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YORKSHIRE DERWENT AQUEDUCT DUPLICATION MAIN ELVINGTON TO RICCALL

POST-EXCAVATION ASSESSMENT REPORT

prepared for

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on behalf of

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**YORKSHIRE DERWENT AQUEDUCT DUPLICATION MAIN
ELVINGTON TO RICCALL**

ARCHAEOLOGICAL POST EXCAVATION ASSESSMENT

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YORKSHIRE DERWENT AQUEDUCT DUPLICATION MAIN ELVINGTON TO RICCALL PIPELINE

ARCHAEOLOGICAL POST EXCAVATION ASSESSMENT

Summary

Archaeological monitoring of topsoil stripping along the 14km construction corridor for the Yorkshire Derwent Aqueduct water pipeline between Elvington and Riccall to the south east of York was undertaken during 2002. Previously known and unknown concentrations of archaeological remains were recorded at two different locations along the pipeline route. These are referred to as Site 3 and Millfield Farm.

Site 3 was located to the south east of Escrick just east of Mount Pleasant Farm, within the Selby District of North Yorkshire. The site consisted of a subrectangular enclosure adjoining a ditched field boundary that had previously been identified from aerial photographs. Pottery recovered during excavation dated the enclosure to the Romano British period. There were no internal features to the enclosure.

Millfield Farm was located to the south west of Wheldrake within the administrative area of the City of York. The site comprised a concentration of settlement related features of Romano British date which extended for a length of 100m along the pipeline corridor. The features recorded included a series of enclosures adjacent to a trackway, the principal enclosure containing evidence of settlement with an external cemetery adjacent to the trackway. The main east to west enclosure boundary ditch adjoined the ditched trackway, which was orientated towards the city of York. On the northern side of the boundary ditch evidence for agricultural and industrial activity was recorded as well as part of a cemetery. On the southern side of the boundary ditch settlement type features were recorded which included the remains of a possible roundhouse. Over a thousand sherds of 3rd to 4th century pottery were recovered from the site which, along with stratigraphic evidence, indicated three broad phases of activity. These were truncated by medieval plough furrows.

In addition to these two sites, a number of former field boundaries and traces of ridge and furrow cultivation were recorded at different locations along the pipeline route.

No further work is recommended in reference to the archive for Site 3 or the isolated features recorded during the watching brief. However, the site at Millfield Farm is of regional significance and therefore warrants further analysis of the site archive. This would comprise further analysis of the pottery and small finds assemblages, the results of which should then be integrated into a re assessment of the stratigraphic record. A final report for publication should be produced on the results of the excavation for inclusion in an appropriate regional journal.

1 0 INTRODUCTION

Northern Archaeological Associates were commissioned by Scott Wilson on behalf of Yorkshire Water Services Ltd to undertake an archaeological watching brief during construction of a water main duplication between Elvington and Riccall to the south east of York (Figure 1). The work was undertaken over a 12 week period between April and July 2002. This report has been prepared by Northern Archaeological Associates (NAA) for Scott Wilson on behalf of Yorkshire Water Services Ltd.

An archaeological appraisal (NAA 2001) was undertaken of the proposed pipeline route which identified 26 archaeological sites within 250m of the pipeline. Based on the results of the assessment a programme of field survey (fieldwalking and geophysical survey) was carried out (NAA 2002a). The field survey identified three potential archaeological sites, and further evaluation comprising trial trenching was subsequently undertaken of one of these sites (Site 3). This confirmed the presence of a Romano British enclosure.

A programme of archaeological monitoring was thus proposed comprising continuous monitoring during topsoil stripping of areas of high archaeological potential together with archaeological inspection of the entire pipeline route. Two areas of visible earthworks were also identified along the route of the pipeline. An earthwork survey of these areas was carried out, the results of which are included in this report. The area of the identified enclosure was stripped and excavated in advance of the programme of pipeline construction.

During the course of archaeological monitoring the remains of a Romano British settlement comprising structural evidence, trackways, boundary ditches and human burials was identified and excavated near Millfield Farm to the west of Wheldrake. In addition a number of discrete undated field boundaries were recorded along the remainder of the pipeline route.

This report describes the location of identified archaeological remains, the methodology and results of the excavation and summarises the specialist assessments of finds and environmental information recovered. It assesses the potential for further analysis and proposes a programme for further work in order to produce a final publication report.

The pipeline passes through two separate administrative authorities, the City of York Council and North Yorkshire County Council. Information presented in the report is divided between the two administrative areas.

2 0 LOCATION, TOPOGRAPHY AND GEOLOGY

The new duplication main runs from Elvington Water Treatment Works to Riccall Pumping Station, a distance of some 14km. Except for a deviation around the village of Wheldrake the route runs parallel, and 6m to the west, of the existing water main (Figure 2). The pipeline begins within the water treatment works to the north of

Elvington and mns round the west of Elvington village and then turns to continue in a south westerly direction. The route deviates from the existing pipeline by a distance of up to 160m where it passes by the north western side of Wheldrake. The deviation ensured that the proposed pipeline did not enter the built up area of the village itself. The route then continues in a south westerly direction before crossing the A19 and terminating at the pumping station to the south of Riccall. The route passes through the civil parishes of Elvington and Wheldrake within the City of York and the parishes of Thorganby, Escrick, Skipwith and Riccall within the Selby District of North Yorkshire.

The pipeline route crosses six different types of underlying drift geology and soils. The types of geology and soil associations are shown in Table 1, their location along the route indicated on Figure 2. The majority of the land was under arable cultivation at the time of construction with a relatively small proportion being improved pasture, principally near the farmsteads adjacent to the pipeline route.

Table 1 Soils and geology

Type	Soil Association	Geology	Soil description
552a	Kexby	Aeolian sand	Deep stoneless fine sandy soils with affected by groundwater
572s	Bishampton 1	River terrace drift	Deep fine loamy soils with slowly permeable subsoils
712i	Foggathorpe 2	Glaciolacustrine clay	Slowly permeable seasonally waterlogged stoneless clayey and fine loamy over clayey soils
821a	Everingham	Aeolian sand	Deep stoneless permeable fine sandy soils with bleached subsurface horizon
821b	Blackwood	Glaciofluvial drift	Deep permeable sandy and coarse loamy soils
831b	Sessay	Glaciolacustrine and glaciofluvial drift	Fine and coarse loamy often stoneless permeable soils

(Jarvis *et al* 1984)

3.0 ARCHAEOLOGICAL BACKGROUND

Archaeological sites recorded within 250m of the proposed route for the sections within North Yorkshire and the City of York limits are listed in Tables 2 and 3 respectively. Sites are identified by their Sites and Monuments Record (SMR) number or National Monument Record (NMR) where the site has no SMR reference. Four new sites identified as a result of the appraisal (NAA 2001) are referred to as Sites 1, 4. Only primary site numbers have been listed, and finds that are not accurately provenanced are not included but are referred to in the text as appropriate. A central grid reference, suggested classification and date are provided for each site which are graded in archaeological significance as of 1 (national), 2 (regional) and 3 (local) importance. Grading is based upon professional judgement and the criteria set out in Annex 4 of Planning Policy Guidance Note 16 (DoE 1990). The location of the sites is indicated on Figures 3 to 7 from south to north along the pipeline route. Ploughed out ridge and furrow are plotted on the same figures though not listed in Tables 2 and 3.

Table 2 Archaeological sites (North Yorkshire)

Site	Grid reference	Description	Grade	Date
12013	SE 6450 3935	Field boundaries	2	Prehistoric
12014	SE 6455 3910	Trackway	3	Post medieval
12017	SE 6280 3780	Enclosures and field system	2	Prehistoric
12018	SE 6265 3680	Field boundaries	3	Medieval/post medieval
12020	SE 6280 3725*	Field boundaries	2	Prehistoric/Roman
12021	SE 6275 3710*	Ridge and furrow	3	Post medieval
12022	SE 6325 3770	Field boundaries	3	Uncertain
12023	SE 6285 3760	Field boundaries	3	Uncertain
12041	SE 6275 3698	Square barrow	2	Iron Age
12054	SE 6296 3746	Pottery	3	Roman
12061	SE 6290 3740	Roman building (possible villa)	1	Roman
SE 64 SE 19	SE 6560 4150*	Field system	3	Iron Age/Roman
SE 63 NW 25	SE 6422 3952	Trackway	3	Post medieval
SE 63 NW 26	SE 6427 3897	Trackway and enclosure	3	Medieval/post medieval
SE 63 NW 28	SE 6445 3929	Enclosed settlement and ditches	2	Prehistoric
SE 63 NW 31	SE 6272 3721	Trackway and enclosures	2	Medieval/post medieval
SE 64 SW 41	SE 6476 4071*	Settlement and field system	2	Iron Age/Roman
Site 3	SE 6628 4245*	Enclosure and field boundary	3	Uncertain
Site 4	SE 6492 3967	Sand pit	3	Post medieval

* indicates site transected by pipeline route

Table 3 Archaeological sites (City of York)

Site	Grid reference	Description	Grade	Date
2325	SE 6760 4465	Findspot flint axe	3	
2332	SE 6720 4420	Mill	3	18th century
2333	SE 6672 4285	Brick kiln	3	18th century
2335	SE 6770 4540	Dovecot	3	17th century
SE 63 SE 10	SE 6748 4462	Building railway station	3	c 1913
Site 1	SE 6960 4785*	Ridge and furrow	3	Medieval/post medieval
Site 2	SE 6718 4448	Gravel pits	3	Post medieval

* indicates site transected by pipeline route

A total of 26 sites are recorded within the 250m of the route of which six were directly transected. These comprised three areas of prehistoric settlement and associated field systems (SMR 12020, NMR SE 64 SE 19 and SE 64 SW 41), undated cropmarks of a small enclosure and field boundary (Site 3) and two areas of medieval or post medieval ridge and furrow (SMR 12021 and Site 1). A further three sites were immediately adjacent to the pipeline route, these being the site of a possible Roman villa (SMR 12054 and 12061) and cropmarks of past field boundaries of uncertain date (SMR 12022). None of the sites are scheduled monuments, though the possible Roman villa site could be of national importance.

A programme of archaeological evaluation was undertaken (NAA 2002a). This comprised fourteen separate areas of geophysical survey totalling some 11.5 ha and rapid fieldwalking of an area totalling some 4.2 km in length (some 30% of the pipeline route length). The areas of geophysical survey and fieldwalking were targeted

on sites identified within the archaeological appraisal (NAA 2001) The evaluation of the route indicated that the possible Roman villa is located to the east of the existing water main outwith the proposed construction corridor and confirmed the presence of three cropmark sites which were to be transected by the pipeline These three sites comprised a Romano British field system (SMR 12013, NMR SE 63 NW 25 and SE 63 NW 28), a probable trackway (NMR SE 64 SW 41) and a small cropmark enclosure (Site 3) Further evaluation of Site 3, which comprised excavation of a trial trench, confirmed the enclosure to be Romano British in origin No new sites were identified during the geophysical or fieldwalking surveys

4 0 ARCHAEOLOGICAL RESULTS (North Yorkshire)

4 1 Introduction

The remains of a Romano British ditched enclosure (Site 3) identified from aerial photographic evidence, and confirmed by geophysical survey and trial trenching, were excavated in advance of pipeline construction In addition, during archaeological monitoring of topsoil stripping, a number of discrete field boundaries were recorded along the remainder of the pipeline route

Remains of ridge and furrow cultivation trends were identified along the entire route of the pipeline However, in some cases these were very ethereal and consisted of slight dark stains only a few centimetres deep The ridge and furrow were generally spaced 8 9m apart and orientated north to south The best surviving furrows were adjacent to Riccall and survived as visible earthworks (SMR 12021) A measured earthwork survey was undertaken of the ridge and furrow (Figure 8a) The furrows were spaced approximately 7 5m apart, aligned north to south and were quite faint, only surviving to a depth of up to 0 2m

All identified features were hand excavated and then individually drawn, recorded and photographed using the NAA recording system (a derivation of the MoLAS system) The site code for the entire pipeline route was ERP02 Within the Site 3 the enclosure and boundary ditches were 10 15% sampled A sample section was excavated of all discrete features identified along the remainder of the pipeline route in accordance with the method statement (NAA 2002a)

4 2 Site 3

Summary

Geophysical survey (WYAS 2002) undertaken in this area identified three sides of a small subrectangular enclosure, which almost exactly matches a small cropmark enclosure identified from aerial photographs (SE 6633 4284) An L shaped trial trench confirmed the presence of the enclosure The area of the enclosure was stripped under archaeological supervision and excavated in advance of pipeline construction (Figure 9) Pottery recovered from the ditches dated the enclosure to the Romano British period

Results

Excavation identified a large boundary ditch (group number 41) orientated approximately north west to south east (Figure 9). The ditch (5) had been re cut (3), the later cut measuring 2.7m wide and up to 1.46m deep. Adjoining this boundary ditch on its north eastern side was a subrectangular ditched enclosure (group number 42). The enclosure measured 15m north west to south east by 25m north east to south west. The ditches (31) defining the enclosure had also been re cut (30), the later cut generally being between 1.8-2m wide by up to 0.7m deep. Biological remains recovered from bulk soil samples were restricted to small amounts of silted charcoal and a few fragments of very poorly preserved charred grain (Appendix K). These remains are of no significant interpretative value.

There were no internal features identified within the enclosure. Pottery was recovered from each phase of both the boundary and the enclosure ditches which suggested a 2nd century date for the enclosure (Appendix B). The latest diagnostic material comprised a sherd of 3rd century mortarium recovered from the re cut enclosure ditch. Pieces of slag recovered would imply that metal working was being undertaken within the vicinity. However, with the absence of any discrete features, it is not possible to identify where this industrial activity took place. It may be that the enclosure is so heavily truncated that none of the internal features have survived, rather than that there were no contemporaneous features within the enclosure.

4.3 Watching brief (discrete boundary features)

Four discrete features were identified along the route of the pipeline. These comprised a burnt feature and three former field boundaries. The features are located on Figures 3 to 7.

Site A (SE 6308 3774)

A shallow ovoid scoop (113) filled with a compaction of burnt material (112) was identified to the west of Riccall. The feature measured 5.4m by 1.2m and possibly represents the footprint from a bonfire. The remains of plough furrows from which two sherds of medieval pottery were recovered cut the feature.

Site B (SE 6436 3936)

A linear ditch (131) aligned north to south was recorded to the west of Charity Farm. The ditch measured 0.85m wide by 0.3m deep and had a U shaped profile. No pottery was recovered from within the fill (130) of the ditch. Although there was no dating evidence from the ditch it is most likely to represent a field boundary related to the Romano British field system which was identified from cropmark evidence and confirmed during the field survey (SMR 12013, NMR SE 63 NW 25 and SE 63 NW 28). Five sherds of Romano British pottery were recovered during fieldwalking within this stretch of the pipeline corridor.

Site C (SE 6551 4114)

A linear ditch (116) aligned north to south was recorded to the east of Whinchat Hall. The ditch measured 0.8m wide by 0.2m deep with a U shaped profile. No pottery was

recovered from within the fill (115) of the ditch. However, a single sherd of Romano British pottery was recovered from the overlying topsoil suggesting the feature represents a boundary dating to that period. The feature was in an area of recorded cropmarks but did not align with any of the plotted features.

Site D (SE 6595 4184)

A linear ditch (118) aligned north to south was recorded to the south of Mount Pleasant Farm. The ditch measured 1m wide by 0.3m deep with a U shaped profile. No pottery was recovered from within the fill (117) of the ditch. The ditch is also likely to represent a boundary and may be part of the Romano British landscape divisions.

NMR SE 64 SW 41 (SE 6522 4087)

This is the site of a probable trackway which was recorded on the National Monuments Record from cropmark evidence, and identified during geophysical survey. However, during monitoring of topsoil stripping there was no sign of any archaeological features at this location.

5.0 DISCUSSION OF RESULTS (North Yorkshire)

An area of upstanding ridge and furrow near Riccall (SMR 12021), a Romano British enclosure near Escrick (Site 3), and four isolated features along the remainder of the pipeline corridor (Sites A-D) were surveyed, excavated or recorded during the programme of archaeological works within the administrative district of North Yorkshire. The results of archaeological works at these sites are of local significance and therefore require no further analysis or publication beyond that which has been undertaken for this report.

6.0 ARCHAEOLOGICAL RESULTS (City of York)

6.1 Introduction

During archaeological monitoring of topsoil stripping of the 20m wide pipeline corridor a complex of archaeological features was identified near Millfield Farm to the south west of the village of Wheldrake. The complex of features consisted of a trackway, enclosure ditches, a cemetery and an area of settlement type activity, all of Romano British date. There were no additional discrete features (such as pits or ditches) identified during the course of the watching brief along the remainder of the pipeline route within the administrative district of the City of York.

Remains of ridge and furrow cultivation trends were identified along the entire route of the pipeline. However, in some cases these were very ethereal consisting of slight dark stains only a few centimetres deep. The ridge and furrow were generally spaced 8-9m apart and orientated north to south. The best surviving furrows were adjacent to Elvington and survived as visible earthworks. A measured earthwork survey was undertaken of the ridge and furrow (Figure 8b). There were two variations in

orientation and width of the furrows indicating two separate former fields. Within the north-western corner of the survey the furrows were spaced approximately 5m apart, aligned west north west to east south east. Within the remainder of the survey area the furrows were slightly wider, approximately 6m across, and orientated east to west. All of the furrows were well preserved, surviving up to a depth of 0.5m. The route of the 1960s water pipeline was clearly visible as a linear flattened strip cut through the upstanding ridge and furrow.

All identified features were hand excavated and then individually drawn, recorded and photographed using the NAA recording system (a derivation of the MoLAS system). The site code for the entire pipeline route was ERP02. Within the site at Millfield Farm, Wheldrake enclosure, trackway and gully ditches were 15-20% sampled, a 50% sample was excavated of all discrete features except burials which were 100% excavated in accordance with the method statement (NAA 2002b).

6.2 Millfield Farm, Wheldrake

6.2.1 *Summary*

A concentration of archaeological features were recorded some 750m to the south west of Wheldrake. The site was located at a height of approximately 16m OD near to the top of a slight north east to south west aligned ridge (SE 668 443). The site was located immediately to the north of the road (Wheldrake Lane) between Wheldrake and Escrick, and extended for a length of 70m along the pipeline corridor (Figure 6).

Prior to the identification of the site no archaeological sites or artefacts had previously been identified at this location. Archaeological remains recorded within the immediate area during the preliminary archaeological appraisal of the pipeline route are few and consist of post medieval gravel pits and the site of a mill, together with evidence of former ridge and furrow cultivation to the north east of the site (NAA 2001). Sample geophysical survey undertaken some 700m to the north east of the site as part of the evaluation of the pipeline route only recorded anomalies resulting from former ridge and furrow ploughing.

Subsequent to the identification of one of the probable trackway ditches the adjacent area was re-cleaned by machine, with this area being further extended upon the identification of burials to reveal the full extent of the site. A length of the pipeline corridor immediately to the south of Wheldrake Lane was also re-cleaned by machine, but no archaeological features were identified extending into this area. Most of the area had been severely truncated by later agricultural activity, and any evidence for shallow archaeological features was likely to have been removed already.

6.2.2 *Archaeological background*

There are few known archaeological remains of a similar date within the vicinity of Wheldrake, the closest being a prehistoric or Romano-British landscape comprising an extensive field system with associated smaller enclosures and settlements identified as cropmarks to the north west. These cropmarks cover an area

approximately 2km square within arable fields on all four sides of Wheldrake Wood where the underlying geology is comprised of aeolian sand. The southern boundary of the cropmarks corresponds exactly with a change in underlying geology to glaciolacustrine clay and it was suggested that this pattern was more to do with the visibility of cropmarks in different geological conditions rather than the distribution of archaeological remains (NAA 2002a). The discovery of this previously unknown settlement in an area absent of cropmarks suggests that the prehistoric or Romano-British landscape identified around Wheldrake Wood is more extensive than present cropmark evidence depicts. The discovery of the site confirms the identified potential for previously unknown archaeological remains to be encountered on the high ground adjacent to Wheldrake as stated in the assessment report. The location of the site on aeolian sands may also imply that that settlement was concentrated outwith the areas of glaciolacustrine clay drift geology, which at the time may have been waterlogged and unsuitable for settlement.

The site at Millfield Farm is within the hinterland of York, a settlement which had colonial status during the Roman period, and its relationship with that city is of great interest. Much of the research of the area is based upon aerial photographic evidence. This has greatly enhanced our understanding of the organisation of the landscape around York (Addyman and Black 1984). However, Millfield Farm represents one of the few Romano-British settlement sites which have been excavated, providing artefactual and environmental evidence to compliment the plotted cropmark evidence of the extent of settlement within the area.

6.2.3 Methodology

Due to the quantity of features identified at Millfield Farm during the course of the watching brief, a detailed methods statement for the archaeological excavation of the site was produced by NAA in June 2002 (NAA 2002b). The excavation was undertaken between 6 June and 2 July 2002. The site grid and the extent of the excavation were accurately surveyed using an EDM total station and tied into the Ordnance Survey grid. Levels were tied into Ordnance Datum.

The designated pottery specialist made site visits during excavation to observe the nature of the archaeology and to provide spot dates to aid the ongoing excavation. Palaeoenvironmental specialists also visited the site during the excavation. Bulk palaeoenvironmental samples were taken from all features that appeared suitable for sampling upon excavation. All artefactual remains have been cleaned, identified, marked and forwarded to the relevant specialists. The specialist assessments of the artefacts recovered, including spot dating of ceramics, and summaries of their potential for further study are included in this report.

6.2.4 Excavation results

Excavations at Wheldrake have identified a multi-phase Romano-British settlement. The site comprised negative features, ditches and pits together with three graves (Figure 10). Distribution of these features suggests that the eastern extent of the area was defined by a north to south aligned trackway defined by two ditches some 5m

apart. A main east to west aligned ditch extended westwards from the trackway. This ditch appears to represent an enclosure boundary that separated two distinct areas of activity.

To the north of the main east to west boundary ditch three possible graves were identified, all aligned approximately north to south parallel with the trackway. To the south of the boundary ditch a number of further ditches, gullies, slots and pits were identified. These represent smaller enclosures and include possible structural evidence within this area of the site.

All of the Romano British period features were truncated by a later phase of activity represented by infilled plough furrows of medieval date. The furrows were on an approximate north west to south east alignment. A post medieval field boundary and a shallow scoop cut the furrows.

The area of excavation was dictated by the route of the pipeline and formed a narrow strip across a corner of the settlement. Because of the heavy truncation and limited area of excavation detailed phasing of the site was not possible. However, five broad phases of activity have been identified based on initial stratigraphic analysis of excavated features and assessment of datable finds, the allocation of which is tentative (Figure 11).

Artefactual evidence from the site mainly comprised Roman pottery, tile and animal bone, which became more concentrated within the area south of the main east to west boundary ditch (299). However, concentrations of archaeological features, pottery and animal bone were low in the very south west corner of the site suggesting that the main focus of settlement was to the south and east of the excavation adjacent to the trackway and where the ground continued to rise. The pottery broadly dates from the 3rd to 4th century AD with some possibly from the late 2nd century. A number of iron and lead fragments were discovered along with nails, a lead plum bob, part of a quern stone, a broken amber bead and a worn hollow ware fragment of fine whiteware, moulded into the form of a female face ('Venus figurine').

