

NEW GAS PIPELINE, BONBY LANE, BONBY, NORTH LINCOLNSHIRE

ARCHAEOLOGICAL MONITORING & RECORDING

NGR: TA 02248 14295
PCAS job no. 2037
Site code: BONM 18
Planning application ref.: WD/2014/0908
Museum Site code: BYAT
OASIS ref: preconst3-314060

Prepared for

GGP Consult

by

A. Lane

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PCAS Archaeology Ltd
47, Manor Road
Saxilby
Lincoln
LN1 2HX
Tel. 01522 703800

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Summary

PCAS Archaeology Ltd was commissioned by GGP Consult to carry out a scheme of archaeological monitoring and recording associated with the installation of a pipeline to link an aerobic digestion (AD) plant and infrastructure at the Bio Waste Solutions site on Bonby Lane, Bonby, with a gas compressor station at Middlegate Road, Elsham (centred on NGR: TA 02248 14295, Fig. 1).

The pipeline extended from the AD plant on Bonby Lane (NGR: TA 01591 16399) along the road to the junction with Middlegate Lane (this stretch of the pipeline has not previously been disturbed by the installation of other services). The pipeline then routed southwards along Middlegate Lane, crossing from the east to the west side of the road where necessary to avoid existing features, continued down Middlegate Lane past Elsham Water Treatment Works and beneath the A15 dual carriageway, terminating shortly beyond the bridge at approximate NGR TA 04828 12277 at the compressor station.

Monitoring took place over the course of five months, during which approximately 5km of pipeline was excavated. A total of seven archaeological features were identified along the route, consisting of a Bronze Age human cremation, five ditches and a single pit, recorded as a possible tree throw.

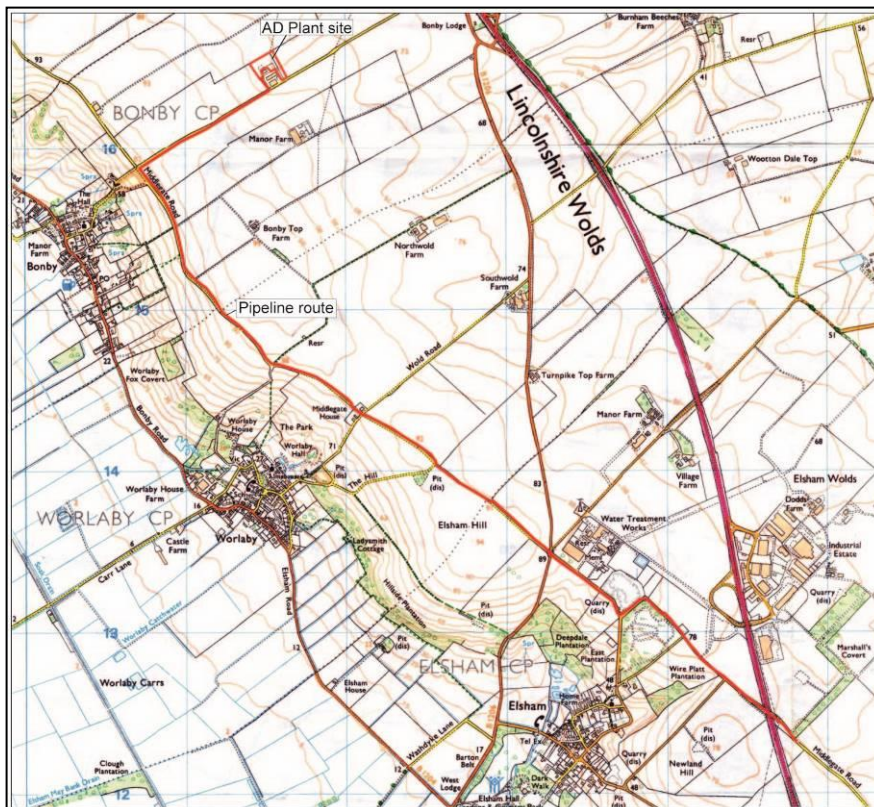


Figure. 1: Site Location Plan with pipeline route shown in red. OS mapping Crown Copyright. PCAS License No. 100049278.

1 Introduction

PCAS Archaeology Ltd was commissioned by GGP Consult to carry out a scheme of archaeological monitoring and recording associated with works for the installation of a pipeline to link an aerobic digestion (AD) plant and infrastructure at the Bio Waste Solutions site on Bonby Lane, Bonby, with a gas compressor station at Middlegate Road, Elsham (centred on NGR: TA 02248 14295, Fig. 1). The pipeline ran (largely) in the grass verge alongside Middlegate Lane, a historic route with prehistoric and Roman origins, with a number of nationally and locally important historic sites in the vicinity of the route.

2.0 Site location and description (Fig. 1)

Bonby is a village and civil parish in North Lincolnshire; a linear settlement spread out along the B1204, between Worlaby and Saxby All Saints. The B1204 runs almost parallel to the new A15 between j6 of the M180 and the Humber Bridge at Barton (c.7km northeast), a local road linking the villages with the River Humber c.6km to the north and the largest local town of Brigg some 8km to the south.

The site of the AD plant lies around 1.4km northeast of Bonby, on the north side of Bonby Lane which links Middlegate Lane and Brigg Road. The site lies on the chalk ridge which marks the edge of the Lincolnshire Wolds, with the village nestled on the more protected clay at the base of the west facing slope.

The associated pipeline was excavated parallel to existing roads for the majority of the route, through the grass verge at the side of the road. The majority of this route has previously been disturbed by excavations for modern services.

The pipeline extended from the AD plant on Bonby Lane (NGR: TA 01591 16399) along the road to the junction with Middlegate Lane. This stretch of the pipeline has not previously been disturbed by the installation of other services. The pipeline then turned southwards along Middlegate Lane, crossing from the east to the west side of the road where necessary to avoid existing features, continued down Middlegate Lane past Elsham Water Treatment Works and beneath the A15 dual carriageway, terminating shortly beyond the bridge at approximate NGR TA 04828 12277 at a compressor station.

3.0 Geology, Soils & Topography

The bedrock geology of the entire pipeline route is Welton Chalk which is described as white, thickly bedded chalk with common flint nodules; there are no recorded overlying drift deposits either on the main site or along the route (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

Archaeological investigations undertaken in association with the construction of the AD plant recorded topsoil directly overlying the chalk bedrock (outside of the plant boundary). Topsoil is described as mid-dark brown silty clay with chalk and flint inclusions, up to 0.35m thick (Chinnock, 2013).

The topography of the pipeline route varies according to the natural topography on the west facing ridge of chalk bedrock, with levels varying generally between 80-90m OD.

4.0 Planning Background

This pipeline was installed in association with the construction of a new Anaerobic Digestion plant (AD plant) on Bonby Lane, (North Lincs planning application ref: WD/2014/0908). The AD plant was constructed following an archaeological investigation (Cleary & Hobbs, 2017) in 2016, followed by the start of excavations for the pipeline. The Historic Environment Officer for North Lincolnshire Council requested a scheme of monitoring and recording to be undertaken in association with the

pipeline, to ensure that any archaeological remains and artefacts encountered during the works were identified and recorded.

A Written Scheme of Investigation, which detailed the archaeological methodology to be employed during the monitoring of groundworks for the pipeline, was produced by PCAS Archaeology Ltd (Lane 2018) and approved by The Historic Environment Officer for North Lincolnshire.

This report details the findings of the archaeological works undertaken.

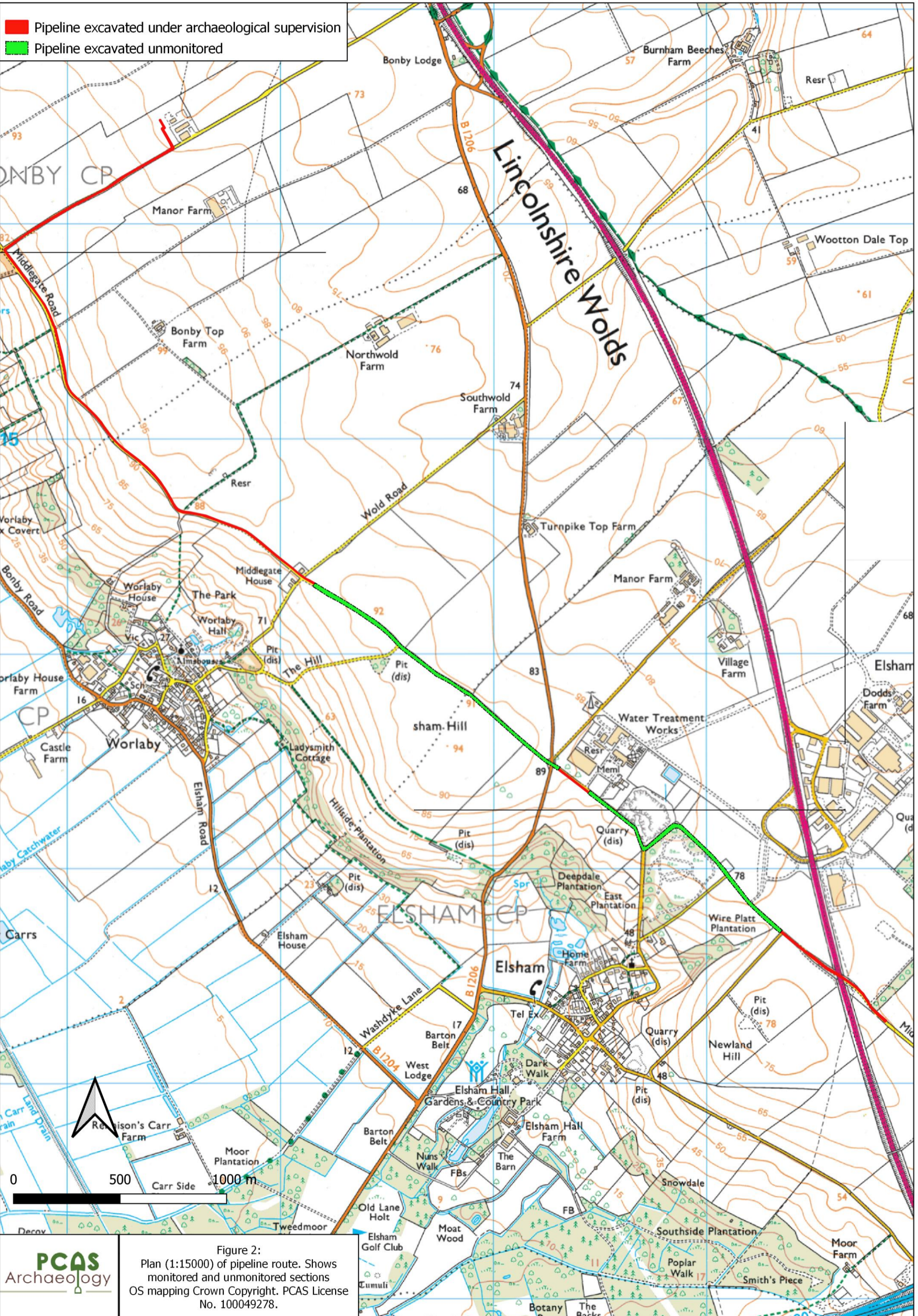


Figure 2:
Plan (1:15000) of pipeline route. Shows
monitored and unmonitored sections
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5.0 Archaeological and historical background

A desk-based assessment, two geophysical surveys, an archaeological evaluation and an excavation were undertaken in association with the development of the AD plant on Bonby Lane, with one of the geophysical surveys including the stretch along the south side of Bonby Lane from the AD plant to Middlegate Lane.

