Conium maculatum* L.), prickly sow-thistle (*Sonchus asper* (L.) Hill) and stinging nettle fruits. These, and the less frequent remains – including moderate numbers of remains of wild celery (*Apium graveolens* L.), oraches (*Atriplex* sp(p).), goosefoots (*Chenopodium* Section *Pseudoblitum*), rush (*Juncus compressus* Jacq./*J. gerardi* Loisel.), common mallow (*Malva sylvestris* L.), buttercup (*Ranunculus* Section *Ranunculus*), hairy buttercup (*R. sardous* Crantz), celery-leaved crowfoot (*R. sceleratus* L.), docks (*Rumex* sp(p).), chickweed (*Stellaria media* (L.) Vill.) and annual nettle (*Urtica urens* L.) point to an area of tall herbaceous vegetation, largely perennial and nutrient-enriched, with a little disturbance and a maritime influence. Such communities might well grow on ditchbanks in an area where disturbance resulted either from human activity, animal grazing or regular inundation by water (though not daily tidal flow).

The flot was of average size (for a 1kg subsample) and had a rather high concentration of insect remains. Preservation varied, though was generally fairly good (E 1.5-3.5, mode 2.5

weak; F 2.0-4.0, mode 2.5 weak). Aquatic insects were well-represented, and *Daphnia* abundant, though the water may not have been permanent. Some taxa suggested marshy vegetation. Terrestrial insects were numerous, and hinted at a rather strongly modified environment, with perhaps enough dung beetles (*Aphodius* and members of other families favouring foul matter) to suggest grazing land. Nettles were indicated by *Cidnorhinus quadrimaculatus* (Linnaeus) and the bug *Heterogaster urticae* (Fabricius).

A 3-5kg subsample would almost certainly produce an insect assemblage large enough for detailed reconstruction, including investigation of land use, though the existing subsample will probably suffice for re-examination of plant remains.

Context 814 (primary fill of ditch 813)

Sample 81401/T (3kg sieved to 300 microns with washover; approximately 8 litres of unprocessed sediment remains)

Waterlogged, light to mid grey-brown to light to mid yellow-brown, unconsolidated and slightly sticky (working sticky), clay silty sand, with stones (2mm to 60mm) present.

There was a very small washover of a few cm³ of fine charcoal and other charred plant material and modern roots, whilst the moderate-sized residue of about 225cm³ was of sand and gravel (to 30mm). The few remains other than charcoal included one or two of each of the following: nutlets of sedge, spike-rush (*Eleocharis palustris sensu lato*) and bristle club-rush (*Scirpus setaceus* L.), and seeds of blinks (*Montia fontana* ssp. *chondrosperma* (Fenzl) Walters), as well as some unidentified charred herbaceous detritus and fragments of hazelnut (*Corylus avellana* L.). With the exception of the last-named, such a suite has been considered by the author perhaps most likely to result from the burning of turves (Hall 2002).

Context 818 (fill of post-hole 817)

Sample 81801/T (1kg sieved to 300 microns with paraffin flotation and washover; approximately one litre of unprocessed sediment remains)

Wet to waterlogged, light to mid brown to mid grey-brown, sticky to unconsolidated, slightly clay silty sand, with some stones (2mm to 6mm) present.

The small washover consisted of a few cm³ of fine charcoal and a trace of charred root/rhizome (from burnt turf?); the moderate-sized residue was mainly sand with a little gravel (to 40mm) and iron-concreted sediment. There was one charred cereal grain whose shape was rather like that of rye (*Secale cereale* L.) but which could not be identified with confidence, and another grain surviving as a damaged fragment.

Context 820 (primary fill of gully 819)

Sample 82001/T (3kg sieved to 300 microns with washover; approximately 3 litres of unprocessed sediment remains)

Moist to wet, mid grey-brown, sticky (working soft and slightly sticky), ?slightly sandy clay silt, with patches of light yellow-brown sand. Stones (2mm to 20mm) and charcoal were present.

The small washover comprised a few cm³ of charcoal (to 15mm) and some modern roots; the modest-sized residue of about 300cm³ was of sand and gravel (to 25mm). There were a very few very abraded charred cereal grains, perhaps all barley (*Hordeum*) and traces of remains which may have come from burnt litter or turves: ?heather (cf. *Calluna vulgaris* (L.) Hull) root/twig fragments, charred herbaceous detritus and a charred rush (*Juncus*) seed capsule.

4.7 Trench 9

Context 918 (fill of pit 917)

Sample 91801/T (6kg sieved to 1mm a washover was attempted but no material was separated; no unprocessed sediment remains)

Abundant medium-sized mammal bone in a matrix of waterlogged, mid grey-brown, unconsolidated, slightly clay sandy silt, with some stones (2mm to 60mm) present.

A large number of bones were recovered from this sample—these are reported in paragraph 2 of the following section.

Context 920 (upper fill of pit 919)

Sample 92001/T (2kg sieved to 300 microns with washover; approximately 7 litres of unprocessed sediment remains)

Moist to wet, light to mid brown to mid grey-brown, crumbly and slightly sticky (working soft and slightly sticky), ?slightly clay silty sand (mostly fine sand of less than 300 microns). Stones (2mm to 60mm) and ?charcoal were present.

The moderate-sized residue of about 200cm³ was of sand and some gravel (to 30mm), with some concreted root-/burrow-casts. There was a small washover of a few cm³ of charred material and uncharred modern rootlets, the former including charcoal (to 10mm) and herbaceous detritus – perhaps rush or grass culm (stem) fragments.

Context 926 (primary fill of pit 924)

Sample 92601/T (1kg sieved to 300 microns with washover; approximately 1 litre of unprocessed sediment remains)

Wet to waterlogged, light to mid grey-brown to dark grey, sticky (working soft and sticky), ?slightly clay silty sand (mostly fine sand of less than 300 microns). Stones (2mm to 20mm) were present and ?very fine charcoal was abundant (resulting in the dark grey colour).

The large residue consisted of about 275cm³ of which about 200cm³ was charcoal (to 10mm), most of it with an iron-like mineral encrustation and in some cases concreted together in clumps. The charcoal included oak and ?willow/poplar (*Salix/Populus*).

Context 929 (primary fill of ditch 927)

Sample 92901/T (1kg sieved to 300 microns with washover; approximately 1 litre of unprocessed sediment remains)

An unconsolidated, waterlogged, mix of light yellow-brown sand and mid grey-brown slightly clay sandy silt with some stones (2mm to 20mm), ?charcoal, and rotted wood, present.

The large residue of about 325cm³ included a large component (about 200cm³) of charcoal (to 35mm), apparently mostly oak, the remainder being sand and gravel (to 25mm).

4.8 Trench 10

Context 1012 (fill of ditch 1011)

Sample 101201/T (2kg sieved to 300 microns with paraffin flotation and washover; approximately 16 litres of unprocessed sediment remains)

Moist, light grey-brown to mid grey-brown, stiff and sticky to crumbly (working soft), slightly sandy clay silt with some stones (20 to 60mm, including chalk) and rotted wood present.

The large residue from this subsample comprised about 200cm³ of uncharred woody (?wood chips and fine twig fragments) and herbaceous detritus amongst which were some well-preserved plant remains, a mixture of woody and herbaceous taxa likely to have lived in the ditch (e.g. duckweed, stonewort (Characeae), water-crowfoot and horned pondweed (*Zannichellia palustris* L.)), on its banks, or in disturbed areas nearby (hemlock, silverweed, chickweed, annual and stinging nettles) and in scrub in the vicinity (hawthorn, *Crataegus monogyna* Jacq., and elder). There was also a distinctive, albeit small, component from salt-marsh – traces of sea milkwort, mud rush (*Juncus* cf. *gerardi*), sea rush (*J. maritimus* Lam.), annual seablite (*Suaeda maritima* (L.) Dumort.), and sea arrowgrass (*Triglochin maritima* L.). The remainder of the residue comprised about 75cm³ of sand and flint gravel (to 35mm). The only charred remains noted were a single shrunken charred cereal grain, traces of charred peat (to 10mm) and a trace of charred herbaceous material.