6.2.5 Phase I

The layout of the settlement was defined by an east to west boundary ditch (299) which adjoined a north to south aligned trackway at the eastern limit of the settlement. The trackway was defined by two parallel ditches (298 and 408) approximately 4.5m apart. Both ditches measured between 1m and 1.5m wide and were generally 0.3-0.5m deep. There were no settlement features to the east of the trackway indicating that the trackway would have formed an eastern boundary to the settlement. However, a large irregular feature (237) was recorded on the eastern side of the trackway. This feature is interpreted as a tree throw hole. A broad range of 2nd to 4th century pottery was recovered from within the fill of 237. This would suggest that the tree was upstanding throughout occupation of the Romano British settlement.

The major east to west boundary ditch 299 appears to have been cut during Phase I, and pottery evidence would suggest that it was re-cut and continued in use during

Phases II and III The boundary ditch was U shaped and generally measured 2.4m wide by 0.6m deep with a fill of mid brownish grey silty clay

To the south of this boundary ditch, in the south western area of the excavation, the remains of a ring gully were recorded which enclosed an area of approximately 11m in diameter. The ring gully (438) was the earliest feature within this area of excavation, it had been completely re-cut (443) on a slightly different alignment. Both cuts measured 0.35-0.4m deep by approximately 0.55-0.6m wide. The fill of the ring gully was generally mid greyish brown silty clay but was notably darker and browner in its north eastern section. A single sherd of undiagnostic Roman greyware was recovered from the re-cut of the ring gully.

Ditch 505 extended south from boundary ditch 299 and would appear to have been contemporaneous with the Phase I cut of the boundary ditch. However, ditch 505 would have cut the ring gully, therefore, although both features are associated with Phase I, they could not have co-existed and indicate slight changes to the settlement within this phase. Ditch 505 measured 2m wide by 0.6m deep.

6.2.6 *Phase II*

The layout of the settlement changed during Phase II. Although boundary 299 continued in use ditch 505 was now infilled. Two north to south boundary ditches (272 and 402) which adjoined ditch 299 were identified that were likely to have been contemporaneous with Phase II cut of ditch 299. On the north side of ditch 299 was a boundary ditch (272) which measured 1.4m deep by 0.7m wide. On the south side of ditch 299 was a boundary ditch (402) which measured 1.4m deep by 0.7m wide. These ditches may have defined areas of the settlement which were for different activities.

The area on the northern side of the main east to west enclosure ditch (299), and bounded by the trackway to the east and ditch 272 to the west, contained two graves (203 and 211) aligned roughly north to south (Figure 11). The graves were heavily truncated, only surviving to a depth of 0.15-0.2m and contained virtually complete, though badly preserved, skeletal remains. The graves have been assigned to this phase as they aligned in such a way as to respect both the trackway ditches and main enclosure ditch. Grave 203 measured 1.4m by 0.42m and contained no artefacts other than the human bone. Grave 211 measured 1.8m by 0.35m and a single sherd of Romano-British pottery was recovered from its fill.

One additional grave shaped feature (216), also aligned north to south, was identified within this area of the site. Feature 216 measured 1.9m by 0.5m and only survived to a depth of 0.5-1m. Although no human remains were encountered an amber bead and 18 sherds of a single pottery vessel were recovered which may have been grave goods thus supporting the suggestion that this feature is also a grave. Slag was also recovered from the fill of this feature. Also within this area of the site was an oval shaped pit (208), which measured 2.1m by 0.8m and 0.3m deep, that contained leg bones of a cow which may have been articulated at the time of deposition.

In the south west area of the site the Phase I ring gully (438/443) was superseded by a series of short ditches and slots. These features could relate to structures within the enclosed area but due to the severe truncation of the site any shallow structural remains such as beam slots or post holes could have been previously removed. All of the features in this area were intercutting and based on the stratigraphic relationships a sequence could be identified.

In chronological order the features comprised a shallow east to west aligned ditch (500) which measured 0.7m wide by 0.25m deep, an irregular north to south ditch (499) that measured 0.6m wide by 0.2m deep, an east to west linear (502) that measured 0.8m wide by 0.4m deep, and a north to south ditch (495) that measured 1.15m wide by 0.3m deep.

6.2.7 Phase III

The re-cut of the trackway ditches cut the last in-fill of boundary 299 indicating that the trackway (ditches 298 and 408) continued in use into Phase III whereas the main east-west boundary ditch had been infilled by this point. Pottery dated to the late 3rd and 4th centuries AD was recovered from the fill of the trackway ditches. The only other feature demonstrably Phase III in date was an east to west slot (503) which overlaid and cut the concentration of Phase II features within the south-west area of the site. It is likely that pits 429, 462 and 460 within this area also relate to Phase III activity. Slot 503 measured 0.5m wide by 0.36m deep and contained pottery dated to the 4th century. Pit 429 measured 1.6m by 1.1m and 0.24m deep. Pit 462 measured 1.9m by 1.2m and 0.45m deep and cut into its fill was pit 460 which measured 0.8m by 0.6m and 0.44m deep. Pit 460 was completely filled with large angular stones.

6.2.8 Unphased Romano British features

A number of discrete features could not be phased on the basis of either stratigraphic or ceramic evidence. Romano British pottery was recovered from the majority of these, and the nature of the remaining features would suggest they also belong to the Romano British phases of activity as opposed to being medieval or later in date.

Within the south-western limit of the excavation, adjacent to the main area of activity were three discrete ditches (504, 472 and 484) and a square posthole (218). Ditch 504 was orientated approximately north to south and perpendicular to the main east to west boundary ditch (299). Ditch 472 was traceable for a length of 4.5m and survived to a maximum dimension of 0.95m wide by 0.25m deep. Ditch 484 was traceable for a length of 3.7m and survived to a maximum width of 0.75m by 0.25m deep.

Within the northern enclosed area, within which the graves were recorded, were several short slots and gullies (223, 255, 260, 282 and 437), along with a number of discrete pits (206, 258, 292 and 294). Ditch 437 was orientated north-west to south-east and was cut at right angles by ditch 223. Ditch 437 measured 0.69m wide by 0.29m deep, ditch 223 measured up to 1.17m wide by 0.33m deep. Pottery dated broadly to the 3rd and 4th centuries was recovered from both these ditches. Ditch 255 was located at the northern limit of this area of the site and measured 1m wide by

0.4m deep. A single sherd of 3rd to 4th century pottery was recovered from its fill (271).

6.2.9 *Phase IV*

The penultimate phase of activity on the site relates to medieval or post medieval agricultural activity. It comprised of a series of plough furrows spaced approximately 5.7m apart running roughly north to south across the excavated area. The furrows were generally 0.8-1.2m wide and survived to a depth of 0.2-0.3m. Along with some residual sherds of Roman pottery a single sherd of 12th century medieval pottery was recovered from within one of the furrows.

6.2.10 *Phase V*

The latest feature to be excavated was a north to south aligned field boundary ditch (296) which measured 1.05m wide by 0.39m deep. The field boundary cut one of the plough furrows and contained post medieval pottery.

7.0 **ASSESSMENT OF SITE ARCHIVE**

7.1 Initial analysis

As part of the assessment of the site the following analysis has been undertaken:

1. A provisional matrix for the site was drawn up showing the stratigraphic relationships of all 290 contexts.
2. Plans and sections were checked against context record sheets to ensure cross referencing. Catalogues of context and finds records have been put onto a computerised database.
3. Catalogues of slide and print photographs, and illustrations have been input onto a computerised database.

The quantification of the site record is as follows:

Table 4 Primary archive inventory

Context descriptions	290
Plans	30
Sections	66
Colour slides (films)	8
Black and white photographs (films)	7
Colour photographs (films)	2

7 2 Recommendations for further analysis

Further work needs to be carried out on the site matrix, especially in consultation with the pottery specialist and small finds specialist, so that more reliably phased information on the site chronology can be attained. Once phased the context record can be listed and described by phase to produce a more detailed site narrative report. Detailed phase plans should also be drawn up which illustrate all structural features.

The results of the detailed analysis of the archive should be integrated with specialist analysis of the finds recovered and synthesised into an illustrated publication report.

7 3 Storage and curation

The written, drawn and photographic records and soil samples are currently held by NAA. A representative proportion of the soil samples was sent to Palaeoecology Research Services and has been processed for this assessment.

The retention and disposal policy for the assemblage from Wheldrake will be to retain the vast majority of artefacts. This is because a high proportion of the material is derived from secure contexts and the assemblage is important in both local and regional terms. The archive will be deposited in the Yorkshire Museum in York after completion of specialists' studies.

8 0 SPECIALIST FINDS ASSESSMENTS

8 1 Processing and quantification

Washing of the bulk finds, including animal bone, was completed and all finds recovered have been recorded, marked where appropriate, packed in labelled bags and placed in labelled museum storage boxes. A finds database was produced in order of context number. This database tabulates the artefact type, quantity and includes a brief description. The artefact assemblage from Wheldrake is summarised below. Once prepared the material was sent to the specialists for assessment.

Table 5 Finds assemblage

Pottery sherds	1034
Ceramic building materials	19
Unidentified ceramic	10
Fired clay	36
Daub	8
Quern	2
Lead/lead alloy	6
Copper alloy	1
Iron	70
Slag material	10
Amber	2

Animal bone fragments	714
Human skeletons	2
Wood	1
Shell	2

8 2 Pottery

Peter Didsbury (Appendix B)

Summary

An total of 1044 sherds of ceramic material weighing 15711g was recovered from the excavations at Millfield Farm, which included unidentified ceramic material as well as pottery. The pottery assemblage is overwhelmingly of later 3rd and 4th century date, the major supplier to the site appearing to be the Holme upon Spalding Moor greyware industries. Dalesware and Dales type jars, also present in some numbers, are broadly contemporary. Close dating for individual features within this period is difficult, but Crambeck greyware, which is generally taken to post date c AD 270, provides a useful *terminus post quem* for several features. Earlier activity appears to be hinted at by a small amount of samian, none of which, however, would appear to pre date the mid 2nd century. Earlier material, perhaps of the 2nd and earlier 3rd century, may also be present as greyware in parts of the site, including the main enclosure ditch (499). The latest material from the site is the Huntcliff jar which was recovered from the main enclosure ditch (499), ditch 425 and ditch 503 and suggests that these features were still open in the 2nd half of the 4th century.

The ceramic evidence as a whole suggests that, despite its proximity to York, the site was an unpretentious rural settlement. There are few finewares, such as colour coated vessels, and a dearth of mortaria. A worn hollow ware fragment of fine whiteware, moulded into the form of a female face was recovered from the fill (407) of the main east to west enclosure ditch 299.

Recommendations

There is little need for further work on the ceramics, though any publication report should include a summary of the pottery, with selected illustrations, as indicative of the types in use on such sites in York's hinterland in the later Roman period. The face-necked fragment should be researched, and published in a regional journal. All material should be retained in the interests of future ceramic research in the region.

8 3 Ceramic building materials

John Tibbles (Appendix C)

Summary

A total of 19 fragments of ceramic building material were recovered from the excavations. Three types of building material were identified, these comprised

tegulae, *imbrices* and box flue tile (*tubulus*) Due to the relatively small size, the potential of the assemblage alone is limited Its presence among the finds assemblage reflects the possibility of a high status building withm, or close to, the site Due to the dearth of the presence of specific ceramic building materials such as *bessalis* or *pedalis* it is likely that the assemblage represents residual elements of Romano British activity and suggests casual deposition Nevertheless, this information is significant as it can add to the corpus of evidence of activity during this period

Recommendations

It is recommended that after a fabric sample has been taken, the Romano British fragments should be retained as part of the finds assemblage as a whole when deposition in the appropriate museum is undertaken

8 4 Quern

Elizabeth Wright (Appendix D)

Summary

A single fragment of worked stone was recovered during excavation It comprised a radial fragment from a rotary quern of fine to medium grained well sorted micaceous sandstone with fine specks of iron minerals (either goethite or limonite) The original colour is difficult to distinguish as the fragment has suffered heating during some secondary use, which has reddened the fabric Probably a coal measures sandstone from Yorkshire From the size, manufacture and signs of secondary use, this quern is almost certainly of Roman date, and probably a 3rd to 4th century date The small size suggests a hand quern rather than a millstone

Recommendations

No further work is required, although the quern fragment should be retained for future research purposes

8 5 Slag material

Jane Cowgill (Appendix E)

Summary

Two pieces of slag were recovered from the enclosure ditch at Site 3 Both are iron smelting slags but are not standard Romano British tap slags

The small assemblage from the settlement site at Millfield Farm, Wheldrake is more diverse in character, and includes evidence for both iron smelting and smithing The slag is not concentrated in any particular area and may therefore be the by products of several different episodes of iron production and smithing at the site The most interesting piece from this site is the smelting slag from the fill of grave 216 (context

217), which has been phased to Phase 11. The slag is neither typical of tap slags or block slags and forms part of an intermediary group that has so far only been identified at West Moor Park, Armthorpe, near Doncaster (Cowgill 2001), a site only 40km to the south of Wheldrake. This is an important piece and, when considered alongside the assemblage from West Moor Park, may hint at a regional form of iron smelting.

Recommendations

No further work is required for these remains at present. However, the slag assemblage should be retained for future research purposes.

8.8 Small finds

Conservation: Leesa Vere Stevens (Appendix F)
Assessment: Jon Watt (Appendix G)

Conservation

A total of 59 finds were submitted for assessment and 6 X-ray plates produced. The number of objects in each material category is listed below:

Copper alloy	1	
Lead alloy	6	
Iron	47	(3 finds identified as slag after assessment)
Slag	3	
Amber	1	
Leather	1	

The metals were in poor condition; there was also active metallic corrosion, suggesting that the areas excavated provided an aggressive environment for metals. The corrosion products did not reflect waterlogged anoxic environments which would favour organic preservation; however, the presence of one leather (context 123) and one amber find (127AA) shows that these conditions were present in some areas of the site.

Assessment

An initial assessment of the small finds assemblage has identified the following artefacts: an amber bead, a spindle whorl, a snaffle bit link, awl, a scale tanged knife, a Dutch hoe blade, two spikes corroded together, 33 nail fragments, five other iron fittings and/or fastenings, three pieces of slag, three pieces of lead and 16 other metal objects (strips, plates, wire etc.).

Recommendations

Further research should be undertaken on the bulk of the recorded finds leading to full publication of the assemblage. Prior to this, investigative conservation should be

undertaken on two of the metal artefacts. The broad terminal of iron fitting or snaffle bit link 269AA should be cleaned (poodled) to reveal more detail of its form as should a small section of the loop, it should be subject to XRF analysis in order to determine the nature of any plating. Partial cleaning (poodling) of the top end of 119AB and across the shank of the possible awl within 121AA may be necessary to confirm identification. Prior to the repair of the amber bead, for illustration, it should be referred to a specialist in order to determine the origin of the material. It is recommended that three objects be illustrated for publication, the amber bead, the spindle whorl and the snaffle bit link.

In order to undertake further conservation of the archive in preparation for long term storage the following work is recommended. Further treatment for the copper alloy find (122AA), the amber find (217AA) and six iron finds (119AB, 121AA, 134AA, 201AD, 269AA, 469AB). Any analysis of the amber find should be completed before the conservation treatment. The slag material and a selection of the lead finds should be referred to an archaeometallurgist. XRF may be required following investigative conservation for any non ferrous metal revealed on the iron finds.

8 12 Skeletal remains

Joanna Higgins (Appendix H)

Summary

The human skeletal remains of two individuals were recovered. The inhumations were interred separately, orientated roughly north to south and were not in close proximity. A possible third grave was excavated and was found to contain grave goods but no human remains. The two burials which contained human remains comprised the fragmentary and incomplete remains of one young adult and one middle aged adult, both of indeterminate sex.

Recommendations

The fragmentary and incomplete condition of the skeletal remains has limited the level of information each can provide about these individuals. No further work is required for these remains at present. However, the skeletal material should be retained for future research purposes.

8 13 Biological remains

Allan Hall, Deborah Jaques and John Carrott (Appendix J)

Summary

Fourteen of the samples were processed for the recovery of plant and invertebrate macrofossils. All of the resulting washovers consisted of (at most) a few cm³ of material, much of it small clasts of concreted sediment (perhaps pan). With this were small amounts of charcoal, coal, and sometimes traces of cinder like material and a

very few charred plant remains, thought mostly to be ancient. The uncharred seeds and roots present in most samples were clearly modern. No invertebrate remains were recovered from the samples. The residues were all mostly of stones and sand and, with the exception of occasional fragments of unidentified bone, were barren of biological remains.

One box of hand collected bone was recovered from excavations, the bulk of which was recovered from Phase II deposits. All of the major domesticates, i.e. cattle, caprovid, and pig were identified, whilst additionally dog and horse bones were present. Preservation was rather variable and very few fragments were recovered that could provide biometrical and age at death data. Fifty one fragments of bone were recovered from a truncated feature which was initially interpreted as a grave (208). These remains were identified as one left front leg from a cow. Despite the fragmentation (much of which was recent), it is likely that the bones were originally deposited in articulation. A common feature of many Iron Age and Romano British sites is the occurrence of articulated limbs which appear to have been deliberately placed within pits or ditches. Their location and association with other artefacts has often resulted in their interpretation as ritual or special deposits. The remains recovered here may represent just such a deposit, but, bearing in mind the condition of the fragments and the evidence of past disturbance which may have resulted in the destruction of other bones, this interpretation can only be tentative.

Recommendations

No further work on the current material is recommended. In view of the fact that this evaluation has most probably encountered only the periphery of the main settlement area, any future excavation at the site should allow for the recovery of additional handcollected material, and the collection and assessment of further samples of well stratified archaeological deposits for biological remains.

9.0 DISCUSSION OF RESULTS (Millfield Farm)

The excavation at Millfield Farm has recorded the remains of part of a Romano British settlement and adjoining areas of agricultural and funerary activity. The settlement was located adjacent to a north to south orientated trackway, which appears to be aligned towards York. Three broad phases of activity were identified within the settlement with some evidence for occupation during the late 2nd century, and the majority of activity dated to the mid 3rd to early 4th century.

The area of archaeological remains was divided by a main east to west boundary ditch. All settlement type features, and the majority of finds, were recorded to the south of this boundary ditch. On the basis of finds distribution and feature types it is considered that the main focus of the settlement was located to the south of the excavated area, adjacent to the trackway, where the ground continued to rise. Finds of Roman building material suggest that there may have been a high status structure within the wider settlement.

The remains of two human skeletons were recovered from within graves which were located to the north of the boundary ditch, and a third possible grave was identified, though no human bone was recovered from its fill. The presence of a cemetery outwith the area of settlement, adjacent to a road, conforms to the usual pattern of Romano British sites, although the low number and dispersed nature of the burials is of note.

Within the range of pottery were very few finewares suggesting that site was an unpretentious rural settlement. Evidence of metal working and agricultural processing was recovered, though no specific features were identified as being associated with these activities. Preservation of biological remains was poor, and although evidence for cultivation of cereals and animal husbandry was recovered the results were very limited due to the small size of the assemblages.

10.0 STATEMENT OF POTENTIAL

10.1 Site potential

Within the York Hinterland previous archaeological excavations of Romano British period sites are very limited. Research objectives for the region are addressing this apparent vacuum of archaeological knowledge around the extensively excavated Roman settlement of York. English Heritage and York City Council outlined a project design for a York Hinterland Survey (Ove Arup and Partners 1991). One of the main two objectives of the paper is focused on the relationship between York and its hinterland through the Roman, Anglian, Anglo Scandinavian and Medieval periods focusing on four principal themes: demography, trade, the agricultural economy and the study of political and administrative boundaries' (*ibid*, 3). The relationship of rural settlements to their landscape and urban centres is an archaeological agenda identified by James and Millet (2001, 53), who have recognised that 'all too often we have satisfied ourselves by noting the presence of settlements without addressing that 'agricultural communities were clearly concerned with access to, and the arrangement of, the wider world around them, both for agricultural production and in mediating their relationships with others. English Heritage's research priorities for the period c AD 200 - AD 700 focus on the nature of the change in Romano British society in the 3rd and 4th centuries (English Heritage 1997, 44).

The results of the excavation at Millfield Farm have the potential to address these agendas, in looking at the relationship of the settlement to the wider landscape, and in comparisons with other excavated sites within the hinterland of York and their relationship with the Roman colony of *Eboracum*. Through examination of cropmark evidence there is also the potential to place the site within a contemporaneous settlement pattern in the landscape. In particular it may be possible to identify a continuation of the trackway from the excavation leading towards York.

There are two other recent excavations of Romano British settlements within the hinterland of York. These sites are part of a Romano British settlement at Stockton Moor West (SE 648 545) encountered during monitoring of the Moor Monkton to

Elvington Yorkshire Water pipeline (Pearson 1996, Hall and Stockdale 1997), and part of an Iron Age and Romano British settlement at Mill House Farm on the west side of Kexby (SE 6930 5135) encountered during monitoring of the Elvington to Harton Yorkshire Water pipeline (Pearson 1997) The site at Stockton Moor West comprised a large rectangular ditched enclosure, a number of other boundary ditches, a circular structure and a single sill beam rectangular structure A quantity of building material including fired clay tile and limestone tile fragments indicate the presence of well constructed building in the vicinity The site west of Mill House Farm comprised a number of probable boundary or enclosure ditches associated with two ring gullies, which may represent structures, and a number of pits and postholes Along with the results of the excavation at Millfield Farm, Wheldrake, the sites at Stockton Moor West and Mill House Farm constitute almost the entire excavated evidence for the Romano British landscape in the hinterland of York

10.2 Site archive potential

The excavations at Millfield Farm were an unexpected opportunity to further our understanding of the Romano British hinterland around York Of particular interest within the stratigraphic record is the re organisation of the settlement during the 3rd century, after which the main phase of activity took place This may parallel the point when York was gained promotion to colonial status and underwent extensive replanning during the early 3rd century (Wacher 1974, 156) These changes to the settlement at York may well have extended to a reorganisation of the hinterland around York, and a greater formalisation of the agrarian settlements which were presumably supplying agricultural produce to the city The majority of archaeological attention of this area has been theoretical, predicting models for how the hinterland interacted with the Roman settlement of York Thus any archaeological evidence which can shed light and help test theories and models for the relationship of York with the surrounding settlements during the Roman period is of regional significance

The pottery assemblage is twice that recovered from Stockton Moor West and several times greater than that from Mill House Farm, the only other excavated Romano British sites within the area As such it represents a key assemblage for future work and comparative analysis within the region The main assemblage of pottery requires reinterpretation, publication and illustration, and the face necked fragment should be further researched The small finds are of significance with respect to the broad range of artefacts recovered and the light they can shed on the activities and status of the settlement The assemblage warrants further study to aid placing the settlement within its regional setting

The poor preservation and small size of the animal bone assemblage limits its potential Although the possible burial of an articulated cattle limb is worthy of note as part of a practice identified within other Iron Age and Romano British sites in the region, the overall assemblage does not justify any further detailed study The worked slag and stone artefacts are of limited potential but may reveal insights into the technology, activities and subsistence nature of the site Due to poor conditions for preservation of biological remains the results of the environmental analysis were very limited and do not justify any further detailed study

Due to the dearth of excavated sites of this period within the hinterland of York the combined results, stratigraphic, artefactual and environmental, of the archaeological excavation of the Romano British settlement site at Millfield Farm, Wheldrake are of regional significance. Although neither the stratigraphic record nor the artefactual and environmental assemblages are of regional significance on an individual basis (and only limited further work has been recommended on any of the assemblages submitted to specialists for assessment), when assessed in respect of the stratigraphic record within the context of the hinterland of York the assemblages are considered of regional significance. The artefactual assemblages and environmental record recovered from Millfield Farm, have the potential to add to our understanding of the function of a rural Romano British settlement within the hinterland of York.