The geophysical survey (Bunn, 2015, Figure 2; reprinted in this report as Figure 3) along Bonby Lane encountered probable modern disturbance opposite existing buildings and close to the junction with Middlegate Lane. However, a number of linear and curvilinear features were identified slightly further north around approximate NGR TA 00951 16008, c.300m from the junction with Middlegate Lane. The origin of these features is unknown, however cropmarks recorded in this area identify a possible trackway (NLHER ref: 20599), and an early Bronze Age barbed and tanged arrowhead was found in close proximity to these cropmarks during fieldwalking in 2004 (NLHER ref: 21344).

As the pipeline route turns to the south to run alongside Middlegate Lane it passes close to an area of cropmarks thought to be evidence of a Roman ladder settlement or an Iron Age land boundary (NLHER ref: 22662). The cropmarks appear to extend at an approximate right angle east from Middlegate Lane about 150m south of the junction, and indicate a track about 8m across with N-S linear features dividing the track further east. A dense scatter of Roman pottery has been found during fieldwalking in this area, indicating occupation at this junction (NLHER ref: 19704), although artefacts from other periods have also been recovered from this area.

Moving south along Middlegate Lane aerial mapping records two possible Bronze Age round barrows seen on aerial photographs, lying just over 200m east of the road adjacent to Bonby Top Farm (NLHER ref: 19639; 19640). Two further probable barrow monuments lie to the east of this, and all four are part of a dispersed barrow cemetery along the Middlegate ridge.

At the junction with Middle Barn Hill to Worlaby the pipeline routes close to an area of cropmarks of overlying enclosures and linear features that are thought to be prehistoric and Roman features, including another possible round barrow (LHER ref: 22840) close to the reservoir. On the southwest side of Middlegate Lane and Middle Barn Hill lies the scheduled remains of a Roman villa (List entry ID 1005233), partially excavated in the mid 1960's after it was discovered during ploughing, the foundations of the building and part of a Saxon cemetery were found on the west facing slope of the ridge less than 150m from the road, with linear cropmarks approaching the site from the north indicating a trackway from Middlegate Lane (NLHER ref: 19636). There are further cropmarks to the south around the historic farmstead of Middlegate (which itself is now occupied by modern farm buildings- NLHER ref: 25392) of probable trackways and enclosures flanking the historic road (NLHER 20941; 20940).

As the pipeline continued south it passed directly through a cropmark enclosure which may extend across to the southwest side of the road. This rectilinear enclosure is undated; however, its form indicates a Romano-British date. A dense scatter of artefacts including Iron Age - Roman pottery and ceramic building materials has been recovered from this area during fieldwalking (NLHER ref: 21087 & 20692), however the same surveys also recovered 133 prehistoric worked flints (NLHER ref:20691) and more than 300 sherds of medieval and post-medieval pottery (NLHER ref: 20693) from this field, indicating a long and varied use of this site.

As Middlegate Lane crosses the B1206 it passes a water treatment plant, where cropmarks and soils marks are recorded both to the northeast and southwest of the road. Just beyond this Middlegate Lane curves around the site of Elsham Quarry where animal bone, pottery and human burials have been encountered in the mid 1950's (NLHER ref: 2302), a cemetery presumably associated with a settlement in the vicinity, probably Elsham itself which at present lies c.1km south of the quarry. To the southeast of the quarry lies another rectilinear cropmark, undated, but again fieldwalking in this area has produced a large quantity of flints and Iron Age – post medieval pottery

(NLHER 2316; 21260; 21261; 21262). The southern end of this cropmark lies less than 40m to the northeast of Middlegate Lane.

From the area around the compression plant at the southern end of the pipeline fieldwalking has recovered more than 300 worked flints dating from the Mesolithic – Bronze Age, Iron Age, Roman, Saxon and medieval dated pottery (NHER ref: 20861; 20682; 20683; 2306).

Just the other side of the A15 dual carriageway lies the site of an Anglo-Saxon cemetery identified during works for the A15 in the 1970's. The cemetery contained over 600 cremation burials and a small number of inhumations, including one which was accompanied by two Bronze Age Beakers suggesting this cemetery had Prehistoric origins (NLHER ref: 2305). Prehistoric flints and Roman & medieval pottery were also recovered from this area during the works for the A15. The compression station itself lies opposite the site is a WWII sick quarters of Marshall's Covert, shown on mid-20th century OS mapping (NLHER ref: 22786)

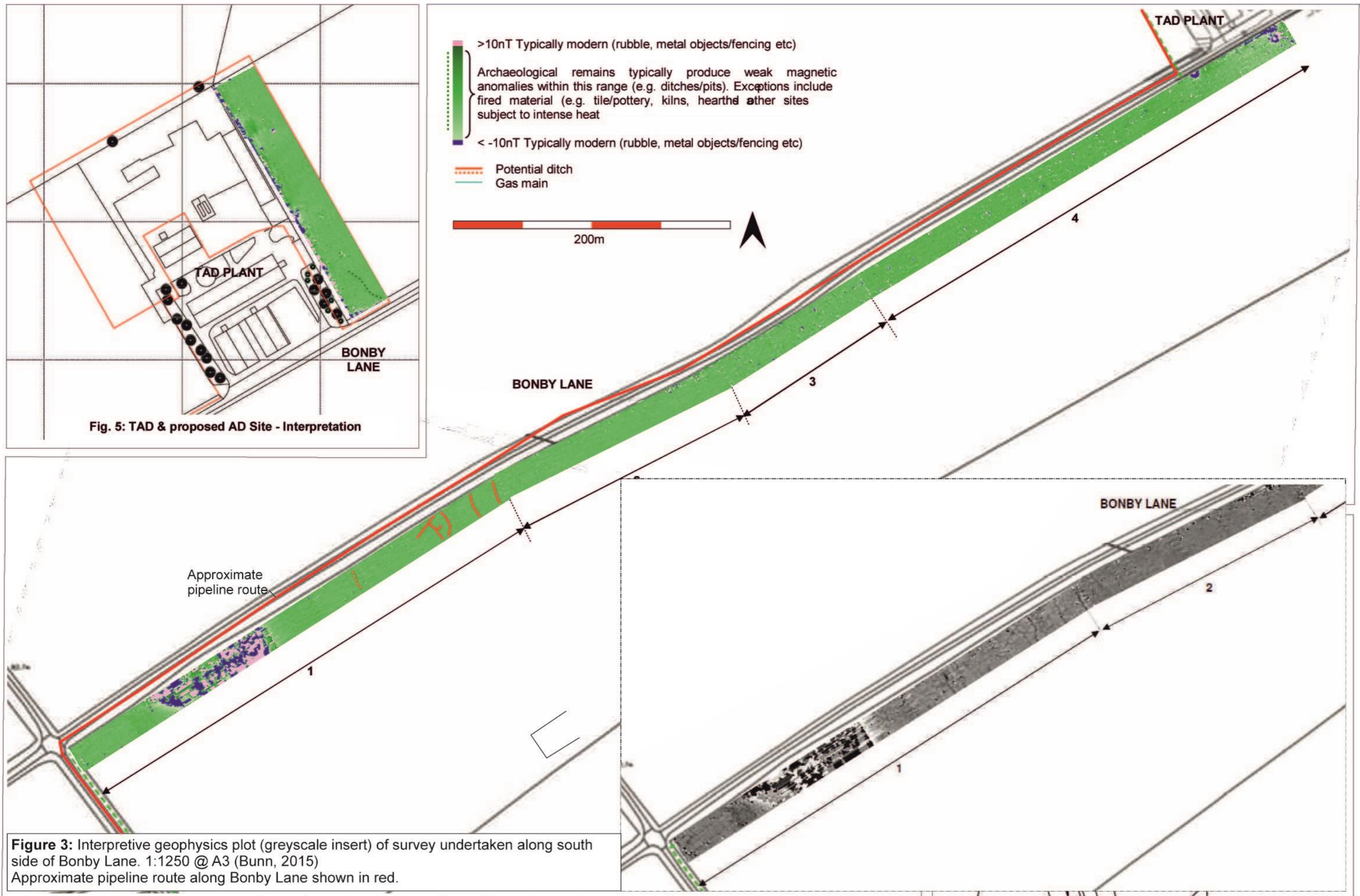


Fig. 5: TAD & proposed AD Site - Interpretation

Figure 3: Interpretive geophysics plot (greyscale insert) of survey undertaken along south side of Bonby Lane. 1:1250 @ A3 (Bunn, 2015)
 Approximate pipeline route along Bonby Lane shown in red.

6.0 Methodology

The Historic Environment Officer for North Lincolnshire Council has requested a scheme of archaeological monitoring and recording to be undertaken during the excavations for the pipeline, due to the route extending alongside Middlegate Lane, a Roman road that had its origins as a prehistoric trackway, and the presence of several nationally and locally important heritage assets in close proximity to the pipeline route.

The excavations for the pipeline had commenced following the construction of the AD plant, prior to the start of archaeological monitoring. Sections of the route had therefore been excavated prior to archaeological attendance, including from The Hill, Worlaby – B1206 and the majority of the route around the water treatment plant and Elsham Quarry (Figure 2 – blue line). The Historic Environment Officer for North Lincolnshire Council requested that these stretches of the pipeline were examined for any exposed features, and any artefacts disturbed along this route to be recovered.

The remainder of the pipeline excavations were subject to archaeological monitoring. The pipeline extended along the verge beside Middlegate Lane, in ground that had been disturbed previously during the construction of the road and the installations of previous services.

The adopted methodology followed the scheme set out within the approved Written Scheme of Investigation (Lane, 2018) and is summarised here:

Archaeological monitoring and recording took place intermittently between 22nd March – 29th August 2018 during the excavations for the remainder of the pipeline. Monitoring was undertaken by a suitably experienced field archaeologist (S. Savage, R. Savage, R. Dickenson, S. Palmer Brown, R. Seaman, J. Sleep, J. Price).

A written record of each stratigraphic horizon was made on standard PCAS context sheets. These were supplemented by a drawn record consisting of representative section and feature section drawings (scale 1:20), plotted onto the issued construction drawings. Alongside the written and drawn record, a digital photographic record was maintained, supplemented by colour slide and monochrome photography. A narrative account of the daily progress was also maintained.

7.0 Results (Figs. 3 – 8)

Results are discussed in the following paragraphs from the north end of the pipeline to the south, divided by the road junctions along the route.

Church Lane

The northernmost c.1km of the pipeline along Church Lane from the AD Plant lay on the south side of the lane. Monitoring on this length took place in August 2018. 195m of this length was unmonitored, between 130-325m from the junction with Middlegate Lane, and a shorter stretch from 432m – 510m. Also monitored was the pipeline linking the new AD Plant with the pipe, extending across Church Lane and along the southwest side of the AD Plant.

The layers recorded here were a thin layer of topsoil (001) covering subsoil (002) / (011) and the natural geology (003). Two features were recorded; a likely tree throw c.880m from the junction with Middlegate Lane, recorded as [023]. It had a slightly irregular “U” shaped profile cut into the subsoil and contained a single fill (024).



Plate 1: Pit [023] (looking S)

Further east, lying 63.80m from the turn in the pipeline to cross Church Lane and approach the AD Plant, was a single cremation burial (See Figure 9). No subsoil was recorded in this small area, with the topsoil lying directly over the natural geology. A cremation urn had been placed in a shallow concave pit, cut into the geology. Cremated remains had been placed inside a small collared urn, now fractured, with an estimated 80% of the vessel recovered (see Appendix 3 and 4). The urn was decorated with incised triangular panels and a row of stabbed markings, with further panels and dots beneath the collar. The urn is dated to the early Bronze Age.



Plate 2: Cremation [025] (looking NW).

Church Lane – Middle Barn Hill

This length of the pipeline measured c.1.5km, lying entirely along the east side of Middlegate Lane. Three sections were excavated unrecorded, with the attending archaeologist observing the open trenches following excavation; one of these was a c.60m stretch close to Church Lane, another c.300m south of the driveway to Bonby Top Farm, and a third c.100m length north of Middle Barn Hill (See Figure 6-8). Eleven representative sections were recorded along this length, including four that identified features.

Approximately 70m south of the junction with Church Lane, three ditches on a c.northeast-southwest alignment were recorded in close proximity to each other. These ditches roughly correspond with two soilmark linear features slightly to the northeast, interpreted as part of an Iron Age or Romano-British feature, associated with a dense scatter of Roman pottery in the same area (See Figure 8). The ditches [013], [015] and [017] were all cut into the bedded chalk nodule natural (004), and had slightly irregular concave sides, [013] having shallower sloped sides than the other two ditches. All three contained a single fill, (014), (016) and (018) respectively, all a dark red brown sandy silt, and all three were devoid of any artefacts. They were covered by a modern imported chalk bedding layer, the foundation of the tarmac road, and the modern topsoil (001).



Plate 3: Ditch [013] (looking NE)



Plate 4: Ditch [015] (looking NE)



Plate 5: Ditch [017] (looking NE)

Moving southwards, the pipeline cut through varying layers of modern disturbance associated with activity on the road verge side and the natural deposition layers. The fourth feature to be encountered in this length of the pipeline lay c.200m north along Middlegate Lane from Middle Barn Hill. The ditch crossed the pipe trench on a c.northeast-southwest alignment. Initially thought to be a furrow, the ditch [007] was cut into the subsoil (002) making it more likely to be a modern feature. It contained a single fill (008), which was devoid of any artefacts (Figure 6).

Middle Barn Hill – Wold Road

This length of the pipeline measured c.1km in length, and also lay entirely on the east side of Middlegate Lane. Nine sections were recorded, including one feature, a ditch.

Along much of this length of the pipeline the modern topsoil overlay the subsoil (002) which in turn covered the bedded chalk (004); the exception being close to the junction with Middle Barn Hill, where topsoil was shallower and no subsoil was recorded in section - likely the result of disturbance from road construction.

The ditch [005] lay c.180m south of the junction with Middle Barn Hill. It lay on a c.northeast-southwest alignment; a wide deep ditch containing a single fill (006), cut into the bedded chalk (006) (Figure 5).

No artefacts were recovered from this section.



Plate 6: Ditch [005] (looking NE)

Wold Road – B1206

The north end of this length of pipeline lay on the east side of Middlegate Lane. On the south side of the junction with The Hill, the pipeline crossed Middlegate Lane and from here lay on the west side of Middlegate Lane (Figure 3 and 4).

The majority of this length of pipeline (1.45km) was excavated without the presence of an archaeologist and was walked over subsequently to check for any exposed features. The exception was c.150m from the junction with Wold Road, which was monitored, and a single representative section recorded, identifying topsoil (001) above subsoil (002), and the bedded chalk (004).



Plate 7 (above): Representative section at southern end of Middlegate Lane (looking NE)

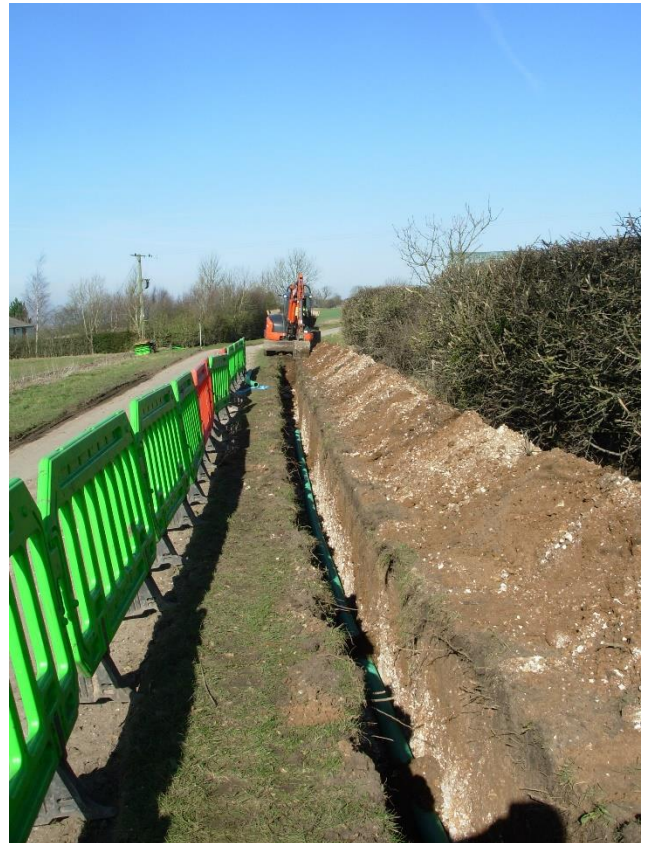


Plate 8 (right): Working shot of monitoring along Middlegate Lane (looking NW)

Newland Hill – B1206

This was the final leg at the southernmost end of the pipeline where it terminated at the gas compressor station. Monitoring of this section began c.300m to the southeast of Vicarage Lane, extending just over 0.5km, crossing beneath the A15. As with the section to the northwest, excavation identified topsoil (001) above subsoil (002), and the bedded chalk (004). No archaeology was identified.

8.0 Conclusion

Monitoring took place over the course of five months, during which approximately 5km of pipeline was excavated. A total of seven archaeological features were identified, consisting of a human cremation, five ditches and a single pit, recorded as a possible tree throw.

The cremation was partially exposed in the pipeline trench at the northwestern end of the route, along Church Lane. This incorporated the remains of a single adult, tentatively identified as female (Appendix 4). Only fragmentary remains of the cremation urn were present, however enough was available in order to date it. It was a collared urn, made of grog-tempered fabric. It was decorated with incised lines which formed triangular filled panels with a row of stab marks running around the vessel directly beneath the rim, with a comparable urn having been recovered from Kirton Lindsey (16 miles to the south west)(Longworth 1984, plate 69, (d) 743). The urn, and the cremation are dated to the early Bronze Age. Along with the two Bronze Age barrows identified on aerial photography approximately 200m away, near Bonby Top Farm, the presence of this cremation suggests that this area was a significant location in the Bronze Age landscape.

To the south of the cremation, close to the junction of Church Land and Middlegate Road, a further three ditches, [013], [015] and [017], were exposed. As with the cremation, each of these features was seen in the pipe trench section. The three ditches were all seen close to each other, on a projected northeast to southwest orientation and seemingly corresponding with previously

observed soilmark features. No dateable artefacts were recovered from any of the ditches; however a scatter of Iron Age/Romano-British pottery has previously been recovered from this area, and the presence of a possible Roman ladder settlement/Iron Age enclosures located in the area suggests that these ditches may date to this period.

A further two features were observed during the scheme of monitoring. Ditch [007] was exposed to the south of the three Iron Age/Roman ditches, close to Bonby Top Farm, however this was cut through rather than sealed by the subsoil suggesting that it was comparatively recent in date. The other feature, ditch [005] was observed between Middle Barn Hill and Wold Road. Seen in the pipe trench section, this ditch was sealed by subsoil, was relatively wide and contained a single deposit. No finds were recovered from this feature, which remains undated. As with the Iron Age/Roman ditches seen to the north, this feature was on the same northeast to southwest orientation, potentially indicating that it was part of the same phase of activity.

9.0 Effectiveness of Methodology

The methodology employed during this archaeological monitoring and recording achieved its primary objective, ensuring that any archaeological remains that might have been present within the pipeline route were not destroyed unrecorded, while causing the minimum of disruption to the construction process.

10.0 Acknowledgements

PCAS Archaeology Ltd would like to GGP Consult for this commission.

11.0 Site Archive

The project archive is currently held at the offices of PCAS Archaeology in Saxilby, Lincolnshire while being prepared for deposition, and will be deposited at North Lincolnshire Museums. A unique accession number will be assigned at the time of deposition.

12.0 References

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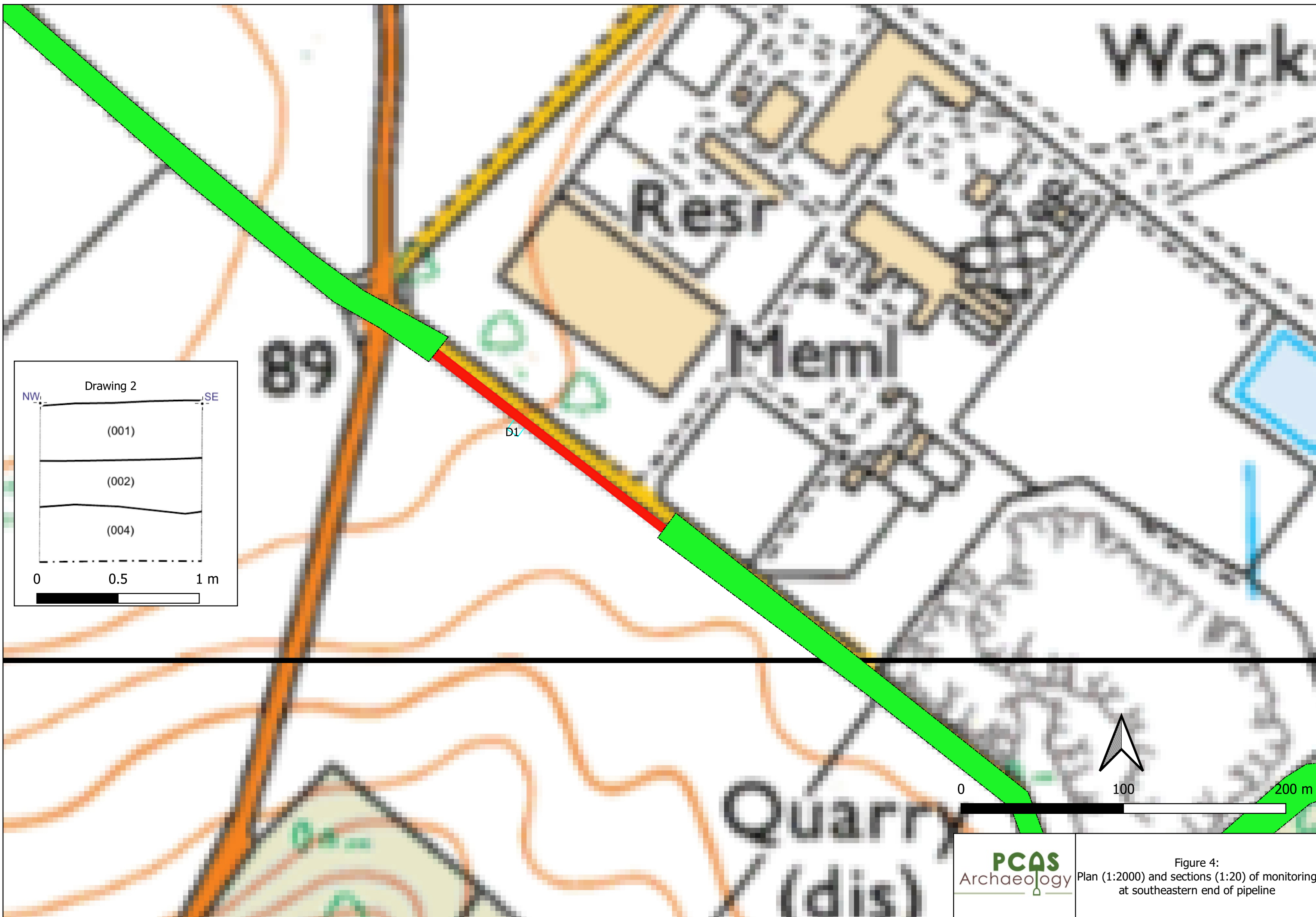
<https://www.historicengland.org.uk/listing/the-list/>

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<https://www.old-maps.co.uk/#/>

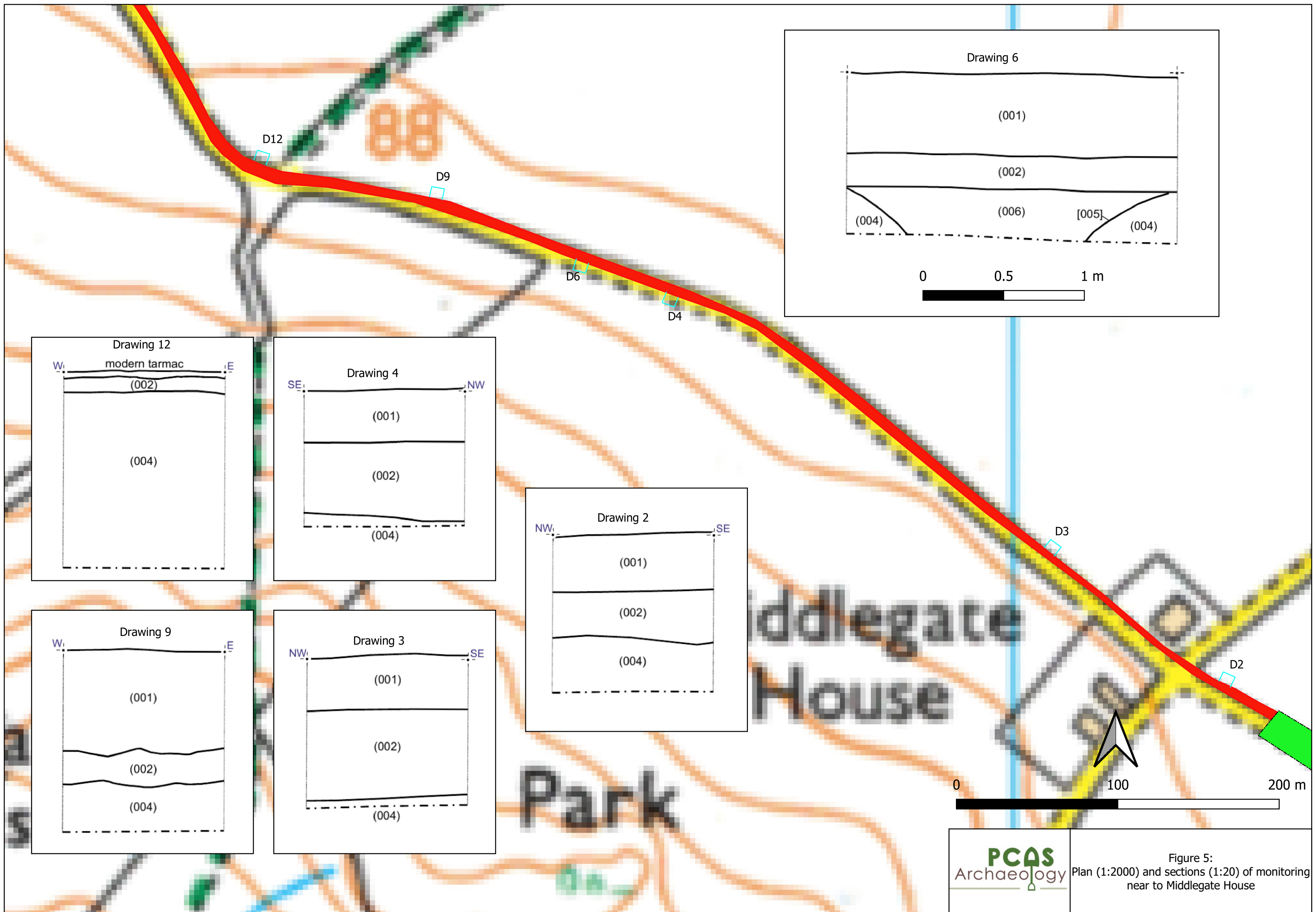
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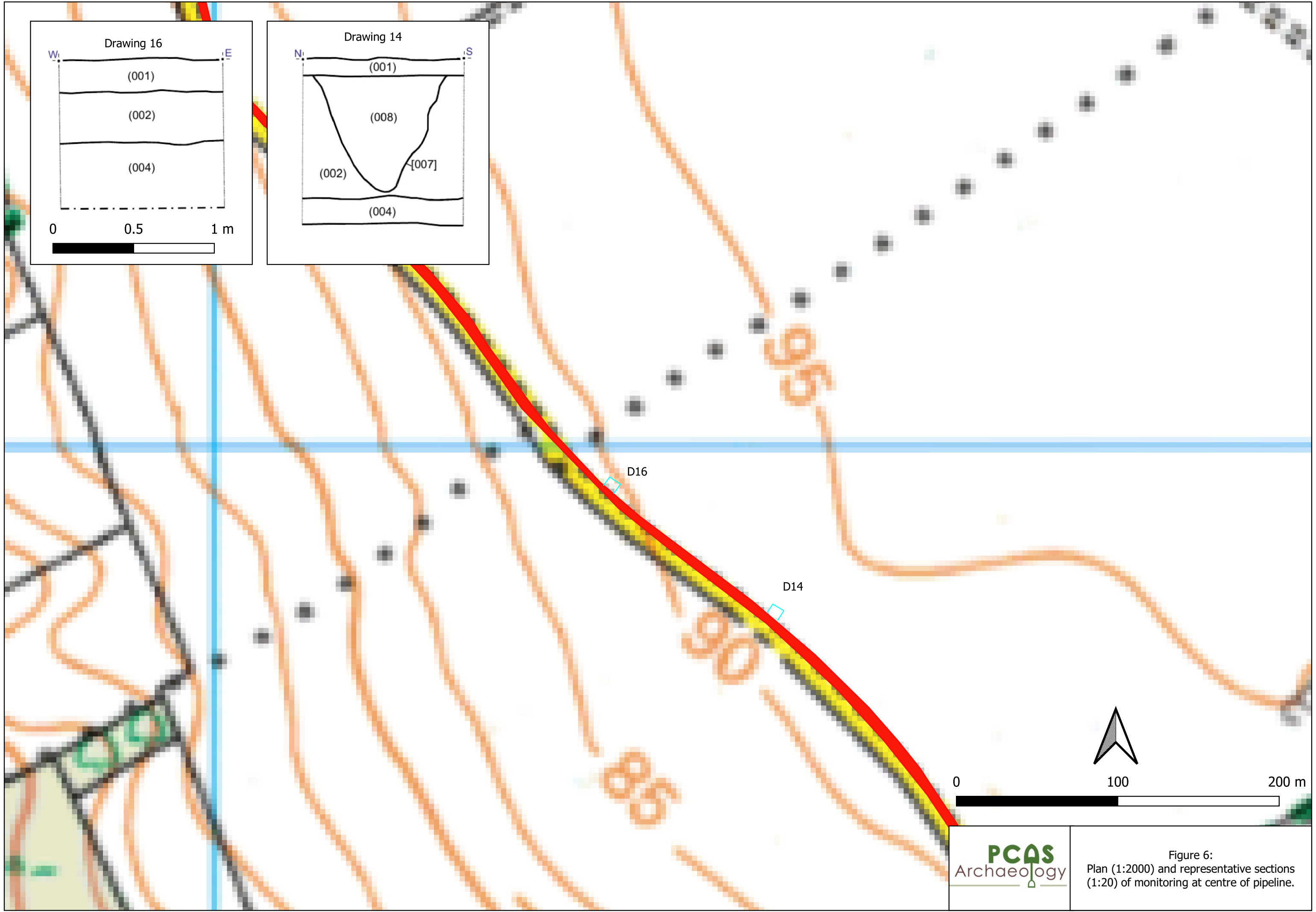
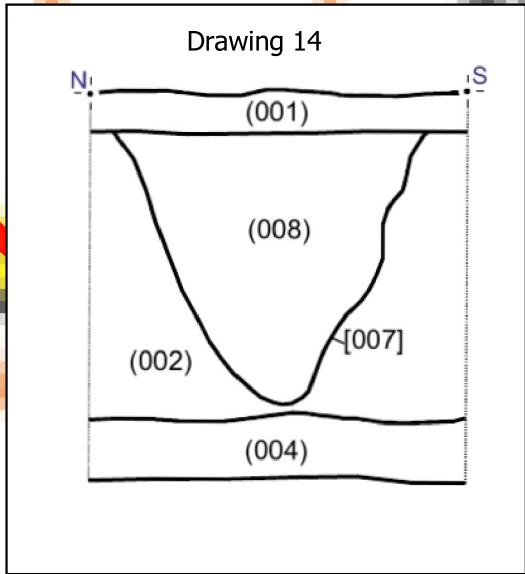
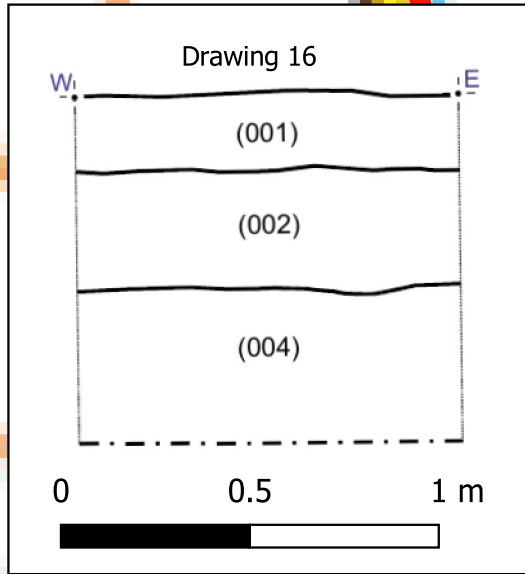
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Figure 4:
Plan (1:2000) and sections (1:20)
at southeastern end of pipeline






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Figure 6:
Plan (1:2000) and representative sections
(1:20) of monitoring at centre of pipeline.




 Figure 7:
 Plan (1:2000) and sections (1:20) of monitoring
 near to Bonby Top Farm

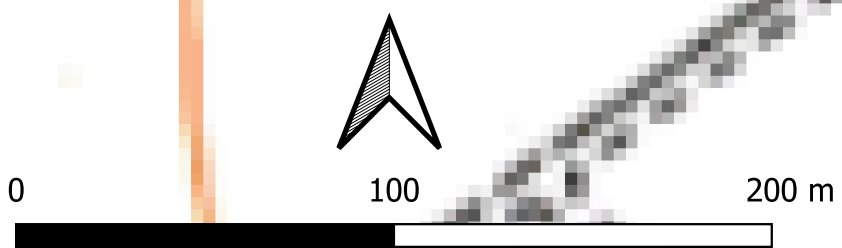
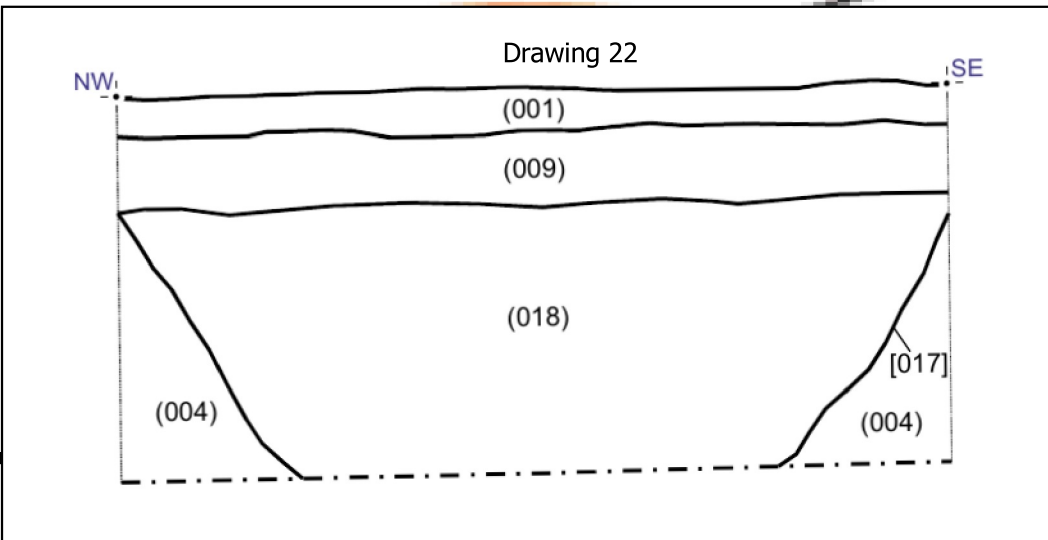
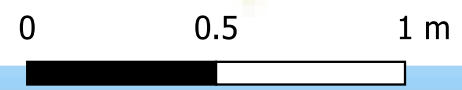
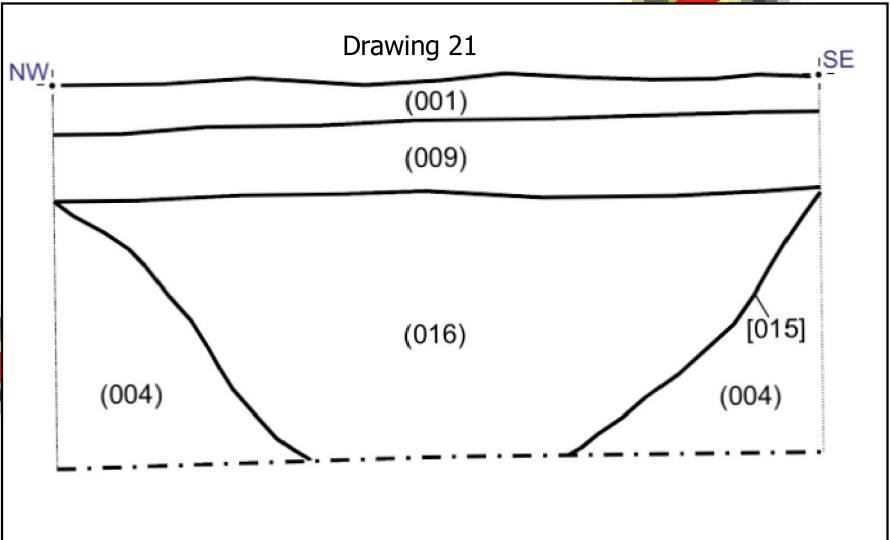
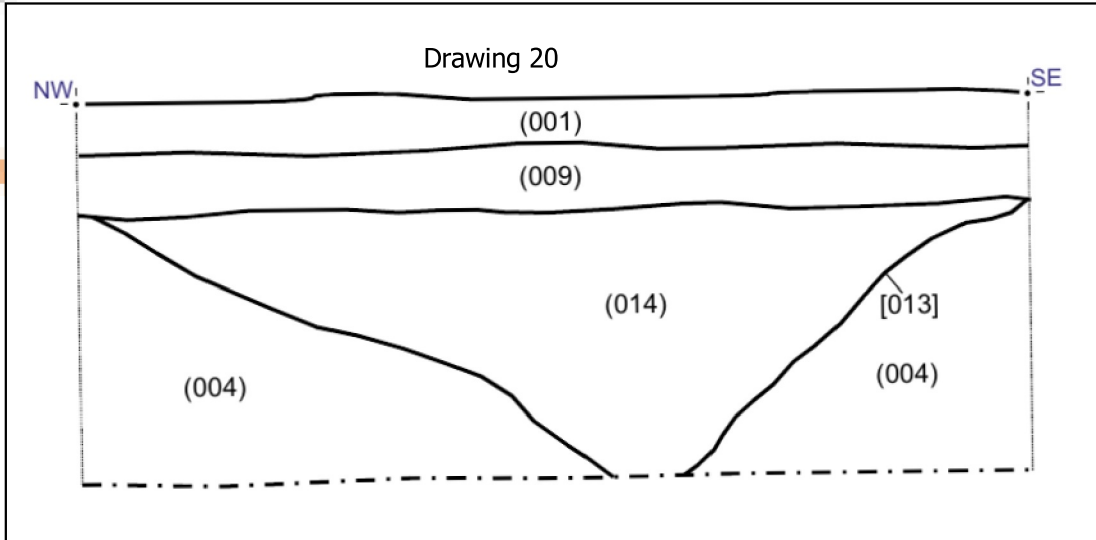
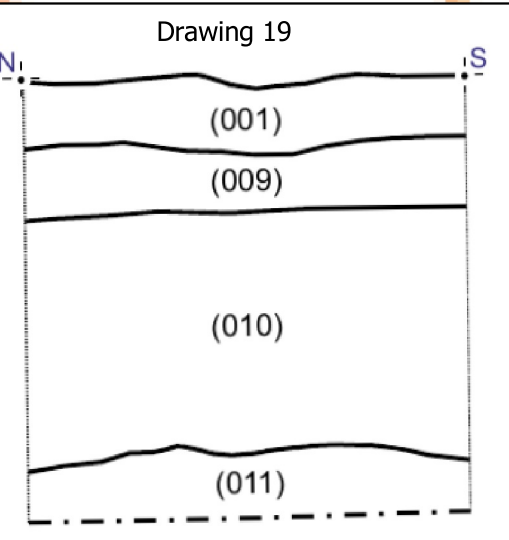
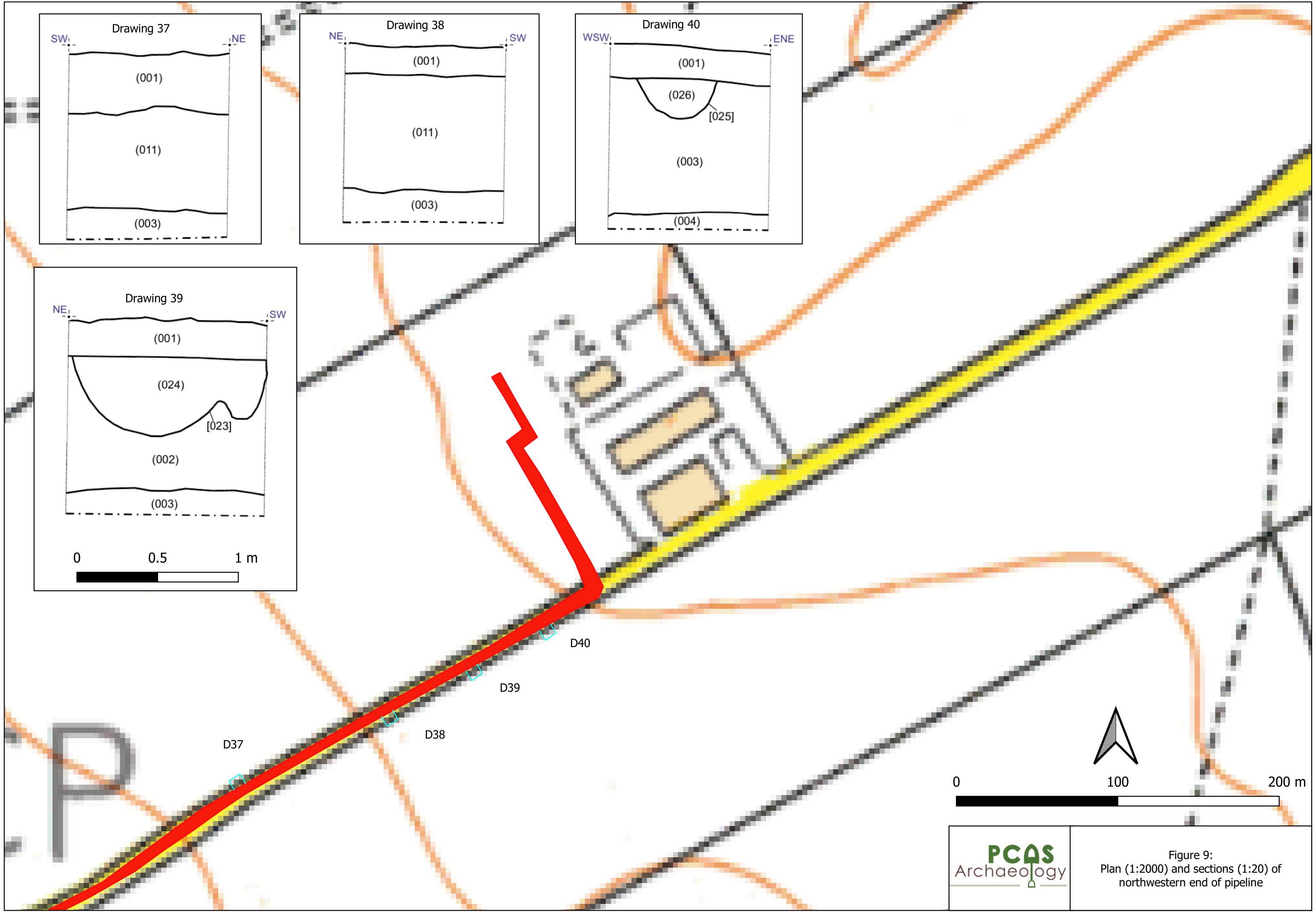
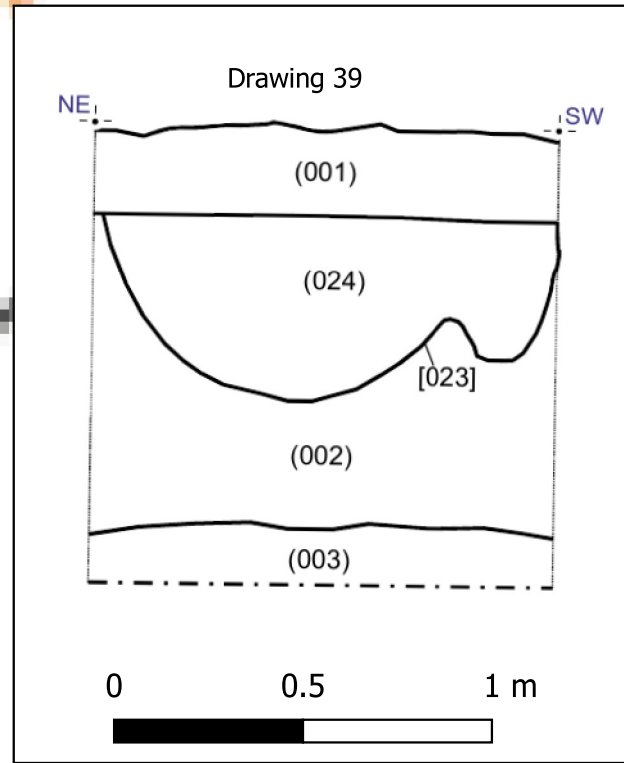
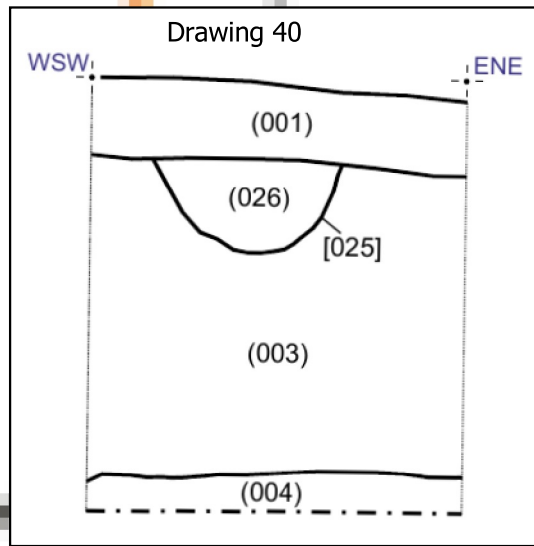
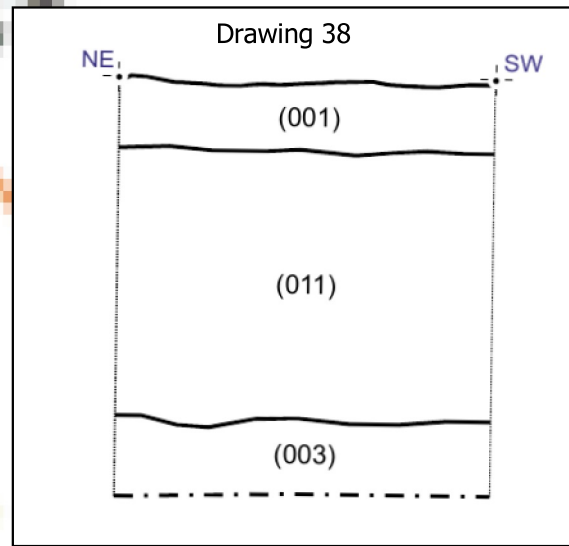
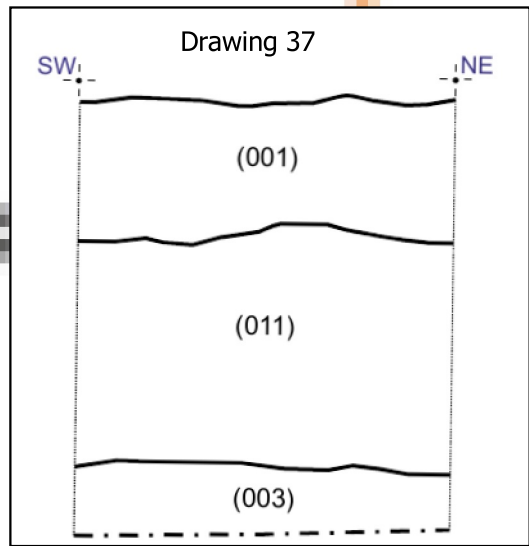


Figure 8:
Plan (1:2000) and sections (1:20) of
northwestern end of pipeline



Context	Type	Description	Findings
001	Layer	Modern Topsoil 0.35m thick	-
002	Layer	Mid brown sandy silt subsoil 0.2m thick	Pot& tile
003	Layer	Mid orange brown and off white weathered chalk natural	-
004	Layer	Natural bedded chalk nodules	-
005	Cut	NE-SW aligned linear feature with gradual sloping edges. 0.2m wide, 0.65m long, 0.28 -0.32m deep – not fully excavated as construction level reached. Filled by (006)	
006	Fill	Single fill of [005]. Friable brown silty clay	-
007	Cut	Possible ridge and furrow – not clear in section. 0.8m wide, 0.75m deep. Irregular profile. Filled by (008).	-
008	Fill	Dark grey brown clayey silt with rare chalk fragment inclusions, 0.75m deep. Fill of [007]	-
009	Layer	Hardcore beneath modern tarmac, 0.3m thick	-
010	Layer	Mid grey brown sandy silt. Firm with small stone inclusions, 0.4m thick	-
011	Layer	Mid orange brown silty sand, 0.2m thick	-
012	Layer	Mid brown sandy silt, friable and disturbed by modern activity	-
013	Cut	Ditch NE – SW. V-shaped, 2.5m wide, 1m deep, filled by (014). Initially interpreted as a furrow	-
014	Fill	Dark red brown sandy silt fill of [013], 1m thick	-
015	Cut	Ditch NE – SW. U-shaped, 2m wide, 1m deep, filled by (016). Initially interpreted as a furrow	
016	Fill	Dark red brown sandy silt fill of [015], 1m thick	-
017	Cut	Ditch NE – SW. U-shaped, 2.2m wide, 1m deep, filled by (018). Initially interpreted as a furrow	-
018	Fill	Dark red brown sandy silt fill of [017], 1m thick	-
019	Cut	Possible pit, 1.2m wide, 0.39m deep. Gradual sloping edges and irregular base, filled by (020)	-
020	Fill	Mid brown red sandy silt single fill of [019], 0.39m thick	-
021	Cut	Possible posthole 0.64m wide, 0.4m deep, with steep edges and rounded base. Single fill (022)	-
022	Fill	Mid brown red sandy silt single fill of [021], 0.4m thick	-
023	Cut	Possible pit or tree throw. 1.2m wide, 0.56m deep. Irregular in plan, sloping edges and concave base containing a single fill (024)	-
024	Fill	Mid grey brown silty clay 0.56m thick. Single fill of [023]	-
025	Cut	Small pit containing human cremation. Steep slightly concave sides and u-shaped base. 0.48m in diameter and 0.26m deep. Contained single fill (026)	-
026	Fill	Cremation (10% pottery) otherwise very dark grey compact ash material with human bone fragments. Occasional chalk pebbles and sub-angular flint.	Cremation

**THE POTTERY FROM NEW GAS PIPELINE, BONBY LANE, BONBY,
LINCOLNSHIRE (BONM 18)**

JANE YOUNG CERAMIC CONSULTANT

INTRODUCTION

Two sherds of pottery and three pieces of tile recovered from the site were examined for this report. The recovered material is of medieval date. The fragments were examined visually and under a x20 binocular microscope and then recorded using the fabric codenames (CNAME) of the City of Lincoln Archaeology Unit (Young, Vince and Nailor 2005). The assemblage was quantified by three measures: number of sherds/fragments, vessel/tile count and weight and the resulting archive entered onto an Access database. Recording of the assemblage was in accordance with the guidelines laid out in Slowikowski, *et al.* (2001) and the PCRG, SGRP, and MPRG Standard for Pottery Studies in Archaeology guidelines (2016) and also complies with the Lincolnshire County Council's *Archaeological Handbook* (sections 13.4 and 13.5).

CONDITION

The pottery is in a slightly abraded condition with sherd size falling into the medium size range at 47grams and 21 grams whereas the tile fragments are in a very abraded condition and jointly weigh 115grams. The pottery is in a stable condition.

THE RANGE AND VARIETY OF MATERIALS

The pottery and tile was recovered from layer **002**. The two recovered sherds join and form part of the base of a drinking jug of late 13th to 14th century date. The base has neat all-round finger-pressings at the basal angle formed with a side-on fingertip. The jug is in North Lincolnshire Fine-medium Sandy ware and was possibly produced in the Scunthorpe area. The three very abraded fragments of tile come from a single Beverley-type flat roof tile of mid 12th to 14th century type.

SUMMARY AND RECOMMENDATIONS

The sherd suggests rubbish disposal in the area between the 13th and 14th centuries.

The tile fragments have been discarded but pottery should be retained for future study.

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Prehistoric Pottery

By Sarah Percival

A small assemblage of 124 prehistoric sherds weighing 360g was collected from two contexts. These include 123 sherds (357g) from a badly smashed Collared Urn from a cremation burial and one sherd (3g) of shell-tempered Iron Age pottery (context (001).

Methodology

The assemblage was analysed in accordance with the guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion type: F representing flint, G representing grog and Q representing quartz. Vessel form was recorded: R representing rim sherds, B representing base sherds, D representing decorated sherds and U representing undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration, condition, food residues and sooting were also noted. The catalogue was recorded using Microsoft Excel 2010.

Collared Urn

The remains of a small Collared Urn were visible within a small pit, [025], in the section of the pipe trench. The urn had been smashed during the machine excavation of the trench which had removed approximately 80% of the vessel leaving only the fragmented remains of a section of rim and upper body.

The Collared Urn is made of grog-tempered fabric containing medium to coarse angular inclusions of dark to pale grog within a fine clay matrix. The vessel was probably fairly squat with a short shallow collar terminating in a direct flat rim. The rim top and interior are undecorated. The collar is decorated with incised lines forming triangular filled panels with a row of stab marks running around the vessel directly beneath the rim. Below the collar a band of incised panels or hurdles marks the upper body of the urn with a second row of stabbed dots defining the girth. Below the girth the urn appears to be undecorated. No base sherds survive.

A Collared Urn with similar decoration is listed in Longworth's corpus from Lancaster (Longworth 1984, plate 84, (c) 825) whilst a vessel of comparable form was found more locally to Bonby at Kirton in Lindsey (Longworth 1984, plate 69, (d) 743). It is likely that the Collared Urn dates to the Early Bronze Age.

Iron Age

A single body sherd in shell-tempered fabric is probably of Iron Age date. The sherd is made of fabric which contains numerous medium sized fossil shell inclusions within a fine reduced clay matrix. The exterior of the sherd has been smoothed.

Further Work

It would be of interest to obtain a radiocarbon date for the cremation associated with the Collared Urn from pit [025]. The vessel is probably too fragmentary to draw or reconstruct but could maybe be photographed for the report. No further analysis is required.

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Osteological Analysis
Bonby Lane and Middlegate Lane
Bonby
North Lincolnshire

Site Code: BONM18
NGR: TA 02248 14295

Report No 0119
January 2019

Prepared for
PCAS Archaeology Ltd
47 Manor Road
Saxilby
Lincoln
LN1 2HX

Prepared by
Elina Petersone-Gordina and Malin Holst
York Osteoarchaeology Ltd
Ivy Cottage
75 Main Street
Bishop Wilton
York YO42 1SR

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Summary

York Osteoarchaeology Ltd was commissioned by PCAS Archaeology to carry out the osteological analysis of one cremated bone assemblage recovered from excavations at Bonby Lane and Middlegate Lane in Bonby, North Lincolnshire (Site code BONM18). The site was excavated as a part of works for the installation of a pipeline to link a gas compressor station with an aerobic digestion plant and infrastructure.

A single urned cremation vessel and contents were discovered during the excavation, and the assemblage was located in an area of diverse prehistoric and Roman activity, including at least four Bronze Age round barrows, a possible Iron Age land boundary, and evidence for Roman occupation in the form of a dense scatter of pottery from the period in the area. Charcoal from the pyre debris was also recovered from the assemblage, as well as charred plant remains. A bone fragment has been selected for radiocarbon dating.

The bone recovered from the cremation burial constituted 17.5% of the quantity of bone one would expect from one individual. The skeletal remains in the burial were grey in colour, suggestive of lower burning temperatures. Moderate fragmentation of the cremated bone assemblage was observed, with the majority of bone deriving from the 5mm sieve.

Osteological analysis found that the burial contained the remains of an adult who was possibly a female. Despite the moderately heavy fragmentation of the bone, it was possible to positively identify over 40% of skeletal elements. No pathological changes were, however, observed on the bones.

Acknowledgements

York Osteoarchaeology Ltd would like to thank Charlotte Bentley of PCAS Archaeology for her help and support.

1.0 INTRODUCTION

In November 2018, York Osteoarchaeology Ltd was commissioned by the PCAS Archaeology to carry out the osteological analysis of one assemblage of cremated human bone. The skeletal remains were recovered from land at Bonby Lane and Middlegate Lane in Bonby, North Lincolnshire, but no other burials were present to aid discussion about the archaeological context of this cremation assemblage.

The archaeological features on site comprised ample evidence for prehistoric activity, including a find of an early Bronze Age arrowhead, cropmarks of a probable trackway from the same period, and four possible Bronze Age round barrows, which are a part of a dispersed barrow cemetery running along the Middlegate ridge. Likewise, cropmarks of either a Roman ladder settlement or an Iron Age land boundary, and a large amount of Roman pottery was also found in the area.

Because the urned cremation burial from Context 026 was an isolated find, it is difficult to assign it to a particular period before the results of radiocarbon dating are obtained but given the Bronze Age funerary monuments in the vicinity, it is likely to date from this period.

Table 1 Summary of cremated bone assemblage

Context	Feature Type	Period	Artefacts and Inclusions	Bone Colour	Preservation	Weight (g)	Percentage of Expected Quantity of Bone
026	-	Bronze Age?	Pyre debris, plant macrofossils	Light grey-dark grey	Moderate	285.4	17.5%

1.1 AIMS AND OBJECTIVES

The skeletal assessment aimed to determine age and sex, as well as any manifestations of disease from which the individuals may have suffered. Additionally, information was sought regarding the cremation techniques.

1.2 METHODOLOGY

The cremated bone was sieved through a stack of sieves, with 10mm, 5mm and 2mm mesh sizes. The bone recovered from each sieve was weighed and sorted into identifiable and non-identifiable bone. The identifiable bone was divided into five categories: skull, axial (excluding the skull), upper limb, lower limb and long bone (unidentifiable as to the limb). All identifiable groups of bone were weighed and described in detail.

2.0 OSTEOLOGICAL ANALYSIS

Osteological analysis is concerned with the determination of the demographic profile of the assemblage based on the assessment of sex, age and non-metric traits. This information is essential in order to

determine the prevalence of disease types and age-related changes. It is also crucial for identifying gender dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.

2.1 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 remains is assessed subjectively, depending on 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 erosion and very few or no post-depositional breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The cremated bone from Bonby Lane survived in good condition. The bone exhibited a solid surface texture with mostly sharp edges. Moderate warping and bone cracking, which occurs commonly during the cremation process, was evident in all the cremated bone.

The fragment size of cremated bone is frequently attributed to post-cremation processes. This is because skeletal elements retrieved from modern crematoria tend to be comparatively large before being ground down for scattering or deposition in the urn. Bone is also prone to fragmentation if it is moved while still hot (McKinley 1994, 340). It is possible that post-burning processes, such as raking of the pyre while the bone was still hot, influenced the bone preservation. The cremation burial showed signs of post depositional alteration, to some extent, and it is likely that bone preservation was affected as a result.

The burial contained bone fragments that were 10mm in size or larger (Table 2). However, most of the bone was derived from the 5mm and 2mm sieves. The fact that only 16.2% of bone was over 10mm suggests that it was subject to some disturbance whilst still hot.

Table 2 Summary of cremated bone fragment size

Context	Sieve Fractions								Total	Total with residue
	10mm		5mm		2mm		<2mm			
	g	%	g	%	g	%	g	%	g	g
026	46.2	16.2	106.3	37.2	59.6	20.9	73.3	25.7	285.4	446.8

The bone assemblage had not been thoroughly burnt, thus preventing the complete loss of the organic portion of the bone and producing a light to dark grey colour, suggesting that the bone had not reached sufficient temperatures, and/or been allowed to burn for long enough. Likewise, the construction of the pyre might not have allowed adequate airflow for optimal burning. According to McKinley (1989), the body requires a minimum temperature of 500° Celsius over seven to eight hours to achieve complete calcination of the bone. This suggests that the techniques required to comprehensively cremate bone were less well understood or followed in Bonby Lane site.

The bone assemblage weighed 285.4g without residue. The amount of bone retrieved from the burial weighed significantly less than the average bone weight produced by modern crematoria, which tends to range from 1,000.5g to 2,299.1g with a mean of 1,625.9g (McKinley 1993). Wahl (1982, 25) found that archaeologically recovered remains of cremated adults tend to weigh less (between 250g and 2,500g) as a result of the commonly practised custom of selecting only some of the cremated bone from the pyre for inclusion in the burial, thereby representing a symbolic, or token, interment. Because just over 17% of bone expected from a modern adult cremation was recovered, it is likely that the burial from Bonby Lane contained only a small selection of cremated bone from the pyre. Since the cremation burial had been bisected by the pipeline trench before the excavation, it is possible that some of the cremated bone assemblage buried had been lost to truncation.

Almost half of the cremated bone (40.5%) could be identified in this burial, despite the level of bone fragmentation (Table 3).

Table 3 Summary of identifiable elements in the cremation burial

Context	Identified Bone											
	Skull		Axial		Upper Limb		Lower Limb		Long Bone			
	g	%	g	%	g	%	g	%	g	%	g	%
026	41.6	36.0	14.5	12.5	7.7	6.7	9.4	8.1	41.9	36.2	115.6	40.5

The majority of identifiable bones derived either from the skull (36.0%), or unidentified long bone shaft fragments (36.2%). These included recognisable fragments of the skull vault, including identifiable temporal and occipital bones and fragments of the mandible and dentition. Although significantly less than from the skull, fragments of ribs, vertebrae, and pelvis were recovered from the axial skeleton, and bones of the lower arms and hands, as well as shafts of the femora, tibiae and fibulae, and fragments of feet, were also present. It is not surprising that skull fragments were among the most abundant skeletal elements, since the cranial vault is very distinctive and easily recognisable, even when severely fragmented. Skull fragments often form a large proportion of identified bone fragments in cremated remains (McKinley 1994). Although bones representing almost all parts of the body were recovered from the burial, unspecified long bone fragments also formed a significant proportion of identifiable remains. With regards to the preferential selection of skeletal elements, no clear trends were observed.

2.2 MINIMUM NUMBER OF INDIVIDUALS

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure during osteological assessments of inhumations in order to establish how many individuals were represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements, such as the hip joints and cranial elements.

It is not possible to calculate the MNI for cremation burials, because often only a token selection of bone from the pyre tends to be buried. Double burials can be identified only if skeletal elements are duplicated,

or if skeletons of different ages are represented in one burial. None of the identified skeletal fragments were duplicated in this assemblage, and no evidence for skeletons of different ages was observed.

2.3 ASSESSMENT OF AGE

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual. Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years), mature adult (ma; 46+) to adult (an individual whose age could not be determined more accurately as over the age of seventeen).

The age assessment in this burial was carried out by observing bone robusticity, as well as the complete epiphyseal fusion, and the closed apex of the molar root, which suggested that the individual was at least seventeen years old but may have been considerably older.

2.4 SEX DETERMINATION

Sex determination is usually 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.

The occipital crest from the burial from Bonby Lane suggested that the individual, or one of the individuals present, was possibly a female. However, sex estimation of the cranium is not very reliable.

2.5 METRIC ANALYSIS

Cremated bone shrinks at an inconsistent rate (up to 15%) during the cremation process and it was therefore not possible to measure any of the bones from this burial.

2.6 NON-METRIC TRAITS

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).

Non-metric traits were not observed in the cremation burial from Bonby Lane.

3.0 PATHOLOGICAL AND DENTAL ANALYSIS

The analysis of skeletal and dental manifestations of disease can provide a vital insight into the health and diet of past populations, as well as their living conditions and occupations. Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles. All bones and teeth recovered were examined macroscopically for evidence of pathological changes.

No evidence for pathology was observed on any of the bones present.

4.0 FUNERARY RITUAL

The discussion of funerary ritual at Bonby Lane is somewhat limited due to the unclear date of the burial, although it is likely to be from Bronze Age, due to several other Bronze Age funerary monuments and finds in the area. Although evidence for possible Iron Age activity, and a vast amount of Roman pottery, were also found nearby, no other burials have been found so far. Radiocarbon dating will help to clarify which period the single cremation burial from Context 026 is from and thus, enable further discussion about it. If it is a Bronze Age burial, then to place it in a wider archaeological context, a comparison with other Bronze Age cremations in Britain is necessary.

In general, the burial from Bonby Lane corresponded with other Bronze Age cremation burials in Britain. According to McKinley (1997, 137) widely varying quantities of human bone have been recovered from cremation burials dating from this period; in the 4,000 undisturbed cremation burials of adults analysed by her, the amount of bone varied between 57 and 2,200g. No associations as to the quantity of bone and the age and sex of the individual buried have been ascertained (*ibid*). To date, however, only one apparent pattern in the weight of bone in a burial has been evident and that is with relation to “primary” Bronze Age barrow burials. Of the eighteen such burials so far examined by the writer [McKinley], all *consistently* produced weights of bone of between 902.3g and 2,747g with an average of 1,525.7g (*ibid*, 142).

Consequently, the recovered weight of the burial from Bonby Lane is consistent with other undisturbed Bronze Age burials analysed by McKinley, although it is significantly lighter than primary Bronze Age barrow burial, which may, however, be due to the truncated nature of the burial. Although Bronze Age Barrows were found in the vicinity, the Bonby Lane burial was not directly associated with any of them, and thus it is more likely that the lighter weight is due to selective deposition rather than disturbance. It is also possible that the original weight of the cremation burial was influenced by taphonomic processes; for example, in a study of late Bronze Age cremation burials, Harvig and Lynnerup (2013) state that original post-cremation weights are frequently underestimated, but largely due to the taphonomic processes rather than ritual selection of skeletal elements for burial.

5.0 DISCUSSION AND SUMMARY

Excavations in Bonby Lane, Bonby, North Lincolnshire produced a single urned cremation burial. Although the burial has not been dated yet, the location near several Bronze Age funerary monuments suggests that it probably dates to this period. A total of four Bronze Age barrows are located nearby and form a part of a dispersed barrow cemetery.

Osteological analysis of the burial revealed that it constituted less than 20% of the expected quantity of bone. The burial had been bisected by a pipeline trench before the excavation, and thus it is possible that some material might have been lost; however, the substantial weight difference between the actual and expected bone weight is most likely due to selective deposition at burial, with taphonomic processes, modern agricultural damage, or a combination of these factors also probably contributing to the preservation of the burial. The assemblage was not thoroughly burnt, suggesting that the temperatures required to comprehensively cremate bone were not reached during the cremation process of the Bonby Lane site burial. The fragmentation of the bone was moderate, with the majority deriving from the 5mm and 2mm sieves, which suggested some disturbance while the bone was still hot.

Despite the moderately heavy fragmentation of the burial, it was possible to positively identify almost one half of the skeletal elements. The identifiable bone material, particularly the closed apex of the molar root and the robusticity of the bones present suggest that there was at least one adult individual in the burial. The biological sex of the burial was possibly female, based on the appearance of the occipital crest. No non-metric traits or pathological lesions were found on any of the bone fragments.

6.0 FUTURE RECOMMENDATIONS

It is recommended that the remains undergo AMS dating, to confirm the Bronze Age date of the burial.

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Evaluation of archaeobotanical remains from single cremation deposit recovered during excavations on land at Bonby Lane and Middlegate Lane, Bonby, North Lincolnshire.

(site code: BONMI8)

by Charles Simpson BSc (Hons) MA MRSB

Introduction

An archaeological evaluation was carried out by PCAS Archaeology on the run of a new pipeline trench on land that primarily follows Bonby Lane and Middlegate Lane at Bonby and Elsham in North Lincolnshire.

Previous desk-based assessments, geophysical surveys and evaluations have discovered a diverse tapestry of human activity within the localised landscape that primarily dates to the prehistoric and Roman periods.

A single bulk sample directly relating to a cremation burial was submitted for processing and an evaluation of its archaeobotanical content.

Methodology

Whilst cremation vessels are usually block lifted for processing in a lab, it was not possible to use this methodology on this occasion. The vessel and contents had already been bisected by the pipeline trench (see figure 1).



Figure 1 – Cremation in section within pipeline trench.

Due to the nature of the sample, the processing varied slightly from a standard environmental processing methodology. The sample was first examined under a binocular microscope to remove any items of a fragile nature or ill-suited to being passed through the flotation process.

The sample was then processed, following the procedures of Kenward *et al.* (1980), for the recovery of biological remains and McKinley and Roberts (1993) for the correct treatment of cremated remains.

The sample was processed by manual water flotation/washover, collecting the flot in a 250 micron mesh sieve. The non-floating residue was collected in a 1mm mesh sieve and dried.

The processed flot was examined for plant macrofossils and other biological remains which were noted down and bagged.

The dried flot was scanned under a binocular microscope using x10, x20 and x35 magnifications and the archaeobotanical remains noted were identified where possible and tabulated in Table 1 below, using the nomenclature of Stace (1997). Morphological criteria were used for the identification of plant species, based on modern reference material and seed identification manuals (e.g. Berggren 1981; Cappers *et al.* 2006; Martin & Barkley 2000; Preston *et al.* 2002).

Plant macrofossils were preserved exclusively by charring. With the proximity of the sample to the surface and the exposure prior to collection, there was a strong likelihood of contamination by modern material. On this occasion, only seeds that had undergone preservation by charring were considered when reporting.

The abundance (x = scarce <10; xx = moderate 10-50; xxx = frequent 50-250; xxxx = super abundant >250) of each archaeobotanical type was estimated and presented in Table 1.

Roots and other plant parts, snail shells, small animal bones along with insect & arthropod remains etc. were also noted where present, but were not removed from the flot.

Any obvious modern contaminants were not noted down as discussed above. The results are presented in Table 1.

Results

The composition of the assemblage was exceptionally minimal and consisted of very low densities of charred macrofossils.

Seeds/fruits of common herb species (weeds, scrub and grassland plants) were present in the sample. They included *Corylus avellana* (hazel), *Poaceae* indet (grasses), *Polygonum* sp. (knotweeds) and *Rumex* sp. (docks).

No cereals were present in this sample.

As no material other than charred remains were examined as part of this analysis, there were no grounds for potential weakening of any interpretation being drawn from the other archaeobotanical remains.

Other Results

Items removed from the residues of all samples are summarised in the table below. An 'x' indicated the material type was present.

Context & <Sample> No.	Bone	Pottery	Charcoal
026 <I>	x	x	x

Discussion

The assemblage of plant remains from the sample was composed of very low densities of charred macrofossils with no cereal evidence present.

The presence of *Polygonum*, *Poaceae* and *Rumex* species may have come from the surrounding land where the cremation took place or gathered with dry grasses to start the pyre. In each case less than half a dozen examples were recovered for the sample.

The only item of note was the presence of a few *Corylus avellana* (hazelnut) fragments within the recovered organic materials. This is possibly explained through the potential use of hazel as one of the woods brought to site for use as pyre fuel, obtained from areas of local scrub. Hazelnuts are a typical prehistoric botanical finds, but unfortunately the limited size of the assemblage prohibits any further interpretation.

Whilst there is evidence of pyre debris in the sample (primarily charcoal), the quantity available is insufficient to obtain any meaningful data relating to pyre technology and cremation rituals.

Charcoal and Wood Fragments - statement of potential

A number of smaller charcoal fragments (as pyre debris) were recovered from the sample submitted and may be sufficiently sized to conduct standard radiometric C14 testing. Should they prove to small, it should certainly be possible to obtain C14 dating using AMS techniques.

Recommendations

The single cremation sent for processing would also not enable any intra- and inter-site comparisons. However, should more cremations have previously been recorded, this option should then be explored.

The results from this site are average to good with good levels of preservation of paleoenvironmental and funary material. Future excavations within the area should certainly be accompanied by a programme of sampling and assessment of any future cremations in order to establish any burial patterns or to collect evidence for funary practices / pyre technology.

No further analysis of the macro-botanical remains recovered or the sample residues is warranted.

Conservation

The dried flots and plant material from the residues, have no particular conservation requirements.

Retention and disposal

All samples from the deposits considered here have been returned to PCAS Archaeology for their retention / disposal.

Archive

A paper and electronic copy of this report has been supplied to PCAS Archaeology and a copy of the paper and electronic records pertaining to the work have been kept by Charles Simpson.

References

Berggren, G. (1981). *Atlas of Seeds and Small Fruits of Northwest-European Plant Species with Morphological Descriptions (Sweden, Norway, Denmark, East Fennoscandia and Iceland). Part 2. Cyperaceae*. Stockholm: Swedish Museum of Natural History.

Cappers, R.T.J., Bekker, R.M. and Jans, J.E.A. (2006). *Digital Seed Atlas of the Netherlands*. Groningen Archaeological Studies 4. Eelde: Barkhuis Publishing.

Kenward, H.K., Hall, A.R. and Jones, A.K.G. (1980). A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits. *Science and Archaeology* 22, 3-15.

Martin A.C. & Barkley W.D. (2000). *Seed Identification Manual*. New Jersey: The Blackburn Press.

McKinley, J I & Roberts, C, (1993). *Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains*, IFA Technical Paper 13

Preston, C.D., Pearman, D.A., & Dines, T.D. (2002). *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press

Stace, C. (1997). *New Flora of the British Isles*. Cambridge: Cambridge University Press.

Table 1: Sample Analysis - BONM18

	<u>Context No.</u>	>	026
	<u>Spot Date</u>	>	prehist
	<u>Environmental Sample No.</u>	>	<1>
	<u>Volume Processed (litres)</u>		10
<u>Latin Name</u>	<u>Common Name</u>		
<i>Corylus avellana</i>	hazelnut		x
<i>Poaceae indet</i>	grasses		x
<i>Polygonum sp.</i>	knotweeds		x
<i>Rumex sp.</i>	docks		x
<i>modern rootlets</i>			xxxx
<i>molluscs</i>			x

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OASIS ID: preconst3-314060

Project details

Project name	Archaeological monitoring along Middlegate Lane, Bonby, North Lincolnshire
Short description of the project	PCAS Archaeology Ltd was commissioned by GGP Consult to carry out a scheme of archaeological monitoring and recording associated with the installation of a pipeline to link an aerobic digestion (AD) plant and infrastructure at the Bio Waste Solutions site on Bonby Lane, Bonby, with a gas compressor station at Middlegate Road, Elsham (centred on NGR: TA 02248 14295, Fig. 1). The pipeline extended from the AD plant on Bonby Lane (NGR: TA 01591 16399) along the road to the junction with Middlegate Lane (this stretch of the pipeline has not previously been disturbed by the installation of other services). The pipeline then routed southwards along Middlegate Lane, crossing from the east to the west side of the road where necessary to avoid existing features, continued down Middlegate Lane past Elsham Water Treatment Works and beneath the A15 dual carriageway, terminating shortly beyond the bridge at approximate NGR TA 04828 12277 at the compressor station. Monitoring took place over the course of five months, during which approximately 5km of pipeline was excavated. A total of seven archaeological features were identified along the route, consisting of a Bronze Age human cremation, five ditches and a single pit, recorded as a possible tree throw.
Project dates	Start: 22-03-2018 End: 29-08-2018
Previous/future work	Yes / Not known
Any associated project reference codes	BONM 18 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Transport and Utilities 3 - Utilities
Monument type	CREMATION Bronze Age
Monument type	DITCH Iron Age
Significant Finds	POTTERY Bronze Age
Investigation type	""Watching Brief""
Prompt	Research

Project location

Country	England
Site location	NORTH LINCOLNSHIRE NORTH LINCOLNSHIRE BONBY Land adjacent to Middlegate Lane
Study area	7 Kilometres
Site coordinates	TA 01591 16399 53.633999686914 -0.46340651077 53 38 02 N 000 27 48 W Point

Site coordinates TA 04828 12277 53.596320817028 -0.415853702502 53 35 46 N 000 24 57 W Point
 Site coordinates TA 00715 15878 53.629487478892 -0.476819763526 53 37 46 N 000 28 36 W Point

Project creators

Name of Organisation PCAS Archaeology Ltd.
 Project brief originator Local Authority Archaeologist and/or Planning Authority/advisory body
 Project design originator PCAS Archaeology Ltd.
 Project director/manager Will Munford
 Project supervisor S. Savage, R. Savage, R. Dickenson, S. Palmer Brown, R. Seaman, J. Sleaf, J. Price
 Type of sponsor/funding body Developer

Project archives

Physical Archive recipient North Lincolnshire Museum
 Physical Contents "Ceramics"
 Digital Archive recipient North Lincolnshire Museum
 Digital Contents "Ceramics"
 Digital Media available "Geophysics", "Images raster / digital photography", "Text"
 Paper Archive recipient North Lincolnshire Museum
 Paper Contents "Ceramics"
 Paper Media available "Context sheet", "Diary", "Map", "Notebook - Excavation", "Research", "General Notes", "Photograph", "Plan", "Report", "Section"
 Entered by Leigh Brocklehurst (leigh.brocklehurst@pcas-archaeology.co.uk)
 Entered on 27 September 2019

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