ARCHDEACON NEWTON MEDIEVAL VILLAGE SITE DARLINGTON, COUNTY DURHAM

ARCHAEOLOGICAL EXCAVATION

MAY 2022

DISCOVER BRIGHTWATER
RESTORE, REVEAL & CELEBRATE LIFE AROUND THE RIVER SKERNE

HERITAGE FUND

The Archaeological Practice Ltd.

ARCHDEACON NEWTON MEDIEVAL VILLAGE, DARLINGTON, COUNTY DURHAM

ARCHAEOLOGICAL EXCAVATION

Frontispiece: *Aerial view of Trench 4 taken on 20 August 2021 at the end of the dig (oriented with north is at the bottom of the photograph)*

Report title:	*Archdeacon Newton Medieval Village Site, County Durham. Archaeological Excavation.*
Stage:	*Final*
Project code:	*AP 21/37*
Compiled by:	*Alan Rushworth, Adam Leigh & Marc Johnstone*
Control:	*Richard Carlton*
OASIS ID:	*thearcha2-510258*
Date issued:	*06/07/2022*
Grid reference:	*NZ 25522 17222*
Client:	*Bright Water Landscape Partnership*

CONTENTS

ILLUSTRATIONS

PHOTOGRAPHIC RECORD

Photo 10: *Trench 1B, north-north-east view showing gulley [116].*

Photo 11: *Trench 2 overview, aerial view.*

Photo 12: *Ditch [204] and posthole [208], north-east view.*

Photo 13: *Ditch [204] and posthole [208], north view.*

Photo 14: *Posthole [208], east view.*

Photo 15: *Trench 3 overview, aerial view.*

Photo 16: *Trench 3 overview, south-south-west view showing trackways [302] and [305].*

Photo 17: *In situ pottery in the base of ditch [308].*

Photo 18: *Pit [466], north view.*

Photo 19: *Gulley [425], west-north-west view.*

Photo 20: *North-east view of Trench 4, showing the terminus of gulley [445].*

Photo 21: *Cobbled surface [447], north-west view.*

Photo 22: *Trench 4 main body overview, south view.*

Photo 23: *West view of walls [402] and [409], together forming a corner of Building 1.*

Photo 24: *Trench 4 main body overview, south-east view showing parts of Building 1 and Building 2.*

Photo 25: *Structure 401, east view.*

Photo 26: *Trackway 450, south-east view.*

Photo 27: *Henry VIII coin from trackway [450].*

Photo 28: *Ditch [454], south-east view.*

Photo 29: *Ditch [423], south view.*

Photo 30: *Wall [508], west view.*

SUMMARY

This report details the programme of excavation undertaken by the Archaeological Practice Ltd for the Bright Water Landscape Partnership at the medieval village site of Archdeacon Newton, a scheduled monument. This was part of a programme of geophysical survey and excavation at Archdeacon Newton and Walworth supported by the Bright Water Landscape Partnership which has provided an opportunity to advance our state of knowledge regarding deserted or shrunken medieval village sites and learn more about the lives of medieval rural communities in the region.

The excavations were undertaken in June-August 2021 with the aid of around 70 volunteers from the local community, ranging in age from 7 to their 70s, under professional archaeological direction. The trenches were positioned to provide a representative sample across the site, targeting features previously identified by the geophysical survey undertaken by Phase SI and areas with the potential to address questions posed following examination of surviving earthworks and the historic map record.

The excavations were largely successful in characterising occupation across the different parts of the medieval village site. Trench 2 extensively explored the elevated area at the northern end of the site where the location of a chapel mentioned in documentary sources, but revealed no trace of any medieval structures and indeed very little indication of any intensive medieval occupation in this area, the pottery assemblage being very small. It is likely this parcel of ground always lay outside the built-up zone of the village. Only at the southern end of Trench 2 were features revealed, in the form of a ditch with a low bank along its south side, both visible as low earthwork features. The ditch was found to contain a posthole in its base. This ditch and bank (and post fence?) most likely marked the northern boundary of the toft situated immediately to the south, itself probably the northernmost occupation on this side of the village. However the almost complete absence of dating material from these features means an earlier origin cannot be excluded.

Trench 3, next to the northern entrance to the present hamlet, was the only area where the remains revealed – two cobbled trackways and an intervening ditch – clearly relate to the more recent periods of the settlement's occupation. Medieval wares were in a minority here and early modern wares were particularly common, a very different assemblage pattern to that encountered in the other trenches.

The area investigated in most detail was encompassed by Trench 4, located in the southern half of the site, just to the north of Hall Farm. A stratigraphic sequence was recorded here beginning with a pit and two gulleys cut in the subsoil (one of the gulleys being demonstrably later, stratigraphically, than the pit). A thick layer of makeup was then laid over the main area of the trench and a series of structures erected on top, including at least one and probably two distinct buildings, plus a substantial revetment wall, perhaps bounding a garden, croft or paddock to the south of the buildings. Evidence for other extremely ephemeral structures was also noted. The only differentiation within the makeup was an area of cobbled surfacing, located in the north-east part of the trench and laid at relatively low level within the makeup. This might imply that the deposition of the makeup took place over an extended period with pauses in the depositional process when unspecified other activities occurred there.

The pottery assemblage from Trench 4 was the largest from the site and was predominantly medieval in date, with only a small quantity of later wares. This implies that the occupation sequence uncovered in Trench 4 fell entirely within the medieval period, with this part of the settlement having been largely abandoned by c. 1450, and witnessing only limited residual activity thereafter. A Bronze Age radiocarbon date from a charcoal deposit beneath the cobbles in the north-east part of the trench presents a puzzling piece of contrary evidence, but the stratigraphic sequence excludes the possibility of in situ Bronze Age activity in this part of the site, and hence implies this was the result of the redeposition of material from a site with Bronze Age occupation somewhere in the vicinity.

Trenches 1a and 1b yielded only limited structural evidence, but the results here echo, on a much smaller scale, those in Trench 4, with such structures as were revealed being more characteristic of the rear of toft plots. The pottery assemblages were overwhelmingly weighted towards the medieval period (up to c. 1450), implying that occupation in this part of the settlement may have ceased before the end of the 15th century.

In Trench 5 the profile of the eastern moat or fishpond ditch was established. An unexpected discovery here was a stone wall on the eastern lip of the ditch. Well over a metre wide and incorporating reused, moulded medieval stonework, this was no mere field wall. It was probably associated with the remodelled farmhouse of the 16th/17th centuries.