The flot contained abundant insect remains, whose preservational condition was variable but often good; fossils were often fragmented, perhaps recently (E 1.5-3.5, mode 2.5 weak; F 1.5-4.0, mode 2.5, weak). This was clearly an aquatic deposit, for a range of water beetles and species associated with mud and marginal vegetation was present. The remains of several dung beetles perhaps hint at the presence of livestock locally, and there were indications of weedy vegetation including nettles. This terrestrial component would be usefully represented in a larger subsample, preferably of about 5kg, though the existing subsample will probably be sufficient for further analysis of plant remains.

4.9 Trench 12

Context 1213 (fill of ditch 1212)

Sample 121301/T (3kg sieved to 300 microns with washover; approximately 25 litres of unprocessed sediment remains)

Moist, mid grey to mid grey-brown, slightly crumbly to soft (working soft and more or less plastic), slightly sandy clay silt with some stones (2mm to 60mm) and modern rootlets present.

This subsample yielded a very small washover of a few cm³ of plant material, both charred (charcoal to 5mm and a single yellow-rattle, *Rhinanthus*, seed) and uncharred (including a few seeds from a handful of taxa – mainly water-plantain, *Alisma*), all rather eroded. The moderate-sized residue of about 175cm³ consisted of sand and gravel (to 45mm). Rather small numbers of invertebrate remains were present in the flot, and preservation was variable, often extremely poor (E 3.0-5.5, mode 4.0 weak; F 2.0-5.5, mode 3.5 weak). Doubtless other remains had decayed completely, though whether during deposition or more recently cannot be determined. The sparseness of remains and their poor condition would make further investigation of very little value.

Context 1221 (fill of ditch 1220)

Sample 122101/T (3kg sieved to 300 microns with washover; approximately 13 litres of unprocessed sediment remains)

Wet to waterlogged, light to mid brown to light to mid grey-brown, soft, slightly clay slightly silty sand with some stones (2mm to 60mm) and modern plant ?stalk fragments.

There was a small washover of a few cm³ of coarse uncharred herbaceous detritus, apparently mostly modern cereal straw debris, with a few fruits and seeds all or most of which might well have been modern. The single charred nutlet of self-heal (*Prunella vulgaris* L.) was presumably ancient. The moderate-sized residue comprised about 275cm³ of sand, gravel (to 25mm) and iron-concreted sediment with a trace of charcoal (to 5mm).

Context 1223 (fill of gully 1222)

Sample 122301/T (3kg sieved to 300 microns with washover; approximately 16 litres of unprocessed sediment remains)

Wet to waterlogged, light to mid brown to light to mid grey-brown, soft, slightly clay silty sand. Stones (2mm to 60mm) and modern rootlets were present.

There was a small washover of a few cm³ of fine charcoal (to 10mm) with traces of charred and uncharred elder seeds/seed fragments, and a large residue of about 400cm³ of sand and gravel (to 35mm).

Context 1229 (fill of post-hole 1228)

Sample 122901/T (3kg sieved to 300 microns with washover; approximately 14 litres of unprocessed sediment remains)

Waterlogged, mid grey-brown to mid to dark grey-brown, crumbly (working soft and slightly sticky), sandy clay silt, with patches of mid yellow-brown silty sand and light grey clay silt. Stones (2mm to 60mm) and charcoal were present.

The small washover of about 60cm³ was primarily of charcoal (mostly iron-stained), with a trace of uncharred elder seeds; there was further charcoal in the residue (presumably it was heavy because of impregnation by iron minerals). The residue volume was large (about 400cm³), the remainder comprising sand and gravel (25mm). Some of the charcoal remained weakly cemented in clusters, as in the sample from Context 926; at least some of the charcoal was oak.

Context 1231 (fill of pit 1230)

Sample 123101/T (3kg sieved to 300 microns with washover; approximately 24 litres of unprocessed sediment remains)

Moist, mid grey, sticky (working soft), sandy clay silt, with patches of light to mid orange-brown silty clay, and some stones (2mm to 20mm).

The very small washover consisted of a few cm³ of charcoal (to 5mm) with moderate numbers of uncharred elder seed fragments and a single unidentified charred cereal grain; the moderate-sized residue was about 325cm³ of sand and flint gravel (to 40mm).

Context 1271 (fill of ditch 1270)

Sample 127101/T (3kg sieved to 300 microns with paraffin flotation and washover; approximately 14 litres of unprocessed sediment remains)

Moist, mid grey-brown to mid to dark grey-brown (and mid orange-brown in places), slightly sticky (working soft and sticky), clay silty sand and herbaceous detritus. Some stones (2mm to 60mm) and modern rootlets were present.

The large washover of about 300cm³ was mostly fine uncharred herbaceous detritus and there was a small residue of about 120cm³ of sand and gravel (to 35mm), with iron-concreted root moulds. Amongst the herbaceous detritus were two charred wheat (*Triticum*) grains and one of oats (*Avena*), together with moderate numbers of charred spikelet forks and glume bases which may well have been spelt (*T. spelta* L.) but which could not be identified at this stage. The most abundant of the uncharred remains were consistent with deposition in a ditch – especially water-crowfoot, water-plantain, sedges, gipsywort (*Lycopus europaeus* L.) and horned pondweed – the banks and land beyond supporting some grassland (there were several taxa likely to have lived in grazed turf) and some areas with disturbance (perhaps through trampling by animals or humans).

The fairly small flot was rich in insect cuticle, though (other than mites) the total number of remains was not large. Preservation was variable, though on average fairly good, with some remains very pale and others distorted (E 1.5-4.0, mode 2.0 weak; F 1.0-3.5, mode 2.5 weak). Aquatic deposition was indicated, water fleas and beetles found in and at the edge of water being predominant. There were a few terrestrial insects.

Adding a further subsample (of about 5kg) to this one would probably produce sufficient remains for a reconstruction of conditions in the ditch and its immediate surroundings. A much larger subsample would be needed to provide a more substantial assemblage of charred cereal chaff to confirm the identification of the wheat.

Context 1292 (fill of pit 1291)

Sample 129201/T (3kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remains)

Waterlogged, light to mid brown to mid grey-brown, unconsolidated, slightly clay silty sand with small stones (2mm to 6mm) common and larger stones (to 60+mm) present.

The small washover consisted of a few cm³ of charred material – charcoal (to 10mm) and hazel nutshell fragments, the large residue of about 550cm³ of sand and flint gravel (to 40mm).

4.10 Vertebrate remains from the samples

In general, only very small amounts of bone were recovered from the samples. Most fragments represented the main domestic mammals. A number of the bones recovered from contexts 818, 820, 1012 and 1229 were burnt. Small mammal and amphibian remains were identified from contexts 603 (Sample 60301/T) and 608 (Sample 60801/T), the latter also included several fish vertebrae and a ?snake vertebra.

Context 918 (Sample 91801/BS) produced a large number of bone fragments. A high degree of fragmentation was noted, with over 300 small fragments, including medium-sized mammal rib, vertebrae, cranium and shaft fragments. A large proportion of the unidentified remains clearly derived from larger bones but were too small to be identified to skeletal element or species. The identified component consisted of 62 sheep bones representing at least three individuals. A wide range of elements were present and these bones could represent parts of whole skeletons.

4.11 Hand-collected vertebrate remains

Hand-collected vertebrate remains, amounting to 162 fragments, were recovered from four of the 16 excavated trenches. Trenches 6 and 12 produced the largest assemblages of bone (61 and 96 fragments, respectively), with only five bones in total from Trenches 2 and 8. Table H1 lists the contexts from which vertebrate remains were recovered by hand collection.

Preservation of the remains was quite variable. Material from Trench 6 was, for the most part, quite well preserved. Some exceptions were the bones from Contexts 600 and 601, which were poorly preserved and eroded and a small number of fragments from context 608 which were slightly battered in appearance. In contrast, the remains from Trench 12 were mainly rather eroded, particularly those from contexts 1223, 1237 and 1269. Material from this trench was also considerably damaged by fresh breakage that must have occurred during excavation. Context 1219 produced 62 fragments, which had all been burnt to varying degrees. This variation was even noted on individual bones, with one end scorched black and the other white and calcined. The resultant remains were quite fragile and brittle. The five fragments from Trenches 2 and 8 were all well preserved.

Table H1. List of contexts producing hand-collected bone.