11 0 PROPOSED POST EXCAVATION PROGRAMME

11 1 Summary

The aim of the post excavation programme will be to produce a final report for publication and a well ordered, clearly indexed archive for deposition in the Yorkshire Museum in York.

In accordance with English Heritage guidelines (1991, 21) this work will be approached in two stages.

- 1 Compilation of a research archive involving work on the stratigraphy, artefacts and environmental data and the production of catalogues, illustrative material and both narrative and artefact reports
- 2 Selection of data from the research archive to produce an integrated report text for publication

The overall sequence of the programme would be as follows:

Stage 1 stratigraphic analysis

Stage 2 site narrative and archive illustrations

Stage 3 preparation of specialist reports and radiocarbon dates

Stage 4 integration and synthesis of stratigraphic and artefactual records

Stage 5 preparation of publication report text and illustrations

Stage 6 archive deposition

11.2 Stratigraphic record

- Stage 1** The need to finalise a secure understanding for the sequence of events is of primary importance. In particular attention should be paid to changes from Phase I to Phase II, both when the changes occurred and what implications they have on the organisation and function of the settlement. One possible circular structure was identified and enclosure ditches delineated two main areas of features. It is important that the stratigraphic matrix represents an accurate chronology of the excavated evidence, as this will form the basis of all further research and analysis.
- Stage 2** Once the stratigraphic sequence has been established a detailed site narrative report, based upon each phase of the site development, will be prepared. Archive illustration phase plans will also be drawn up.
- Stage 3** Further literary research of other excavated sites would be undertaken to assist with the interpretation of the excavated evidence, and to place Millfield within its local, regional and national contexts. Parallels with other Romano-British sites need to be examined, particularly the pottery assemblages and types of structures represented. A wider search of aerial photographs should be undertaken to look for evidence as to whether the trackway identified within the excavation continued to the Roman settlement at York.
- Stage 4** The stratigraphic and structural evidence will be integrated with the artefactual and environmental reports. The chronology and distribution of artefacts will be analysed to establish the use of structures and function of different site areas within each phase.
- Stage 5** Upon receipt of the relevant specialist material a synthesised summary text will be prepared for publication. The features differed greatly in character between the two main areas of the site. Artefactual and environmental analysis may enable the nature and function of the circular structure and the areas within the site to be understood, whether domestic, industrial, funerary or agricultural.
- Stage 6** Upon completion of the publication report and associated specialist assessments the indexed site archive (paper and artefactual records) will be deposited at the Yorkshire Museum in York.

11.3 Artefactual record

The pottery is a significant assemblage with respect to the dearth of material from similar Romano-British sites within the hinterland of York in the Roman period. The main assemblage of pottery requires reinterpretation, publication and illustration, and the face-necked fragment should be further researched.

The small finds are of significance with respect to the broad range of artefacts recovered and the light they can shed on the activities and status of the settlement. The assemblage warrants further study to aid placing the settlement within its regional setting. No further work is required on the other artefactual or environmental assemblages.

12.0 CONCLUSION

During the archaeological monitoring of topsoil stripping for the construction corridor of the Yorkshire Derwent Aqueduct water pipeline between Elvington and Riccall within North Yorkshire, previously known and unknown concentrations of archaeological remains were recorded at two different locations along the pipeline route. These are referred to as Site 3 and Millfield Farm.

Site 3 was located to the south east of Escrick just east of Mount Pleasant Farm within North Yorkshire. The site consisted of a subrectangular enclosure adjoining a ditched field boundary that had previously been identified from aerial photographs. Pottery recovered during excavation dated the enclosure to the Romano British period. There were no internal features recorded.

Millfield Farm was located to the south west of Wheldrake within the City of York. The site comprised a concentration of settlement related features which extended for a length of 100m along the pipeline corridor. The complex of features near Millfield Farm consisted of a trackway, associated enclosures, possible cemetery and an area of a settlement, all of Romano British date. Three phases of activity were identified within the settlement. These were truncated by medieval plough furrows.

In addition to these two sites, several isolated features, former field boundaries and traces of ridge and furrow cultivation were recorded at different locations along the pipeline route.

No further work is recommended in reference to the archive for Site 3 or the isolated features during the watching brief. However, the site at Millfield Farm is considered to be of regional significance and therefore warrants further analysis of the site archive. This would comprise full analysis of the small finds assemblage and some further research of part of the pottery assemblage, the results of which should then be integrated into a re-assessment of the stratigraphic record. A final publication report should be produced on the results of the excavation for inclusion in an appropriate regional journal.

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Project No	422
Text	Philip Neal and Gavin Robinson
Edited by	Peter Cardwell
Illustrations	Damien Ronan and Richard Hewitt

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Appendix A

CONTEXT AND FINDS CATALOGUE MILLFIELD FARM

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
1		layer (topsoil)									
2	15	fill of ditch 3	1							2	
3	15	ditch cut									
4	15	fill of ditch 5								2	
5	15	ditch cut									
6		fill of natural feature								2	
7		natural feature									
8	41	fill of ditch 9	1							2	
9	41	ditch cut									
10		natural deposit									
11	15	primary fill of ditch 3									
12		fill of ditch 13									
13		ditch cut									
14		natural deposit									
15		Romano British enclosure									
16	15	ditch cut									
17	15	fill of ditch 42	6			1					
18	15	ditch cut									
19	15	secondary fill of ditch 18									
20	15	secondary fill of ditch 22	1								
21	15	primary fill of ditch 22									
22	15	ditch cut									
23	15	primary fill of ditch 16									
24	15	primary fill of ditch 18	7			1					
25	15	fill of 40									
26	15	primary fill of 27									
27	15	ditch cut									
28	15	secondary fill of 30									
29	15	primary fill of 31									
30	15	ditch cut									
31	15	ditch cut									
32	15	secondary fill of ditch 16									
33	41	ditch cut									
34	41	fill of ditch 33									
35	15	tertiary fill of ditch 16									
36	15	secondary fill of ditch 31									
37	15	primary fill of ditch 30									
38	15	ditch cut									
39	15	fill of ditch 38									
40	15	ditch cut									
41		group number of ditch									
42	15	ditch cut									
110		fill of plough furrow 111									
111		plough furrow									
112		fill of burnt feature 113									

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
113		burnt feature									
114		plough furrow									
115		fill of boundary ditch 116									
116		boundary ditch									
117		fill of boundary ditch 118									
118		boundary ditch									
119		tertiary fill of ditch 120	17			2			4		
120		ditch cut									
121		secondary fill of ditch 120	7	1		5			3		1
122		primary fill of ditch 120	126	3		4			31		2
123		tertiary fill of ditch 124	19						3		1
124		ditch cut									
125		secondary fill of ditch 124									
126		primary fill of ditch 124									
130		secondary fill of ditch 131									
131		ditch cut									
132		primary fill of ditch 131									
134		ditch fill	34			1			34		
135		ditch cut									
136		layer (topsoil)	6	1							
137		layer (topsoil)									
138		fill of 139	8								
139		cut of linear									
200		layer (topsoil)	53			1			9		2
201		layer (machining)	7	1		4					
202		layer (glacial deposit)									
203	222	grave cut									
204		skeleton in 203						1			
205		fill of grave 203									
206		pit cut									
207		fill of pit 206									
208	222	grave cut									
209		skeleton in 208						1			
210		fill of grave 208	16			1				1	2
211	222	grave cut									
212		skeleton in 211						1			
213		fill of grave 211	3	1						2	2
214	299	ditch cut									
215		fill of ditch 214	26	1		1			88		
216	222	grave cut									
217		upper fill of grave 216	18				2		17	1	1
218		posthole cut									
219		fill of posthole 218									
220		cut of shallow scoop									
221		fill of scoop 220	1	1			1				9
222		group number									
223		group number									
224	437	ditch terminus cut									
225		fill of ditch terminus 224	66	2		1			2		2

Yorkshire Derwent Aqueduct Duplication Main Elvington to Riccall near York

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
226	298	ditch cut									
227		fill of ditch 226	9			1			2		
228		upper fill of ditch 229	1			1				2	
229	502	ditch cut	3			3			3		
230		lower fill of grave 216									
231	504	ditch cut									
232		fill of ditch 231	4			2			9		
233	504	ditch cut									
234		fill of ditch 233	2			1					
235	407	ditch cut									
236		fill of ditch 235									
237		cut of tree bowl									
238	252	cut of stakehole									
239	252	fill of stakehole 238									
240	252	cut of stakehole									
241	252	fill of stakehole 240									
242	252	cut of stakehole									
243	252	fill of stakehole 242									
244	252	cut of stakehole									
245	252	fill of stakehole 244									
246	252	cut of stakehole									
247	252	fill of stakehole 246									
248	252	cut of stakehole									
249	252	fill of stakehole 248									
250	252	cut of stakehole									
251	252	fill of stakehole 250									
252		group number									
253		upper fill of ditch 255	20		6	1			10	2	
254		fill of ditch 255	58		7	3			20		4
255		ditch cut									
256		natural gully cut									
257		fill of gully 256	3								
258		pit cut									
259		fill of pit 258	5		2	1					
260		group number									
261	437	ditch cut									
262		fill of ditch 261	4						37	2	
263	299	ditch cut									
264		fill of ditch 263	14		3	3	1		23	2	3
265	223	ditch cut									
266		fill of ditch 265	4						66	2	
267	494	plough furrow cut									
268		fill of plough furrow 267				1					
269		fill of tree bowl 237	155			2			2		
270		fill of ditch 255									
271		primary fill of ditch 255									
272		ditch cut									
273		fill of ditch 272	22				1		43	2	1
274	223	ditch cut									

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
275		fill of ditch 274							10		
276	437	ditch cut									
277		fill of ditch 276	6								
278	260	cut of ditch									3
279		fill of ditch 278	17			6			1	3	
280		fill of ditch 281	12		1	1				2	
281	503	ditch cut	4	1					3		2
282		ditch cut									
283		primary fill of 282									
284		upper fill of 282	15		2				2	1	
285		primary fill of ditch 229									
286		primary fill of ditch 281									
287		fill of ditch 281									
288	260	ditch terminus cut									
289		fill of terminus 288	6			2					
290	223	ditch cut									
291		fill of ditch 290									
292		truncated pit cut									
293		fill of pit 292	17			1			1		
294		pit cut									
295		fill of pit 294									
296		ditch cut									
297		fill of ditch 296	1			2					9
298		group number									
299		group number									
400	299	ditch cut									
401		fill of ditch 400	17	1					19	2	1
402		ditch cut									
403	299	fill of ditch 402									
404		ditch cut									
405	505	fill of ditch 404	4		1						
406	299	ditch cut									
407	299	fill of 406	31		4				43	2	
408		group number	55		2	2	1		12	1	2
409		fill of ditch 408									
410	501	ditch cut									
411		fill of ditch 410									
412		ditch cut									
413		fill of ditch 412									
414	495	ditch cut	7			2			8		
415		fill of ditch 414	1	1					8		
416	500	ditch cut									
417		fill of ditch 416				1					
418		fill of plough furrow 498		2		3					
419	438	ditch cut									
420		fill of ditch 419									
421	443	ditch cut									
422		fill of ditch 421									
423	500	ditch cut									

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
424		fill of ditch 423									
425		ditch cut									
426		fill of ditch 425	8			1			25		1
427	501	ditch cut									
428		fill of ditch 427	2						1		
429		ditch cut	2	2							
430		fill of ditch 429	5							2	
431	505	ditch cut									
432		fill of ditch 431	14	1		2			26	2	
433	495	ditch cut									
434		fill of ditch 433									
435	438	ditch cut									
436		fill of ditch 435									
437		group number	4						12		
438		group number									
439	494	plough furrow cut									
440		fill of furrow 439	2								
441	502	ditch cut									
442		fill of ditch 441	1								
443		group number									
444	407	ditch cut (re cut of 488)									
445	503	ditch cut									
446		fill of ditch 445									
447	499	ditch cut									
448		fill of ditch 447				4					
449	499	ditch cut	4						3		
450		fill of ditch 449									
451	499	ditch cut									
452		fill of ditch 451									
453	499	ditch cut									
454		fill of ditch 454								2	
455	407	cut of ditch (re cut of 486)									
456	443	cut of ditch									
457		fill of ditch 456									
458	443	ditch cut									
459		fill of ditch 458									
460		large possible posthole cut									
461		fill of posthole 460	2						9		
462		pit cut									
463		fill of pit 462	1							1	
464	495	ditch cut									
465		fill of ditch 464	5						47	2	
466	495	ditch cut									
467		fill of ditch 466									
468	298	trackway ditch cut									
469		fill of ditch 468	10			4			13	2	
470	299	ditch cut									
471		fill of ditch 470	6			1			36		
472		ditch cut									

Context	Group	Description	pottery	CBM	burnt clay	metal	slag	human bone	animal bone	sample	other
473		fill of ditch 472	1		5					3	2
474		posthole cut									
475		fill of posthole 474									
476	494	plough furrow cut									
477		fill of furrow 476	3								
478	443	ditch cut									
479		fill of ditch 478								2	
480	438	ditch cut									
481		fill of ditch 480	1							2	
482		plough furrow cut									
483		fill of plough furrow 482	8			2	4				1
484		ditch cut									
485		fill of ditch 484	2								
486	408	ditch cut									
487		fill of ditch 486									
488	408	ditch cut									
489		fill of ditch 444	9							5	
490		fill of ditch 488	4		3				27		
491		fill of ditch 455	4								
492	298	trackway ditch cut									
493		fill of ditch 492	11						2		
494		group number (furrows)									
495		group number									
496	494	cut of plough furrow									
497		fill of furrow 496	5			2					
498	494	cut of plough furrow									
499		group number									
500		group number									
501		group number									
502		group number									
503		group number									
504		group number									
505		group number									
		Total	1034	19	36	77	10	2	714	58	51

Appendix B

POTTERY

Peter Didsbury M Phil

1 0 INTRODUCTION AND METHODOLOGY

A total of 1044 sherds of ceramic weighing 15711g was recovered from the excavations. With the exception of a single sherd of possible ceramic building material weighing 26g, this consisted of pottery. The overwhelming majority of the pottery viz 96.4% according to number of sherds is of Romano-British date, the remainder being medieval, post-medieval or of uncertain chronological attribution.

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 submitted as an integral part of this assessment and should be consulted where appropriate.

Fabric codes employed in the database are listed in an appendix below.

2 0 DISCUSSION

2 1 Phase I

A number of features are allocated to this phase based on stratigraphic relationships identified during excavation as follows:

Curvilinear feature in the south west corner of the site

This feature comprised a ring ditch (438) which had been re-cut (443) of which six segments were excavated. The only pottery recovered was a single small body sherd of greyware from fill 481 of segment 480. The sherd is not chronologically diagnostic but is not within the typical fabric range of the Holme upon Spalding Moor greyware industry (hereafter HOSM) which appears to be the major provider to the site from about the mid 3rd century onwards.

Ditch 505 (fills 138, 404 and 432) contained late 3rd or 4th century HOSM greywares including the base of a pedestal bowl in the B3-B5 range and a wide-mouthed bowl of form B2a. A large rim sherd from a Crambeck greyware wide-mouthed bowl (Corder 1937 Type 4) and a Type 1 straight-sided flanged bowl in the same fabric show that the ditch was open after c AD 270. There were also scraps of calcareously tempered ware, a sherd of possible Roman greyware and a samian rim. In advance of specialist opinion this is identified as a form 31 with a mid 2nd to mid 3rd century date range.

It will be noted that where diagnostic material is present, the ceramic evidence suggests the 2nd half of the 3rd century and the first half of the 4th as the optimum date for the filling of Phase 1 features. Ditch 255 was clearly receiving pottery until post c AD 270.

2.2 Phase II

Trackway ditches

The only pottery recovered from the eastern trackway ditches of Group 408 came from fill (490) of ditch 488. The feature yielded two body sherds from a vessel with girth grooves probably in HOSM fabric, an unattributed piece of ceramic and a neck sherd from a wide mouthed bowl in Crambeck greyware (Corder 1937 Type 4). The latter shows the feature was receiving pottery after c AD 270. The form continued to be made for most of the 4th century.

The eastern trackway ditch had recuts and small assemblages were recovered from two of these viz Ditches 455 and 444. None of the combined assemblage of 13 sherds from these ditches was chronologically diagnostic being composed of small and generally worn body sherds of greyware and leached calcareously tempered wares. Material found in watching brief contexts equivalent to 444 (i.e. the fills of ditch 120) however contains a distinctively late assemblage comprising HOSM greyware (including a B5a bowl), a Dalesware jar, Crambeck greyware dish and bowl fragments and sherds from several proto Huntcliff jars. Taken together these suggest an early 4th century assemblage.

On the west of the trackway Group 298 pottery was retrieved from the fills of ditches 226, 468 and 492. Ditch 226 had a small assemblage consisting of seven sherds of chronologically undiagnostic greyware, a possible sherd in an unidentified amphora fabric and a rim sherd from a c 12th century cooking pot in a white firing North Yorkshire gritty fabric in the Pimply Ware tradition (compare ditch 272). Ditch 468 contained nine quite large sherds of greyware and a single sherd of calcareously tempered ware. The greywares are mostly of later 3rd to 4th century appearance and include HOSM forms in the B3.4 and B8.11 range. Ditch 492 yielded a small assemblage of eleven sherds comprising greyware and calcareously tempered scrap, a possible amphora sherd in a red fabric with five rim and body sherds from a Crambeck greyware straight sided flanged bowl (Corder 1937 Type 1).

It will be noted that three of the four pottery assemblages from the trackway ditches can be shown by the presence of Crambeck greyware to have been open after AD 270 and one of them probably into the first half of the 4th century. The Roman component of the assemblage from the remaining ditch is impossible to date at the present stage though the latest material in it is medieval.

The main enclosure ditch

Pottery was recovered from the fills of the following ditch segments within enclosure 299: 214, 263, 400, 406 and 470.

Segment 214 produced an assemblage of 26 sherds consisting of greywares with small amounts of calcareously tempered ware and an oxidised sherd possibly from an amphora. One of the greywares is a possible small flagon rim in a light firing greyware though not Crambeck. The greywares also include a later 3rd or 4th century HOSM B1e bowl and a Crambeck greyware straight sided flanged bowl (Corder 1937 Type 1) while the calcareously tempered body sherds have girth grooves which strongly suggest that they come from a Huntcliff jar. The ditch was therefore certainly open after c AD 270 and if the above mentioned sherds are indeed from a Huntcliff jar possibly after c AD 355.

Segment 263 contained 14 sherds mainly greywares in fabrics of later 3rd to 4th century appearance. These probably constitute the latest material in the group. There were also a fragment of burned ceramic possibly building material shell tempered fragments possibly from Dales type vessels and two fragments of heavily worn and no doubt residual samian. In advance of specialist opinion it is suggested that one of these sherds comes from a vessel with cut glass decoration possibly a form 72. The latter would date between the mid 2nd and mid 3rd centuries.

Segment 400 contained twelve greyware sherds and four large sherds from an externally sooted Dalesware or Dales type jar. These forms are held to be almost entirely of 3rd century date in York itself (Monaghan 1997) but this does not appear to be the case in the East Riding as a whole and it is safer in this case to see these as dating to the 3rd century or the first half of the 4th. The assemblage also contained a fragment of sandy oxidised ware which could be either Roman or medieval.

Segment 470 contained calcareously tempered body sherds and five greywares including a large rim sherd from a wide mouthed bowl. Typologically this vessel is perhaps more likely to belong to the late 2nd or earlier 3rd century than later cf a vessel from Dragonby (May 1996 no 1067). One of the other sherds is from a jar in a light firing greyware of similar appearance to Crambeck greyware though its decoration of grouped oblique lines is not known on Crambeck jars and suggests that it may be contemporary with the bowl already discussed.

Segment 406 contained two rim sherds of different forms of mortaria which are dated to the late 2nd to early 3rd century and a number of sherds of Roman greyware and shell tempered ware. Of particular interest from this context was smallfind 407AA see below.

Smallfind 407 AA

This is a worn hollow ware fragment of fine whiteware moulded into the form of a female face. Various considerations including the small size the high and elaborate coiffure and the fact that the vessel wall appears to rise for some distance behind the head suggest that the sherd comes from a pottery vessel rather than from a figurine of the Venus type. Many of the characteristics of this sherd are shared by later 3rd and 4th century face flagons which were made at a number of centres including Oxford. These are however usually considerably larger. Form Type YH5 in the York series (face necked vessels Monaghan 1997) includes examples in white fabrics. The distribution would appear to be mainly 4th century at York. Further research is required into this vessel.

Ditch 272 which adjoined at right angles to the main enclosure ditch (299) contained 21 small worn sherds of Roman pottery comprising greywares and shell tempered scrap. The latest material was the rim of a c 12th century jar in a white firing North Yorkshire fabric in the Pimply ware tradition (compare ditch 226).

Graves

No pottery was found in Grave 203. Grave 211 contained two tiny sherds of slightly coarse Roman greyware of uncertain date.

Grave 216 contained eighteen sherds of greyware consisting of base and body sherds and two joining rim sherds of a necked jar. The form is not closely datable but the gritty fabric is

distinctive and very similar to the kinds of fabrics used for some Dales type jars produced in East Yorkshire in the 3rd and possibly earlier 4th century

Intersecting ditches cutting the Phase 1 curvilinear features

These are ditch cuts in the following groups 495 499 500 501 502 503 and ditch cut 412 (no group number) No pottery was recovered from ditch 412 or from the ditches in Group 500 Evidence from the remaining groups is summarised below

In Group 495 ditches 464 and 414 produced small assemblages of greyware calcareously tempered ware whiteware and colour coated ware Little can be said of ditch 464 except that its greywares include possible HOSM and Crambeck products suggesting a later third or fourth century date The latest material in ditch 414 may be considerably earlier since this consists of a necked bowl in a fine white fabric No parallel has been found for this in the York form series and further literature search is required at this stage However the form is essentially Belgic in origin and it is possible that it is to be ascribed to the second or earlier third century rather than later

In Group 499 the only pottery came from ditch 449 comprising four sherds of chronologically undiagnostic greyware

In Group 501 pottery was recovered from ditch 427 This consisted of two sherds of greyware one of them in a gritty fabric which suggests a *possible* derivation from a third or earlier fourth century Dales type jar

In Group 502 pottery came from Ditch 441 and from upper fill (228) of ditch 229 The only material in 442 was an amphora sherd probably from a Dressel 20 The form is widely distributed in Britain from the Conquest period up until the mid 3rd century Ditch 229 produced a small assemblage (four sherds) comprising greyware and calcareously tempered scrap and a body sherd of samian Specialist opinion would be needed to suggest a date for this sherd

2 3 Phase III

Shallow ditch 425

Fills (134=426) contained a combined assemblage (42 sherds) in which the most diagnostic elements were a grooved body sherd which is almost certainly from a Huntcliff jar and the rim of a Dalesware jar If correctly attributed the former suggests that the feature was still open after c AD 355 Greywares included a hemispherical flanged bowl and a wide mouthed bowl cf form BT in the York series (Monaghan 1997) The York form code is reserved for later 3rd or 4th century Throlam type vessels though the fabric is probably too coarse to admit of a HOSM provenance in this particular case There is also a samian body sherd scraps of oxidised ware a 3rd or 4th century Nene Valley colour coated beaker base a body sherd of Black Burnished Ware and the rim of a small vessel possibly a flask or bottle in white ware No parallels have been found for this vessel at the present assessment stage A sherd of unattributed sandy oxidised ware may be either Roman or medieval

In Group 503 pottery was recovered from ditch 281 This consisted largely of worn body sherds of greyware of little evidential value but there were also sherds from the rims of three different Huntcliff jars suggesting that the ditch was open after c AD 355 The form was in use in the region into the early 5th century

2.4 Unphased features

Ditches at the south western extremity of the site

There were three discrete ditches (472 484 and 504) within this area of the excavation. Fill (473) of ditch 472 yielded a small and very worn body sherd of non chronologically diagnostic greyware. Fill (485) of ditch 484 yielded two fragments of sandy non HOSM greyware.