Palaeoenvironmental analysis of the fill deposit from the easternmost boundary ditch of the Trench 4 toft yielded a great deal of information on the wider environment and landuse in the area around the village. Plant macrofossils, pollen and insects all suggest a landscape comprising open disturbed grassland with some arable cultivation. This arable cultivation included oats, bread wheat, barley, rye and peas – typical medieval crops for this region. The ditch itself held shallow stagnant water and was probably bordered by a hedgerow, whilst stable manure and other farm waste from outbuildings was evidently disposed of periodically within it.

1. INTRODUCTION AND RESEARCH BACKGROUND

1.1 Deserted and Shrunken Medieval Villages of the Bright Water landscape area

The numerous, well-preserved deserted and shrunken village sites (DMVs & SMVs), dating to the later medieval period and its immediate aftermath, which survive as earthwork monuments in the area, represent one of the cultural heritage highlights of the Bright Water Landscape Partnership area, which encompasses the catchment area of the River Skerne in south-central County Durham. Yet surprisingly little archaeological research has been focussed on these sites. Though several were surveyed in detail by the RCHME, very little excavation has taken place prior to the Bright Water programme, with only Ulnaby having been subjected to a co-ordinated programme of documentary analysis, topographic survey and excavation (the latter a Time Team excavation of limited scale). Hence, the programme of geophysical survey and excavation at Archdeacon Newton and Walworth has provided an opportunity to advance our state of knowledge regarding this class of site and learn more about the lives of medieval rural communities in the region. Standing medieval buildings survive at both Archdeacon Newton and Walworth in the form of Old Hall, a service wing formerly attached to a manorial hall, further rebuilt in the 16th/17th-century and now serving as a barn at Archdeacon Newton, plus the 12th-century chapel, now a barn, encapsulated with the farm building complex at Walworth North Farm, and parts of the south range of Walworth Castle. This report details the programme of excavation undertaken at the second of these sites, Archdeacon Newton.

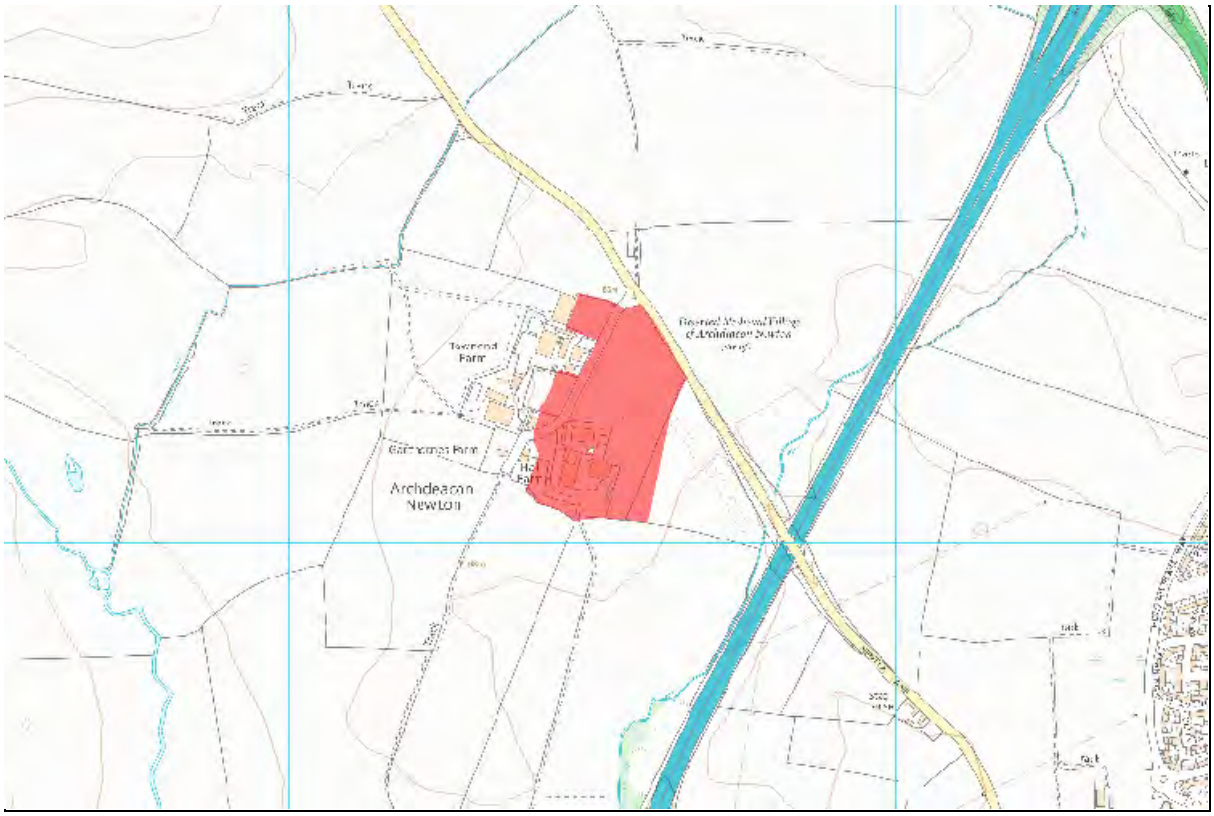
1.2 Archdeacon Newton DMV

1.2.1 Location

The hamlet of Archdeacon Newton is situated *c*. 1km north-west of Darlington conurbation (4.5km from the town centre) in the southern County Durham, just beyond the A1(M) motorway.

Illus. 1: *The location of Archdeacon Newton north-west of Darlington.*

The earthwork remains of the DMV are located to the east and north of the present-day settlement, which is comprised of three farm complexes: Townend Farm, Garthorne Farm (Acorn Dairy) and Hall Farm located on the south side of Newton Lane.