Context	Number of fragments
203	2
600	1
601	6
604	4
607	2
608	36
610	2
621	10
814	1
825	2
1219	62
1223	9
1237	15
1268	1
1269	2
1273	3
1277	3
1285	1
18	162

A large component of the vertebrate assemblage was unidentified to species but represented large and medium-sized mammals. Identified remains included cattle, caprovid, with a few fragments of horse and pig. Caprovid remains were predominant but the numbers were inflated by the presence of what appeared to be the part skeleton of an adult sheep from context 1219. As discussed above, all the bones were burnt. Parts of both the front and back legs were recorded, along with ribs and some vertebrae (atlas, cervical and thoracic). No fragments of cranium or teeth were present.

Additionally, a single shaft fragment of a human baby was identified from context 621.

Few bones were measurable and mandibles with teeth *in situ* were scarce.

Table H2 gives summary information for the hand-collected vertebrate material.

Table H2. Hand-collected vertebrate remains

Species		No. frags	No. meas	No. mands/teeth
<i>Equus f. domestic</i>	horse	3	-	-
<i>Sus f. domestic</i>	pig	2	1	-
<i>Bos f. domestic</i>	cow	11	4	1
Caprovid	sheep/goat	9 (62)	1	1
<i>Homo sapiens</i>	human	1	-	-
Unidentified		74	-	-
Total		100 (62)	6	2

Key: No. frags = total number of fragments; No. meas. = number of measurable fragments; No. mands/teeth = number of mandibles (with teeth *in situ*) and numbers of teeth of use for providing age-at-death data; the number in parentheses represents a part skeleton from Context 1219.

5.0 DISCUSSION AND STATEMENT OF POTENTIAL

Preservation of plant remains in these deposits was very localised, uncharred remains being abundant (and usually well preserved) in some of the ditch fills (e.g. 203, 1012, and 1271) and in the one non-fill layer examined (peat 806). However, some of the ditch fills contained very few remains. The pit fills always yielded very few remains. Charred plant material, other than charcoal, was limited to very small amounts of cereal grain, never in sufficient quantity to merit further investigation, even with larger subsamples (concentrations were generally no more than one or two grains per kilogramme), one example of a moderate concentration of wheat chaff (1271), which should be examined further (if dating will be sufficiently precise, if necessary using AMS on selected plant remains), and some hints of the presence of burnt material from peat or turves (contexts 814, 818, 820, 920 and 1012).

Despite the evidence for human occupation at this site, the plant remains largely indicate a landscape with rather little disturbance. Apart from the seeds and fruits of a few weeds and the charred cereal remains, most of the remains suggest natural or semi-natural vegetation typical of an area of lowland wetland traversed by ditches and with the sea close by. Further analysis might usefully be carried out in order to amplify the ecological reconstruction and further explore the evidence for human activity in the environs.

Preservation of invertebrates varied, but the remains were often (so far as can be revealed by visual inspection) chemically changed, usually pale. This may have been the result of recent de-watering, or of a rather vigorous decay environment during deposition. The invertebrate assemblages reflected deposition in ditches which contained water for an appreciable part of the year, but not necessarily permanently. There were indications of grazing land from dung beetles, and very little to suggest the presence of trees or shrubs (there were traces of dead wood species, but these are as likely to have lived in posts as in woodland). Synanthropes were very rare, with no evidence for buildings nearby or for waste disposal.

Enough invertebrate remains could be recovered from some of the samples to amplify these preliminary deductions and to contribute useful evidence concerning the site and its surroundings. Further analysis would also yield data for synthesis of changing land use in lowland eastern Yorkshire. In two cases the residues contained significant numbers of insect remains, and many fossils may have broken during extraction, signalling the need for careful processing for detailed analysis.

The vertebrate assemblage recovered from these excavations was small, with few measurable bones and mandibles with teeth *in situ* of use for providing biometrical and age-at-death information. Preservation was rather variable and quite a number of fragments were eroded or rather fragile. Some of the material may be redeposited and may have initially been dumped elsewhere prior to being incorporated into ditch and pit fills. A limited range of species was identified. However, the presence of part skeletons is worthy of note. This is a phenomenon known from other Iron Age/Romano-British sites in the region, including burnt and part burnt caprovid skeletons found at Welton Road, Brough (Hamshaw-Thomas and Jaques 2000), and Hayton (Jaques *et al* 2000); deposits such as these are frequently identified as being ritual in nature.

6.0 RECOMENDATIONS

- 6.1 Providing dating is refined (if necessary by AMS assay), plant and invertebrate remains from the richer deposits should be analysed in detail to address the topics mentioned above. Where further samples from similar deposits (e.g. from additional ditch fill contexts) at the site exist which have not been examined here, they should be included in any further stage of analysis.

In spite of the poor preservation and small assemblage size, an archive report should be made of all well dated vertebrate material. Bone assemblages from rural sites, particularly of this date, are rare and our understanding of these sites is limited. Data from this assemblage could be used to provide a valuable contribution to any synthetic projects carried out in the region.

6.2 Retention and disposal

All of the current material should be retained for the present.

6.3 Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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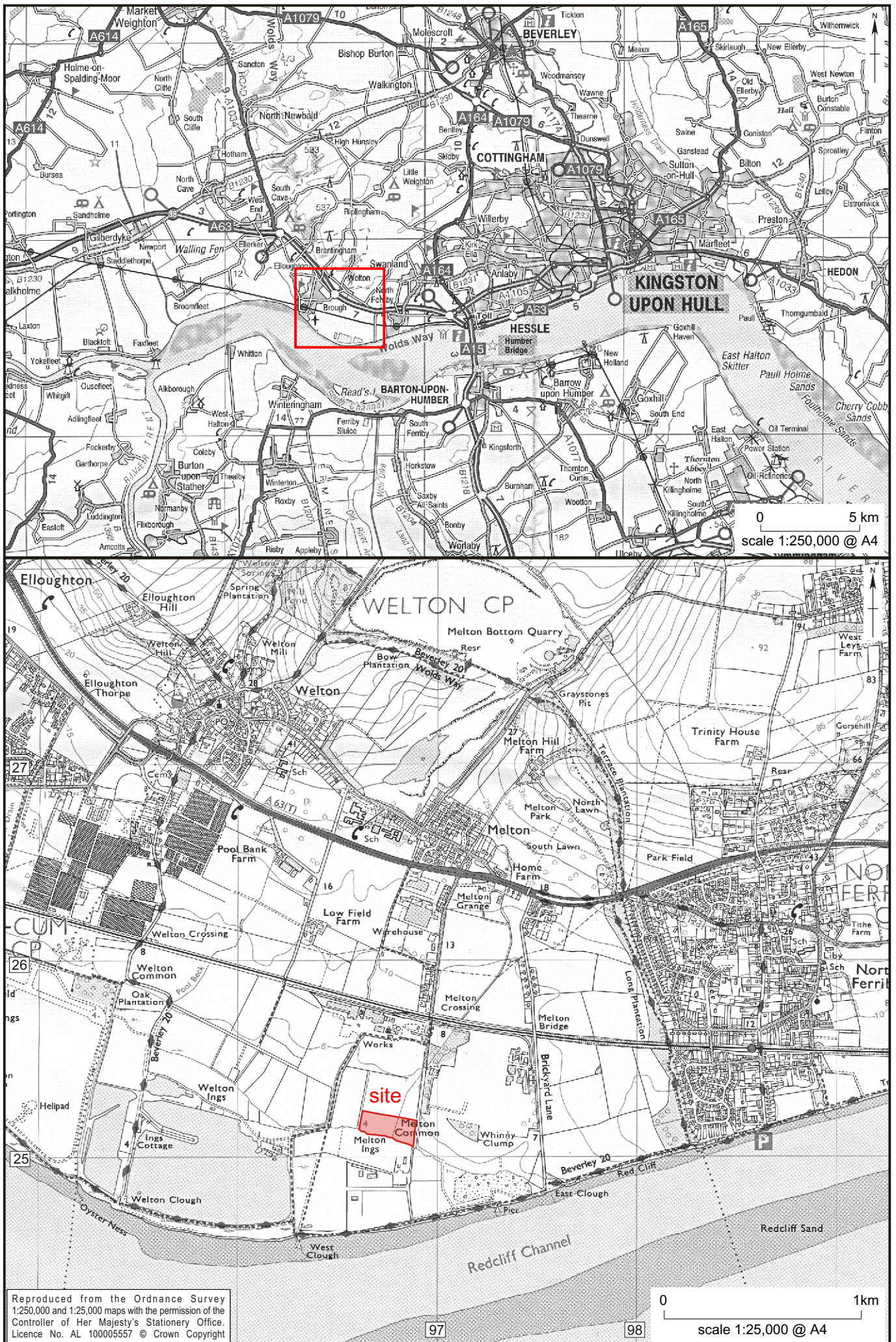
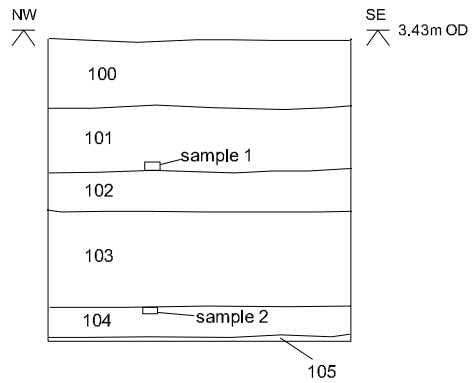