The combined assemblage from ditch 504 amounted to six sherds of greyware from a possible three vessels. One of these vessels was in a coarse gritty fabric of the type employed for Dales type jars which might indicate a 3rd or earlier 4th century date *terminus post quem* for the fill.

Post holes pits and related features

The only post hole to produce pottery was 460. Unfortunately the assemblage from this feature consisted of three small body sherds. Two of these were greyware and the third an oxidised fabric which could be either Roman or medieval.

Post hole 460 cut pit 294 which contained no pottery and also a short sinuous ditch sequence in Group 499. Within this Group pottery was recovered from ditch 449 but once again it consisted solely of small body sherds of undiagnostic greyware.

Finally pit 429 (fill 430) contained seven sherds of pottery comprising greywares calcareously tempered ware and colour coated ware. A greyware dish with externally grooved rim is not chronologically diagnostic being available from at least the earlier 2nd century but the colour coated ware consists of two sherds from an indented scale beaker form KF1 in the York series (Monaghan 1997) which was current in the period c AD 225 300. It seems possible that the pottery from this feature could all be of 3rd century date.

Truncated ditches in the northern area of the site

Pottery was recovered from ditches 223 255 260 282 and 437.

In ditch 223 the only pottery recovered came from segment 265 four greyware sherds which included a rim sherd from a form tentatively identified as a HOSM B5 pedestal bowl (for the HOSM form series used throughout this report see Creighton 1999). The form was made at Throlam which is usually considered to have been active in the later 3rd and earlier 4th century.

In ditch 260 pottery came from segments 278 and 288 with respective fills (279) and (289). The latter ditch yielded a small assemblage comprising scrap sherds of samian and undiagnostic fragments of Roman greyware and coarse greyware. In Ditch 278 the latest pottery was two small sherds of post medieval Glazed Red earthenware probably of seventeenth or eighteenth century date. The sherds are small enough to be intrusive if this is archaeologically acceptable. The remaining pottery from the feature consisted of a scrap sherd of 3rd or 4th century Nene Valley colour coated ware and greyware sherds which include a dish which could be of Severan date and body sherds in fabrics within the range of the HOSM industry. No closer dating than 3rd or 4th century can be suggested for this assemblage.

In ditch 437 pottery was retrieved from segments 224 261 and 276 with fills (225) (262) and (277) Ditch 224 yielded a large assemblage (66 sherds) consisting mainly of HOSM greywares with a small number of coarse greyware body sherds The HOSM component included rims of jar form J1a and bases from pedestal bowls in the B3 5 range The jar was made at all three excavated HOSM production centres and a later 3rd or 4th century date must be proposed for this assemblage Ditch 261 contained four sherds from a vessel tentatively identified as a HOSM pedestal bowl form B3b The form was made at Hasholme and is probably best regarded as being of later 3rd or 4th century date Ditch 276 contained a small assemblage consisting of one sherd of greyware and five sherds of shell tempered scrap The fabric of the latter is consistent with derivation from 3rd or 4th century Dalesware jars though in the absence of rim forms this can be no more than conjectural

Ditch 282 contained a small assemblage containing worn greyware scrap and twelve small sherds from an indented beaker in an unidentified colour coated fabric It seems likely that these sherds derive from a 3rd century vessel rather than from one of the 4th century indented types

Ditch 255 yielded assemblages both from general fill (254) and upper fill (253) The assemblage from the general fill (58 sherds) contained large sherds from Dalesware and Dales type jars scrap sherds of Nene Valley colour coated wares (beaker) and oxidised ware and large sherds from several HOSM vessel including rims of forms B2e B3a B3 5 J1a/1 and Flc Most importantly there is the rim of a Crambeck greyware simple rimmed dish (Corder 1937 Type 2) Crambeck greyware is currently held to have been in production from c AD 270 thus providing a *terminus post quem* for the ditch fill The remaining elements of the assemblage would be entirely acceptable as contemporary at this date or up to the middle of the 4th century The upper fill of the ditch has a small mixed and worn assemblage of grey coarse grey oxidised and colour coated ware These include a sherd from a 3rd or 4th century Nene Valley beaker neck and a rim sherd which is possibly from an Antonine carinated jar

2 5 Phases IV and V

Plough furrows 267 and 498 contained no pottery Furrow 476 contained three small fragments of Roman greyware Furrows 496 482 and 439 contained small amounts of worn Roman and unattributed material In the case of furrow 439 an unattributed gritty ware is probably medieval and of c 12th century date

Field boundary 296 contained a single sherd of Late Blackware dating between the late 18th and early 20th century

2 6 Site 3 (contexts 1 99)

Small amounts of material from the fills of ditches 3 9 16 18 and 42 include small handmade jars which suggested a 2nd century date to the enclosure The latest diagnostic material from these features is a 3rd century mortarium from the primary fill the re cut enclosure ditch (16)

2 7 Watching brief topsoil finds (contexts 301 315)

Sherds from these contexts were entirely medieval and possibly post medieval in date The probable date range of the medieval material is from the 12th to the 15th century with the emphasis on the earlier part of this period

3 0 CONCLUSIONS AND RECOMMENDATIONS

The Roman site assemblage is overwhelmingly of later 3rd and 4th century date the major supplier to the site appearing to be the Holme upon Spalding Moor greyware industries Dalesware and Dales type jars also present in some numbers are broadly contemporary Close dating for individual features within this period is difficult but Crambeck greyware which is generally taken to post date c AD 270 provides a useful *terminus post quem* for several features Earlier activity appears to be hinted at by a small amount of samian none of which however would appear to pre date the mid 2nd century Earlier material perhaps of the 2nd and earlier 3rd century may also be present as greyware in parts of the site including the main enclosure ditch (cut 470 above) Individual vessels such as the necked whiteware bowl already discussed may also belong to this period The latest material from the site is the Huntchff jar which occurs in small quantities in a limited number of contexts and suggests that some features were still open in the 2nd half of the 4th century These are in the main enclosure ditch in ditch 425 and in one of the ditches which cut the Phase I curvilinear features There is also an unstratified example from the topsoil context (200)

The ceramic evidence as a whole suggests that despite its proximity to York the site was an unpretentious rural settlement There are few finewares such as colour coated vessels and a dearth of mortaria A small amount of fine whiteware requires further research

There seems to be little need for further work on the ceramics though any publication report could usefully include a summary of the pottery with selected illustrations as indicative of the types in use on such sites in York's hinterland in the later Roman period The face necked fragment should receive further attention and be published as a note in a relevant regional journal

All material should be retained in the interests of future ceramic research in the region

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Appendix C

CERAMIC BUILDING MATERIALS

J Tibbles

Summary

The bulk of the ceramic building material is of a Romano British date and represents the residual elements of Romano British activity. Its presence among the finds assemblage could reflect an affluent/high status building within the vicinity. However the small assemblage does not contain the range of ceramic building material normally associated with various aspects of Romano British building construction and is therefore likely to be from re deposition. The post Romano British assemblage examined was identified as residual/casual deposition and agricultural field draining.

1 0 INTRODUCTION AND METHODOLOGY

An assemblage of twenty eight fragments of ceramic building material weighing 901g was submitted for examination retrieved from fifteen contexts. Romano British and post Romano British material was identified. To simplify this report they have been divided into Romano British and later periods.

All the fragments were quantified by count and weight and were visibly examined using a x15 magnification lens. Information regarding the dimensions, shape and fabric was recorded and catalogued accordingly and a Munsell colour code has been incorporated where appropriate. The presence of the original surfaces was also taken into consideration to aid identification.

It should be noted that the diversity of size and colour within the brick and tile caused during the manufacturing process must be taken into consideration when comparing examples within collected assemblages and typologies. The varying sizes and colours can be attributed to that variation in the clays used, shrinkage during drying, firing within the kiln or clamp and the location of the brick/tile within the kiln.

The dating of brick and tile can be highly contentious due to its re-usable nature and therefore the date range given is that of known dates where material has been recorded.

2 0 ROMANO BRITISH MATERIAL

An assemblage of seventeen fragments of Romano British ceramic building material with a combined weight of 840g was retrieved from thirteen contexts.

The assemblage is comprised of Romano British fabrics from which three building material types could tentatively be identified. The remainder was unidentifiable by form.

Tegulae Tegulae are the fundamental building material in the construction of the roof. They have particular features in the form of flanges on one face and upper and lower cut aways that were required to allow the tile to slot into each other.

Imbrices Used in conjunction with *tegulae* *imbrices* overlapped the flanges of the *tegulae* to produce a solid roof

Box flue tile (Tubulus) These square pipes were set within the walls as part of the hypocaust heating system of Roman buildings They have characteristic combing or scoring of two surfaces as a keying element for plaster or mortar They also often have a lateral *cut out* vent in the sides This allowed the warm air to circulate

Table C1 Romano British assemblage quantification by form

Form	Quantity	Weight
Tegulae	8 fragments	405g
Imbrices	3 fragments	100g
Box flue tile	4 fragments	320g
Unidentifiable	2 fragments	15g
Total	17 fragments	840g

2.1 The catalogue

2.2 The roof tile

Description

A total of seven fragments of roof tile were recovered from contexts 136 201 215 401 415 429 and 432 with a total weight of 505g The fragments displayed moulding sand and/or moulding/finger impressions from their method of manufacture Two category types were identified *tegulae* and *imbrex*

Table C2 Roof tile quantification

Roof tile	Quantity	Weight
Tegulae	8 fragments	405g
Imbrex	3 fragments	100g

Context 121 *Tegulae* (wt 80g)

One non diagnostic fragment of *tegula* of a Light Red fabric colour (2.5YR/6/8) Oxidised throughout Residual moulding sand Slight hp

Context 122 *Tegulae* (wt 40g)

Two non diagnostic joining fragments of *tegula* of a Light Red fabric colour (2.5YR/6/6) Oxidised throughout

Context 122 *Tegulae* (wt 40g)

One non diagnostic fragment of *tegula* of a Light Red fabric colour (2.5YR/6/6) Oxidised throughout Slight burning on one surface Residual moulding sand

Context 201 *Tegulae* (wt 140g)

One non diagnostic fragment of *tegula* 20mm thick of a Light Red fabric colour (2.5YR/6/8) Oxidised throughout Edge displays partial fingertip impressions Flange Type 2 (Tibbles)

Context 215 *Tegulae?* (wt 50g)

One non diagnostic fragment of *tegula* of a Light Red fabric colour (2 5YR/5/8) Oxidised throughout

Context 401 *Tegulae* (wt 30g)

One non diagnostic fragment of *tegula* 25mm thick of a Light Red fabric colour (2 5YR/6/8) Reduced core Fragments of two flat surfaces visible

Context 432 *Tegulae?* (wt 15g)

One non diagnostic fragment of *tegula* of a Light Red fabric colour (2 5YR/6/8) Oxidised throughout

Context 136 *Imbrex* (wt 60g)

Single fragment of *imbrex* 15mm thick, a fabric colour of Light Red (2 5YR/6/8) Oxidised with frequent lens of unfired clay Residual moulding sand

Context 415 *Imbrex* (wt 20g)

Single fragment of *imbrex* 15mm thick, a fabric colour of Light Red (2 5YR/6/8) Reduced core

Context 429 *Imbrex* (wt 30g)

Single fragment of *imbrex* 14mm thick, a fabric colour of Light Red (2 5YR/6/8) Oxidised with frequent patches of unfired clay

2.3 Box flue tile

Description

A small assemblage of four fragments of box flue tile with a total weight of 320g was recovered from two contexts (225 and 418) The fragments displayed moulding sand and/or moulding/finger impressions from their method of manufacture

Table C3 Box flue tile quantification

Box Flue Tile	Quantity	Weight
Non diagnostic	4 fragments	320g

Context 225 (wt 270g)

Two non diagnostic joining fragments of box flue tile 20mm thick with a fabric colour of Light Red (2 5YR/6/6) Oxidised throughout with abraded surfaces Slight burning over flat surface and broken edge Grey white adhesion to edges of tile may represent residual mortar

Context 418 (wt 50g)

Two non diagnostic joining fragments of box flue tile 15mm residual thickness with a fabric colour of Light Red (2 5YR/6/6) Oxidised throughout

2.4 Non identifiable Romano British ceramic building material

The assemblage comprised three fragments of unidentifiable ceramic building material recovered from contexts 281 and 429 All were non diagnostic and of Romano British fabrics

Context 281 (wt <5g)

One non diagnostic fragment of ceramic building material of a Light Red fabric colour (10R/6/6) Oxidised throughout The fragment bore no distinguishing features

Context 429 (wt 10g)

One non diagnostic fragment of ceramic building material of a Light Red fabric colour (2.5YR/6/6) Oxidised throughout The fragment bore no distinguishing features

2.5 Romano British assemblage discussion

Due to the relatively small size the potential of the assemblage alone is limited

Ceramic building material was considered to be a symbol of affluence/high status and a valued re useable commodity Its presence among the finds assemblage reflects the possibility of a high status building within or close to the site The general appearance of the assemblage although abraded appears to represent a range of ceramic building material that would have been associated with the various aspects of Romano British construction There is also a paucity of evidence of mortar adhesions to ascertain use prior to deposition Therefore despite being within an area of Romano British activity it would be conjecture to suggest the presence of a structure within the vicinity that was utilising ceramic building material

Due to the dearth of the presence of specific ceramic building materials i.e. *bessals pedals* etc it is likely that the assemblage represents residual elements of Romano British activity and suggests casual deposition Nevertheless this information is significant as it can add to the corpus of evidence of activity during this period for the area

3.0 POST ROMANO BRITISH MATERIAL

An assemblage of eleven fragments of non Roman ceramic building material weighing 20g was submitted for examination The fragments were retrieved from contexts 221 297 and 483

3.1 Catalogue

Context 221 (wt <5g)

One non diagnostic fragment of ceramic building material of a Red fabric colour (10R/5/6) Oxidised throughout Possible medieval roof tile?

Context 297 (wt 10g)

Nine flakes/chips of non diagnostic ceramic material of a Red fabric colour (10R/6/6) Oxidised throughout The fragments are similar to those of post medieval land drains

Context 483 (wt <5g)

One non diagnostic fragment of ceramic building material of a Red fabric colour (10R/5/6) Oxidised throughout The fragment bore no distinguishing features

3.2 Post Romano British assemblage discussion

The fragments of material although non diagnostic have been tentatively identified based upon fabric and elements of manufacture The majority of the fragments are from within the field boundary 296 and are residual elements of 18th or 19th century land drainage schemes

The remainder are likely to be of a late medieval/post medieval date and the results of casual deposition

4 0 RECOMMENDATIONS

It is recommended that after a fabric sample has been taken the Romano British fragments should be retained as part of the finds assemblage as a whole when deposition in the appropriate museum is undertaken

REFERENCES

Tibbles S (*forthcoming*) The Romano British Building Material in J Fraser and K Steedman
Excavations at High Catton East Yorkshire

Appendix D
WORKED STONE
Elizabeth Wright

1 0 INTRODUCTION

A single fragment of worked stone was recovered during excavation. It comprised a radial fragment from a rotary quern of fine to medium grained well sorted micaceous sandstone with fine specks of iron minerals (either goethite or limonite). The original colour is difficult to distinguish as the fragment has suffered heating during some secondary use which has reddened the fabric. Probably a coal measures sandstone from Yorkshire.

2 0 DESCRIPTION

The fragment which measures 165mm x 153mm x 40mm over all shows evidence of wear on both flat faces and some shaping of the curved edge. It is 40mm thick at the edge narrowing to 27mm where broken towards the centre probably at the central eye which always creates a weak spot. Although the quern fragment lacks distinctive features being very plain and undecorated the size and shaping suggest it is part of an upper stone of a hand operated quern of Roman date. The fragment is quite thin which while it might result from very heavy wear could also suggest that it was originally of a thinner lighter design. This would accord well with the low angle of inclination of the grinding face. The grinding face has been dressed with a fine pattern of peck dressing which had not worn totally smooth since last being redressed before breakage. The dorsal face shows much undulating smoothing. This is unlikely to have resulted from rotary use and suggests some secondary use perhaps after the quern was broken but certainly before the fragment was as small as it is now as the polish does not extend over the broken edges. During the Roman period such secondary uses are common and may have encompassed use as the lower stone of a saddle quern as a whetstone or even use in an area of paving or as a threshold stone. The diameter of the complete stone estimated from its remaining curve is about 380mm. The stone was excavated from within the fill of shallow ditch 425 where some material may have been of late 2nd century and most of 3rd to 4th century.

3 0 DISCUSSION

From the size, manufacture and signs of secondary use this quern is almost certainly of Roman date. The thinness and plainness of the design allied with the low inclination of the grinding surface might possibly suggest a date later in the Roman period rather than earlier perhaps tying in more with a 3rd to 4th century date than one in the 2nd century. The small size suggests a hand quern rather than a millstone.

Appendix E

SLAG

Jane Cowgill

1 0 INTRODUCTION

Slag was recovered from the two main concentrations of archaeological features excavated along the route of the pipeline two pieces from Site 3 and seven pieces from Millfield Farm Wheldrake In addition a piece of worked stone was submitted from Millfield Farm

2 0 RECORDING METHODOLOGY

A total of 744g (11 pieces) of slag and associated materials were submitted for recording The slag was washed dried and then identified solely on morphological grounds by visual examination sometimes with the aid of a x10 binocular microscope It was recorded on *pro forma* recording sheets and this information was entered directly into Table 1 below

Table D1 The slag and associated finds recovered from the site

Context	Code	Type	Count	Weight	Craft	Fuel	Comments
17	AA	Tap?	1	23g	Fesmelt	Chare	Tap? Dense + HL matt black
24	AA	Tap?	1	38g	Fesmelt	Chare	Tap? Dense matt black abraded?
217		Slag	1	501g	Fesmelt	Chare	Fresh condition moulded by massive chare up to 60 x 35 x 18mm not tap or block elongated piece – 130 x 65 x 60mm
221		Slag	1	42g	Fesmith?	Coal?	Glassy sand on 1 side hollows on top
232		Slag	1	22g	Fesmith?		Very magnetic encrusted iron rich
264		Stone	1	3g			Niedermendig lava quern fragment
273		Concretion	1	2g			
408		HB	1	107g	Fesmith	Chare	Compact 60 x 55 x 30mm
483		Slag	1	2g	Fesmith?		Fragment + HL
483		Slag	2	4g	Fesmith		Fragments

CODES USED IN THE ABOVE TABLE

Chare	Charcoal	HB	Plano convex slag accumulation
Fesmelt	Evidence for iron production		(commonly cal led hearth bottom)
Fesmith	Evidence for iron smithing	HL	Hearth lining

3 0 COMMENTS

The two pieces of slag from the enclosure ditch and associated linear features are both iron smelting slags but are not standard Romano British tap slags Both are dense and black and the piece from ditch 42 (context 17) contains frequent charcoal imprints indicating that that was the fuel type employed The piece from ditch 18 (context 24) maybe abraded and therefore in a secondary context The presence of these pieces both quite small indicate that some iron was smelted in the vicinity of the site but possibly not very close by

The small assemblage from the settlement site at Millfield Farm is more diverse in character and includes evidence for both iron smelting and smithing. The slag is not concentrated in any particular area and may therefore be the by products of several different episodes of iron production and smithing at the site. There is only one definite plano convex slag accumulation which is from Group Number 408 on the eastern side of the site. Charcoal fuel was used when this piece was formed including large pieces measuring 60mm x 55mm x 30mm. The smithing slag which had ?coal inclusions (from the fuel) from Scoop 220 (context 221) may not be Romano British in date.

The most interesting piece from this site is the smelting slag from the fill of grave 216 (context 217) which has been phased to Phase II. The slag is neither typical of tap slags or block slags and forms part of an intermediary group that has so far only been identified at West Moor Park, Armthorpe near Doncaster (Cowgill 2001), a site only 40km to the south of Wheldrake. At Armthorpe a sequence of enclosure complexes were found but all the ditches were very truncated with often little more than 0.2m of the basal fills surviving. The dating evidence from the site is very limited and is mainly in the form of Romano British pottery dating to between the 2nd to 4th centuries. There was also some Iron Age occupation at the site and it has been suggested that this slag is more likely to be Iron Age in date or very early/transitional Romano British.

The tap slags found like the piece from Millfield Farm are generally large and most seem to be composed of a number of large dense flows – much larger than those usually encountered. The size of the flows may indicate that the slag was quite viscous when tapped which could be a reflection of its temperature or composition. Some of the tap has vertical sides moulded by the tapping channel or pit. Another unusual feature is the fact that in many instances it is not possible to distinguish the top of the tap from the base; the orientation of tapped slags is usually obvious. This may be partly explained by the fact that some pieces have large charcoal imprints on the upper and/or base (resulting in some very irregular bases) and occasionally on all sides giving the impression that the slag was tapped into a charcoal heap. The Millfield Farm slag has been moulded by massive pieces of charcoal, one measuring 60 x 35 x 18+mm. It is an elongated flow (130 x 65 x 60mm) and once again its orientation is unclear. It is in a very fresh condition which suggests that it is in a primary deposit and has not suffered from weathering on a ground surface or redeposition. This is an important piece and when considered alongside the assemblage from West Moor Park may hint at a regional form of iron smelting. If there is any good dating evidence from ditch 255 this will be important in trying to establish the date when this technology was employed for the production of iron. Finances have been made available to try and obtain a radiocarbon date for the Armthorpe slag but unfortunately there is only a very limited amount of charcoal within the slag.

REFERENCES

Cowgill J (2001) *Report on the slags and associated finds from West Moor Park, Doncaster (WMP 01)*. Archive report for West Yorkshire Archaeology Service.