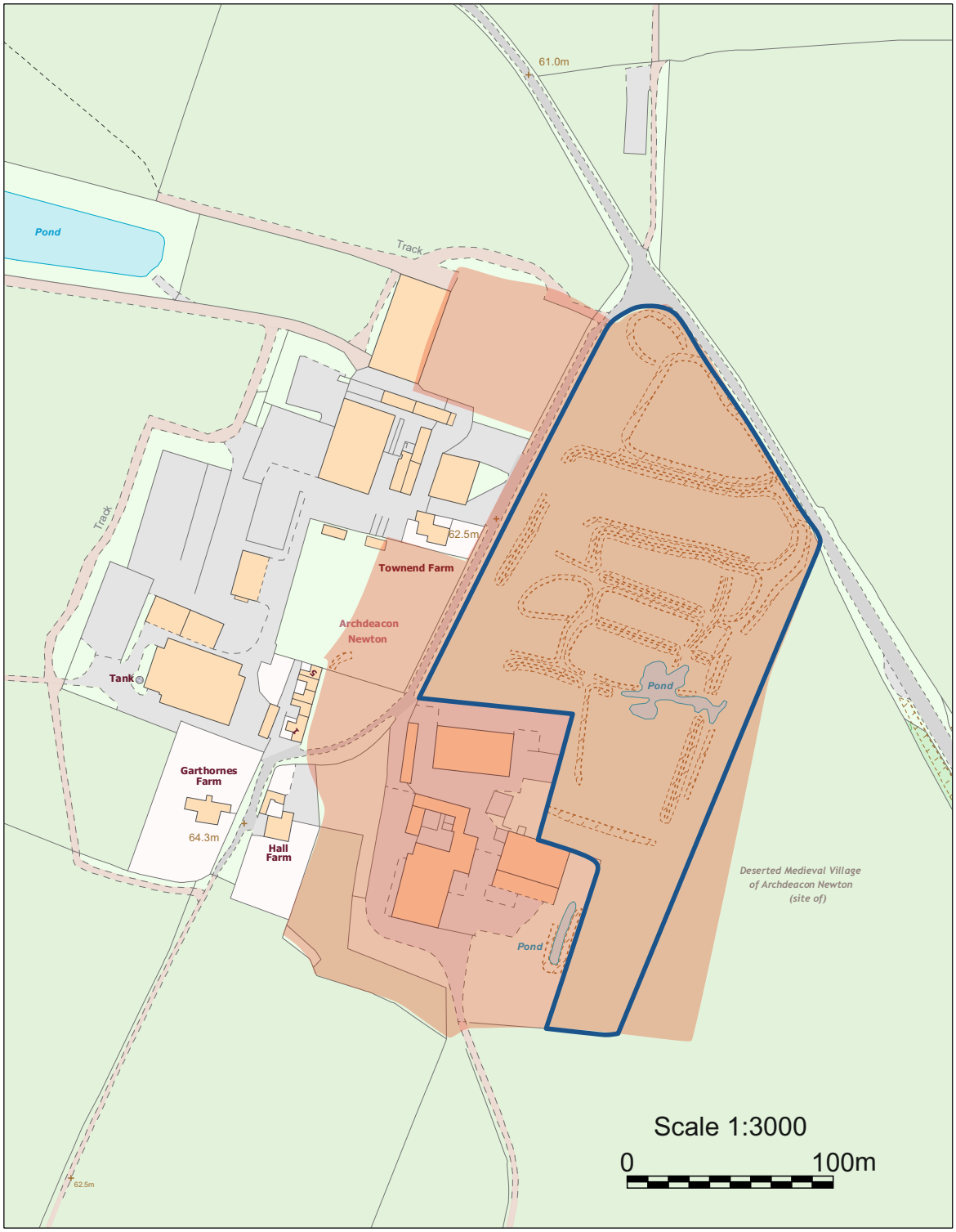


Illus. 2: *The location of the scheduled extent of Archdeacon Newton SMV, with the present farm hamlet settlement to the south and west.*

1.2.2 Description

Archdeacon Newton moated site, deserted manorial settlement and section of rig and furrow is a scheduled ancient monument (List entry no. 1015841 (Legacy UID: 28547); National Archaeological Record Monument No. 23602; DHER H1524, R41505; NGR: NZ 25522 17222). The scheduling incorporates the area of visible earthworks, most prominently in Village Field on the east side of the settlement, but also extending into two paddocks in on the west side of the north-south access lane leading off Newton Lane. The scheduling also encompasses the site of the moated manor house at the south-east corner of the hamlet, beneath the buildings of Hall Farm. The built areas of Garthorne Farm and Townend Farm on the west side of the hamlet are excluded from the scheduling, however.

The earthworks in Village Field take the form of a series of E-W aligned toft compartments. At the north end of the field a triangular platform standing around 2m high has been suggested as the site of a chapel mentioned in a documentary source of 1414. To the south, Hall Farm marks the site of a moated manorial enclosure which would have contained the manor house plus ancillary structures and the buildings associated with the lord's demesne farm. A barn, known as 'Old Hall' (*photo 01-02*), situated 100m east of Hall Farmhouse, represents the surviving service cross-wing of the manor house (Listed Building – Grade II*: 1322949; DHER: H1525/H1526/H36699/R11545; cf. Ryder 1991). The manorial hall, which would have been attached to the east side of this building, has not survived. The

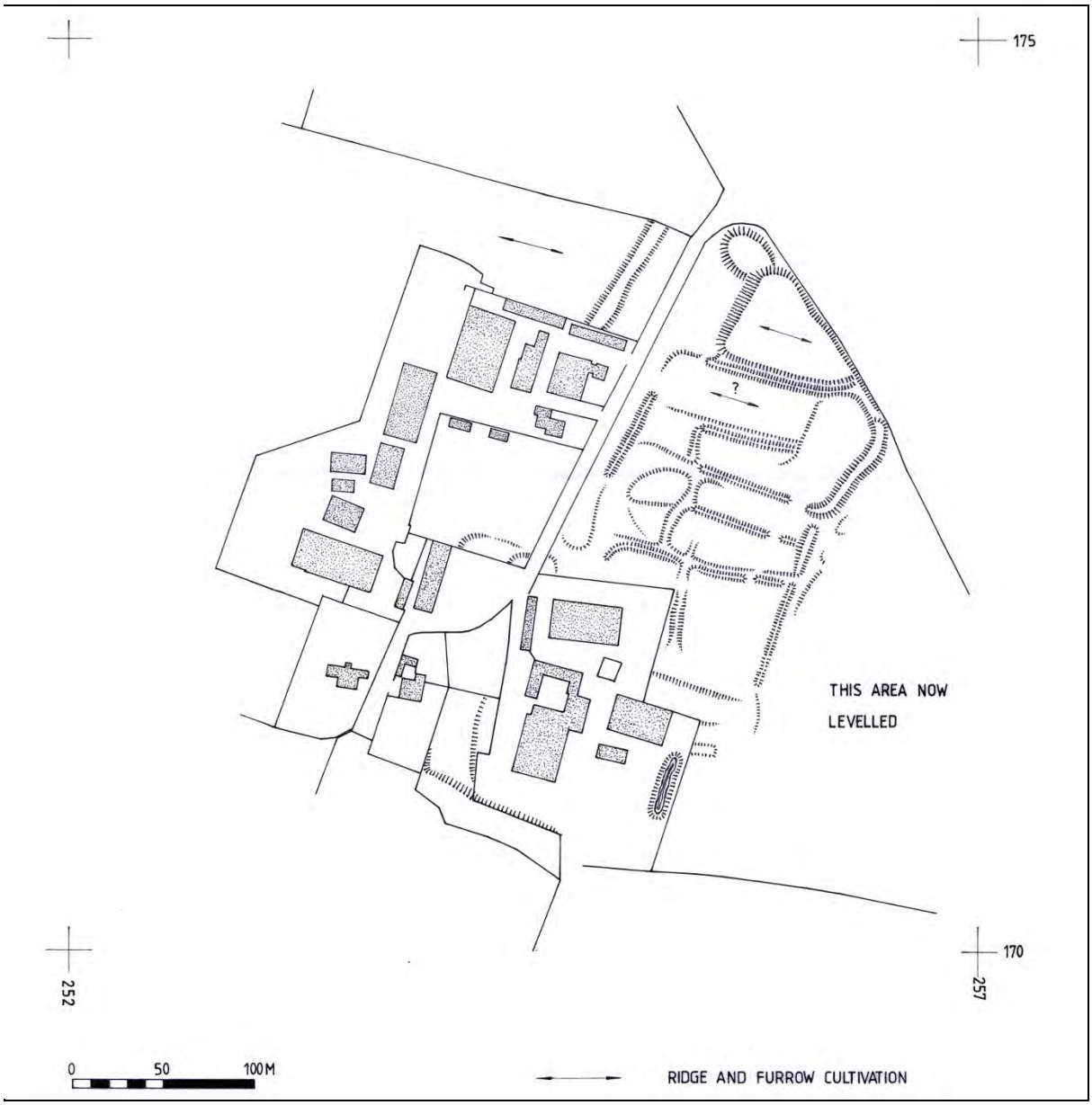


Illus.03: *Map showing the scheduled extent of Archdeacon Newton moated site, with Village Field outlined in blue.*

moat is now mostly infilled (save for one linear pond on the east side of the farm), but historic maps – tithe map and 1st edition OS – show that it was still present along the east and south sides and around the SW corner during the mid-19th century, with a double moat ditch on the east side (the outer perhaps functioning as a fish pond).

The monument is described in more detail as follows in the Historic England Scheduled Monument List entry (no. 1015841):

> *The monument includes the remains of a medieval settlement, a moated manorial site and a fragment of rig and furrow at Archdeacon Newton, situated on the East Durham Plateau. The remains of the Archdeacon of Durham's manor are contained within an irregularly shaped enclosure. This enclosure measures 365m north to south by 210m east to west and is bounded by a bank, which in places is flanked by the remains of an outer ditch. The enclosing bank is clearly visible as an earthwork on the eastern side of the monument and at the north western corner where it stands up to 1m high. Parts of the western side are visible as slight earthworks and it is thought that the buried remains of the bank also survive on this side. The moated site is situated at the southern end of the monument and is visible as the fragmentary remains of a strongly defended rectangular ditched enclosure with double defences on its eastern side. The ditch is most pronounced at the north west and south west angles where it is 20m wide and up to 2m deep. Elsewhere, the moat has become infilled but it survives above ground as a slight earthwork and below ground level as a buried feature. The island of the moat is occupied by a group of late 18th or 19th century buildings but one medieval building survives on the island. This building known as the Old Hall is thought to be the remains of a service wing which was attached to the original medieval manor house of which there are no surface remains. The size and nature of the stonework of the service wing suggest that the manor house itself was a large complex. Indeed, a document of 1570 which is thought to refer to the Manor House lists the Hall, the Parlour above the Hall, the Chamber over the Hall, the New Chamber, The Little Chamber, the Loft beneath the Doors, the Buttery, the Kitchen and the Stable. The northern part of the monument is divided into a series of small rectangular enclosures, orientated east to west, by parallel linear banks standing 0.6m high and ditches 0.3m deep. At the extreme northern end of the monument there is a large raised triangular platform up to 2m high bounded by a ditch on its south side. This is thought to be the site of a chapel referred to in a document of 1414 in which Robert Fisher, John Nicholson and John Deves were granted licence for divine service to celebrated in a chapel at Archdeacon Newton. Immediately west of the western side of the settlement enclosure wall there is a section of medieval rig and furrow cultivation. This cultivation is part of the once extensive field system which surrounded the medieval settlement. The exact relationship between the cultivation and the enclosure wall is uncertain but the rig and furrow appears to be later in date. This area is included in the scheduling. A number of features within the area are excluded from the scheduling; these are the metalled surfaces of all roads, drives, paths, hard-standing areas and farmyards as well as all stone walls, fences, gate posts and hedges which cross the monument. Also excluded are all buildings and associated structures situated on the island of the moated site including the medieval building which is Listed Grade II*; the ground beneath these features is included. The water tank constructed by North East Water on the island of the moat is totally excluded from the scheduling.*

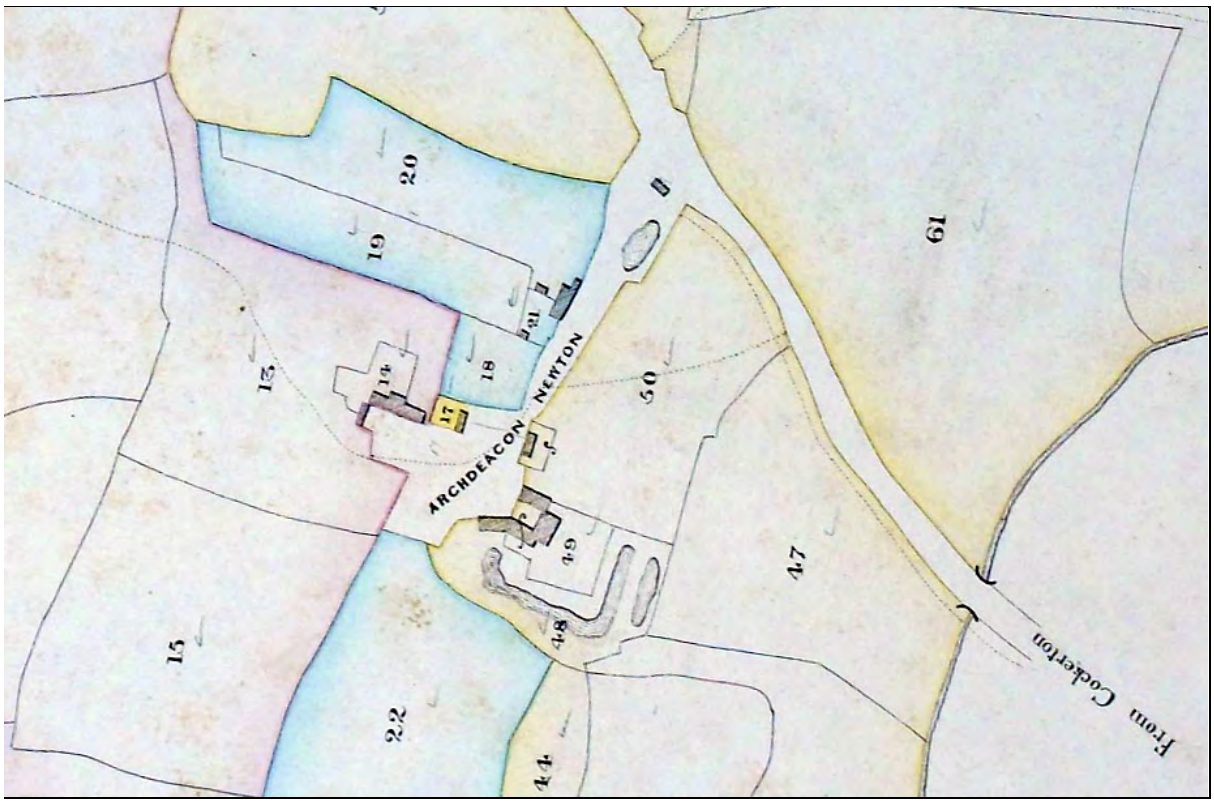


Illus. 04: *RCHME 1991 survey of the earthwork remains of Archdeacon Newton DMV.*

1.2.3 Morphology – Discussion and Interpretation

The earthworks suggest that the medieval settlement of Archdeacon Newton took the form of a single row of peasant tenements laid out on the east side of a street or green, with a moated manor house to the south and perhaps a chapel to the north, next to Newton Lane. However the form and layout of the surviving earthworks must be compared with the historic map evidence, principally the tithe map of 1847 (DDR/EA/TTH/1/1) and the 1st edition Ordnance Survey map (surveyed 1855, published 1859). Although scarcely a decade separates the appearance of these two maps, there are substantial differences between the two, too great to be accounted for by the inferior accuracy of the tithe map, implying that a significant reorganisation, particularly of the remaining common areas – the lanes, outgangs and remnants of the green, had occurred in the intervening period between the two

surveys.[1] The tithe map, especially, provides intriguing clues into the earlier layout of the settlement, suggesting its form may have been more complex.



Illus. 05: *Extract from the tithe map of Archdeacon Newton (DDR/EA/TTH/1/1), dated 1847, showing the farm hamlet and site of the medieval village.*

Both Newton Lane, running NW-SE, and the access lane leading from it to the settlement are shown as much broader on the tithe map than they are on the Ordnance Survey plan. The access lane in particular forms a broad corridor, widening to the north, like a funnel, as it gets further away from the hamlet, a classic outgang form. At the southern end the lane opened onto a large, roughly square, open area surrounded by the buildings of the two farms (unnamed but equivalent to the present-day Hall and Garthorne farms). The field immediately to the south, numbered 22 on the tithe map, was entitled Town Green Field in the associated apportionment schedule, implying that outgang corridor and open area to the south represented the earlier village green, in part at least. The buildings of the three farms appear much less developed than shown on the OS 1st edition, particularly noticeable in the case of Townend Farm to the north, another clue as to the much earlier date of the survey. Finally, the two long narrow fields on the west side of the green/outgang lane, numbered 19 and 20 on the map, are both labelled 'garth' in the apportionment, whilst the smaller square paddock 18 immediately to the south is named Little Garth. Garth is a name often given to areas of former village

[1] Tithe maps sometimes copied or incorporated material from earlier surveys to save landowners the cost of producing a newly surveyed map, so the actual time period between the two surveys – tithe and 1st edition OS – might be significantly greater than the dates would indicate.

tofts and crofts.[2] It is possible, therefore, that there was a second row of tenements laid out on the west side of the lane, which have not survived as earthworks, having perhaps been ploughed level at some stage.

Illus. 06: *Archdeacon Newton as shown on the 1st edition Ordnance Survey 6in to the mile (1855).*

1.2.4 Historical and Documentary Background

> *Of Archdeacon Newton, nothing occurs worth noting* (Hutchinson 1794, 195).

As Hutchinson's terse statement emphasises, the history of the township and manor of Archdeacon Newton is very obscure. Subsequent county historians – Surtees (1823, 375), Mackenzie and Ross (1834, II, 156), and Fordyce (1857, I, 498) published longer entries, but these actually provide no more substantive information relating to the vill's medieval history. Page (1905, I, 360) does include a discussion of the village earthworks. The various histories of Darlington focus on the town itself, however, and largely exclude the rural townships of the wider parish, including Archdeacon Newton. Unfortunately this policy was continued by Volume IV of the History of the County of Durham, recently published by the Victoria County History (Cookson 2005), and the accompanying volume on Darlington's townscape (Cookson 2003). Longstaffe (1854, 279-81) does include some interesting late 16th-century wills relating to inhabitants of Archdeacon Newton, whilst an early 17th-century inventory has recently been published by the Surtees Society (Atkinson et al. 1993: Ralph Thursbey,

[2] Thus field 50, which roughly corresponds to Village Field today, is labelled Well Garth, whilst field 47, immediately to the east, is labelled 'garths', perhaps implying that a series of crofts extended eastward from the toft row in Village Field/Well Garth.

1622). Sunderland (1967, 20) mentions the grant of a licence for the celebration of divine service in a chapel at Archdeacon Newton in 1414, but does not cite the original documentary source.

It is assumed that the township was held by the Archdeacon of Durham during the Middle Ages, as was the case in the post-medieval era documented by the county historians, and as reflected by the name of the village. However Archdeacon Newton does not figure in either of the two great medieval surveys of the episcopal estate, the Boldon Book of c. 1183 and Bishop Hatfield's survey of 1381. While it is conceivable that the village was founded at some point after the compilation of the Boldon Book, it certainly pre-dated the Hatfield Survey, as confirmed by the limited evidence. Hence, either the township was held by the archdeacon separately from the main episcopal estate and the relevant records have not survived or perhaps it was initially granted to one of the bishop's feudal tenants – thereby avoiding mention in two estate surveys – and only later came into the possession of the archdeacon. Archdeacon Newton certainly features as a place-name by the late 16th century, but earlier on the settlement may simply have been referred to as Newton, one of many villages with that name in the bishopric of Durham, its existence thereby obscured. The records of Darlington contain at least one reference to an individual with the name *de Newton* who almost certainly took his name from the township (see Longstaffe 1854, 7: *Hugo de Newton*, *c.* 1355).

The place-name implies that Archdeacon Newton was established as a new settlement at some point during the Middle Ages, rather than representing an ancient vill dating back long before the Norman Conquest. It is logical to assume that it was carved out of Cockerton, the adjoining vill in Darlington parish, which was certainly held by the bishop, like the parish's other townships, Blackwell, and the borough and township of Darlington itself.[3]

The history of the collegiate organisation of Darlington's parish church of St Cuthbert provides some clues helping to narrow down the settlement's foundation date. In 1439, Bishop Neville reformed the college of secular canons, replacing the post of vicar with that of Dean, and his ordinance describes in detail the organisation that had hitherto prevailed (Surtees 1823, 361-62; Longstaffe 1854, 195-96; Cookson 2005, 194). In addition to the vicar, who had the cure of souls and was, in theory at least, resident in the parish, there were four secular canons, known as prebendaries, who drew a substantial income from the parish and were typically absentee clerics. Each post, or prebend, took its title from one of the four townships of the parish, Darlington, Cockerton, Newton or Blackwell. In addition to revenue from various lands and properties, the prebendaries received the tithes in grain and hay from the four townships on a 12 yearly rotational cycle, receiving the tithes from each township in turn for three years. These arrangements had prevailed for a considerable period. The ecclesiastical tax assessments of 1292 and 1318 listed four named canons and a vicar in relation to Darlington church, and it is likely that this organisational structure dates back to the foundation or refoundation of the college by Bishop Hugh du Puiset in the late 12th century (Cookson 2005, 193; Longstaffe 1854, 194-95; Scammell 1956, 110; *Tres scriptores*, 14).[4] It is even possible that the college originated in a measure traditionally attributed to Bishop William de St Calais to make provision for some of the secular priests of the Community of St Cuthbert at Durham who had refused to make the transition to

[3] Oxenhall or Oxneyfield, which formed a detached portion of Darlington township at the southern end of the parish beside the Tees, was a manor in its own right, listed separately in the Boldon Book and Hatfield Survey, and sometimes treated like a township.

[4] The foundation charter has not survived and the precise date of Bishop du Puisset's reorganisation is uncertain.

the newly established Benedictine priory (cf. Rollason (ed.), *Symeon of Durham*, 230-31). However, even if this was the case, there is no guarantee that the arrangements and number of canons were precisely the same in the late 11th century as they were later on after du Puisset's reorganisation. Nevertheless this does strongly suggest that Newton was already in existence by the late 13th century, and most probably by the late 12th century, when it is likely the number of prebendaries in Darlington was set at four by Bishop du Puiset to reflect the number of townships then existing in the parish of Darlington.

1.2.5 Previous Archaeological Investigation

Relatively little archaeological work has taken place at Archdeacon Newton prior to the initiation of the Bright Water programme.

HER no.	Date	Investigation
H1524	05-09-1991	**Survey**: The Ordnance Survey plan of the DMV was revised by the RCHME in as part of the Durham SAMs programme.
Cf. H1525, H36699	1991	**Historic Building Study:** Analysis of the Old Hall – the surviving medieval service wing of the manor house, by Peter Ryder (published Ryder 1991).
	11-1996	**Desk-based-Assessment:** Proposed East Coast High Pressure Gas Pipeline – included coverage of Archdeacon Newton.
E9116	01-2006	**Watching brief** undertaken by Brigantia Archaeological Practice during excavation of an electricity supply trench at Garthorne Farm. No archaeological features were observed.
	05-2011	**Historic Impact Assessment** of a proposed wind turbine for Acorn Dairy, Archdeacon Newton, by Archaeo-Environment Ltd.
H60569 E60567	04/05-2015	**Geophysical Survey** at Garthorne Farm by Archaeological Services Durham University. Covered a 0.2 hectare area on the W side of the access lane. Only extant earthworks (ridge and furrow and a boundary bank) were revealed.
H60998 E60996	02-2016	**Watching brief** at Garthorne Farm by Archaeological Services Durham University. Only truncated remains of ridge and furrow and a later field boundary ditch were encountered.

1.3 Geophysical Survey 2020

As the first component of the Bright Water programme of investigative fieldwork, a geophysical survey, employing three different techniques – magnetic gradiometry, earth resistivity, and electromagnetic conductivity – was undertaken by Phase Site Investigations between 1st and 8th June 2020. This encompassed the entirety of the two fenced field enclosures collectively known as Village Field, but excluded other components of the scheduled monument area, namely Hall Farm to the south, which was the site of the moated manorial complex, and the paddocks to the west and south-west. Hall Farm is covered by standing buildings and modern hard standings and is thus unsuitable for survey, whilst time constraints prevented survey of the small paddocks.

1.3.1 The Geophysical Survey Results

The geophysical survey report's Summary and Conclusions are set out below (in italics). The following discussion is designed to highlight some of the results which may have a bearing on the research questions set out below.

> *The geophysical survey has identified numerous anomalies indicative or suggestive of anthropogenic features / activity and a number of anomalies of uncertain origin. A number of anomalies correspond with visible earthworks and the different datasets have identified different characteristics of features. Some responses will relate to the bank, others to the base of slopes and some are possibly infilled ditches. Some earthworks do not have clear anomalies associated with them, possibly suggesting that the composition of the earthworks may vary across the site, although this could also because the subtle anomalies are masked by changes in material / soils over the features. There are anomalies that are not directly associated with earthworks, indicating the presence of additional features.*
>
> *An area of strong responses in the south of the area corresponds with a part of the moat or a pond and will be caused by material infilling this feature.*
>
> *A variation in the EM data may confirm that the access lane was once significantly wider than the current layout.*
>
> *It has been suggested that the triangular platform in the north of the site may have been the site of a chapel but there is no evidence for structural remains on the top of the platform in the geophysical data. There are responses related to ridge and furrow on the platform and several anomalies of uncertain origin but these are not suggestive of the remains of a church.*
>
> *There are a number of anomalies suggestive of relatively modern features, such as drains or pipes. One such anomaly appears to connect to a manhole cover, which corresponds with the location of a well shown on historic maps.*
>
> *A number of responses are present that are suggestive of anthropogenic features / activity which do not correspond with earthworks. It is not certain if these are related to additional archaeological features or if they are caused by more modern features / activity. Some responses form regular shapes that could suggest they are related to archaeological features but some of the anomalies could be related to drainage or possibly water pipes and so care should be taken if they are investigated.*
>
> *A significant number of responses are present that are relatively weak or short / fragmented. The cause of these anomalies is not certain as they are too weak and short to reliably interpret. Some could relate to sub-surface features but many could be a product of natural variations, agricultural or other relatively modern activity.*
>
> *There are several areas of relatively strong responses suggestive of a spread of material and there are numerous isolated responses. Anomalies of these types are usually related to relatively modern material but it is possible that some of the responses could be related to material associated with the former medieval village. There are some areas where strong responses from modern features / material dominate the surrounding data. It should be recognised that the strength of the strong responses could mask anomalies from other subsurface features in the area.*

1.3.2 Discussion

Toft enclosures and house platforms

The toft enclosures of the settlement are clearly defined both as earthworks and as geophysical anomalies, but house platforms or associated remains cannot be traced, with the occasional possible exception. Geomagnetic anomalies M3, which straddle the plot immediately south of the triangular enclosure at the north end of the field, might indicate the presence of a house, perhaps representing drip gulleys or a continuous post or beam trench. With its long axis aligned N-S, this house would face on to the green to the west. However this plot shows traces of ridge-and-furrow ploughing (as earthworks and geomagnetic anomalies) so the surviving medieval settlement remains here may be degraded by later (early modern?) plough damage.

The suggested chapel site

The geophysical survey did not provide any definite evidence for the existence of a building in the triangular area at the north end of Village Field, which has traditionally been identified as the site of a chapel (cf. Ryder 1991, 129). The area is presently covered by ridge-and-furrow earthworks, potentially obscuring any underlying remains on the magnetometry survey plot (see Drawing ARC_2573_1079_03).

The street frontage

The survey data provided some degree of confirmation for the tithe map evidence that the present N-S aligned lane to the west of the tofts was initially much wider. Moreover the surviving earthworks hint that the toft frontages to the south of the triangular area may originally have been set back even further to the east than implied by the tithe map. Certain of the geophysical anomalies also support this suggestion, notably R6, M3 and (parts of) E2. It is uncertain whether the subsequent westward extension of the toft plots will have resulted in the relocation of the peasants' farmhouses or simply the creation of gardens in front of the houses. Alternatively these features might be interpreted as front house plots with separate croft enclosures to the rear.

The manorial moat

The infilled moat/related pond along the eastern side of the manorial enclosure at the southern end of the settlement was clearly represented in the magnetic and electromagnetic surveys by anomalies M12 and E10.

1.4 Research Questions

1.4.1 Regional Research Agenda Questions

The Bright Water programme to investigate the DMVs in the Skerne Catchment in South Durham will address the following Key Research Themes and Priorities from the North-East Regional Research Framework (NERRF: Petts & Gerrard 2006, 158-59, 168-70, 175):

Early Medieval research priority: EMii. Settlement.

Later Medieval research theme: MD3. Medieval vernacular architecture;

Later Medieval research priorities: MDi. Settlement; MDxi. The medieval to post-medieval transition.

1.4.2 Project Research Questions

The geophysical survey results, the overall plan of the earthworks and the history the settlement give rise to a number of site specific questions. These in turn feed into broader themes of rural settlement formation, growth and decline and the relationship between manorial lords and their subordinate communities of agricultural tenants:

1. When was the settlement established?
2. Is there any evidence for substantial later remodelling of the settlement at any stage?
3. What are the stages and chronology of the settlement's desertion and abandonment?
4. Is the triangular platform at the N end of the settlement the site of the chapel mentioned in 1414?
5. Does the moat, and the deposits it contains, preserve any evidence of the history of the manorial hall and the wider settlement?

2. EXCAVATION PROGRAMME & METHODOLOGY

2.1 Overall Project Aims

The excavation project was guided by the following overall aims:

- To define and identify the nature of archaeological deposits on site, and date these if and where possible, establishing whether the features/deposits represent part of the medieval settlement. A particular focus for the team will be identifying how occupation ceased.
- to attempt to characterise the nature of the archaeological sequence and recover as much information as possible about the spatial patterning of features present on the site.
- To address the research questions identified in the previous section of this document (*see* 1.4)
- Provide training in archaeological methods and techniques to volunteers wishing to investigate their area's past, equipping them with the relevant new skills.
- Further the understanding of the site and its environment by all members of the community.
- Reinforce and develop the volunteers' existing sense of place and belonging within the area.
- To provide a springboard for further community-led initiatives in the field of archaeology.

2.2 Excavation Strategy and Trench Positioning

The positioning of the trenches (*see Illus. 07*) was based on the results of the geophysical survey combined with scrutiny of the surviving earthworks (using the RCHME topographic survey, aerial photography and walkover examination). The scope of work was intended to allow flexibility to follow up promising results and to enable more extensive investigation if the opportunity presented itself.

2.2.1 Location and Purpose of Trenches

General: The locations of the initial trenches are given below. Several of these trenches were set within defined areas wherein the trenches might be extended as deemed appropriate in consultation with the Historic England (HE) Inspector of Ancient Monuments and Durham County Archaeologist in order to further investigate features of interest revealed by the initial trench and answer questions generated. In each case a maximum proportion of extension in relation to the initial trench was specified (an additional 100% in relation to the longer trenches and 200% in relation to the shorter ones). This methodology was deemed necessary in part because neither the geophysical survey nor the earthwork record had identified distinct house sites within the toft enclosures.

The area with the well-preserved SMV earthworks known as Village Field is presently subdivided into two fenced field enclosures. Trenches 1a, 1b, 2 and 3 were excavated in the northern field enclosure (Field 1) whilst Trenches 4 and 5 were located in the southern field (2).

Trenches 1a & 1b

Dimensions and orientation: An ESE-WNW orientated 30m x 2m excavation trench (Trench 1a) was initially excavated towards the southern edge of Field 1. This was subsequently extended westward by a further 5.00m to the edge of the area permitted by the terms of the scheduled monument consent.

A subsidiary NNE-SSW aligned trench (Trench 1b), measuring 12.20m x 2.00m, was excavated in the northern part of the same box (to investigate geomagnetic anomaly M3 in the adjoining toft).

Location: Field 1 – Over the toft enclosure identified towards the southern edge of Field 1 (T1a) and over anomaly M3 to the north of the visible toft earthworks (T1b).

Trench 2

Dimensions and orientation: A NNE-SSW aligned trench, measuring 31.50m x 2m, was opened within a wider area box measuring 40m NNE-SSW x 30m ESE-WNW (Area 2). Two branches were subsequently excavated, extending eastwards over the interior of the platform, giving the entire trench an F-shaped layout. One branch extended some 11m eastward from the northern end to the original trench, whilst the second branch, located 10.50m to the south of the first, extended 20m eastward.

Location: Field 1 – traversing the triangular 'platform' at the north end of the site. The trench extended northward from the boundary bank of the toft enclosure to the south.

Trench 3

Dimensions and orientation: A 15m x 2m trench, aligned NE-SW, was initially excavated within a wider area box measuring 20m NE-SW x 15m NW-SE (Area 3). After uncovering the surface of a cobbled trackway, the central part of the trench was then extended eastwards to encompass further 3.00m (E-W) by 4.50m (N-S). The trench covered a total area of 43.5m^2.

Location: Field 1 – located in the northern apex of the field across the low oval mound adjoining the north angle of the triangular platform.

Trench 4

Dimensions and orientation: An ESE-WNW orientated trench initially measuring 30m x 2m within a wider 50m (E-W) x 35m (N-S) box (Area 4). This trench became the main focus of investigation, the west end of the trench was being expanded progressively to form an irregular rectangular box covering an area measuring up to 20.00m (E-W) by 12.00m (N-S), whilst the overall length of the trench ultimately attained 32.00m.

Location: Field 2 – Over the distinct toft enclosure in the northern part of Field 2.

Trench 5

Dimensions and orientation: An ESE-WNW orientated trench measuring 25m x 2m.

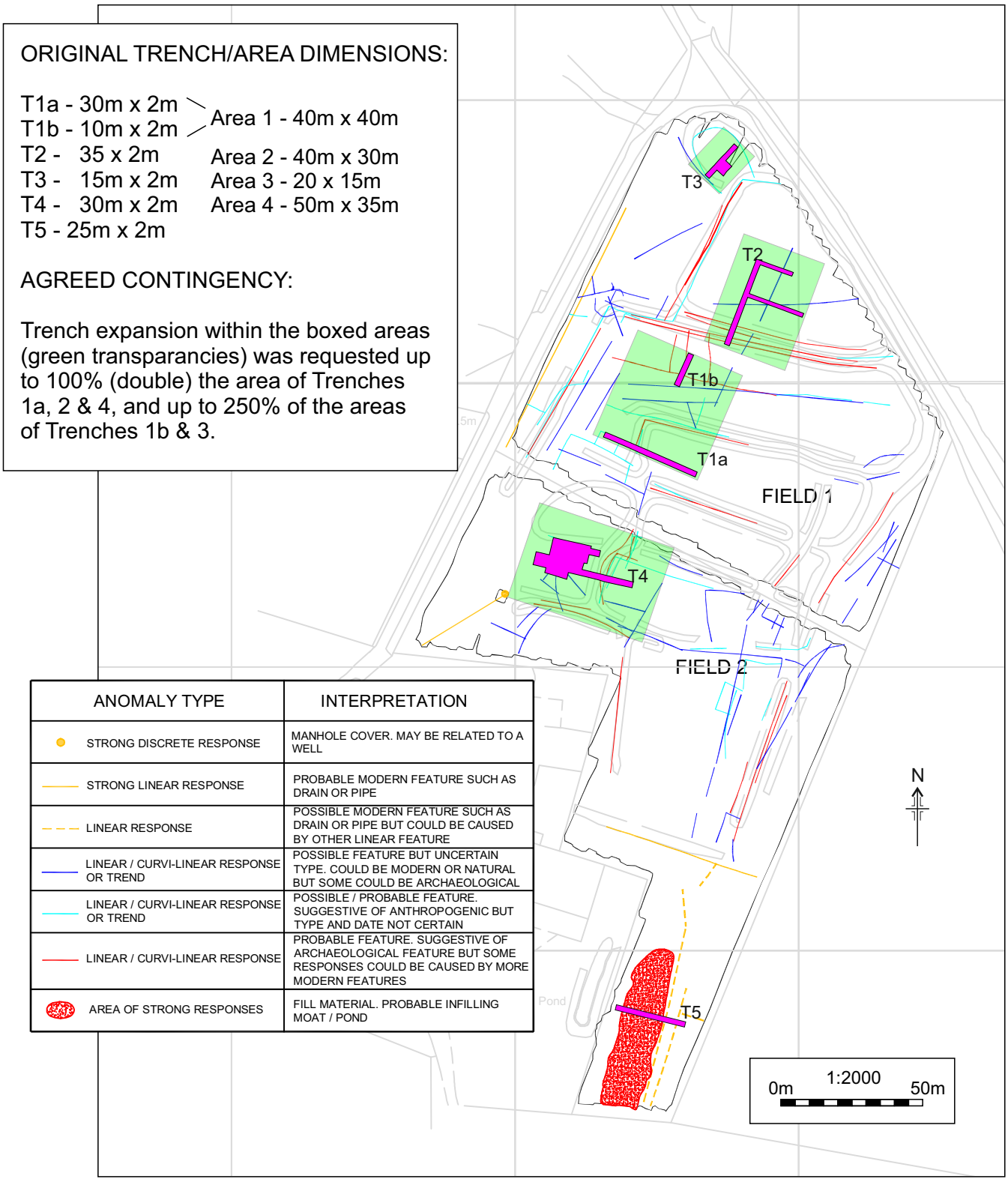
Location: Field 2 – Cutting a section across the infilled moat.

2.3 Excavation Timetable, Duration and Staffing

The excavations were undertaken over a ten week period from 14 June – 23 August 2021 (extended from the four weeks initially projected). Trenches in both field enclosures were opened in the early

stages of the excavation. