ARCHAEOLOGICAL SERVICES WYAS

Darrington Quarry Pipeline Extension
Byram Park, Brotherton
North Yorkshire

Archaeological Investigations

April 2008

Report No. 1795

CLIENT

RSK Environmental Limited

Darrington Quarry Pipeline Diversion
Byram Park, Brotherton
North Yorkshire

Archaeological Investigations

Summary

Archaeological Services WYAS undertook a scheme of archaeological investigations comprising trial trenching and a strip and record operation prior to and during works to redirect a high pressure gas pipeline at Byram Park. The proposal area was within the former Byram Hall estate and appears to have been part of the deer park from at least the 13th century to the early 20th century. Cropmark evidence indicates that several ditched features survive within and immediately adjacent to the proposed working area. Recent open-area excavations to the west, in advance of quarry extensions, have revealed comprehensive complexes of rectilinear field systems, trackways and enclosures probably dating to the Roman period with likely Late Iron Age origins. As seen from the cropmarks, the redirected pipeline cut through a double-ditched trackway and part of a possible enclosure. A burial with human remains and two possible post-hole alignments were identified within the enclosure. Seven ditches running approximately east-west were also identified along the pipeline easement. One rim sherd of early Bronze Age pottery, two sherds of late prehistoric pottery and two sherds of Roman grey ware were recovered from a trackway ditch, enclosure ditch and discrete features in the southern limits of the easement. From the same area, one struck flint, one broken blade and one flint core were also recovered. The human remains have been radiocarbon dated in the range 80 to 330AD.

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Report Information

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1 Introduction

Archaeological Services WYAS (ASWYAS) was commissioned by RSK Environment Limited, acting as archaeological consultant on behalf of United Utilities Operations (UU plc), to undertake a series of archaeological investigations during works to redirect a high pressure gas pipeline so that it would fall outside the new application area for mineral extraction (Magnesian Limestone) by Darrington Quarries Limited. The investigations comprised the excavation of six trenches and a strip, map and record operation (Figs 1 and 2). The works for the new gas pipeline comprised five areas of operation. The principal one was a north-south 30m wide and 750m long easement for the re-routed pipe. Additional working areas at each end of the easement, an access road and a laydown area for offices and materials gave a total working area of approximately 4 hectares. The investigation was undertaken following a Written Scheme of Investigation produced by ASWYAS (Appendix 1). This report details the results from the archaeological investigations, which were undertaken between the 15th to 21st August 2007 and the 24th September to the 8th of October 2007.

Site location and topography

The area under investigation is situated within Byram Park, between Byram to the south and Burton Salmon to the north, centred at approximately SE 495 265, with Byram Hall lying immediately to the south-east (Fig. 1). In recent years limestone quarrying has extended steadily eastwards, expanding from original quarry sites at Brotherton and Foxcliff, and is now encroaching upon the gas pipeline (Fig. 2). The site area is relatively flat and lies between 10m and 16m Above Ordnance Datum (AOD).

Soils, geology and land-use

The solid geology of the area is mapped as Upper Magnesium Limestone of the Permian Age (British Geological Survey 1978) overlain by calcareous fine loamy soils of the Aberford Association (Soil Survey of England and Wales 1983).

2 Archaeological and Historical Background

Prehistoric/Romano-British period

Activity in the area is reflected in intermittent cropmarks patterns identified by aerial photography. The "brickfield" pattern of the cropmarks is probably part of an overall landscape covering a much wide area. Recent open-area excavations by ASWYAS in advance of quarry extensions have identified these cropmarks as comprehensive complexes of rectilinear field systems, trackways and enclosures that probably extend over the whole area of Byram Park (Fig. 2). Pottery recovered from these open-area excavations indicates a

Roman date, although Late Iron Age origins cannot be entirely dismissed. To date, seven inhumations have also been encountered, six of Roman date and one of Early Iron Age date (Walsh 2008).

Medieval period

Byram Park probably originated as a medieval deer park and was in existence by at least the 13th century. A reference in the documentary records identifies that the Dean of York was stocking the park with deer from Galtres forest in 1284 (NYSMR). Occupation of the area is also indicated by the settlements of Brotherton and Burton Salmon, both of which have medieval origins (Atkins 1995).

Post-medieval period

The parkland features which survive today are predominantly 18th century in date, when the park formed part of the Ramsden family estate. The original Manor came into the Ramsden family in 1612. Documentary evidence attest that during the Civil War the Parliamentarians captured a John Ramsden, at the time Sheriff of Yorkshire, and used Byram House as their headquarters during the siege of Pontefract Castle in 1644 (Pickersgill 1996, 4). In the late 18th century, the original Hall was rebuilt on a design by John Carr of York and in 1782 the park was landscaped by Capability Brown. In addition to the Deer Park, the estate contained fish ponds, an orangey (also built by John Carr), an icehouse, gardens, farms, lodges and tree-lined avenues. It covered an area of approximately 200 acres and in the early 20th century, contained 300 fallow deer (Page 1907). The estate also included the villages of Brotherton and Burton Salmon, with farms and outbuildings. It seems that some sort of industrial activity was carried out within the estate, as the first edition Ordnance Survey (OS) map of 1845 records the location of quarries, lime kilns and coppering kilns. In the 1920s, the estate was broken up and sold and most of the land was brought into cultivation (Atkins 1995). During the Second World War, the estate was requisitioned for army vehicle storage. In 1945, the McCloy family bought the property which became part of a large farmland estate. By the time of the 1950 OS map most of the trees and the icehouse had been removed. After 1953 the remaining buildings on the estate were made safe, with the orangery being converted into a house. The wings of the Hall were preserved, although the main section had been demolished. In 1968, the majority of the remaining buildings, including many of the walls and ornamental gateways, were Grade II listed (May 2003).

3 Aims and Objectives

The specific aims and objectives of this project were:

- to record the nature and extent of any archaeological remains within the proposed working areas;

- to further determine the date, function, condition, character, and quality of survival, importance and date of such archaeological remains.

The results of this work will be placed in the public domain by depositing the archive with the recipient museum.

4 Methodology

The archaeological investigations at Byram Park, Brotherton were undertaken in accordance with recognised standards (English Heritage 1991, 2002; Institute of Field Archaeologists 2001) and ASWYAS' methodologies (ASWYAS 2005). During both investigations, topsoil and subsoil were removed in level spits no more than 0.2m in depth down to the first significant archaeological horizon or undisturbed natural. Any archaeological features uncovered were then hand cleaned, planned and hand excavated in an archaeologically controlled and stratigraphic manner. A sample of 10% of all the linear features was excavated. All discrete features were initially 50% excavated. Only a few of these features, because of their small size, were fully excavated.

Initially six trial trenches were excavated in advance of the machining of the 30m wide, 750m long, north-south easement (Fig. 2). The trial trenches and easement were excavated using a mechanical excavator equipped with a toothless ditching bucket under direct archaeological supervision (Plate 1).

A full written, drawn and photographic record was made during the course of the work following the Written Scheme (Appendix 1) and ASWYAS standard methods (ASWYAS 2005). The excavation limits were fixed to survey stations established by the Trimble Geodimeter 5600 Total Station, which were fixed to set points on the Ordnance Survey base map. Sections were recorded at a scale of 1:10 with plans recorded at 1:20.

The archive contains all the information gathered during the investigations, and the contents are listed in Appendix 2. Inventories of contexts and samples are listed in Appendix 3. The archive is currently held at ASWYAS headquarters but archive deposition will be arranged in due course following consultation with the recipient museum.

5 Results

The archaeological investigations revealed a series of ditches, part of a possible field system, a trackway and an enclosure. Also, two possible post-hole alignments and a sub-oval grave containing part of an articulated skeleton were identified in the southern end of the easement (Figs 3, 4 and 6).

All archaeological features investigated were cut into natural. In the northern limits of the area this was orangey brown sand and in the southern portion, Magnesian limestone.

Trial trenching

Six trenches were excavated in order to investigate the presence/absence of possible archaeological features visible as cropmarks (see Fig. 2).

Table 1. Summary of results of the trial trenching

Trench	Trench size	Trench depth	Topsoil depth	Subsoil depth	Description of Archaeology
1	24m x 2.75m	0.45m	0.30m	0.15m	Two parallel linear ditches
2	21.5m x 2.75m	0.45m	0.30m	0.15m	Two ditches probably part of the same enclosure ditch
3	21m x 2.75m	0.45m	0.30m	0.15m	Part of enclosure ditch
4	16m x 2.75m	1.1m	0.48m	0.62m	-
5	39m x 2.75m	0.55m	0.40m	0.15m	-
6	17m x 2.75m	0.52m	0.12m	0.42m	-

Trench 1(Figs 2, 3 and 4, Plate 2)

Trench 1 was orientated approximately north-south. Two parallel ditches (512 and 514), U-shaped in profile with irregular sides and flat bases, were identified. They were orientated east-west, 3.6m apart and probably formed part of a trackway. The width of the ditches varied between 1.25m to 1.35m and the depth varied between 0.32m and 0.58m. One sherd of Romano-British grey ware was recovered from the fill (515) of ditch 514.

Trench 2 (Figs 2, 3 and 4)

Trench 2 was orientated east-west. Two linear ditches (507 and 510), U-shaped with irregular sides and flat bases and orientated approximately north-south, were identified 30m apart. The ditches were between 1.27m and 1.3m wide and between 0.3m and 0.36m deep and they seemed to be part of a possible enclosure, identified by cropmarks (Fig. 2). No archaeological finds were recovered from these features.

Trench 3 (Fig. 2, Plate 2)

Trench 3 was orientated approximately north-south. A ditch (503), also identified during the strip and record as ditch 532, running east-west, was identified in the southern end of the trench (Plate 3). It was U-shaped in profile with irregular sides and base and probably represented the southern limits of the enclosure identified in Trench 2. Two fragments of Romano-British grey ware was recovered from the only fill (504) of this ditch.

Strip and record operation

A total of 38 archaeological features were identified within the stripped area of the pipeline easement. Some of the ditches identified to the north presumably represent the continuation of the cropmarks mapped to the east (Fig. 2).

In the northern and central part of the stripped area, seven ditches (603, 607, 600, 597, 594, 584 and 574) running approximately east-west, and two discrete features (576 and 610) were identified (Fig. 3). The ditches were all between 0.9-3.7m wide and 0.2-0.6m deep and possessed a relatively shallow, U-shaped profile with a round base (Fig. 5, S.50 and S.52). Five of the ditches (603, 607, 600, 597 and 594) had multiple fills, mainly bluish to grey brown silty sand with no inclusions. Two ditches (584 and 574) had a single fill, mainly orangey brown sandy silt with rare limestone fragments. No finds were identified from these features. The two discrete features (576 and 610) although badly truncated, seemed to be pits with shallow U-shaped profiles and a round bases. They were between 0.64-0.82m wide and 0.1-0.15m deep, but again no archaeological finds were recovered.

In the southern area of the easement (Fig. 4), two parallel ditches (Plate 4), two adjacent pits, two possible post-hole alignments, one burial and an east-west orientated ditch were revealed (Plates 5 and 6). The two parallel ditches (581 and 578), identified during the trial trenching as ditches 512 and 514, represented a continuation of the trackway visible as cropmark (Fig. 2, Plate 7). The ditches were between 0.93-1.12m wide, 0.3-0.6m deep and possessed a steep, flat-based, U-shaped profile (Fig. 5, S.37 and S.39). From the primary fill (582) of ditch 581 a flint flake was retrieved and two late prehistoric sherds of pottery were recovered from its secondary fill (583). No finds were identified in the only fill (579) of ditch 578.

South of the trackway, presumably within the enclosure, two adjacent pits (559 and 565) were identified (Fig. 4). The pits were only partially excavated as they extended under the excavation limits but were probably U-shaped in profile (Fig. 5, S.22 and S.23). Both features had a single reddish brown clay fill and from the single fill (560) of 559, a fragment of a flint blade was recovered. Both pits were cut by small post-holes (553, 563, 567, 569 and 571). To the south of the two pits, a possible post-hole alignment (537, 539, 541, 543, 547, 549, 545, 551, 555, 557 and 561) running approximately north-south was identified. All the post-holes were of sub-circular shape and possessed steep, round-based, U-shaped profiles and had single reddish clay fills (Fig. 5, S.25 and S.27). A diagnostic rim sherd of a possible early Bronze Age food vessel was recovered from post-hole 557. The second post-hole

alignment (516, 518, 520, 522, 524, 526, 528 and 530) seemed to have a NNE-SSW orientation. All the post-holes were of sub-circular shape and possessed a steep, round-based, U-shaped profile with a single reddish clay single fill (Fig. 5, S.11 and S.12; Plates 8 and 9). No archaeological finds were recovered from these features.

Conceivably enclosed by the post-hole alignments, a sub-oval pit (534) containing the fragmentary remains of a skeleton (SK1) was identified (Figs 4 and 6, Plates 9 and 10). The burial was badly truncated and no grave goods were identified. The grave measured 1.1m long, 0.5m wide and 0.1m deep.

In the southern end of the easement (Fig. 4) a ditch (532) running east-west was revealed. It represents the continuation of the enclosure ditch identified as a cropmark and investigated during the trial trenching (as 503, 507 and 510). This ditch possessed a steep, flat-based, U-shaped profile and a reddish brown silty fill (Fig. 5, S.8). No archaeological finds were recovered from this feature.

6 Artefact Record

Early Bronze Age pottery by B. Vyner

A single rim sherd was recovered from the only fill (558) of post-hole 557. The rim upper surface is decorated with a double row of short oblique cord impressions, the rim outer edge bears two opposed rows of short oblique cord impressions, while the rim lower surface has traces of a further row of oblique cord impressions. This is a rim sherd from a Food Vessel, a ceramic form current from around the very beginning of the second millennium BC for perhaps two centuries, although their chronology is still not fully clear. The sherd was found in one of a number of post-holes that may have been associated with an inhumation burial and with which a Food vessel might originally have been associated. Food Vessels are usually found accompanying inhumation burials and are especially common in eastern Yorkshire, with isolated examples recorded from a barrow at Ferry Fryston, and in a pit at Newton Kyme (Manby *et al.* 2003, 62), both locations on the western edge of the Vale of York. A little further north, barrows at North Deighton and Ainderby Quernhowe maintain the Vale of York distribution, although records of Food vessels from Baildon and Marsden confirm a widespread, if sparse distribution into the Pennine areas (Manby 1986). The Byram Park sherd, from a location only 2 km north-east of the Ferry Fryston burial mound, tends to confirm a preferential distribution along the western edge of the Vale of York. Unexpected, therefore, was the return of a radiocarbon date in the range of 80 to 338 AD (Table 7, SUERC-18030). Either the rim sherd is residual within a much later context or the post-holes are much earlier and have no association with the inhumation.