Appendix F

CONSERVATION

Leesa Vere Stevens
(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) The condition of the various classes of material is summarised and indicators of unusual preservation are noted There are recommendations for investigative conservation for additional specialist support and topics for further research are raised

2 0 PROCEDURES

The iron copper alloy and a selection of the lead were X rayed using standard YAT procedures and equipment One sheet of film was used and each plate was given a reference number in the YAT conservation laboratory series The X ray number was written on each recorded find bag Each image on the radiograph was labelled with its recorded find number The plates were packaged in archival paper envelopes

All finds were examined under a binocular microscope at x20 magnification The material identifications were checked and observations made about the condition and stability of the finds and recorded in section 4 below

One piece of possible wood/leather was passed to Steve Allen in the Wet Wood Laboratory It was dry packed The find was removed from its packaging small surface areas were brushed to remove some of the adhering soil deposits and returned to its packaging after examination and species identification The latter was carried out under x40 and x100 magnification

3 0 QUANTIFICATION

A total of 59 finds were assessed and approximately 6 X ray plates produced The number of objects in each material category is listed below

Table F1 Quantity of objects

Copper alloy	1	
Lead alloy	6	
Iron	47	(3 finds identified as slag after assessment)
Slag	3	
Amber	1	
Leather	1	

40 ASSESSMENT

The assessments are listed in tables below by material type and in find number order. Recommendations for further investigation and new observations are highlighted in bold type. Unless further treatment and stabilisation has been recommended, the finds should remain stable and require no further work at this stage. Additional work may be required if objects are selected for drawing, photography or display; this is not routinely included below.

41 Iron

X ray No	Context	Find No	Assessment
5766	119	AA	<p>Bag labelled Fe nail x1 One piece incomplete broken and missing at shank tip</p> <p>Condition Sand silt over bulky mixed orange brown and yellow iron corrosion with inclusions (stones MFO 'organic material) throughout the shank. The broken end reveals a hollow core and a rectangular cross section to the shank.</p> <p>X ray little or no remaining core on shank there is a small area on top of the head that is dense to x ray. No magnetic response.</p> <p>Proposed treatment None</p>
	119	AB	<p>Bag labelled Fe nail One piece appears complete Uncertain if this is a nail?</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (stones charcoal) throughout the shank.</p> <p>X ray little or no remaining core at thin end the wide end is dense to x ray and shows magnetic response.</p> <p>Proposed treatment if required for research partial investigative cleaning may aid identification (est 2hrs)</p>
	121	AA	<p>Bag labelled Fe nails x 5 One piece three smaller finds appear complete the remaining two are incomplete Uncertain if the larger find is a nail or spike</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (stones charcoal) throughout the shank. The broken end of the larger find has a square cross section.</p> <p>X ray little or no remaining core at shanks (apart from the bulkier find which is also magnetic the head area is dense to x ray and shows magnetic response. Two nails appear fractured at shank.</p> <p>Proposed treatment if required for research partial investigative cleaning of the larger find may aid identification (est 2hrs)</p>
5767	122	AB	<p>Two bags with the same find and context number (see below) bag labelled Fe nail One piece incomplete broken and missing area of the head</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (stones charcoal) The head is flat and bent over the shank is also bent and appears rectangular in section.</p> <p>X ray generally dense to x ray positive magnetic response.</p> <p>Proposed treatment None</p>

X ray No	Context	Find No	Assessment
	122	AB	Two bags with the same find and context number (see above) bag labelled Fe nails x 2 Both are in one piece and complete Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (rocks stones and charcoal) The larger find has a cracked corrosion crust and parts of the crust are missing (particularly at the head area) Both have flat heads smaller find has a bent shank Shank of largest nail appears to have a rectangular cross section whilst the smaller is square in section X ray little or no remaining core at shank of the smaller nail the head area is dense to x ray Larger nail dense to x ray Both are magnetic Proposed treatment None
5766	134	AA	Bag labelled Fe? nail One piece complete? Bent Uncertain if this is a nail or part of a staple? Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (stones roots charcoal) throughout the shank Possibly rectangular in cross section tapering to a round section X ray generally dense to x ray and shows magnetic response Proposed treatment if required for research partial investigative cleaning of the larger find may aid identification (est 2hrs)
5767	200	AA	Bag labelled Fe nail x 1 One piece incomplete area of loss at head Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (stones white mineral) The broken part of the head shows active iron corrosion X ray little or no remaining core at shank the head area is dense to x ray and shows magnetic response Proposed treatment None
	201	AA	Bag labelled Fe nail If this is a nail the head is missing One piece complete? Condition Sand silt over bulky mixed orange brown iron corrosion Corrosion crust is missing at one side to expose bright orange red (haematite?) corrosion product with tiny bright blue inclusions Corrosion crust missing from one end showing active iron corrosion X ray remaining core is dense to x ray find is magnetic Proposed treatment None
	201	AB	Bag labelled Fe nail One piece complete Condition Sand silt over bulky mixed orange brown iron flat head and square cross section to shank X ray non ferrous debris within corrosion cmst appears opaque to x ray substantial core dense to x ray shows magnetic response Proposed treatment None
5768 and 5770	201	AD	Bag labelled Fe obj (2 joining fragments) incomplete in four pieces plate form with V shaped perforation for possible handle Possible agricultural tool? Condition Sand silt over bulky mixed orange brown iron corrosion Fragmented parts of the crust have lifted and broken away revealing active corrosion Fragments of corrosion in bag X ray shows angled shoulder with V shaped central perforation Find is magnetic Proposed treatment If in line with research requirements rejoin element and repack with more support (est 1hr)

X ray No	Context	Find No	Assessment
5767	210	AA	<p>Bag labelled Fe nail x1 One piece complete</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (white material) Flat head at one end tapering rectangular shank</p> <p>X ray little or no remaining core at shank the head area is dense to x ray and shows magnetic response</p> <p>Proposed treatment None</p>
	215	AA	<p>Bag labelled Fe nail One piece incomplete tip of shank broken and missing</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion Broken end appears square in section</p> <p>X ray little or no remaining core at shank the head area is dense to x ray and shows magnetic response</p> <p>Proposed treatment None</p>
	225	AA	<p>Bag labelled Fe nail If this is a nail the head is missing/severely mineralised One piece complete?</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion Square cross section</p> <p>X ray remaining core is dense to x ray find is magnetic</p> <p>Proposed treatment None</p>
	227	AA	<p>Bag labelled Fe obj fragmented x4 fragments Two definitely fit together Possibly rectangular shaped plate incomplete corrosion fragments in bag</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion fragments have spalled off exposing active corrosion</p> <p>X ray Fragmented and mineralised surface layers substantial core evident on largest frag x3 pieces show magnetic response</p> <p>Proposed treatment None</p>
	229	AA	<p>Bag labelled Fe x3 All appear to be Nail fragments one head is missing/severely mineralised One piece incomplete parts of head missing</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion Hollow cores visible at break edges</p> <p>X ray little remaining core is dense to x ray none are magnetic</p> <p>Proposed treatment None</p>
	232	AA	<p>Bag labelled Fe? nail head Nail head One piece complete?</p> <p>Condition Sand silt over bulky mixed orange brown iron corrosion with white material inclusions The head appears square Mineralised core insitu</p> <p>X ray remaining core of head is dense to x ray shank is mineralised Find is magnetic</p> <p>Proposed treatment None</p>
	234	AA	<p>Bag labelled Fe hob nail head includes shank complete in one piece</p> <p>Condition Sand silt over bulky mixed orange brown iron The head appears oval rectangular shank Mineralised core insitu</p> <p>X ray mineralised core Find is magnetic</p> <p>Proposed treatment None</p>
	253	AC	<p>Bag labelled Fe (?nail) Obj If this is a nail the head is missing</p> <p>Condition Sand silt over bulky mixed porous orange brown iron corrosion containing inclusions (charcoal and white mineral products)</p> <p>Slight magnetic response bent structure</p> <p>X ray Mineralised structure</p> <p>Proposed treatment None</p>

X ray No	Context	Find No	Assessment
	254	AC	Bag labelled Fe (?nail) If this is a nail the head is missing this is a shank frag Condition Sand silt over bulky mixed porous orange brown iron corrosion containing inclusions (charcoal and white mineral products) No magnetic response Rectangular cross section to shank X ray little or no remaining core Proposed treatment None
5768	254	AD	Bag labelled Fe nail One piece incomplete tip of shank broken and missing Condition Sand silt over bulky porous mixed orange brown iron corrosion The head appears round Does not appear magnetic X ray Little remaining core visible Proposed treatment None
	259	AA	Bag labelled Fe (frags) obj x3 Possibly oval shaped plate incomplete corrosion fragments in bag Condition Sand silt over bulky mixed orange brown iron corrosion fragments have spalled off exposing active corrosion X ray Fragmented and mineralised surface layers substantial core evident on largest frag x2 pieces show magnetic response Proposed treatment None
	264	AC	Bag labelled Fe nail x1 Flat head and square cross section to shank incomplete shank tip broken and missing Condition Sand silt over bulky mixed orange brown iron corrosion X ray Substantial core evident on nail head shank is more mineralised Proposed treatment None
	264	AD	Bag labelled Fe nail x1 ?Complete in one piece shank is bent headless Condition Sand silt over bulky mixed orange brown iron corrosion fragments of crust have broken away to reveal red orange iron corrosion (heamatite?) X ray substantial core evident Magnetic Proposed treatment None
	269	AA	Bag labelled Fe object incomplete in one piece Possible fitting fragment Condition Sand silt over bulky porous mixed orange brown iron corrosion (patches of iridescent green corrosion) Cmst contains inclusions (MPO ?wood remains) The form is irregular and broken one break edge exposes a rectangular cross section X ray possible non ferrous plating? Splayed and broken at both ends one end appears to form part of a loop Mineralised core Find is magnetic Proposed treatment Investigate presence or absence of MPOs if required for research partial investigative cleaning of loop arm may expose non ferrous plating (est 2 5hrs)
5769	269	AB	Bag labelled Fe nail If this is a nail the head is missing in one piece incomplete broken at each end Condition Sand silt over bulky mixed orange brown iron corrosion contains inclusions (charcoal) Broken ends reveal square cross section X ray mineralised core no magnetic response Proposed treatment None
	279	AB	Bag labelled Fe x6 appear to be nail shank and head fragments in one piece incomplete and broken Condition Sand silt over bulky mixed orange brown iron corrosion Rectangular and square cross sections evident X ray little or no remaining core None are magnetic Proposed treatment None

X ray No	Context	Find No	Assessment
	280	AB	Bag labelled Fe nail includes shank and head complete in one piece Condition Sand silt over bulky mixed orange brown iron corrosion localised spots of yellow corrosion visible on head The head appears round Cracked corrosion crust with areas of loss X ray no core remaining at tip of shank substantial core at head area Find is magnetic Proposed treatment None
	289	AA	Bag labelled Fe nail (2 joining frags) two pieces incomplete If this is a nail the head is missing Condition Sand silt over bulky mixed orange brown iron corrosion The broken edges reveal a hollow core square cross section X ray no core remaining throughout shank no magnetic response Proposed treatment None
	293	AA	Bag labelled Fe nail x1 includes part of shank and head incomplete in one piece Condition Sand silt over bulky mixed orange brown iron corrosion The head appears oval rectangular shank X ray no core remaining throughout the shank find is magnetic Proposed treatment None
	297	AA	Bag labelled ?Fe ?obj irregular strip fragment with orange paint on surface Condition Sand silt over bulky mixed brown iron corrosion Appears diamond shaped cross section X ray mineralised core Find is magnetic Proposed treatment None
	297	AB	Bag labelled Fe twisted wire incomplete in one piece Condition Sand silt over mixed orange brown iron corrosion Twisted and tapers to a point at one end X ray mineralised core Find is magnetic Proposed treatment None
5768	408	AB	Bag labelled Fe nails x2 one shank and one head and shank fragment in one piece incomplete Condition Sand silt over bulky mixed orange brown iron corrosion with inclusions (MPO wood remains charcoal stones) Broken end of shank with head appears square in cross section Break shows a hollow core X ray mineralised core Find is magnetic Proposed treatment None
	414	AA	Bag labelled Fe nail x1 One piece broken and missing at shank incomplete Head and part of shank evident Condition Sand silt and bulky mixed iron corrosion with inclusions (charcoal) broken end shows an exposed Find is magnetic X ray substantial core Proposed treatment None
5770	414	AB	Bag labelled Fe nail One piece complete Condition Sand silt and bulky porous mixed iron corrosion with inclusions (white material) Magnetic X ray Little or no core evident throughout shank although the head and connecting point to the shank is opaque indicating solid core at this point Proposed treatment None
	417	AA	Bag labelled Fe obj/nail One piece bent complete? If this is a nail it is without a head Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions X ray substantial core Proposed treatment None

X ray No	Context	Find No	Assessment
	418	AA	Bag labelled Fe nail One piece bent incomplete broken at one end If this is a nail it is without a head Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions (charcoal) Corrosion cmst is broken and missing at points to reveal active iron corrosion Square cross section visible at broken end X ray substantial core evident severe crack/break at mineralised end Proposed treatment None
	418	AB	Bag labelled Fe nail (2 joining frags) Fragments do not fit together One nail with flat head and shank and one shank tip fragment Two pieces incomplete and broken May have originally have fitted together but the breaks have received loss and no longer join Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions X ray substantial core evident on larger fragment with head no core evident to shank tip fragment Proposed treatment None
5769	426	AA	Bag labelled Fe nail One piece complete? Condition Sand silt and bulky mixed orange brown iron corrosion Oval head and possible square cross section to shank X ray substantial core apart from shank tip which is mineralised Proposed treatment None
	432	AB	Bag labelled Fe nail (2 joining frags) Two pieces broken incomplete Oval head and square cross section to shank Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions (charcoal) Shank tip fragment broken at both ends X ray no remaining core Proposed treatment None
	448	AA	Bag labelled Fe nail (2 joining fragments) Two pieces bent incomplete? Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions (charcoal possible MPO stained orange) Corrosion crust is cracked broken and missing to reveal active iron corrosion X ray substantial core at the head end of the nail little or no remaining core at shank tip end Proposed treatment None
	448	AB	Bag labelled Fe obj (2 joining frags) Possible nail shank or headless nail Two pieces bent and broken Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions (white/cream coloured minerals) Broken ends reveal a square cross section to shank X ray little or no remaining core Proposed treatment None
	469	AB	Bag labelled Fe? Blade (2 frags) Possible blade fragment with pierced end (? folding knife) Two pieces fit together incomplete broken and missing areas Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions Corrosion crust cracked and broken Broken edges reveal a triangular cross section X ray little or no remaining core round perforation at one end Proposed treatment Rejoin fragments plus partial investigative cleaning of each end exposing cross section across perforation and another at narrow end (est 4hrs)

X ray No	Context	Find No	Assessment
5769	469	AC	Bag labelled Fe nail (2 frags) Two pieces join to form a complete nail Condition Sand silt and bulky mixed orange brown iron corrosion Corrosion crust is broken and missing at points to reveal areas of shiny black surface oxidation Broken ends reveal a square cross section to the shank X ray no remaining core Proposed treatment None
	483	AA	Bag labelled Fe nail One piece incomplete (small area of loss to tip) Condition Sand silt and bulky mixed orange brown iron corrosion with inclusions (white mineral) corrosion crust cracked X ray substantial core but tip is mineralised flat head evident Proposed treatment None
	471	AA	Bag labelled Fe obj / rove One piece complete? Possible square rove or square plate Condition Sand silt and bulky mixed orange brown iron corrosion X ray substantial core Proposed treatment If required for research partial investigative cleaning to look for signs of a nail tip having been hammered or bent over in the centre of the plate to see if this is a rove (est 2hrs)
	483	AB	Bag labelled Fe nail One piece bent incomplete If this is a nail it is without a head Condition Sand silt and bulky mixed orange brown iron corrosion Magnetic X ray substantial core Proposed treatment None

4.2 Copper alloy

X ray No	Context	Find No	Assessment
5772	122	AA	Labelled Cu alloy One piece incomplete parts of edge broken and missing Small plate fragment Condition Silt over a thick irregular mixed corrosion crust (turquoise light and dark green plus pale powdery corrosion Unstable Surface is cracking laminating and fragile X ray shows little metal core and one edge has an angled shoulder form Proposed treatment If required for research limited removal of silt deposits partial investigative cleaning to reveal cross section followed by stabilisation and consolidation (est 2 hrs) Should remain stable if stored at less than 35%RH

4.3 Lead alloy

X ray No	Context	Find No	Assessment
	201	AC	Labelled Pb alloy One piece complete folded sheet debris Condition Sand and silt over a grey surface areas of powdery white corrosion are potentially active and parts have broken off revealing a very shiny white coloured pitted metal Small localised spot of green coloured corrosion visible Proposed treatment None Store dry at less than 35%RH

5772	228	AB	<p>Labelled Pb alloy obj One piece incomplete broken at each end Tapering rod bulbous at one end Condition Sand and silt over a grey surface spots of black throughout corrosion crust there are areas of powdery white corrosion (potentially active) at the broken ends Round cross section X ray Bulbous end shows internal cavity plus three small bubble cavities extending into the shank Proposed treatment None Store dry at less than 35%RH</p>
	254	AA	<p>Labelled Pb 'repair One piece complete Condition Sand and silt over a pale buff smooth surface areas are cracked to reveal white corrosion which is potentially active and parts of the edge are missing Proposed treatment None Store dry at less than 35%RH</p>
	264	AA	<p>Labelled Pb plumb bob One piece complete Pb with iron 'rod extending from one end Condition Sand and silt over a grey and buff irregular surface areas of powdery white corrosion are potentially active iron rod extending from centre is potentially active and parts of the crust have broken off Proposed treatment None Store dry at less than 15%RH</p>
	268	AA	<p>Labelled Pb obj One piece complete? possible waste? Condition Silt over a cream and buff fairly smooth surface Proposed treatment None Store dry at less than 35%RH</p>
	497	AB	<p>Labelled Pb One piece complete? Possible waste? Condition Sand and silt over a pale buff irregular surface broken edge reveals shiny metal Proposed treatment None Store dry at less than 35%RH</p>

4.4 Slag

X ray No	Context	Find No	Assessment
5766	17	AA	<p>Labelled Fe object One piece complete? Identified as slag from the x ray Condition Sand silt and thin mixed iron corrosion coloured powdery bright orange at one end there is an area of loss exposing the inside of a cavity There is no magnetic response X ray appears to be slag porous structure dense to x ray Proposed treatment refer to archaeometallurgist Bright orange corrosion products may indicate activity Dry storage is recommended</p>
	24	AA	<p>Labelled Fe object One piece complete? Identified as slag from the x ray Condition Sand silt and thin mixed iron corrosion with inclusions (white/cream coloured deposits) at one end there is an area of loss revealing glassy crystal structure the inside of a cavity contains orange coloured minerals Bubbled structure There is no magnetic response Stable does not need desiccation X ray appears to be slag porous structure dense to x ray Proposed treatment refer to archaeometallurgist</p>
5767	232	AB	<p>Bag labelled Fe 'object One piece complete? Identified as slag from the x ray Condition Sand silt and thin mixed iron areas of surface loss reveal bubbled cavities Magnetic X ray appears to be slag porous structure dense to x ray Proposed treatment refer to archaeometallurgist</p>

4 5 Amber

Context	Find No	Assessment
217	AA	Labelled Amber bead (fragmented) In ten pieces incomplete? Condition Arrived in lab dry Silt lies above compact but irregular surface areas broken edges are clean of silt (recent damage) and show numerous fine and deep cracks Cream/light orange coloured opaque inclusions within structure Fragile Small splinter fragments loose within packaging Proposed treatment if in line with research requirements reconstruct form of bead remove silt deposits plus possible consolidation of structure Please note provenance studies could be affected by introducing a consolidant or adhesive (est 4hrs)

4 6 Leather

Context	Find No	Assessment
123		Labelled Wood/leather (dry) Leather incomplete broken and missing dry Condition Arrived in lab dry Silt lies above compact irregular surface broken at edges small areas of surface loss reveal an orange brown fibrous structure Proposed treatment None

5 0 CONDITION

5 1 Iron

The ironwork was generally covered in sand and silt above bulky orange corrosion There were charcoal white minerals and possible MPO organic (wood?) inclusions within corrosion crusts Possible organic matter was noted in the corrosion crusts of 119AA 269AA 408AB 448AA The iron is in poor condition find numbers 227AA and 259AA show signs of active corrosion and many of the finds are severely mineralised with cores that have corroded away (finds 119AA 121AA 229AA 254AC 279AB 469AC are virtually hollow)

Possible haematite was visually identified on 201AA and 264AD Find 201AA also had tiny localised deposits of bright blue coloured minerals within the crust adjacent to the possible haematite

From the X ray non ferrous debris was identified within the corrosion crust of 201AB

5 2 Copper alloy

The copper alloy find shows signs of active corrosion it is in poor condition and will require dry storage

5 3 Lead

The lead finds show signs of instability and requires dry storage

5 4 Slag

Three objects (17AA 24AA and 232AB) were identified as slag not iron 232AB appears to have some iron content and is magnetic 17AA has signs of active corrosion (bright orange) but is not magnetic

The metals were generally in poor condition many of them unstable The site provides an aggressive environment for metal finds The excavated iron and the slag will require dry storage at less than 15%RH for the long term The non ferrous finds will require dry storage at less than 35%RH for the long term

5 5 Amber

The amber find is severely deteriorated and in numerous pieces The breaks appear clean and fresh This damage may have occurred during post excavation drying (it arrived stored in a desiccated box with the metal finds) It is now stored in a crystal box at ambient temperature and relative humidity For the long term store at 50 55% RH at low light levels (150 lux)

5 6 Leather

One object was identified as leather It is dry and desiccated It arrived stored in a desiccated box with the metal finds and is now stored in a crystal box at ambient temperature

6 0 Statement of potential

This report was written without seeing the site and without the benefit of discussion with other members of the project team

6 1 Indicators of preservation The metals were in poor condition there was also active metallic corrosion suggesting that the areas excavated provided an aggressive environment for metals The corrosion products did not reflect waterlogged anoxic environments which would favour organic preservation however the presence of one leather (context 123) and one amber find (context 127 AA) shows that these conditions were present in some areas of the site

6 2 High temperature processes possible haematite was found on two finds this is formed at a temperature above 200 degrees C (Cronyn 1990) and could indicate the burning of material surrounding the iron before burial Charcoal inclusions were found within iron corrosion crusts There is a presence of slag on this site (from contexts 17 24 and 232) but not in numbers large enough to suggest ironworking (slag was often transported for hardcore)

7 0 RECOMMENDATIONS

Recommendations for further work are highlighted in bold in the tables (see section 4 above)

7 1 Further investigative conservation

Further treatment is recommended (if required for research) for the copper alloy find (122AA) the amber find (217AA) and six iron finds (119AB 121AA 134AA 201AD 269AA and 469AB)

Conservation records for each object treated will be supplied on archival paper a copy will remain in our laboratory The records are produced in MSWord files and copies can be provided on disc if requested

Further cosmetic work or physical support may be required if any finds are selected for photography illustration or display Please notify the conservator if this is required

7 2 Analysis and specialist support

Suggestions for further analysis and specialist support have been made

- Any analysis of the amber find should be completed before the conservation treatment
- The slag material and a selection of the lead finds (see 4 3 and 4 4 above) should be referred to an archaeometallurgist
- XRF may be required following investigative conservation for any non ferrous metal revealed on the iron finds
- MPO (?wood) remains were noted on four iron finds More may be revealed during investigative cleaning and if preservation is good further identification may be recommended However this seems unlikely