Figure 1 Melton Waste Water Treatment Works: location plan



Figure 2: Melton Waste Water Treatment Works: location of trial trenches overlain on results of geophysical survey



Trench 1 section

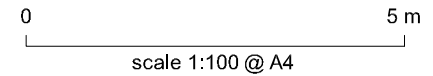
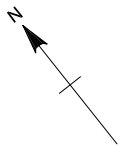
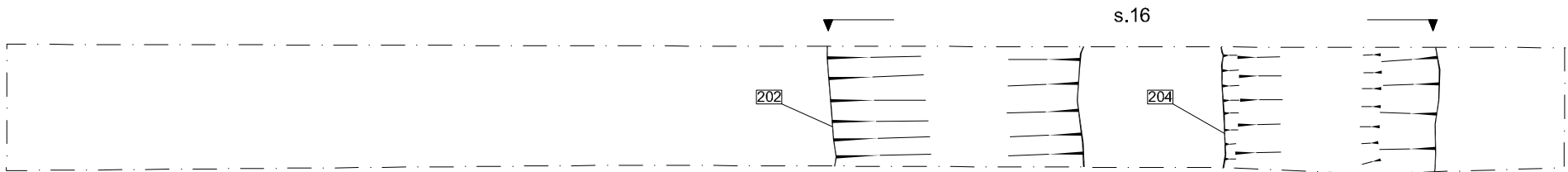
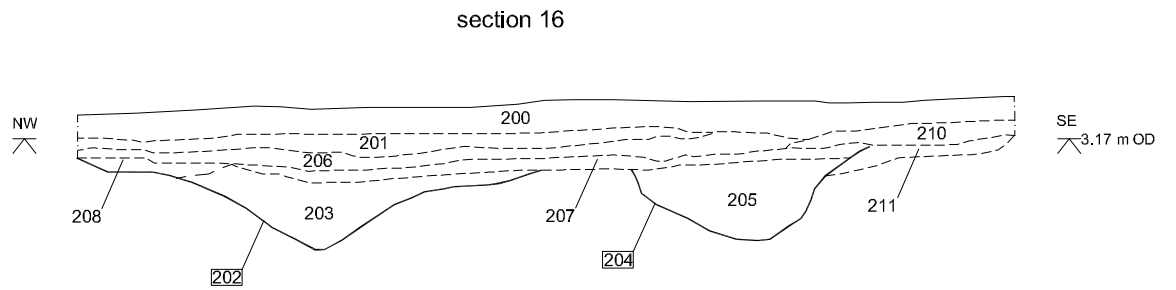