Catalogue

1 Decorated rim sherd, hard well fired fabric with dark grey-brown surfaces, fabric dark grey with few obvious grits apart from a few small cavities from which calcitic grits have leached, quartz dust in the clay matrix, weight 5g. *Post-hole 557, 558*

Iron Age and Romano-British pottery by R. S. Leary

Two sherds of Romano-British pottery (40g) and two sherd of prehistoric pottery (7g) were recovered during excavation (Table 2). Two grey ware sherds, probably from the same vessel, a jar with simple base, came from the only fill (504) of ditch 503. The fabric compared well with wares made at the South Yorkshire kilns around Doncaster (Buckland *et al.* 1980) and dates from the mid-2nd to the mid-4th century. Two very abraded handmade body sherds from a closed vessel came from the secondary fill (583) of ditch 581. These were oxidised externally with a rather darker internal surfaces. The fabric was with an irregular fracture and has moderate, medium to coarse inclusions of angular grog, subrounded quartz and irregularly shaped slag. Slag-tempered Iron Age pottery has been identified in the region (Evans 2005, 132, Evans 2001, 154 and 173 and Buckland *et al.* 1990, 132) and these sherds belong to this group.

Table 2. Summary of the Iron Age and Romano-British pottery

Context	Ware	Fabric	Nos	G	Abras	Part	Form description	Form	Vessel type	Spot date
504	Grey ware	GRB1	2	40	abraded		Simple jar base	simple base	jar	M2+
583		SLAG-T	2	7.2	very abraded	Undiag-nostic body		closed vessel	jar?	PRIA

Medieval pottery by C.G. Cumberpatch

An unstratified sherd of pottery, weighing 19g proved to be an example of a sandy Humberware and was in good condition with little sign of abrasion or similar damage. It was a body sherd from a jug with part of a double thumbed lower terminal for a strap handle attached externally. Glaze was sparse and limited to spots and trickles externally. The fabric was sandy in texture and contained abundant quartz grit from which the sherd derived its character. Sandy Humberware is usually associated with the Holme-upon-Spalding Moor site (Mayes and Hayfield 1980) rather than Cowick (Hayfield and Grieg 1989, 1990) but while it is probable that this was the origin of the sherd, there may be other Humberware potteries which are as yet undiscovered or unpublished (Hayfield 1992) and so it is impossible to be certain as to the precise origin of this sherd. Humberwares of the type represented by the

sherd in question were manufactured between the later 13th and 15th centuries and were widely distributed in Yorkshire and neighbouring counties.

Flint by P. Weston

The struck flint recovered during excavation most probably was residual, although the recovery of early Bronze Age pottery from post-hole 557 does indicate early prehistoric activity nearby. The flint is also interpreted as evidence of low-level prehistoric activity in the area.

Catalogue

1 Chip. Butt missing. Light grey, opaque. Secondary. Patinated. Not sharp. *Ditch 512, 513*

2 Broken blade. Proximal end missing. Light grey-white, opaque. Tertiary. Patination unknown as piece is heavily burnt. Fairly sharp. *Pit 559, 560*

3 Core preparation flake. Unprepared butt. Light grey-white, opaque. Secondary. Patination unknown as piece has been burnt. Fairly sharp. *Ditch 581, 582*

7 Environmental Record

Carbonised plant macrofossils and charcoal by D. Alldritt

A total of 24 sample flots were analysed for the presence of carbonised plant macrofossils including charcoal. In addition one bag of charred fragments sorted from the retents was also examined for identifiable charcoal.

Methodology

Bulk environmental samples were processed by ASWYAS using an Ankara-style water flotation system (French 1971). The floating remains (the flot) were collected in a 300μm sieve and the heavy fraction (the retent) was collected in a 1mm mesh. The flot, once dry, was scanned using a low-powered binocular microscope and the results are presented in Table 3. The retent was scanned by eye for both ecofacts and artefacts by ASWYAS prior to disposal. This included a scan with a magnet to recover any hammerscale present. All charcoal suitable for identification was examined using a high powered Vickers M10 metallurgical microscope. The reference photographs of Schweingruber (1990) were consulted for charcoal identification. All charcoal was bagged separately by type. Plant nomenclature utilised in the text follows Stace (1997) for all vascular plants apart from cereals, which follow Zohary and Hopf (2000). All identified charred plant remains were bagged separately by type. The presence of non-marine mollusc shell was noted, but these were not removed from the samples.

Results

The flots generally contained very few charred fragments, with often only <2.5ml to 2.5ml of charred remains present, with the majority of this being tea-leaf sized charcoal fragments. The exception to this was sample 1 (509), which contained 25ml of charred material, mostly in the form of wood charcoal. Occasional samples produced no carbonised remains whatsoever. Modern roots were fairly scarce throughout, as were earthworm egg capsules and modern seeds.

Discussion

The 24 environmental samples taken produced a narrow range of carbonised plant material, which in many of the samples was present only in scarce amounts. The material showed similar recovery in terms of species types and quantity to that previously identified from the neighbouring Byram Park excavations (BYP05-07, Walsh 2008). It is possible that some of the trace cereal grain recovered from Byram Park Pipeline may be residual material from elsewhere on the site.

Identifiable carbonised cereal grain was recovered from two samples only, with a single grain of *Triticum spelta* (spelt wheat) from sample 1 (509), and a single *Triticum aestivum* sl. (bread / spelt wheat) in sample 7 (535). Indeterminate cereal grain, exhibiting a poor state of preservation, was recovered in small amounts from samples 3 (508) and 12 (556). The morphology of bread and spelt wheat can be very similar amongst certain grains, but it is highly likely in this case that both types were present at the site, and some of the indeterminate grain may also have been wheat. No evidence for barley or oat cereals was recovered, and no chaff or weeds of agriculture were present. It is possible that the grain may be residual or wind-blown material carried from activity occurring elsewhere, given that the overall number of grain recorded was very low.

Charcoal large enough to accurately identify was recovered from sample 1 (509) only and was found to consist of two different types of wood, namely *Corylus* (hazel) and Prunoideae (cherry family), with occasional other fragments being indeterminate short-lived types. Both hazel and the various cherry types are light-loving species growing at woodland edges and amongst hedgerows as shrubs or small trees, and have many uses as both fuel and construction materials. A possible alternative source of fuel to wood charcoal was present in sample 3 (508), in the form of a single fragment of burnt peat, most likely harvested from local peat lands or bogs.