7 3 Storage

Packaging on arrival at the laboratory

The metalwork and one piece of desiccated leather had been packed in perforated mini grip bags without jiffy foam inserts The iron was stored in a desiccated plastic box labelled "ERP 02 Fe 17AA 497AA" The non ferrous metals (Pb and Cu alloy) were stored in a desiccated plastic box with the leather and amber material This box was labelled Pb + Cu Alloy Wood/leather Amber" The Desiccare Inc humidity indicating strips did not appear to be working properly

Long term storage

The finds have been packaged appropriately for long term storage All materials used are archive stable and acid free Plastic bags have been pierced to allow airflow reducing the risk of condensation and mould growth 'Jiffy' (polythene) foam inserts have been added to the bags to provide additional support and protect against mechanical damage during transit A Humidial Corp relative humidity indicator strip was added to each desiccated storage box Any replacement of packaging materials should be carried out in consultation with a conservator Avoid paper or card labels in association with metals especially lead and lead alloys Acid vapours will cause active corrosion (Cronyn 1990)

Metals are packed in a polythene 'Stewart' box with sufficient airflow to allow the silica gel to provide a dry micro environment of less than 15% Relative Humidity which should prevent further corrosion of iron finds (Knight 1990) 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

The leather fragment and amber find have been placed in a small polystyrene crystal box (not desiccated)

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Appendix G

RECORDED FINDS (METALWORK AND LEATHER)

Jon Watt

1 0 INTRODUCTION

This report is based upon guidelines issued by the Finds Research Group 700 1700 and the Institute of Field Archaeology

2 0 QUANTIFICATION OF FINDS

2 1 By quantity

Material	Quantity
Iron	51
Cu alloy	1
Lead	4 (one with an iron insert)
?Zinc	1
Aluminium	1
Slag	3
Pottery	1
Stone	1
Leather	1
Amber	1
Stone	1

2 2 By function

The functional groups (used to describe the objects original use) referred to in this report are based on those adopted by Crummy (1983)

Function	Description	Material	Reference	Illustrate
Dress accessories	Bead	Amber	217 AA	Yes
Textile manufacture	Spindle whorl	Ceramic	401 AA	Yes
Transport	Snaffle bit link	Iron#	269 AA	(Yes)
Tools	Awl+	Iron	121 AA (1)	
	Scale tanged knife	Iron	469 AB	
Fittings and fastenings	Nail	Iron	119 AA	
	Four nail fragments+	Iron	121 AA (x5)	
	Nail	Iron	122 AB*	
	Two nails+	Iron	122 AB*(x2)	
	Rectangular staple	Iron	134 AA	
	Nail	Iron	200 AA	
	Wire nail (modern)	Iron	201 AB	
	Nail	Iron	210 AA	
	Nail	Iron	215 AA	
	Three nail fragments	Iron	229 AA	
	Nut (modern)	Iron	232 AA	

Function	Description	Material	Reference	Illustrate
	Nail	Iron	234 AA	
	Nail shank	Iron	254 AC	
	Nail	Iron	254 AD	
	Plug with iron insert	Lead (Iron)	264 AA	
	Nail	Iron	264 AC	
	Nail shank	Iron	264 AD	
	Nail (6 fragments)	Iron	279 AB	
	Wood screw (modern)	Iron	280 AB	
	Nail	Iron	293 AA	
	Nail (2 fragments)	Iron	408 AB	
	Nail	Iron	414 AA	
	Nail	Iron	414 AB	
	Nail shank	Iron	418 AA	
	Nail	Iron	418 AB	
	Nail	Iron	426 AA	
	Nail	Iron	432 AB	
	Nail (2 fragments)	Iron	448 AA	
	Nail	Iron	448 AB	
	Nail	Iron	469 AC	
	Nail head	Iron	471 AA	
	Wire nail (modern)	Iron	483 AA	
	Nail	Iron	497 AA	
Agriculture Metal workmg	Dutch hoe blade	Iron	201 AD	
	Slag	Iron slag	17 AA	
	Slag	Iron slag	24 AA	
	Slag	Iron slag	232 AB	
	Melt	Lead	254 AA	
	Melt	Lead	268 AA	
	Melt	Lead	497 AA	
Uncertain	Two spikes corroded together	Iron	119 AB	
	Strip	Cu alloy	122 AA	
	Fragment	Leather	123	
	Strip fragment	Iron	201 AA	
	Sheet	Aluminium	201 AC	
	Strip fragment	Iron	225 AA	
	Rectangular plate	Iron	227 AA	
	Battery electrode?	?Zinc	228 AB	
	Strip fragment	Iron	253 AC	
	Flake (natural)	Stone	254 AB	
	Strip fragment	Iron	259 AA	
	Strip fragment	Iron	269 AB	
	Strip fragment	Iron	289 AA	
	Wire	Iron	297 AA	
	Wire	Iron	297 AB	
	Strip fragment	Iron	417 AA	
	Curving strip	Iron	483 AB	

+ More than one object with the same RF number

* Duplicate numbers

Possibly plated

Dress accessories The only object positively identified as a dress item is a barrel shaped amber bead

Textile manufacture A single discoid spindle whorl (401AA) was made from the pedestal base of an original form and therefore function cannot be determined 119AB appears to consist of two iron spikes corroded together cleaning may reveal further details and perhaps its use Several of the iron strips may be fragments of nail shanks Both (201AC) a sheet of aluminium and 228AB provisionally interpreted as a zinc electrode from a battery are modern

3 0 ILLUSTRATIONS

It is recommended that three objects be illustrated for publication

4 0 RECOMMENDATIONS

Further research should be undertaken on the bulk of the recorded finds leading to full publication of the assemblage

Prior to this investigative conservation should be undertaken on two of the metal artefacts The broad terminal of iron fitting or snaffle bit link 269AA should be cleaned (poodled) to reveal more detail of its form as should a small section of the loop it should be subject to XRF analysis in order to determine the nature of any plating Partial cleaning (poodling) of the top end of 119AB and across the shank of the possible awl within 121AA may be necessary to confirm identification

Prior to the repair of the amber bead for illustration it should be referred to a specialist in order to determine the origin of the material

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Appendix H

THE HUMAN REMAINS

Joanna Higgins

1 0 INTRODUCTION

During archaeological excavations of a Romano British settlement and associated cemetery at Millfield Farm Wheldrake near York in 2002 the human skeletal remains of two individuals were recovered. These comprised the fragmentary and incomplete remains of one young adult and one middle aged adult both of indeterminate sex. The inhumations were interred separately orientated roughly north to south and were not in close proximity. A third grave was excavated and was found to contain grave goods but no human remains.

2 0 METHODOLOGY

A detailed inventory of all skeletal elements present was made for each inhumation. The level of preservation was recorded as good, fair or poor depending on the condition of the bone tissue. The relative completeness of each individual was recorded as a percentage of the total number of bones in a normal human skeleton.

An estimation of sex was not possible for either skeleton due to the lack of surviving diagnostic elements. An estimation of age at death was made using the dental attrition scheme devised by Miles (1962) and by late fusing epiphyses where possible (Schwartz 1995). Additional ageing methods were not implemented due to poor preservation of diagnostic elements.

The level of preservation prevented the calculation of stature and the collection of metric and non metric data in most instances. All skeletal elements present were examined for visible abnormalities and any pathological changes were described as appropriate.

3 0 RESULTS

Preservation and completeness

Skeleton 204 was well preserved but less than 40% complete and extremely fragmentary. The surviving bone consisted primarily of long bone and skull fragments and a partially complete dentition. Skeleton 212 was also less than 40% complete and extremely fragmentary. The surviving bone was in very poor condition and also consisted primarily of skull and long bone fragments.

Estimation of age at death

Skeleton 204 was estimated to be a young adult aged about 25 years at the time of death. Skeleton 212 was estimated to be that of a middle aged adult of between 42-52 years at the time of death.

Health and disease

Dental pathology and variation

The dentition of skeleton 204 only was suitable for pathological assessment although it was incomplete. This individual had no evidence of caries or dental enamel hypoplasia (0/13) or

of dental abscess or ante mortem tooth loss (0/12) However slight calculus deposits were present on most teeth (11/13)

There was some variation in premolar form in the dentition of skeleton 204 In the maxilla the right first premolar had an accessory cusplet In the mandible the right 2nd premolar was a three cusped variant In addition two small enamel pearls were present on the mesial and distal aspects of the root of the left maxillary 3rd molar

General pathology

No other skeletal abnormalities or pathologies were observed in skeleton 204 or skeleton 212

4 0 DISCUSSION

The fragmentary and incomplete condition of skeleton 204 and skeleton 212 has limited the level of information each can provide about these individuals in life

The presence of slight calculus and the absence of other dental pathologies in skeleton 204 can be considered normal for a young adult from an archaeological population

The premolar variants in skeleton 204 are very common (Hillson 1996) and are most likely genetically linked However in isolated individuals they are of limited value as markers of populational or familial relationships

The occurrence of enamel pearls on the exterior surface (extradental) of a tooth root (radicular) is a fairly common developmental anomaly thought to occur as a result of abnormalities in embryological development although the precise cause is unclear (Ortner 2003) The anomaly is asymptomatic and is most frequently found in the maxillary molars (Pindborg 1970) as was the case here

5 0 RECOMMENDATIONS FOR FURTHER WORK

No further work is required for these remains at present However the skeletal material should be retained for future research purposes

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Appendix J

BIOLOGICAL REMAINS MILLFIELD FARM

Allan Hall, Deborah Jaques and John Carrott

Summary

Sixteen sediment samples (of twenty seven collected) two fragments of handcollected shell and a single box of handcollected bone recovered from excavations at Millfield Farm Wheldrake near York, a site encountered along the route of the Elvington to Riccall water pipeline were submitted to PRS for an evaluation of their bioarchaeological potential. The deposits were mainly of Romano British date but the nature of the excavation (i.e. within the area designated for the pipeline) made detailed phasing of the site impossible. Three broad phases of activity were tentatively identified as 'pre dating the Romano British settlement (Phase I) Romano British (Phase II) and indicative of medieval agriculture (Phase III)

Fourteen of the samples were processed for the recovery of plant and invertebrate macrofossils. All of the resulting washovers consisted of (at most) a few cm³ of material much of it small clasts of concreted sediment (perhaps pan?). With this were small amounts of charcoal, coal and sometimes traces of cinder like material and a very few charred plant remains thought mostly to be ancient. The uncharred seeds and roots present in most samples were clearly modern. No invertebrate remains were recovered from the samples. The residues were all mostly of stones and sand and with the exception of occasional fragments of unidentified bone were barren of biological remains.

One box of handcollected bone was recovered from excavations the bulk of which was recovered from Phase II deposits. All of the major domesticates i.e. cattle, caprovid and pig were identified whilst additionally dog and horse bones were present. Preservation was rather variable and very few fragments were recovered that could provide biometrical and age at death data.

No further work on the current material is recommended. In view of the fact that this evaluation has most probably encountered only the periphery of the main settlement area any future excavation at the site should allow for the recovery of additional handcollected material and the collection and assessment of further samples of well stratified archaeological deposits for biological remains.

10 INTRODUCTION

An archaeological evaluation excavation was carried out by Northern Archaeological Associates at Millfield Farm Wheldrake near York (NGR SE 668 443) during June 2002. This work was undertaken in association with the construction of a water pipeline between Elvington and Riccall.

The archaeological features encountered were four graves and several pits and ditches forming the edge of a multi phased enclosure with an associated trackway. The area of excavation was dictated by the route of the pipeline and formed a narrow strip across one corner of the settlement. This limiting of the excavation area prevented detailed phasing of the site but three broad phases of activity could be tentatively identified.

Phase I mostly ditch features perhaps representing early activity predating the main period of settlement.

Phase II the main period of activity comprising the Romano British (most of the recovered pottery was Roman of the 3rd to 4th century AD) settlement trackway ditches and graves

Phase III medieval agricultural activity represented by a series of plough furrows and a field boundary ditch

Sixteen sediment samples (GBA / BS *sensu* Dobney *et al* 1992) from a total of twenty seven collected two fragments of handcollected shell (from Context 200) and a single small box of handcollected bone were submitted to PRS for an evaluation of their bioarchaeological potential

2 0 METHODS

All sixteen of the submitted sediment samples were inspected in the laboratory and their lithologies were recorded using a 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

3 0 RESULTS

Sediment samples

All of the washovers consisted of (at most) a few cm³ of material much of it concreted sediment (perhaps pan?) in clasts of no more than about 1mm in size With this were small amounts of charcoal coal and sometimes traces of cinder like material and a very few charred plant remains thought mostly to be ancient The uncharred seeds and roots present in most samples were clearly modern No invertebrate remains were recovered from the samples

The residues were all mostly of stones and sand ranged from 0.3 to 0.6kg in dry weight and with the exception of occasional fragments of unidentified bone were barren of biological remains

The results of the evaluation of the samples are summarised in Table J1

Handcollected shell

Only two small fragments of very eroded oyster (cf *Ostrea edulis* L) shell were recovered both from context 200 (topsoil)

Handcollected bone

A single box (approximately 20 litres) of handcollected bone was recovered from the site The handcollected animal bone assemblage amounted to 666 fragments representing 39 deposits of which 25 were assigned to Phase II no bone was recovered from Phase III deposits The bulk of the assemblage was retrieved from ditch fills Table J2 shows the number of fragments by species by phase

Preservation of the bones was quite varied between contexts Fragments from 14 of the deposits were described as being of poor or very poor preservation whilst material from 19 was recorded as fair Many of the more poorly preserved fragments had very degraded

surfaces which was primarily a consequence of chemical erosion while in the ground. Other bones were rather brittle and had split in to layers (contexts 407 and 471). Tooth enamel which normally survives in the most adverse conditions was in some cases very degraded (contexts 264, 437 and 449). Only six contexts produced bones that were well preserved. Fragmentation was extensive and largely the result of fresh breakage damage. Evidence of dog gnawing was present but minimal.

The poor preservation and extensive fragmentation resulted in few identifiable fragments. Many of the bones recovered could only be identified to categories such as large or medium sized mammal. Identified fragments indicated a restricted range of species which included cattle, horse, caprovid and pig. A single dog mandible was also recovered (from context 215). The most numerous elements identified for both cattle and caprovid were isolated teeth and other elements of denser bone which are more robust and generally survive better. Skeletal element representation is therefore more likely to reflect the preservational conditions rather than any particular disposal patterns.

In total 12 measurable fragments and six mandibles with teeth *in situ* of use for providing biometrical and age at death data were recorded.

Fifty one poorly preserved fragments of bone were recovered from a truncated feature which was initially interpreted as a grave (208). These remains were identified as cattle and although very fragmented represented a humerus, a radius, an ulna and a set of carpals probably all from one left front leg. Despite the fragmentation (much of which was recent) it is likely that the bones were originally deposited in articulation. A common feature of many Iron Age and Romano British sites is the occurrence of articulated limbs which appear to have been deliberately placed within pits or ditches. Their location and association with other artefacts has often resulted in their interpretation as ritual or special deposits (Grant 1984, 2002). The remains recovered here may represent just such a deposit but bearing in mind the condition of the fragments and the evidence of past disturbance which may have resulted in the destruction of other bones, this interpretation can only be tentative.

Additional note on animal bone

In addition to the 666 fragments of bone submitted for analysis 51 poorly preserved fragments of bone were recovered from a truncated feature which was initially interpreted as a grave (208). These additional remains were identified as cattle and although very fragmented represented a humerus, a radius, an ulna and a set of carpals probably all from one left front leg. Despite the fragmentation (much of which was recent) it is likely that the bones were originally deposited in articulation. A common feature of many Iron Age and Romano British sites is the occurrence of articulated limbs which appear to have been deliberately placed within pits or ditches. Their location and association with other artefacts has often resulted in their interpretation as ritual or special deposits (Grant 1984, 2002). The remains recovered here may represent just such a deposit but bearing in mind the condition of the fragments and the evidence of past disturbance which may have resulted in the destruction of other bones, this interpretation can only be tentative.

4.0 DISCUSSION AND STATEMENT OF POTENTIAL

It is evident from the extremely small amounts of material (allowing for the size of the samples processed) that these deposits will not repay further analysis in their own right nor does it seem likely that further deposits from the site will be likely to furnish more useful assemblages. The presence of small amounts of charred heather root/twig (and some other

charred remains root/rhizome fragments and unidentified herbaceous material) is of interest however This kind of material is being recorded from many late prehistoric and Romano British sites in the southern (and especially south eastern) Vale of York (and elsewhere see Hall 2003) and it is thought that it may represent remains from the burning of peat and/or turves The deposits examined for this evaluation thus have a value in adding to the corpus of records for such material in the area and more than justify the investment in this investigation of plant remains The retention of any unprocessed material does not however seem worth while

The two very poorly preserved fragments of shell were recovered from a topsoil layer and of no interpretative value

The bone assemblage recovered from this site was too poorly preserved and fragmented to be of much interpretative value Clearly the ditches were convenient places for the dumping of rubbish but whether or not this was the primary place of deposition could not be confidently ascertained because of the poor condition of some of the fragments However evidence of dog gnawing was minimal and this may suggest that the bones were quickly incorporated into the deposits and not easily accessible for scavenging

These deposits show little potential for the preservation of a vertebrate assemblage of sufficient size to provide useful archaeological and zooarchaeological data Additionally dating of the deposits appears rather uncertain beyond the broad category of Romano British

5 0 RECOMMENDATIONS

No further work on the current material is recommended

In view of the fact that this evaluation has most probably encountered only the periphery of the main settlement area any future excavation at the site should allow for the recovery of additional handcollected material and the collection of further samples of well stratified archaeological deposits for assessment

6 0 RETENTION AND DISPOSAL

All of the remaining unprocessed sediment samples and the handcollected material may be discarded unless they are required for other purposes

7 0 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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Table J1 Plant remains and other components from samples from Millfield Farm, Wheldrake

Key P=Phase CN=Context number S=NAA sample PRS=PRS sample Wt (kg)=weight of processed subsample (kg) Rem (l) = approximate volume of unprocessed sediment remaining (litres) – figures in parentheses indicate the number of additional unseen tub Proc=how processed – NFA=No further action (i.e. description only) wo=subsample sieved to 300 microns with washover Components from the washovers are recorded in the first four of the last five columns as ch—charcoal (C=includes conifer Q=includes oak Quercus) co—coal ?Ca—charred of Calluna vulgaris (L) Hull (?heather) root/basal twig fragments and other remains a=amphibian bone b=bone fragments C=sedge (Carex) nutlet ce=cereal indet chd=charred herbaceous detritus ci=cinder like material H=barley (Hordeum) P=pale persicaria (Polygonum lapathifolium L) nutlet fragment R=dock (Rumex) nutlet rr=charred root/rhizome T=wheat (Triticum) Tg=wheat glume base No material was present in more than trace amounts (given the sample size of 3kg throughout) the figures are maximum dimensions (in mm) Biological and artefactual components of the residues are given in the final column as b=bone fragments (with their weight in grammes in brackets) p=pot sherds (single fragments in each case)

Yorkshire Derwent Aqueduct Duplication Main Elvington to Riccall near York

P	Context	Context type	S	PRS	Sediment description	Wt (kg)	Rem (l)	Proc	ch	co	°Ca	Other components			R
												cereals	other charred plants	bone and other materials	
2	210	grave fill in 208	AB	21001	Dry light to mid grey brown to light to mid orange brown brittle and stiff to crumbly (working more or less plastic when wetted) stony (stones 2 to 20mm were common and larger stones (20 to 60mm) were present) ?slightly sandy clay with some modern rootlets	0	all	NFA							
2	213	grave fill in 211	AA	21301/T	Just moist light to mid grey brown to light to mid orange brown stiff to crumbly (working soft and somewhat plastic when wetted) sandy clay (to clay sand) Stones (2 to 20mm) and fine charred material were present	3	7 (+1)	wo	5		5	°T		b	b (2)
2	228	upper ditch fill in 229	AA	22801/T	Just moist mid to dark grey to mid brown (mottled on a cm scale) with a reddish brown cast in places brittle to crumbly (working soft and slightly sticky when wetted) ?slightly silty sandy clay Stones (2 to 6mm and 60+mm) and fine charred material were present	3	7 (+1)	wo	10	5	5	ce	chd rr		p
1	253	upper ditch fill in 255	AB	25301/T	Moist mottled (cm scale) mid grey brown to light to mid orange brown to mid to dark grey stiff to crumbly (working plastic) ?very slightly sandy clay Fragments of pot and traces of fine charred material were present	3	4	wo	10C					ci	P b (1)
1	266	fill of ditch 265	AA	26601	Just moist mid grey brown to light to mid grey crumbly (soft and then more or less plastic when wetted) stony (stones 6 to 60mm were common and smaller and larger stones were present) silty clay	0	all	NFA							
1	279	fill of ditch 278	AA	27901/T	A just moist to dry light to mid grey brown to mid grey brittle to crumbly (working more or less plastic in the more moist and more clay parts) mix of sand and clay (in varying proportions) Stones (6 to 60mm) and traces of fine charred material were present	3	4 (+2)	wo	10Q	10	5	°T			

P	Context	Context type	S	PRS	Sediment description	Wt (kg)	Rem (l)	Proc	ch	co	?Ca	Other components			R
												cereals	other charred plants	bone and other materials	
1	284	upper fill of ditch 282	AA	2S401/T	Dry light yellow brown to dark grey (with shaded of grey brown between) indurated to brittle (working crumbly) ?sandy clay Stones (6 to 20mm and 60+mm) fine charred material rotted bone and modern rootlets were present	2	2	wo	5		2		C rr	b	P b (14)
?	407	group number	AB	40701/T	Moist mid brown to mid to dark grey brown to mid grey crumbly and slightly sticky (working more or less plastic) slightly sandy clay with patches of yellow brown sand (to 5mm possibly from very rotted sandstone) Stones (2 to 60mm) traces of fine charred material fragments of root/twig and modern rootlets were present	3	5 (+1)	wo	2	5	5	?H ?T		a	b (<1)
2	430	fill of ditch 429	AA	43001/T	Just moist light to mid grey brown to mid grey (slightly orange brown in places) crumbly working soft (where more sandy) or plastic (where more clay) sandy clay to clay sand Stones (2 to 6mm and 60+mm) and fine charred material were present	3	6 (+1)	wo	5	5	5	T Tg			b (<1)
2	432	fill of ditch 431	AA	43201/T	Moist mid grey to mid grey brown crumbly and slightly sticky (working plastic) ?slightly silty clay with some stones (2 to 20mm) and fine charred material	3	7 (+1)	wo	3		5	ce ?T	chd	a	
?	463	fill of pit 462	AA	46301/T	Just moist mid grey to light to mid grey brown to orange brown indurated and brittle to crumbly (working more or less plastic when wetted) ?slightly sandy clay with small patches of buff ?silty clay (to 10mm) Stones (2 to 20mm) and fine charred material were present	3	4	wo	5	5	5	?T	R		
2	465	fill of ditch 464	AA	46501/T	Just moist light to mid grey brown to mid to dark grey brown crumbly (working more or less plastic) sandy clay Large stones (60+mm) rotted charcoal and modern rootlets were present	3	4 (+1)	wo	5	5	3		chd	ci	

Yorkshire Derwent Aqueduct Duplication Main Elvington to Riccall near York

P	Context	Context type	S	PRS	Sediment description	Wt (kg)	Rem (l)	Proc	ch	co	Ca	Other components			R
												cereals	other charred plants	bone and other materials	
2	469	fill of ditch 468	AA	46901/T	Just moist mid brown to mid grey (reddish brown in places) brittle to crumbly (working sticky and slightly plastic) gritty sandy clay with some lumps of light grey brown indurated clay (to 7 mm) Stones (2 to 60mm) coal (to 4mm) and modern rootlets were present	3	4 (+1)	wo	2					b	b (3)
1	473	fill of ditch 472	AA	47301/T	Just moist mid grey brown (lighter in places) crumbly (working soft and somewhat plastic) sandy clay with stones (2 to 20mm) ?fine charred material and modern rootlets	3	8 (+1)	wo	5	5	3	ce			
1	481	fill of ditch 480	AA	48101/T	Dry light to mid brown to mid grey brown to mid to dark grey indurated and brittle to crumbly sandy clay (to clay sand) Stones (2 to 20mm) fine charred material and modern rootlets were present	3	6 (+1)	wo	10	5	3		P R	cl	
2	489	fill of ditch 444	AA	48901/T	Moist mid to dark grey to mid grey brown unconsolidated to slightly sticky (working plastic) ?slightly silty clay with some stones (6 to 20mm)	3	5 (+4)	wo	5		5	ce	rr		b (1)

Table J2 Handcollected vertebrate remains from Millfield Farm, Wheldrake

Species		1	2	?	Total
<i>Canis</i> f domestic	dog		1		1
<i>Equus</i> f domestic	horse		5		5
<i>Sus</i> f domestic	pig		6		6
cf <i>Sus</i> f domestic	?pig	2			2
<i>Bos</i> f domestic	cow	1	46	2	49
Caprovid	sheep/goat	1	20	1	22
Unidentified		143	371	67	581
Total		147	449	70	666

Key ?=phase uncertain

Appendix K
BIOLOGICAL REMAINS SITE 3
John Carrott and Stephen Cousins

1 0 SUMMARY

Four sediment samples recovered from deposits encountered during excavations at Site 3 a site on the Elvington to Riccall water pipeline North Yorkshire were submitted for an evaluation of their bioarchaeological potential Pottery recovered from the deposits suggested a 2nd century (Romano British) date for all of the archaeological features

2 0 RESULTS

Ancient biological remains recovered from the samples were restricted to small amounts of silted charcoal and a few fragments of very poorly preserved charred grain These remains are of no significant interpretative value and no further work is recommended

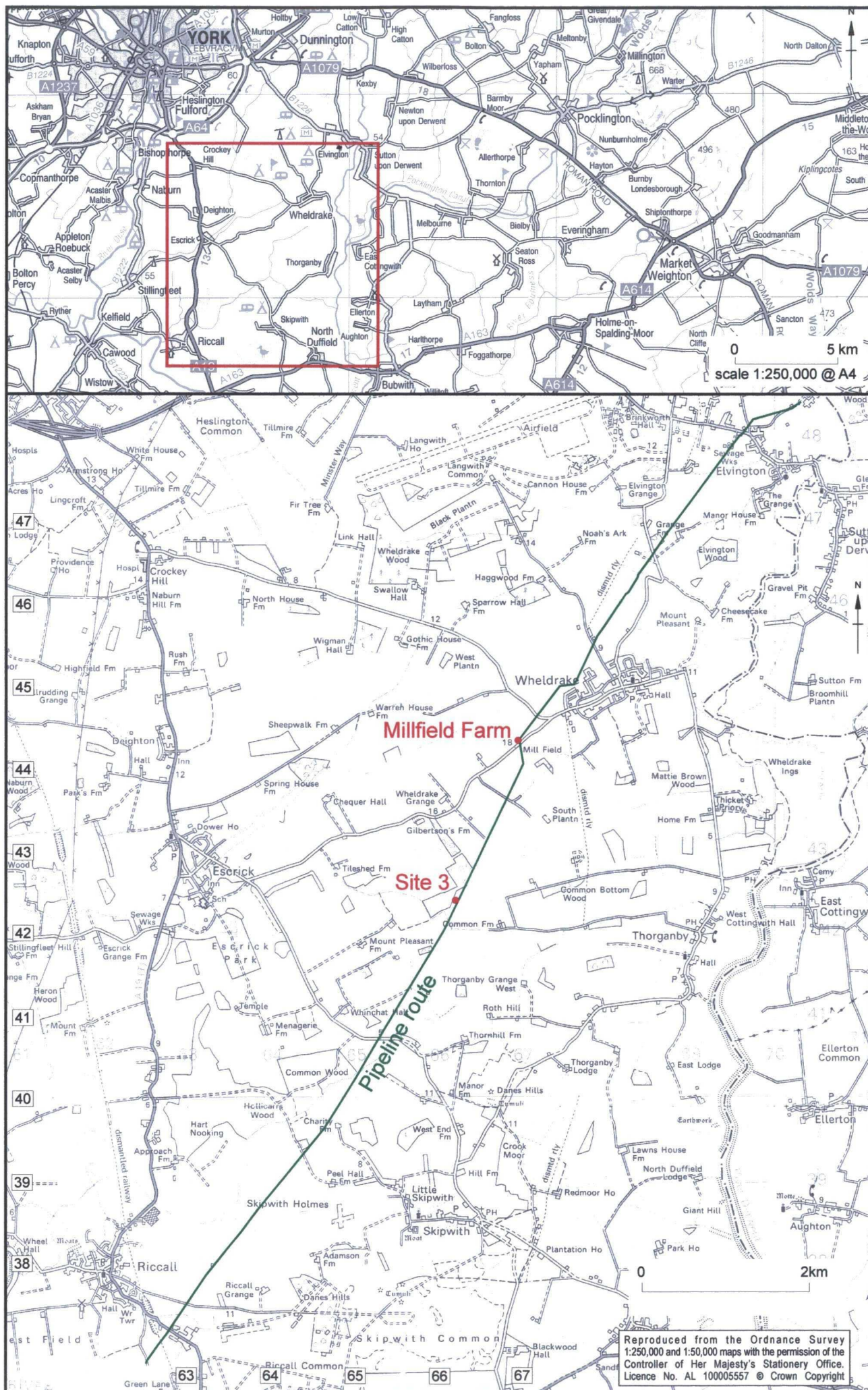
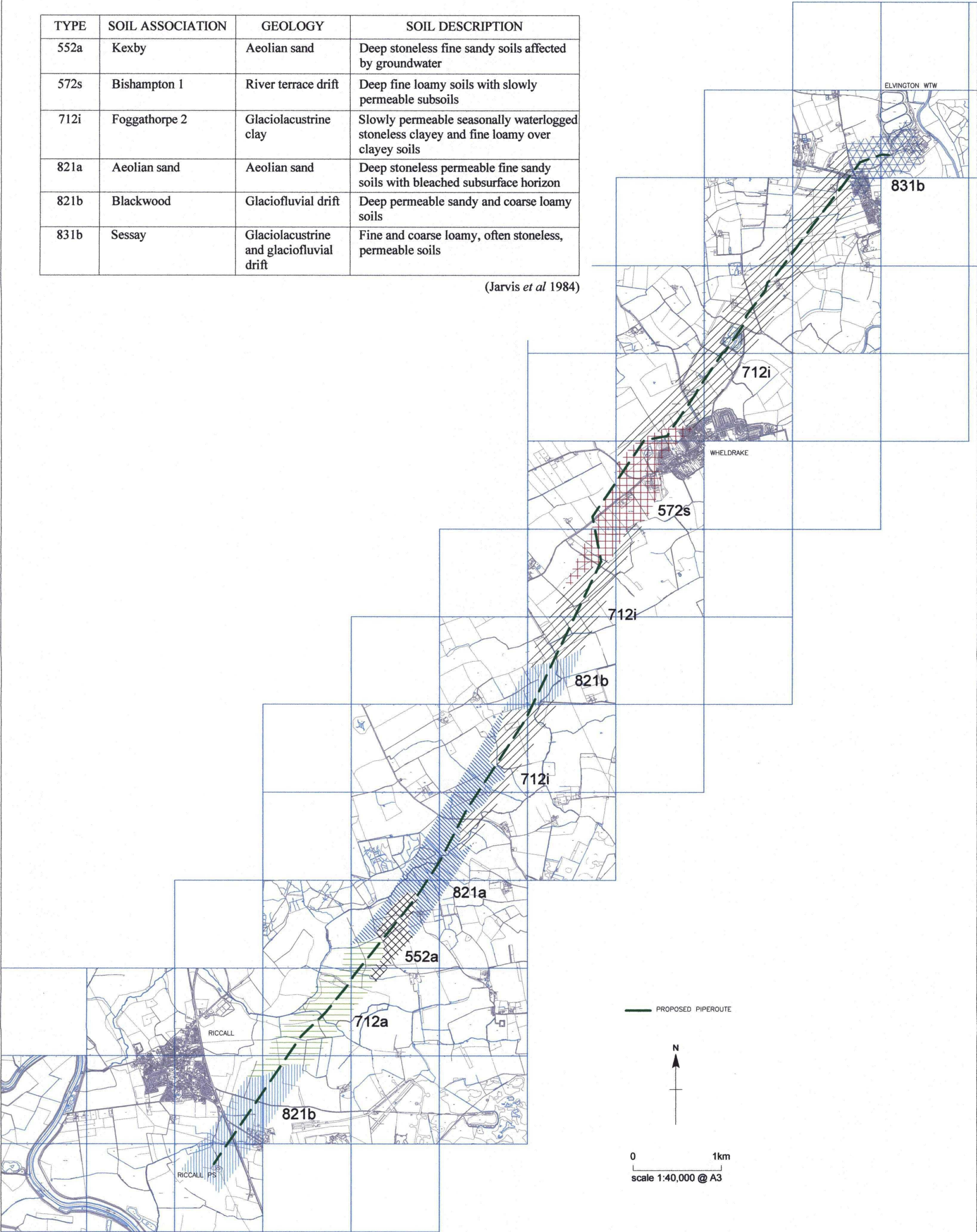


Figure 1 Yorkshire Derwent Aqueduct: pipeline location plan

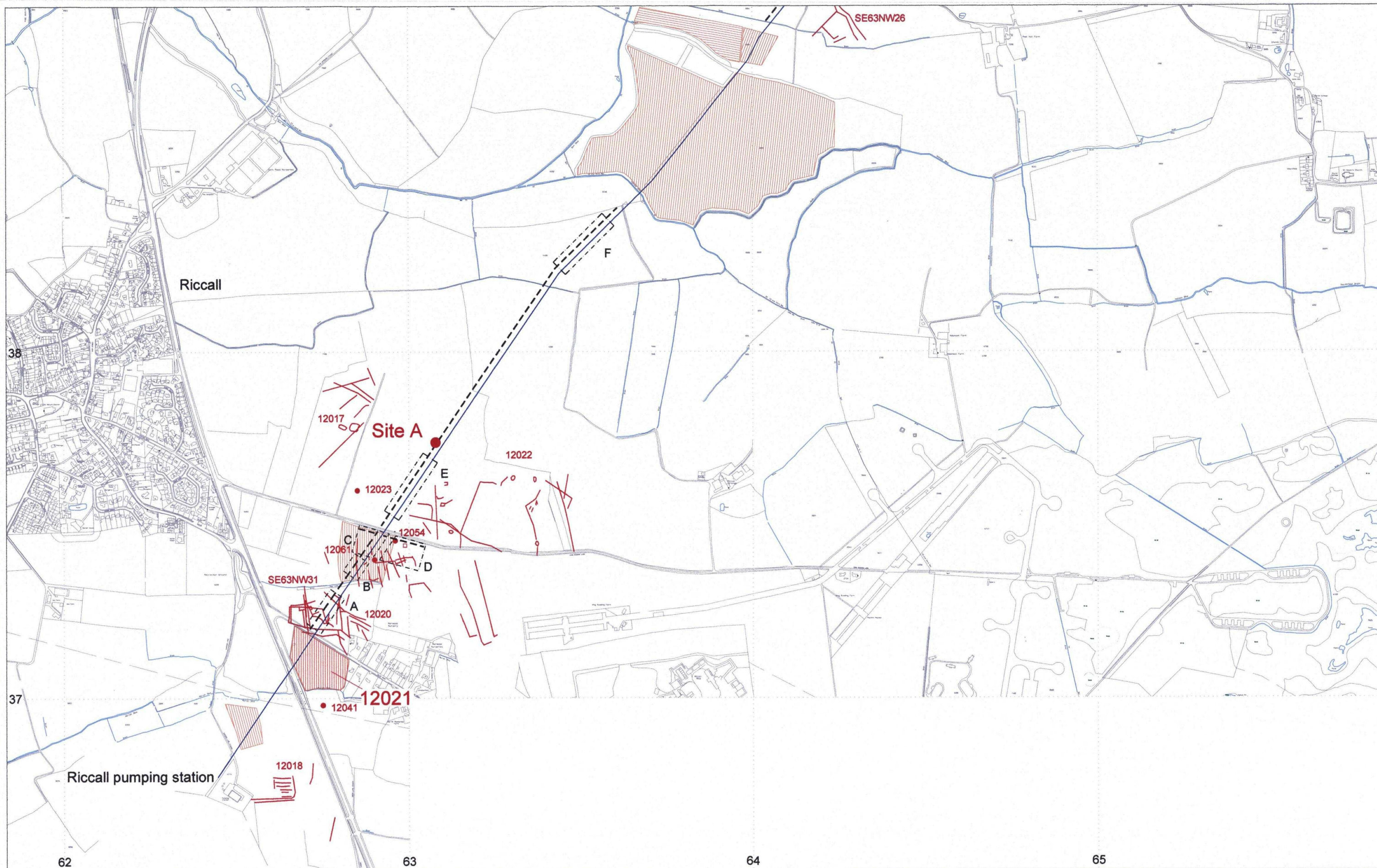
TYPE	SOIL ASSOCIATION	GEOLOGY	SOIL DESCRIPTION
552a	Kexby	Aeolian sand	Deep stoneless fine sandy soils affected by groundwater
572s	Bishampton 1	River terrace drift	Deep fine loamy soils with slowly permeable subsoils
712i	Foggathorpe 2	Glaciolacustrine clay	Slowly permeable seasonally waterlogged stoneless clayey and fine loamy over clayey soils
821a	Aeolian sand	Aeolian sand	Deep stoneless permeable fine sandy soils with bleached subsurface horizon
821b	Blackwood	Glaciofluvial drift	Deep permeable sandy and coarse loamy soils
831b	Sessay	Glaciolacustrine and glaciofluvial drift	Fine and coarse loamy, often stoneless, permeable soils

(Jarvis *et al* 1984)



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Figure 2 Yorkshire Derwent Aqueduct: geological areas along the pipeline route



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KEY

- pipeline route
- 2335 archaeological sites
- cropmarks

- ▨ extant ridge and furrow
- ▨ cropmark ridge and furrow
- conservation area boundary

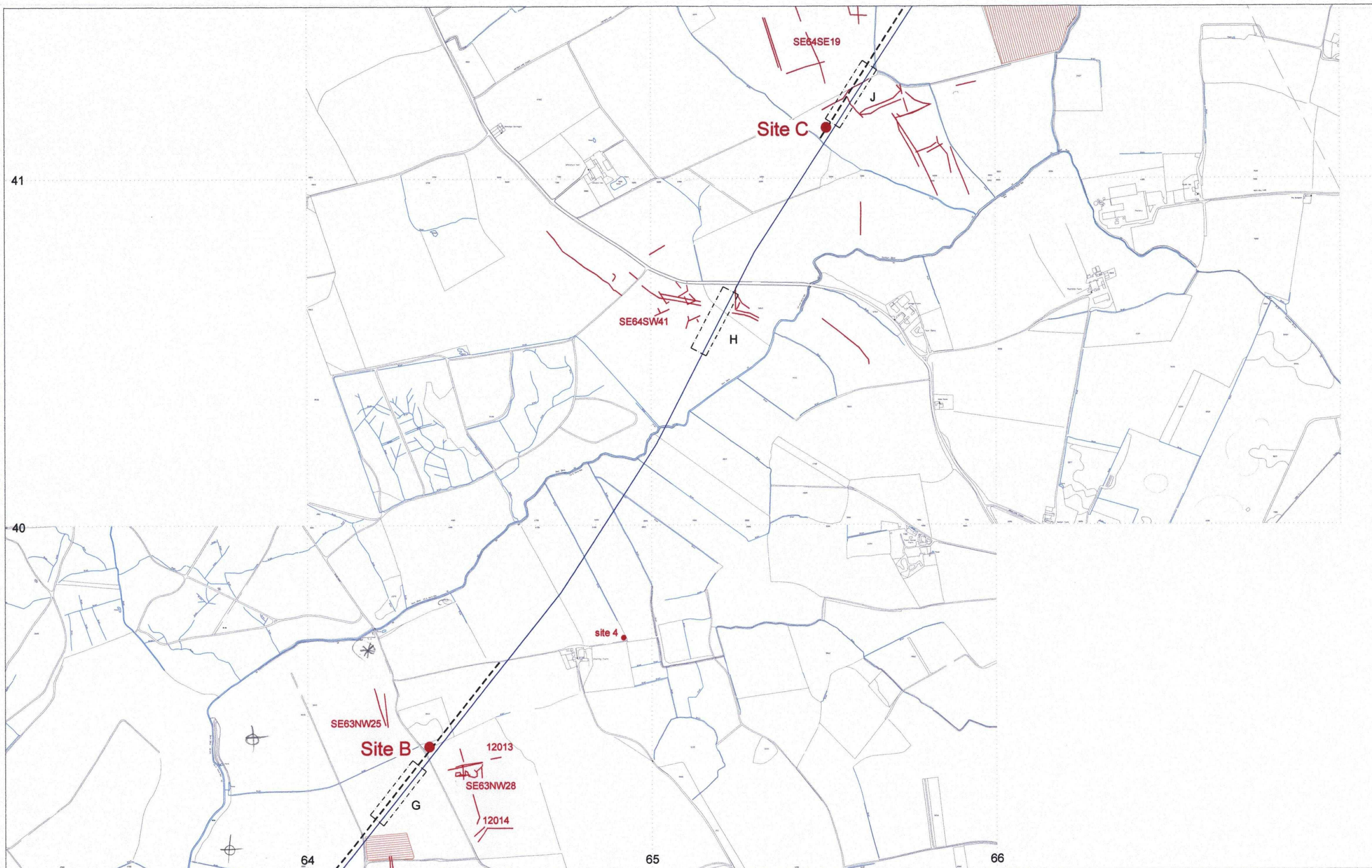
- rapid fieldwalking survey
- ... area of geophysical survey

0 500m
 scale 1:10,000 @ A3



41

40



KEY

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- | | | |
|---------------------------|----------------------------|----------------------------|
| pipeline route | extant ridge and furrow | rapid fieldwalking survey |
| 2335 archaeological sites | cropmark ridge and furrow | area of geophysical survey |
| cropmarks | conservation area boundary | |

0 500m
scale 1:10,000 @ A3



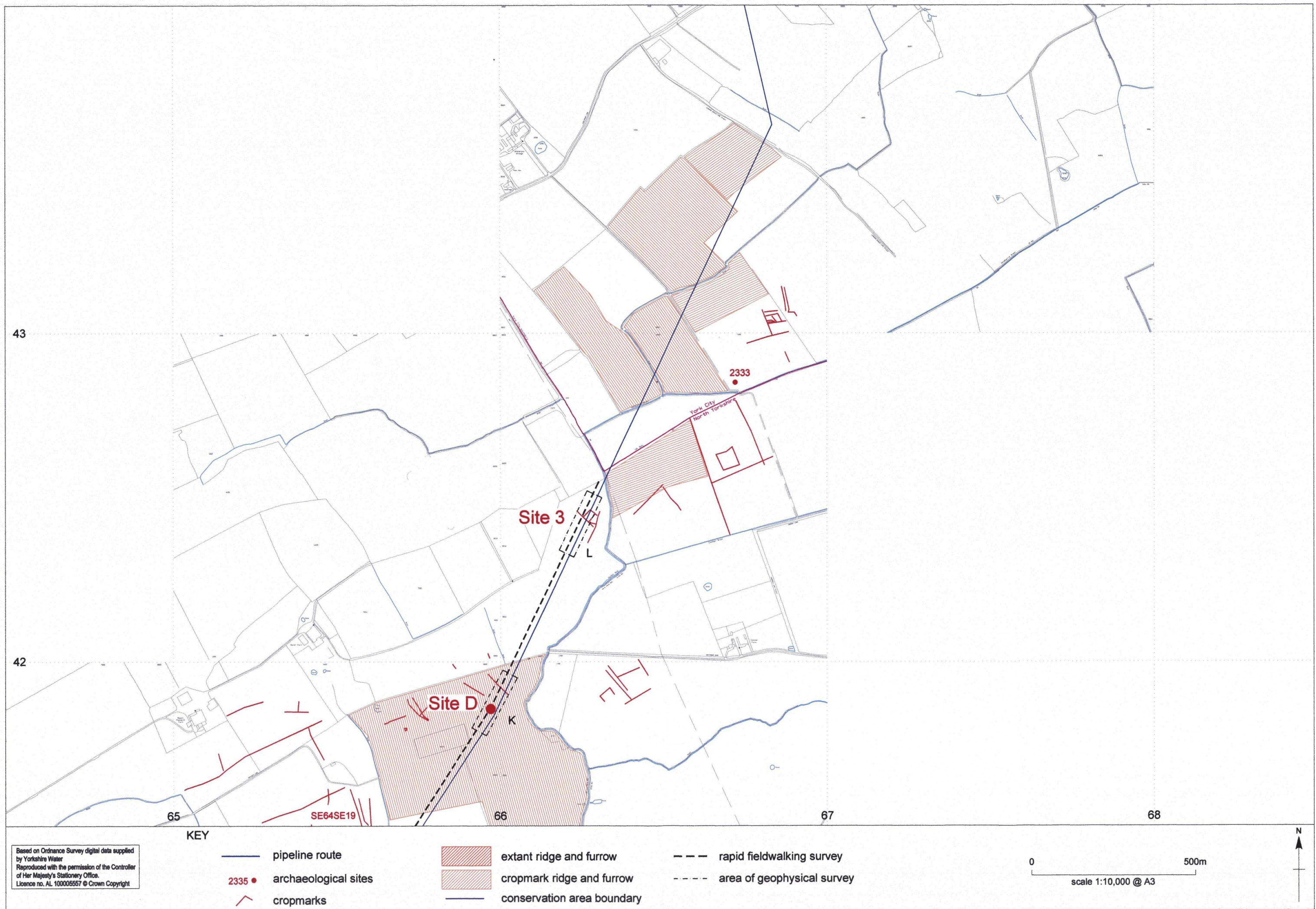


Figure 5. Yorkshire Derwent Aqueduct: sites in the vicinity of the pipeline route, areas of archaeological field survey (3 of 5)