Figure 3 Melton Waste water Treatment Works: Trenches 1 and 2 plan and sections

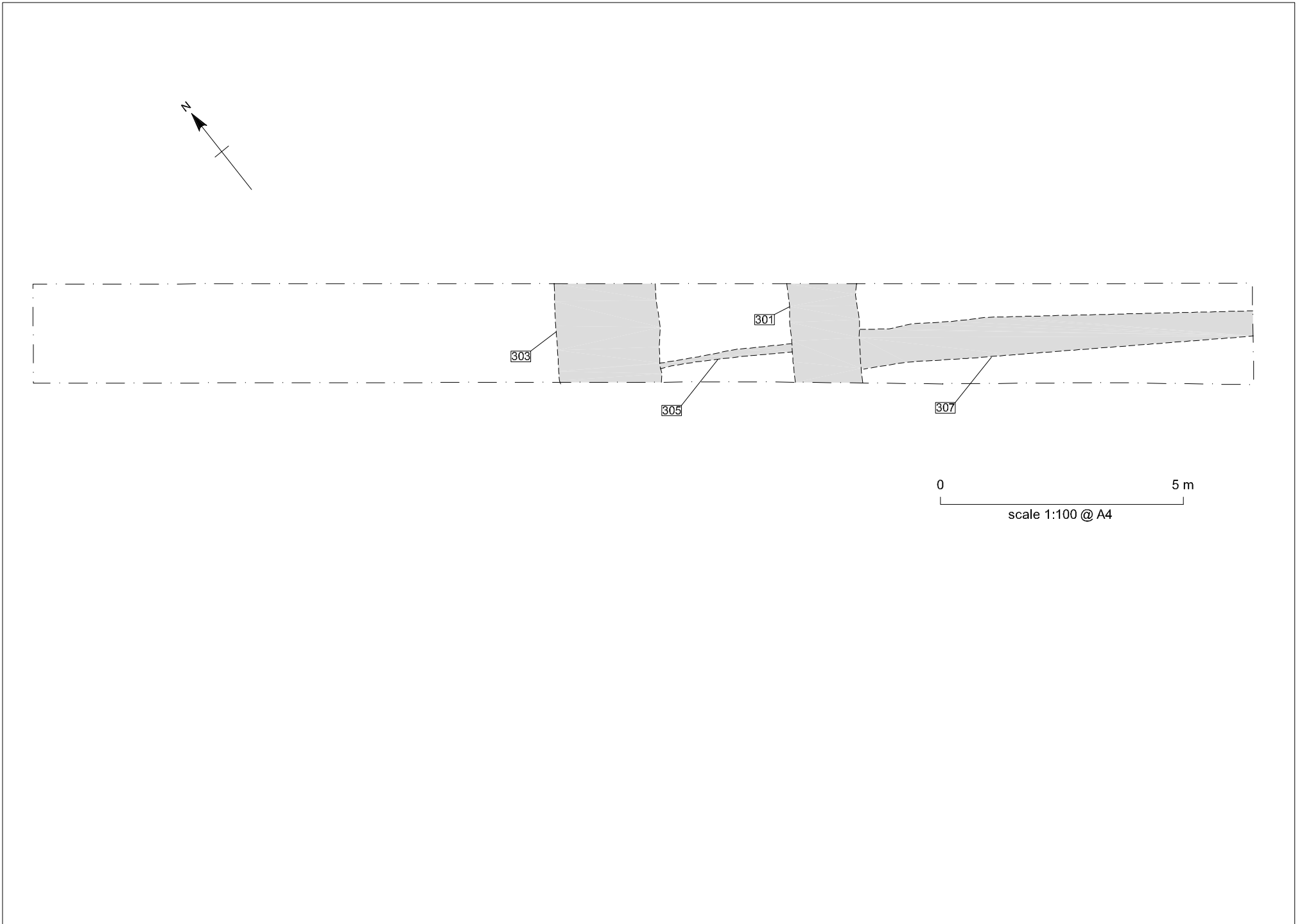


Figure 4 Melton Waste Water Treatment Works: Trench 3 plan

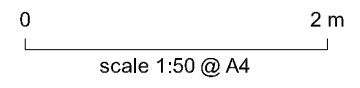
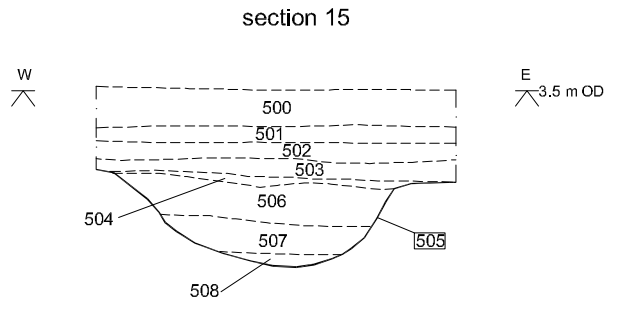
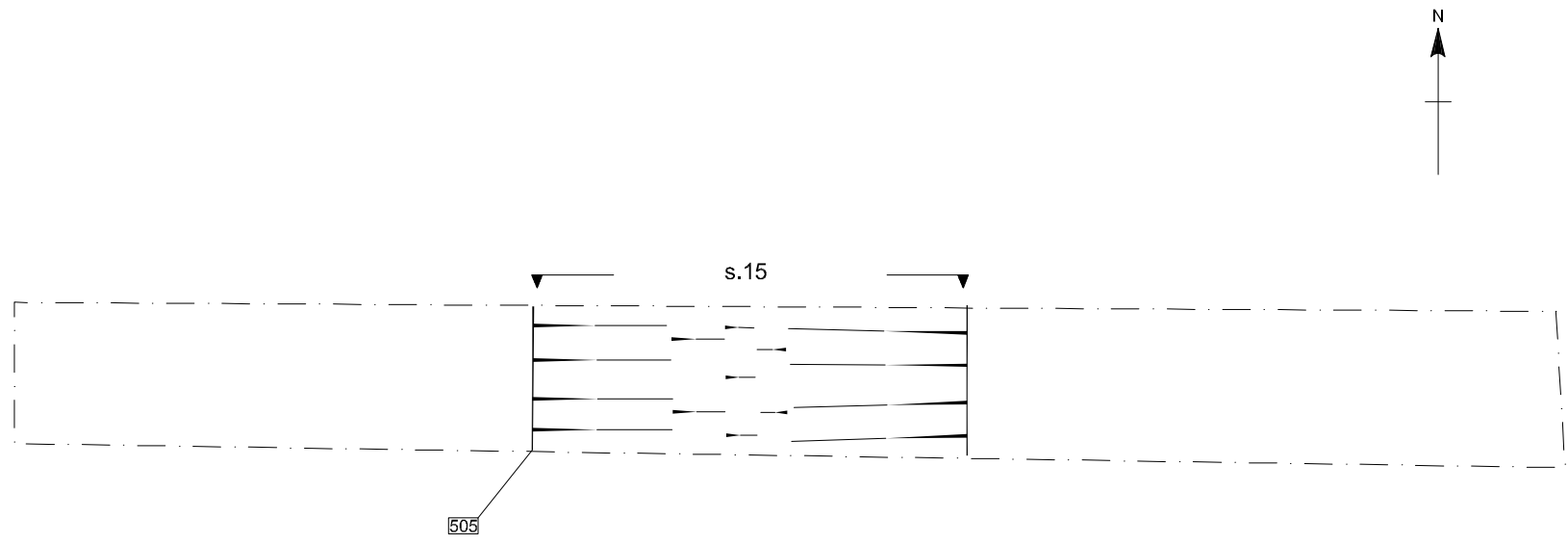


Figure 5 Melton Waste Water Treatment Works: Trench 5 plan and section

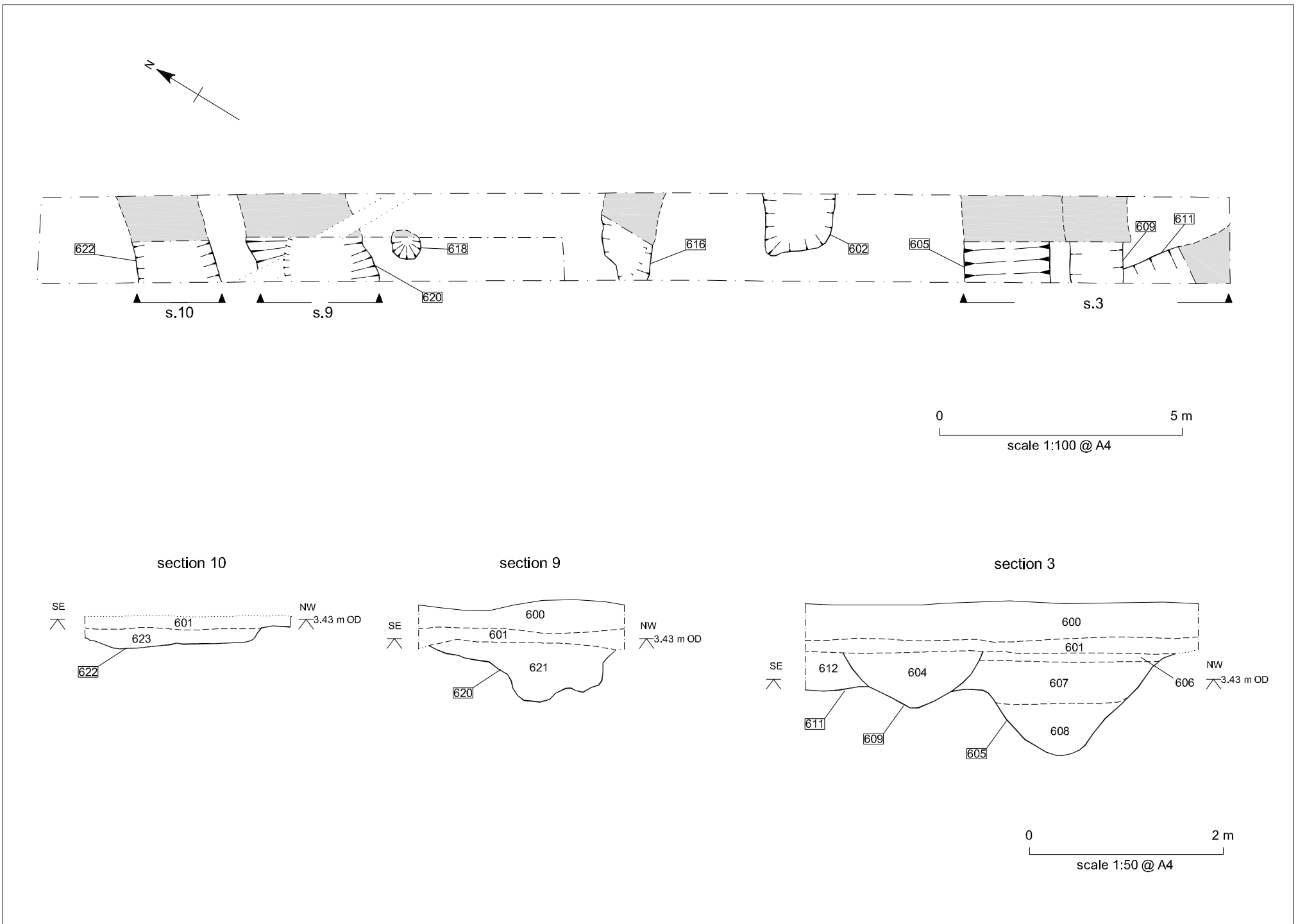


Figure 6 Melton Waste Water Treatment Works: Trench 6 plan and sections

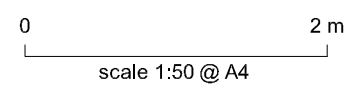
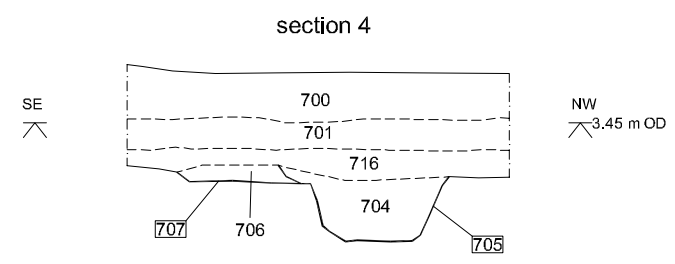
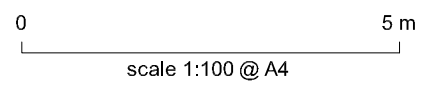
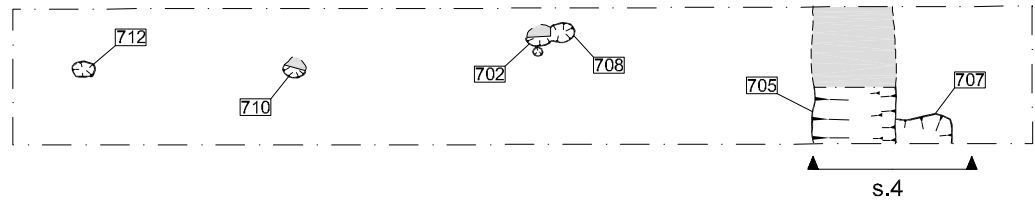
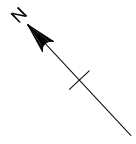


Figure 7 Melton Waste Water Treatment Works: Trench 7 plan and section

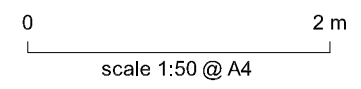
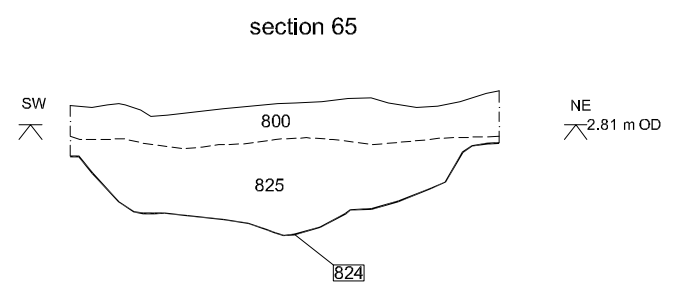
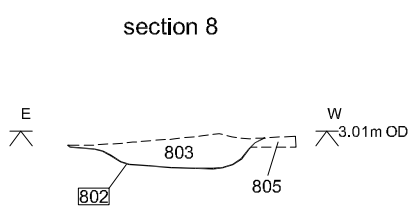
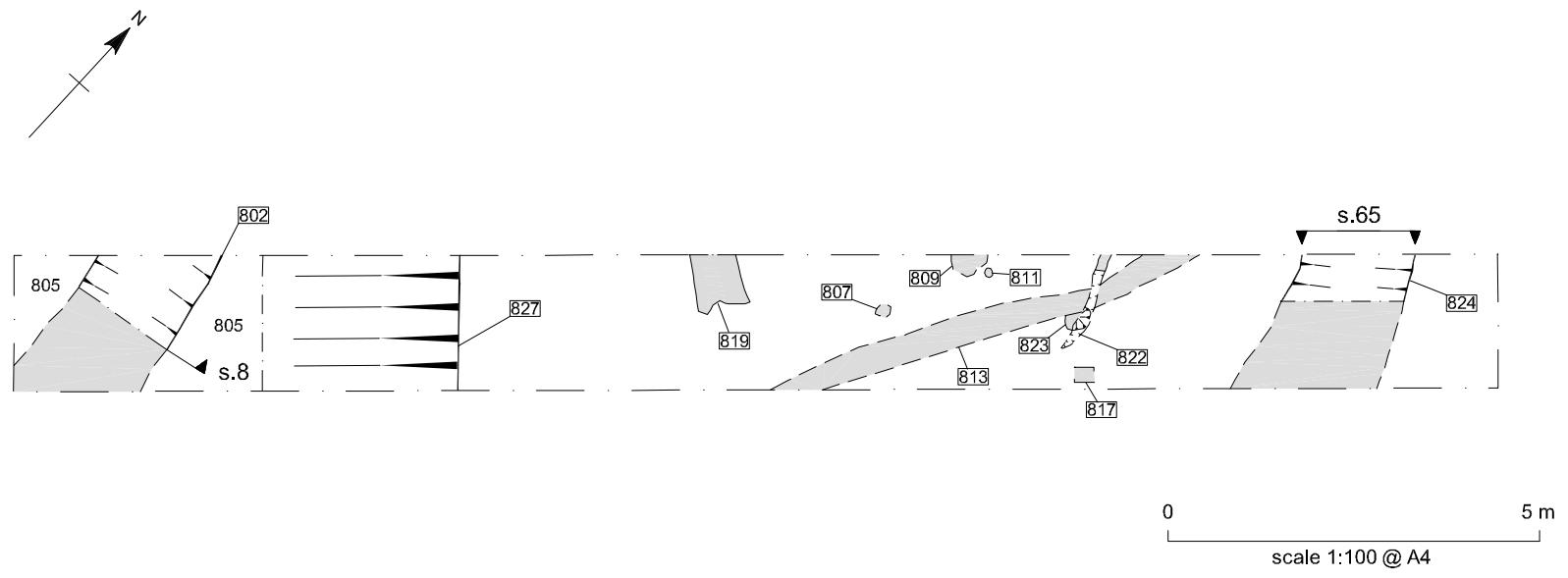
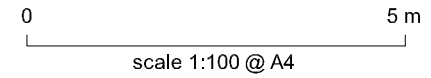
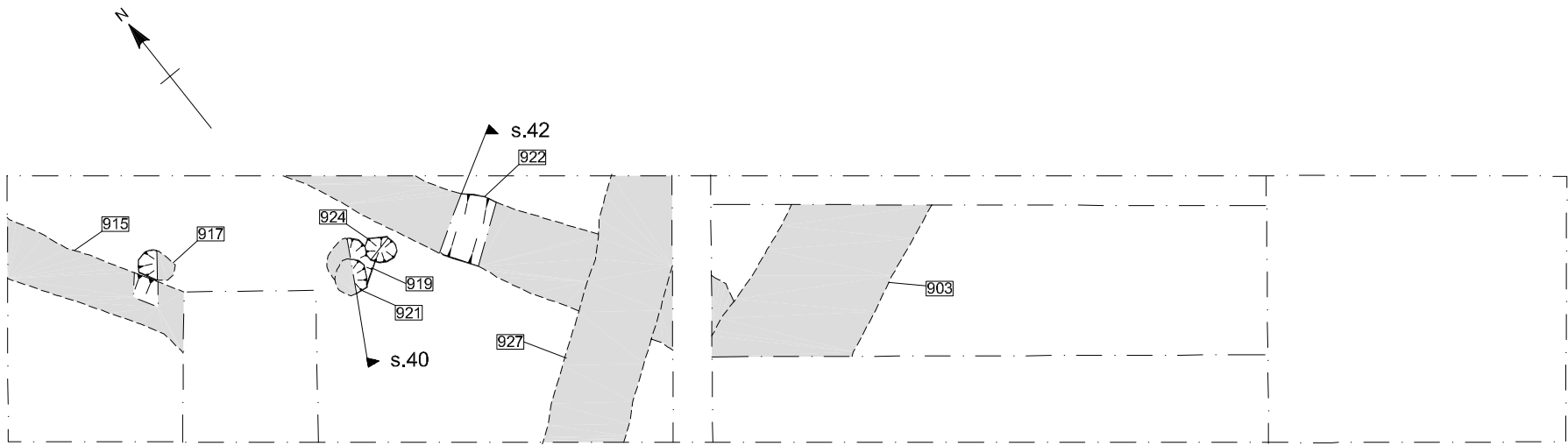
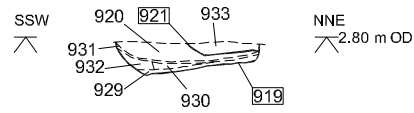


Figure 8 Melton Waste Water Treatment Works: Trench 8 plan and sections



section 40



section 42

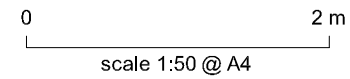
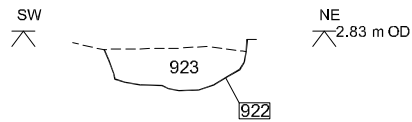
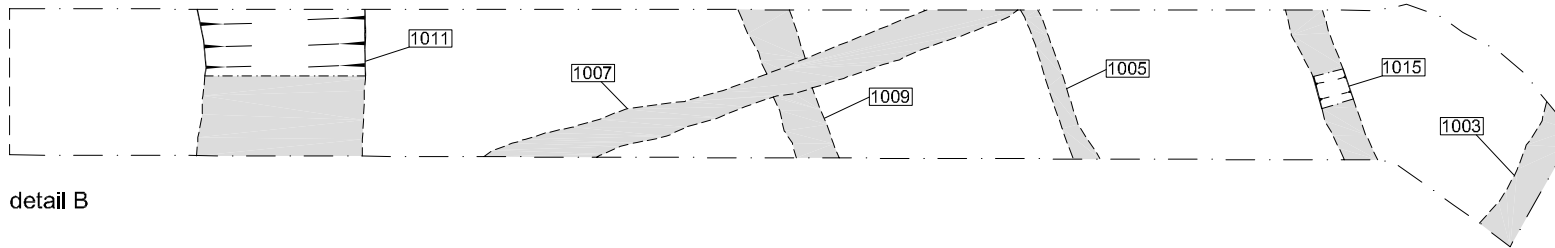
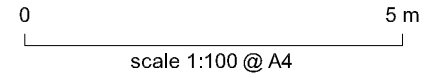
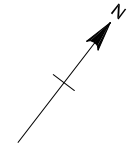


Figure 9 Melton Waste Water Treatment Works: Trench 9 plan and sections



detail A



detail B

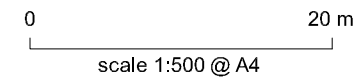
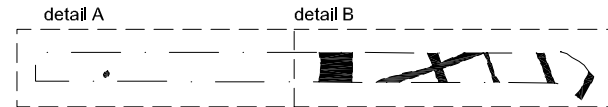


Figure 10 Melton Waste Water Treatment Works: Trench 10 plan

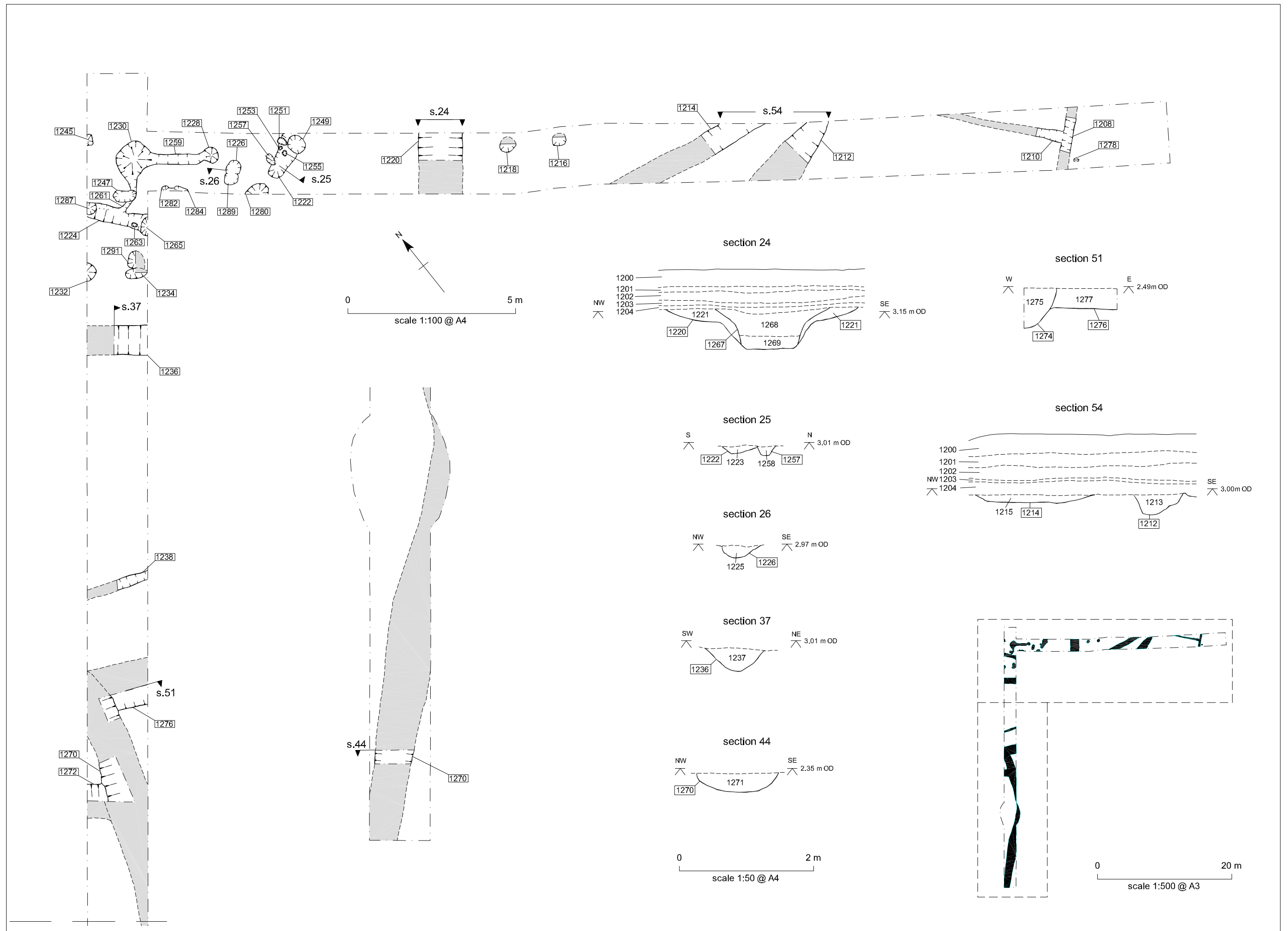


Figure 11 Melton Waste Water Treatment Works: Trench 12 plan and sections

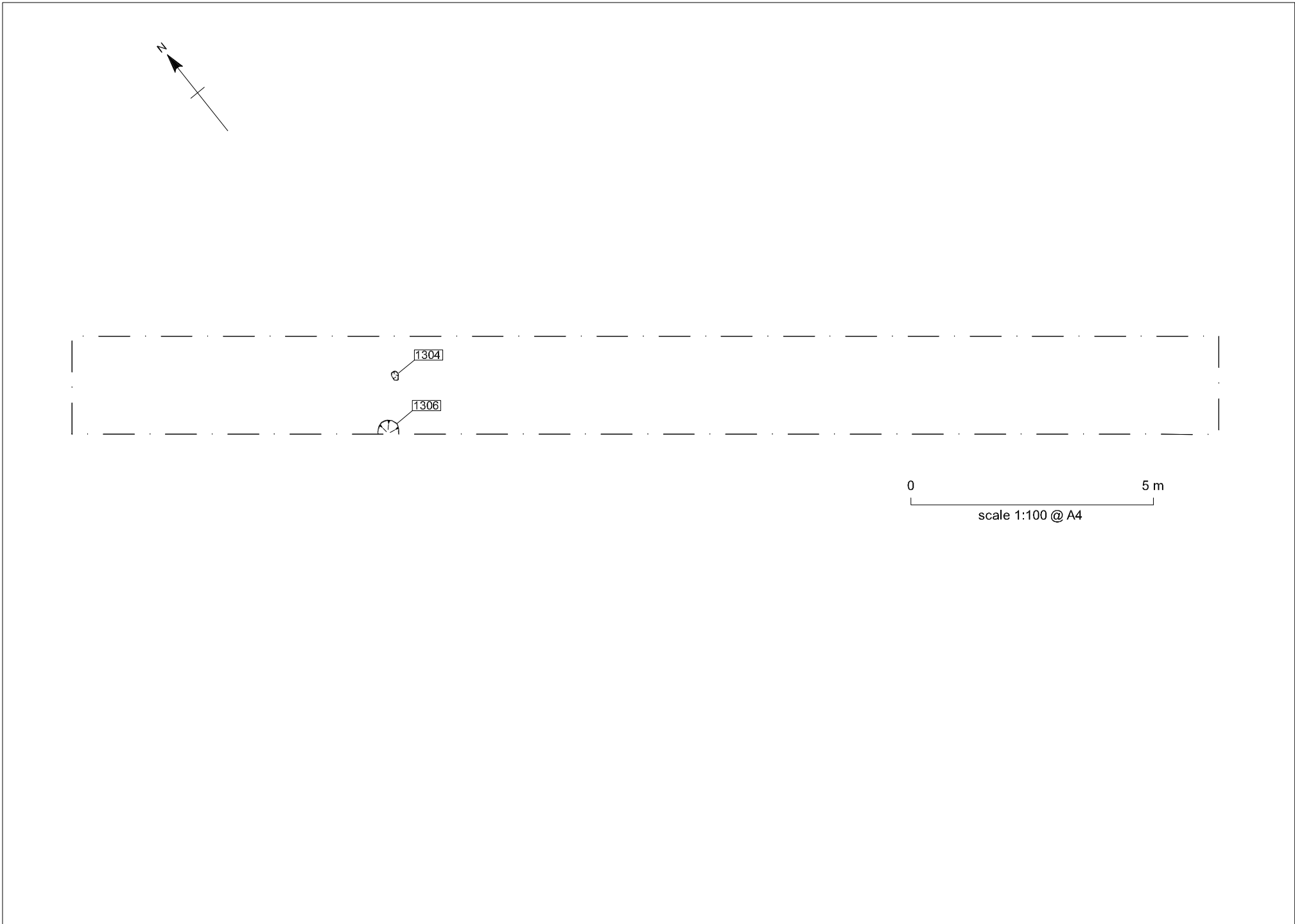


Figure 12 Melton Waste Water Treatment Works: Trench 13 plan

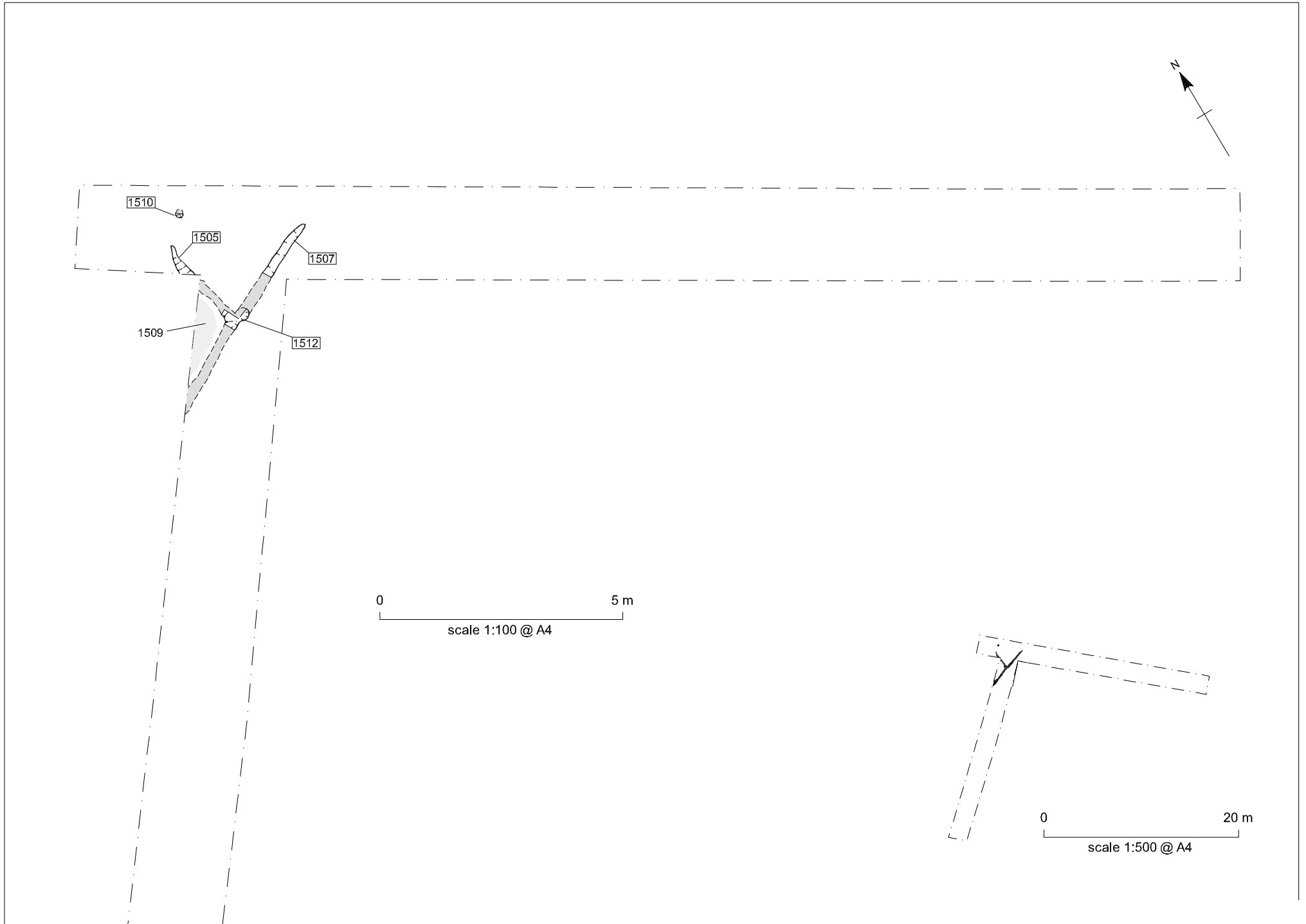
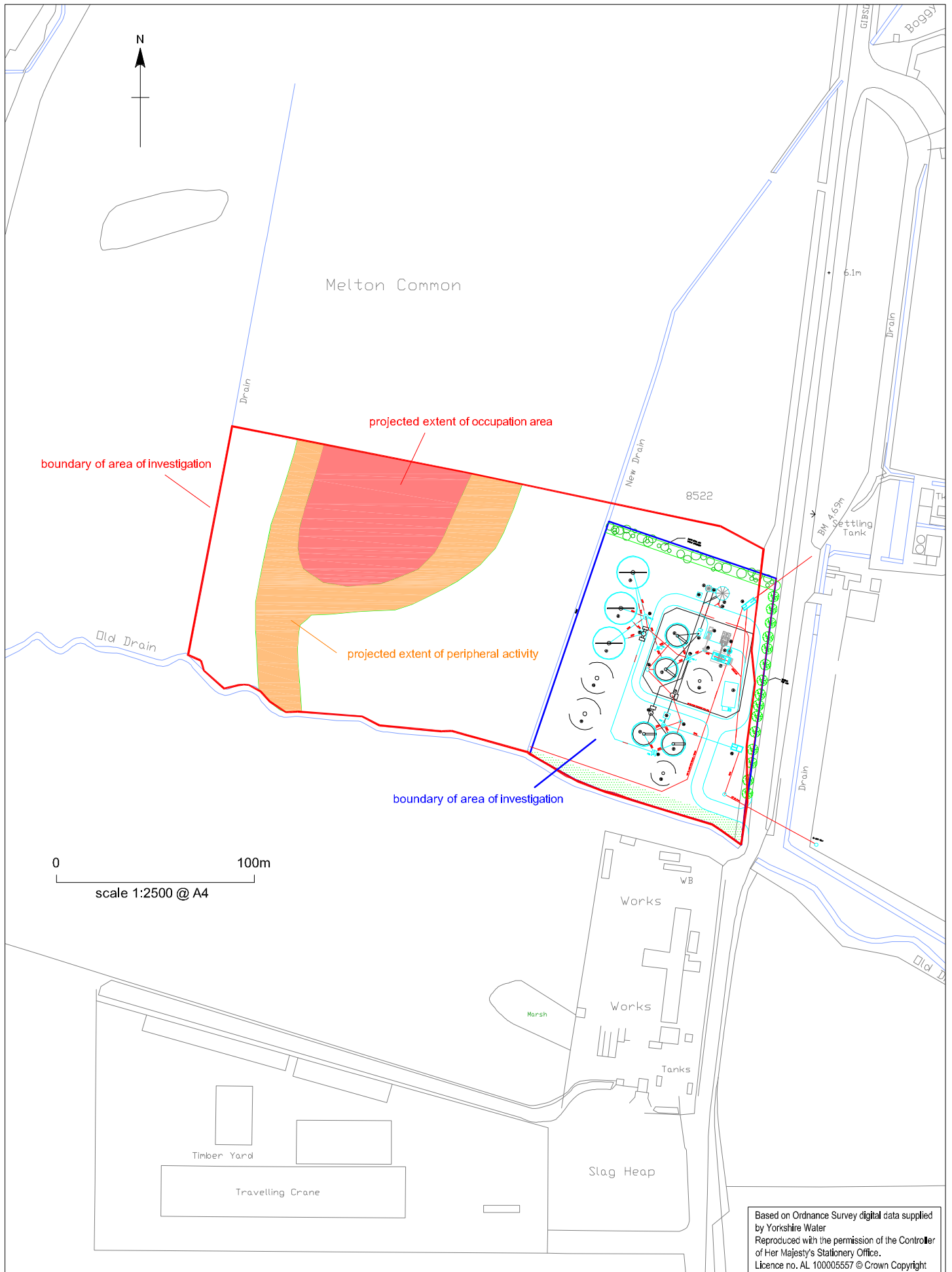


Figure 13 Melton Waste Water Treatment Works: Trench 15 plan



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Figure 14: Revised extent of proposed Melton Waste Water Treatment Works: projected limit of Romano-British ladder settlement



Plate 1: Droveaway ditch 202 in Trench 2



Plate 2 Excavation of Trench 3 exposing continuation of droveaway ditches from Trench 2



Plate 3 Pre-excavation view of roundhouse within Trench 12



Plate 4 Possible cultivation marks (1509) within Trench 15