Table 3. Summary of the environmental samples

	Sample	1	2	3	4	5	6	7	8	9	10	11
	Context	509	504	508	511	513	515	535	536	519	540	542
	Total CV	25ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<205ml	0	<2.5ml	<2.5ml
	Modern	2.5ml	2.5ml	2.5ml	5ml	5ml	2.5ml	20ml	10ml	<2.5ml	10ml	2.5ml
Carbonised Cereal Grain	**Common name**											
Triticum spelta	Spelt wheat	1										
Triticum aestivum sl.	Bread/spelt wheat							1				
Indeterminate cereal grain (+embryo)		1		1								
Charcoal												
Corylus	hazel	6 (1.45g)										
Prunoideae	Cherry Family	5 (2.43g)										
Indeterminate		4 (1.26g)										
Carbonised Wild Resources												
Burnt peat				1 (0.06g)								
Earthworm egg capsules		1									1	
Modern (non-carbonised) seeds					3							2

	Sample	12	13	14	15	16	17	18	19	20	21	22	23	24
	Context	556	558	560	562	566	572	587	589	591	593	604	608	601
	Total CV	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	10ml	2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml
	Modern													
Carbonised Cereal Grain	**Common name**													
Triticum spelta	Spelt wheat													
Triticum aestivum sl.	Bread/spelt wheat													
Indeterminate cereal grain (+embryo)		2												
Charcoal														
Corylus	hazel													
Prunoideae	Cherry Family													
Indeterminate														
Carbonised Wild Resources														
Burnt peat														
Other Remains														
Earthworm egg capsules				1			2				1			1
Modern (non-carbonised) seeds					1		2	1						

Assessment of mollusc remains by J. Carrott

Methods

Three bulk sediment samples from the site were processed to 1mm (with a 300 micron sieve for the lighter washover fraction). The washovers submitted were examined for their content of mollusc remains. The washovers were scanned and the remains were identified to species (main sources Cameron 2003, Cameron and Redfern 1976, Ellis 1969, Kerney 1999, Kerney and Cameron 1979) where possible. The assemblages were small so that minimum numbers of individuals could be readily determined and, in most cases, counts were recorded. For the burrowing land snail *Cecilioides acicula* (likely to be intrusive and ignored in the interpretation of the assemblages) and unidentified shell fragments, abundance was recorded semi-quantitatively on a four-point scale: f – few (up to 3 individuals/fragments); s – some (4 to 20); m – many (21-50); vm – very many (more than 50).

Results

The washovers consisted in large part of modern rootlets but each also gave a small assemblage of land snails. The shells of smaller snail taxa were fairly well preserved, though most were eroded to some degree, but those of larger forms were often fragmented and unidentifiable shell fragments were always present. Definite species level identifications were sometimes prevented by small amounts of encrusted sediment obscuring diagnostic features (e.g. in the mouth of the shell).

Details of the snail assemblages are presented in Table 4 in context number order.

Discussion and statement of potential

The assemblage from the fill of a shallow pit containing a human burial (536) was mostly *Cecilioides acicula*, with only a few other identifiable land snails which were too few for valid interpretation. A slightly larger snail assemblage was recovered from the fill (513) of the northern ditch 512 and a larger again assemblage (though still only small) was obtained from the fill (515) of the southern ditch 514. Both of these assemblages were of 'mixed' character containing taxa indicative of dry, open, lightly vegetated habitats, such as calcareous, short-turfed grassland (e.g. *Vallonia* species and *Vertigo pygmaea*) and damper habitats like longer grass which remains permanently damp at the base or moist herbage/ground litter (e.g. *Carychium ?tridentatum*, *Vitrea*, *Discus rotundatus*). The largest assemblage (from 515) was also the most diverse and provided hints of more substantial vegetation, such as hedgerow or woodland, from the presence of small numbers of *Punctum pygmaeum* and *Ena obscura* (both of these species also favouring undisturbed areas). This sample also gave a single *Truncatellina cylindrica*, which favours similar habitats (perhaps somewhat more exposed) to the *Vallonia* species and *Vertigo pygmaea*, but is now a rare species. Overall, these snail assemblages were, unsurprisingly, very similar to those recorded from previous works at Byram Park (Carrott and Beacock 2007). They reflected the same

open environment of dry, calcareous, short-turfed grassland, with areas of hedgerow/woodland and more shaded/damper conditions provided by vegetation growth within the ditches. The absence of aquatic and waterside taxa strongly suggests that the features did not hold standing water at the time of the formation of these deposits.

Recommendations

The assemblages are too few and too small to warrant any further study in isolation. In the event that the recommended detailed recording of snail assemblages from previous excavations a Byram Park is undertaken (Carrott and Beacock 2007) it would, perhaps, be worth including the data from the samples reported here if they can be securely dated (no further recording would be required as this report identifies and quantifies the remains as far as possible).

Key for Table 4: CN = context number; S = sample number; Description = Context description; Vp = approximate volume of processed sample in litres; Vw = approximate volume of washover in ml; s = some (4 to 20); m = many (21 to 50); vm = very many (more than 50); figures give minimum numbers of individuals. Nomenclature and taxonomic order follows Kerney (1999).

Table 4. Summary of the land snails

CN	S	Description	Vp	Vw	*Carychium ?tridentatum* (Risso)	*Carychium* sp.	*Cochlicopa ?lubricella* (Porro)	*Cochlicopa* sp.	*Truncatellina cylindrica* (Férussac)	*Vertigo pygmaea* (Draparnaud)	*Vertigo* sp.	*P. muscorum/Lauria cylindracea* (da Costa)	*Lauria cylindracea* (da Costa)	*Vallonia ?costata* (Müller)	*Vallonia ?excentrica* Sterki	*Ena obscura* (Müller)	*Punctum pygmaeum* (Draparnaud)	*Discus rotundatus* (Müller)	*Vitrea ?crystallina* (Müller)/*V. contracta* (Westerlund)	*?Aegopinella* sp..	*Cecilioides acicula* (Müller)	*Clausilia bidentata* (Ström)	*Trichia ?hispida* (L.)	Unidentified land snail fragments
513	5	Fill of ditch 512; no dating evidence	10	10	4	2	-	-	-	1	1	-	-	9	3	-	-	5	1	-	m	1	1	m
515	6	Fill of ditch 514; a single sherd of mid-2nd to mid-4th-century pottery	10	20	11	3	1	1	1	2	-	2	1	8	16	2	3	7	2	6	s	-	11	vm
536	8	Fill of pit 534 containing a human burial, radiocarbon dated in the range 80-330AD	20	30	2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	vm	-	2	4

Human bone by M. Holst

Skeleton 1 was interred in an oval grave in a supine extended position. The individual lay with the head to the northeast and the feet to the southwest. The burial was thought to date to the early Bronze Age, as a rim sherd from a food vessel, normally associated with Bronze Age funerary contexts, was found in one of a number of post-holes apparently surrounding the burial. Radiocarbon dating, however, assigned the remains to the Romano-British period.

Methodology

The skeleton was analysed in detail, assessing the preservation and completeness, as well as determining the age, sex and stature of the individual. Pathological lesions were considered but none were identified.