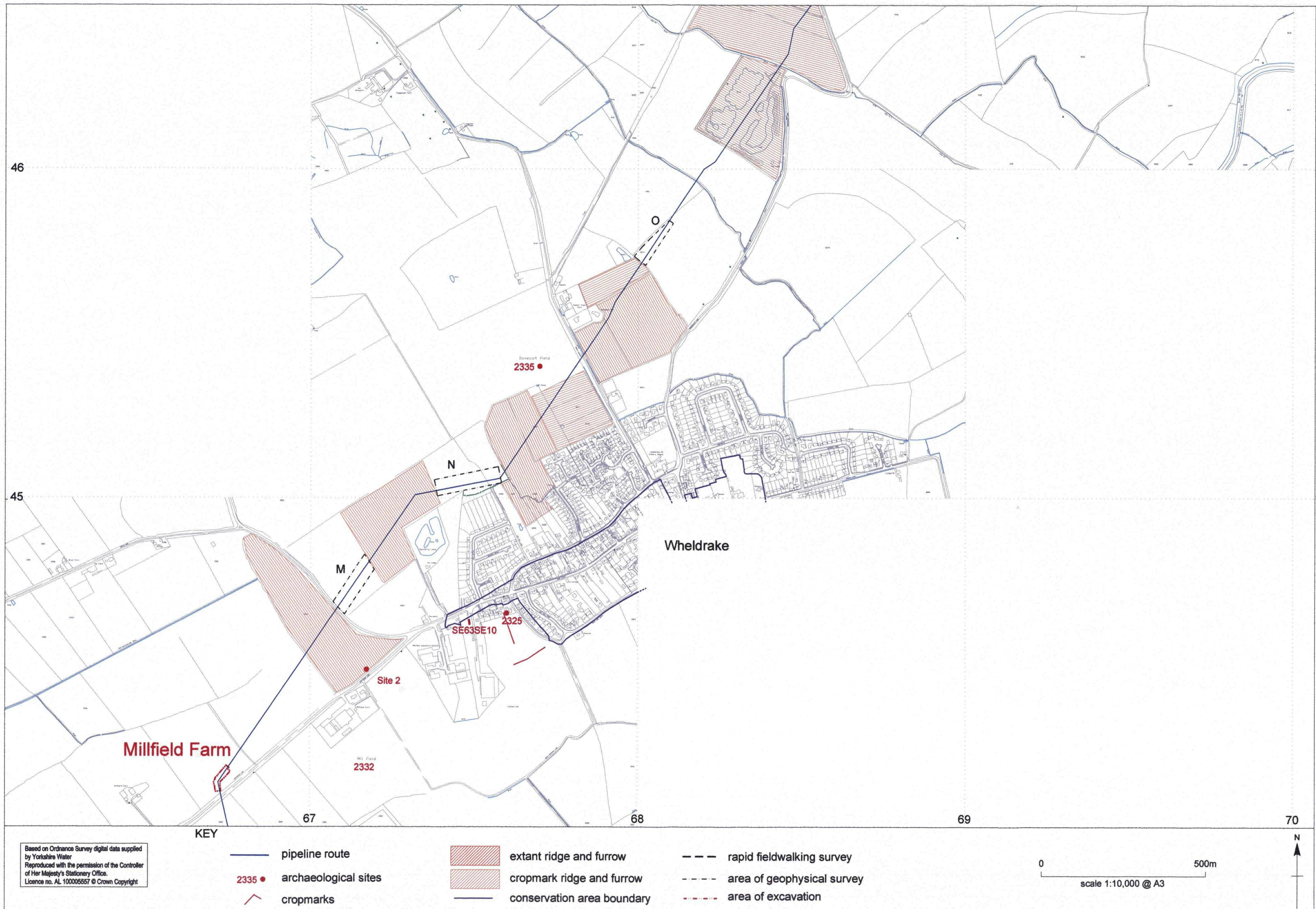


Figure 6. Yorkshire Dales National Park, site of the proposed pipeline route, showing the location of the pipeline route and the location of the archaeological sites.

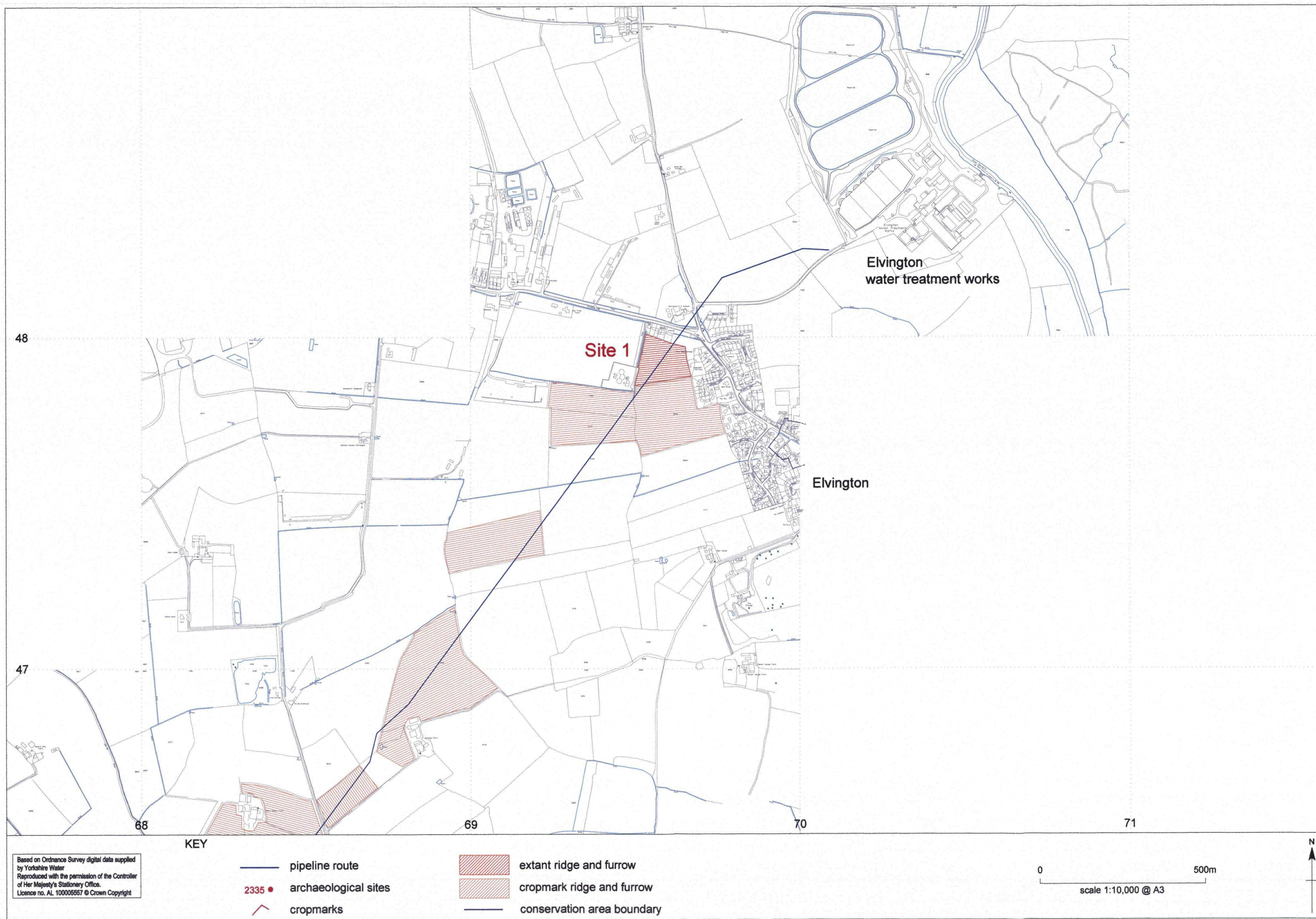


Figure 7. Yorkshire Darnest Aqueduct: sites in the vicinity of the pipeline route (5 of 5)

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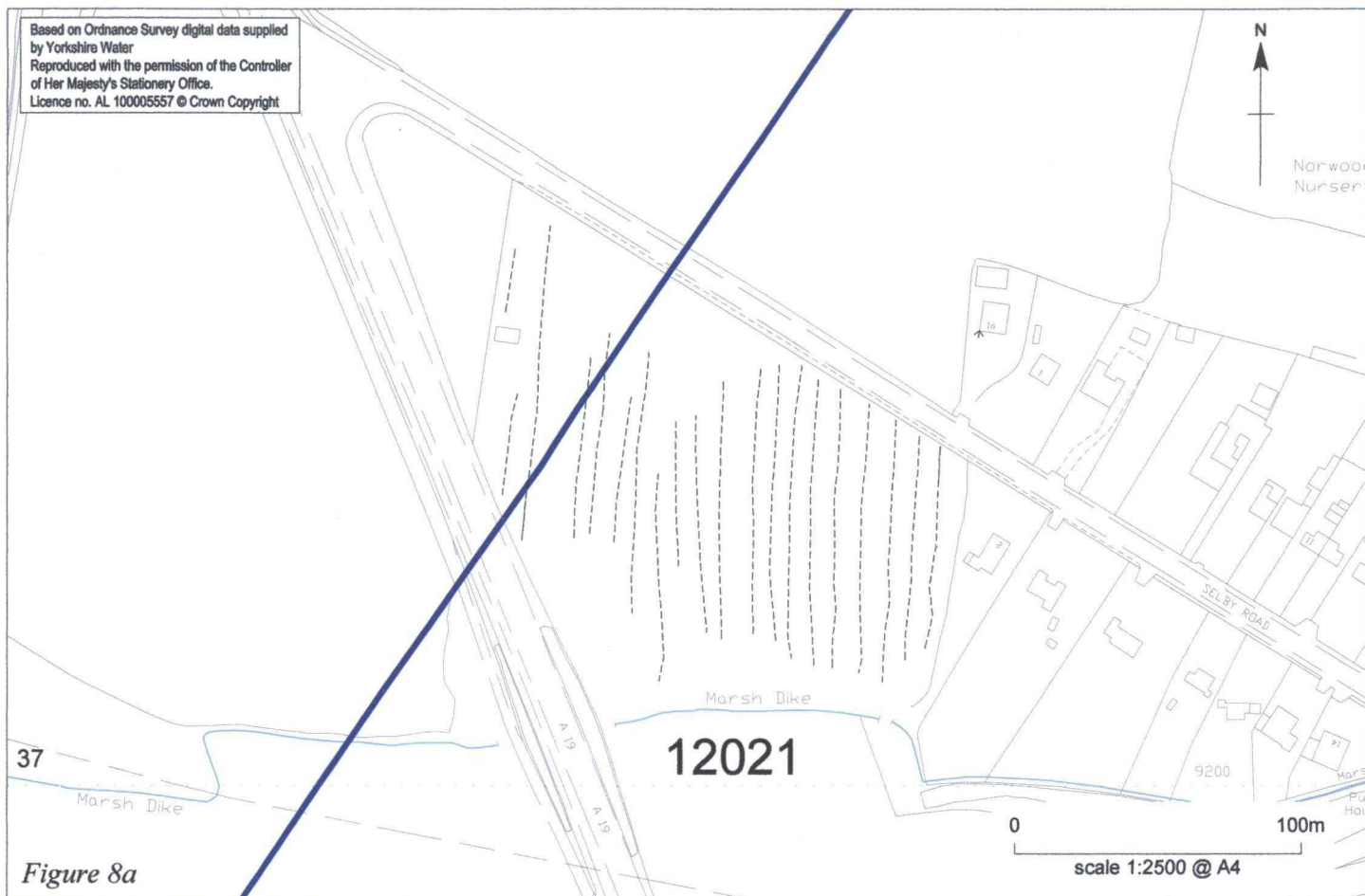


Figure 8a



Figure 8b

KEY

— pipeline route

©NAA 2003

Figure 8 Yorkshire Derwent Aqueduct: results of earthworks survey

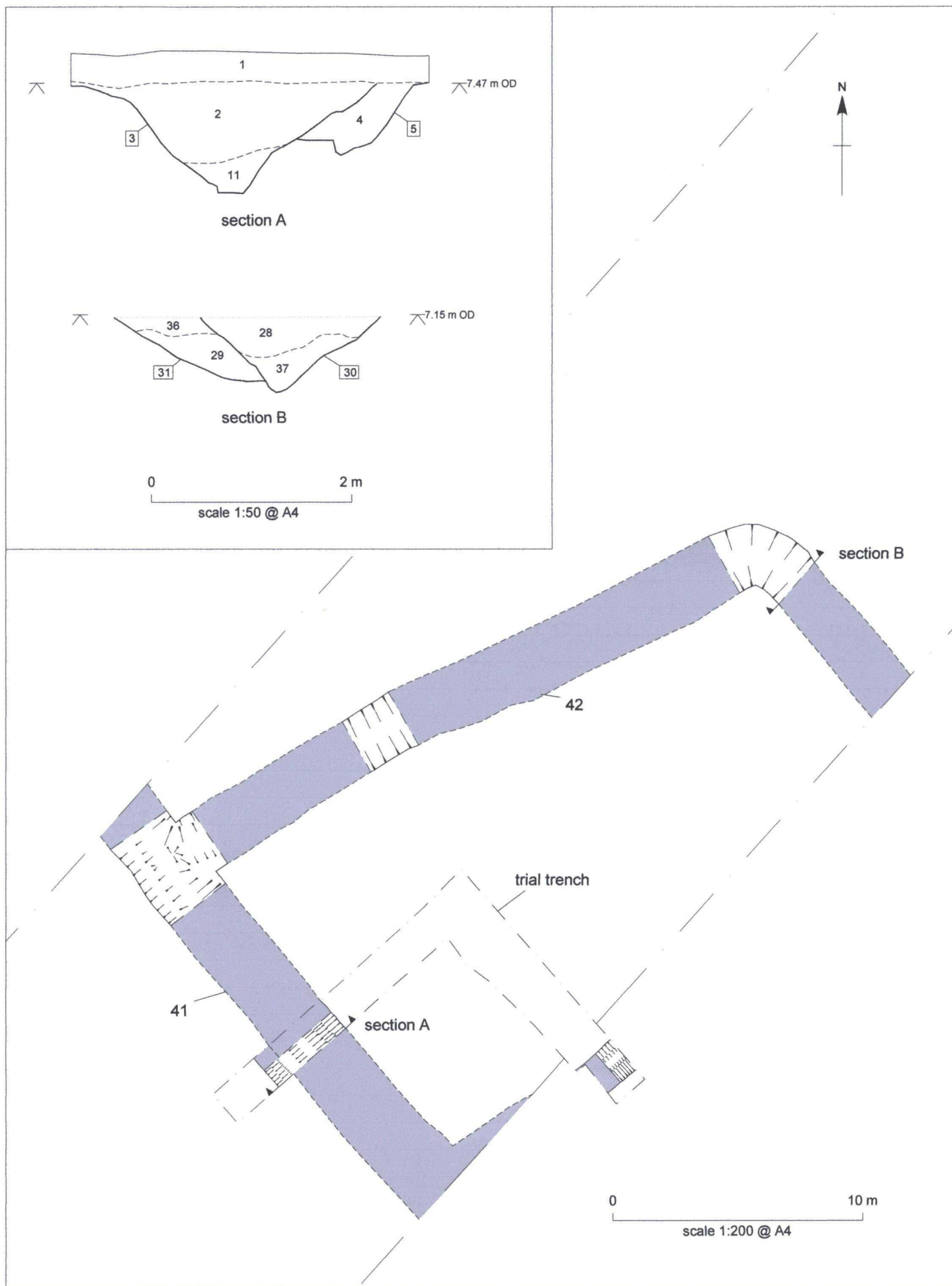


Figure 9 Yorkshire Derwent Aqueduct: Site 3, plan and sections

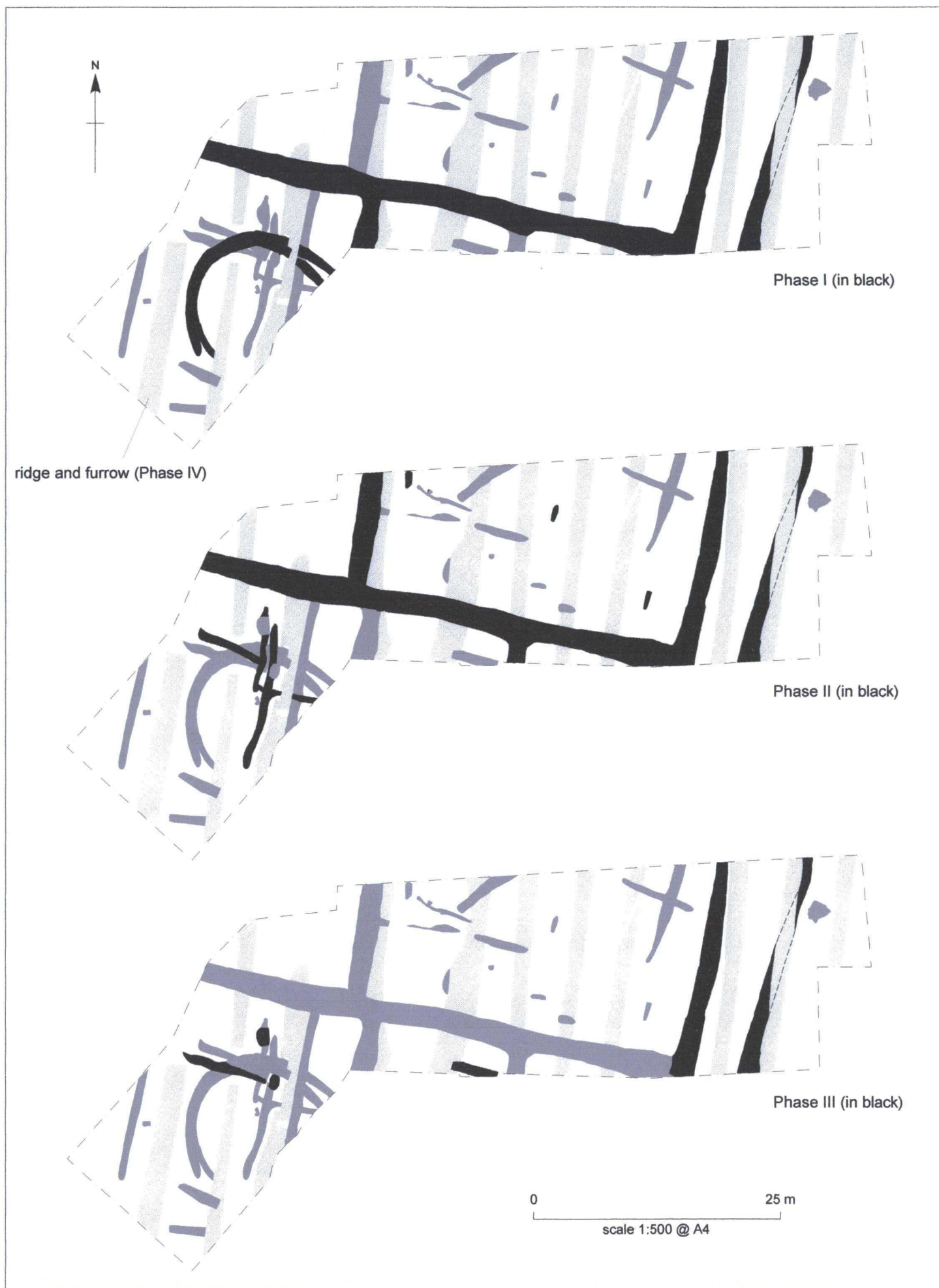


Figure 11 Yorkshire Derwent Aqueduct: Millfield Farm phase plan

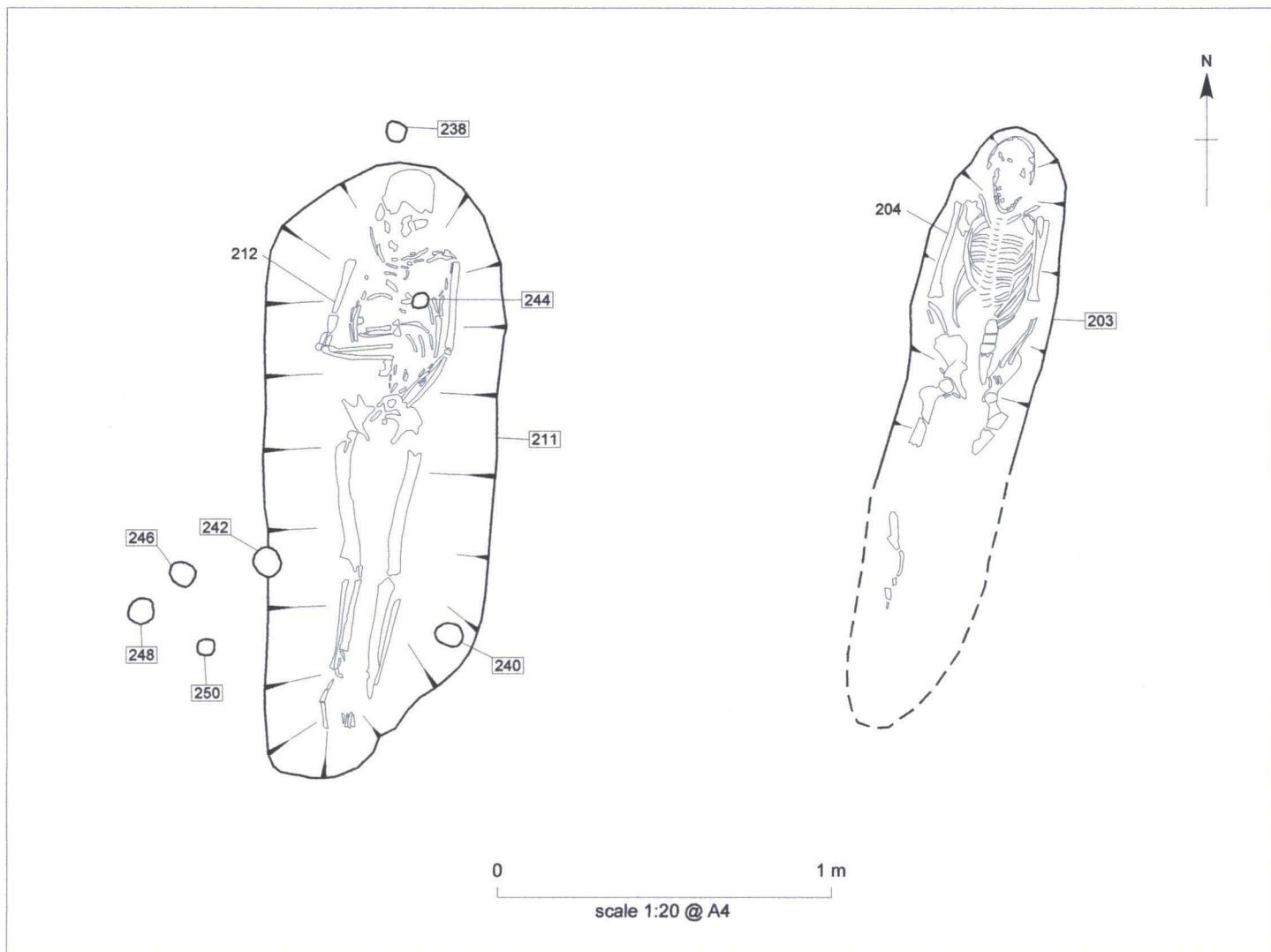


Figure 12 Yorkshire Derwent Aqueduct: Millfield Farm burials