Osteological analysis

Osteological analysis is concerned with the determination of the identity of a skeleton, by estimating its age, sex and stature. Robusticity and non-metric traits can provide further information on the appearance and familial affinities of the individual studied. This information is essential in order to determine the prevalence of disease types and age-related changes. It is crucial for identifying gender dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.

Preservation

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion and very few or no breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The skeleton was in a very poor condition (Table 5). It had suffered from severe post-mortem fragmentation and moderate bone erosion. The poor preservation is probably due to truncation of the grave by ploughing.

Table 5. Summary of osteological and palaeopathological results

Preservation	Completeness	Age	Sex	Stature	Pathology
Very poor	15%	Adult	Male	-	-

The skeleton was 15% complete; only parts of the lower vertebrae, the left hip, the left radius, ulna and hand, the left proximal femur, left distal fibula and left talus and fragments of the lumbar vertebrae were recovered.

Assessment of age

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). The proximal end of the left femur was fully fused, indicating that the individual had reached adulthood and was aged eighteen years or older.

Sex Determination

Sex determination was carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood. This individual had a very narrow sciatic notch and did not have a preauricular sulcus, suggesting that this was a male. A measurement was taken of the left femoral head with regards to sex determination; this proved to be inconclusive.

Metric and Non-Metric Analysis

Stature depends on two main factors, heredity and environment. Stature, however, can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present. In this instance, the lack of complete long bones meant that it was not possible to assess stature. Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978). The individual had no non-metric traits.

Conclusions

Osteological analysis of the skeleton established that this individual was a male adult, aged eighteen years or older. The preservation was very poor and the skeleton was only 15% complete. None of the long bones were complete, which meant that it was not possible to

ascertain his stature. Perhaps because of the skeleton's poor preservation and the incomplete nature of the bones, pathology was not observed.

Animal bone by J. Richardson

Relatively little animal bone was recovered during hand excavation (Table 6). The presence of cattle and sheep/goat are likely to indicate livestock husbandry and/or domestic consumption although no butchery marks were noted. A single horse tooth was also identified.

In contrast, a relatively large deposit of animal bone was retrieved from the soil sample taken from a fill (509) of enclosure ditch 503. This is almost entirely made up of cremated goat bones, most probably representing the remains of a single animal. Although relatively few complete bones survive, those that did, appear to be goat rather than sheep-like in appearance (following Boessneck 1969). The treatment of this deposit (burnt) and the identification of a goat (much less commonly recorded than sheep in the archaeological record) may indicate the presence of a structured deposit.

Table 6. Summary of the animal bone (italicised entries represent bone recovered from soil sampling)

Context	Taxa	Element	Description	Quantity
504	Cattle	Metacarpal	Eroded barrel	1
	Cattle	Humerus	Fragments	2
	Large mammal	Long bone	Fragment	1
	Sheep/goat	Radius	Fragment	1
509	*Goat*	*Tooth*	*Burnt root fragments*	*3*
	Goat	*Hyoid*	*Burnt fragment*	*1*
	Goat	*Humerus*	*Burnt fragment*	*1*
	Goat	*Calcaneus*	*Burnt. Right*	*1*
	Goat	*Carpals*	*Burnt*	*5*
	Goat	*First phalanx*	*Burnt. Left. Not fused + epiphysis*	*1*
	Goat	*First phalanx*	*Burnt fragment and epiphysis*	*2*
	Goat	*Second phalanx*	*Burnt epiphyses*	*2*
	Goat	*Second phalanx*	*Burnt. Left. Not fused*	*1*
	Goat	*Skull*	*Burnt fragments*	*40*
	Goat	*Vertebra*	*Burnt fragments*	*10*
	Goat	*Rib*	*Burnt fragments*	*40*
	Goat	*Long bone*	*Burnt fragments*	*70*

Context	Taxa	Element	Description	Quantity
	Frog/toad	*Long bone*	*Fragments*	*3*
511	Large mammal	Long bone	Fragment	1
513	Horse	Incisor	Wear = 7-8 year old	1
	Large mammal	Long bone	Eroded fragments	2
	Large mammal	Rib	Eroded fragment	1
533	Sheep/goat	Mandibular M1/M2	Wear stage G	1
560	*Frog/toad*	*Long bone*	*Fragment*	*1*

8 Radiocarbon Dating

A sample of human bones was submitted for radiocarbon dating at the Scottish Universities Environmental Research Centre. The sample was submitted in order to provide a secure date for the possible inhumation identified in feature 534 at the southern end of the pipeline easement (Fig. 4). It was also hoped that a secure date would aid interpretation of the feature itself and its relationship with the surrounding archaeology, in particular the post-hole alignments. The result is presented in Table 7.

Table 7. Summary of the radiocarbon dating results

Context	Material	Lab. sample code	1σ date range	2σ date range	Radiocarbon age BP
537	Human bone	SUERC-18030 (GU-16691)	cal 135-235AD	cal 80-330AD	1820±35

9 Discussion and Conclusions

The archaeological investigations have confirmed the presence of a multi-phase archaeological landscape previously identified through aerial photograph investigations and confirmed by recent open-area excavations in advance of quarry extensions to the west of the easement (Walsh 2008). The linear features identified in the northern area of the pipeline easement appear to be part of an extensive complex of rectilinear field systems and trackways extending over the whole area of Byram Park. Although a lack of dateable artefacts limits any possibility of further phasing in this area, the features are likely to be Romano-British in date, in line with datable material recovered from the extensive excavations to the west.

The archaeological features identified in the southern area of the easement; the double-ditched trackway, the enclosure, the post-hole alignments and the burial seem to have a spatial relationship, although the recovered artefacts in conjunction with a radiocarbon date

for the inhumation indicate multi-phase activities. The two fragments of grey ware from the enclosure ditch and the radiocarbon dating of the human remains confirm the presence of Romano-British activity, while the presence of two sherds of handmade slag-tempered Iron Age pottery in the secondary fill of the northern-most ditch of the trackway attests to earlier origins. Late prehistoric occupation in this region is predominately aceramic (Chadwick 1999, 154-5) so even such limited quantities of Iron Age pottery in association with ditched boundaries and trackways, is significant. Despite a rigorous sampling strategy, however, the environmental remains recovered were too sparse to provide any useful information regarding the function of the enclosure. Even the trace amount of cereal grain could have been residual and/or wind blown material derived from elsewhere and while the animal bones hinted at structured deposition, overall the assemblage was too small to assist in the reconstruction of possible husbandry practices. The mollusc remains, however, did indicate a largely open landscape of dry, calcareous, short-turfed grassland with areas of hedgerow or woodland. Finally, the recovery of one decorated rim sherd from an early Bronze Age food vessel and a small scatter of flints highlights much earlier prehistoric activity.

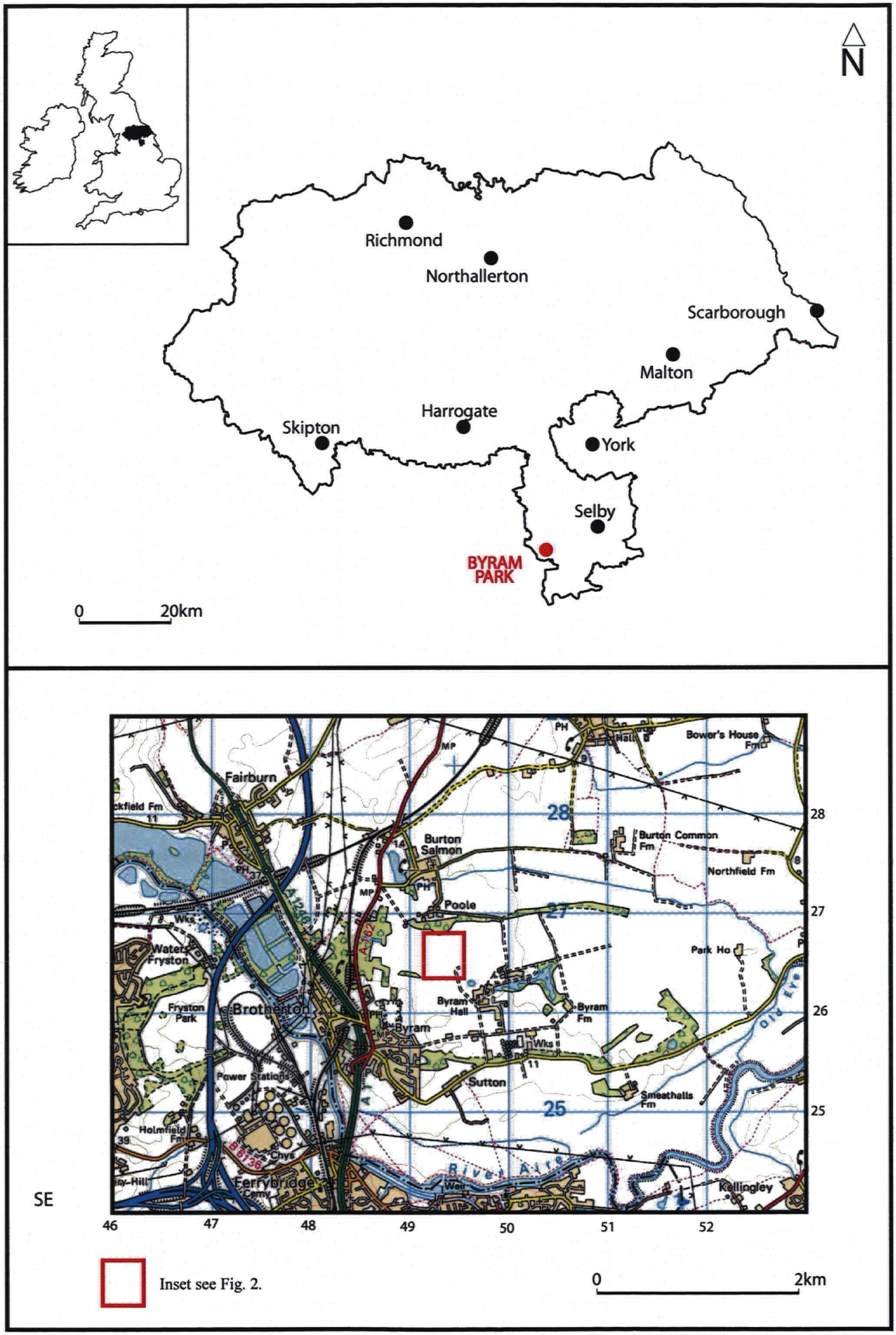


Fig. 1. Site location

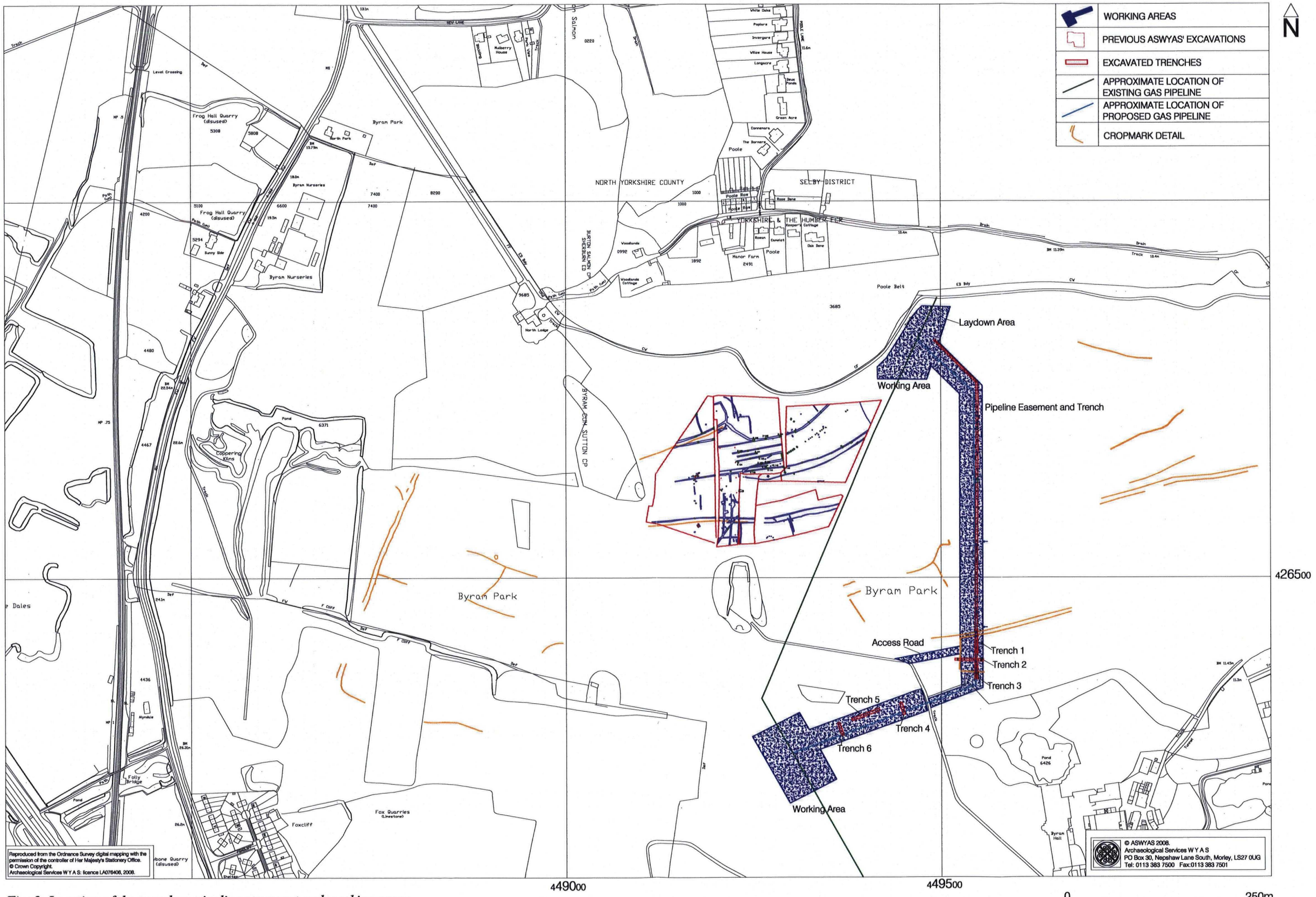


Fig. 2. Location of the trenches, pipeline easement and working areas

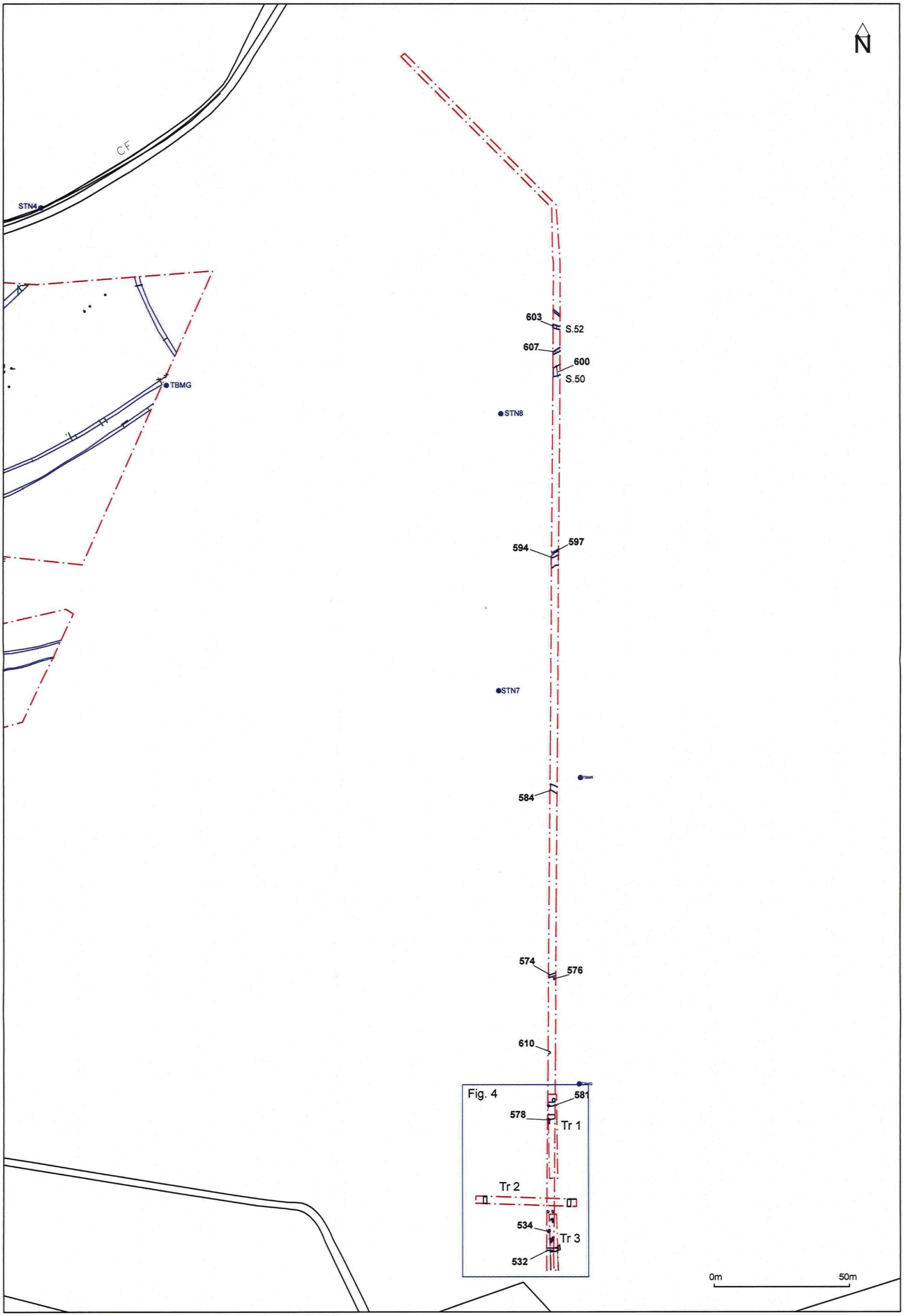


Fig. 3. Location of archaeological features

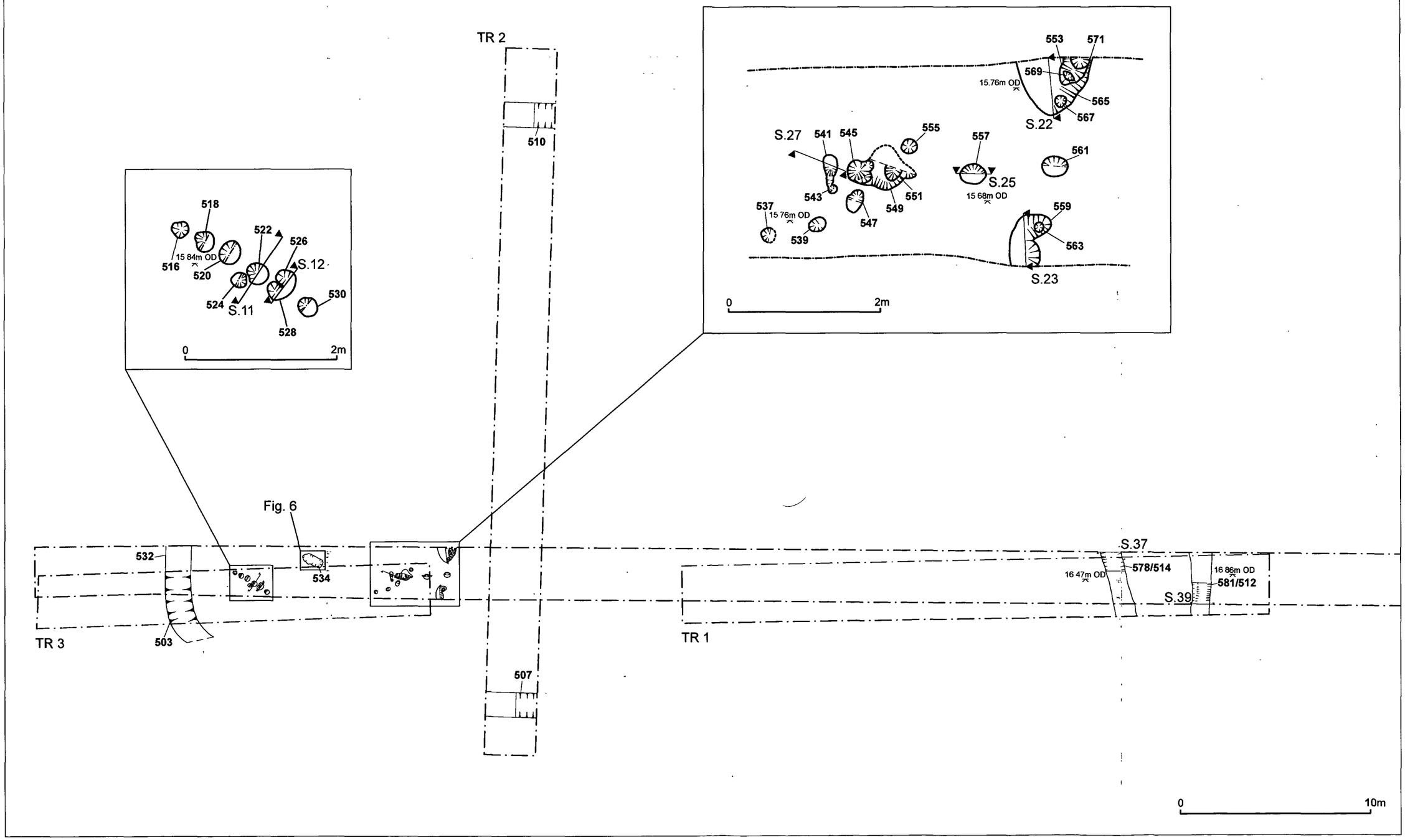


Fig. 4. Archaeology in the southern area of the easement

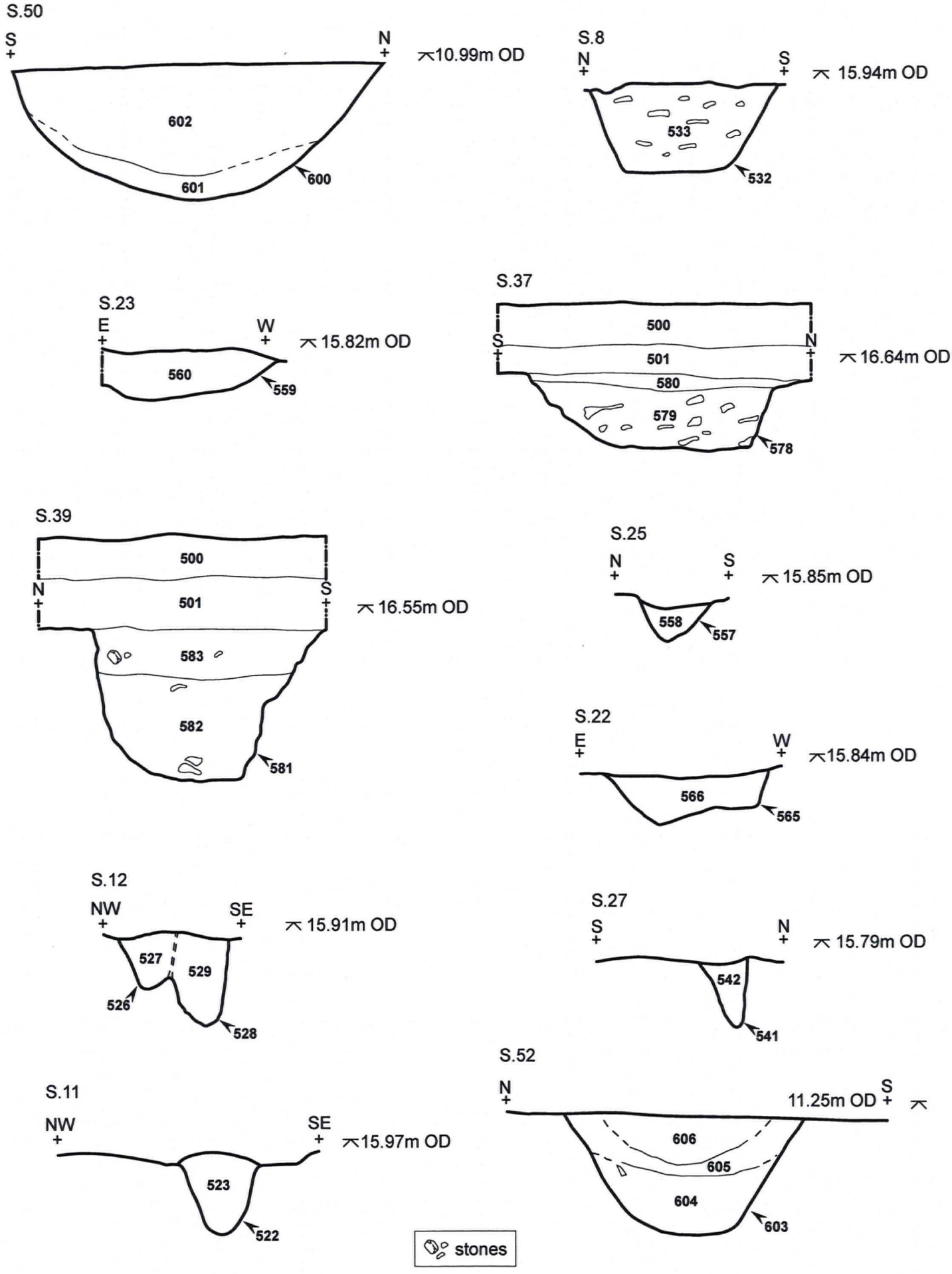
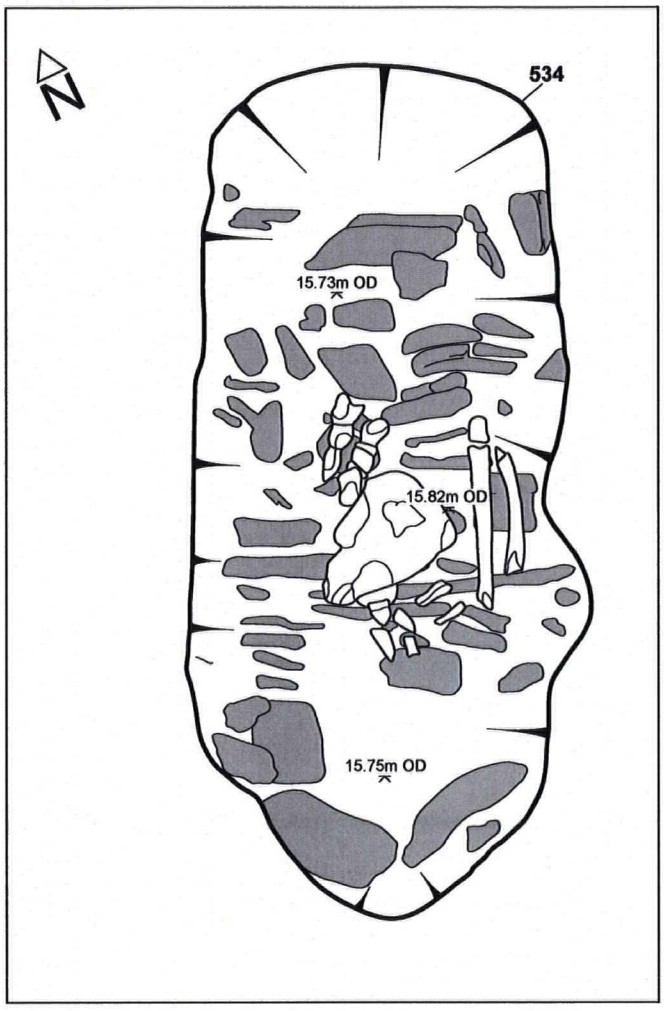
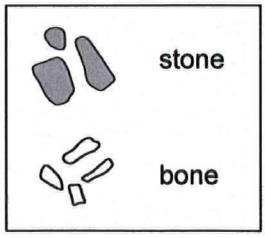


Fig. 5. Selected sections





0 0.5m

Fig. 6. Grave pit 534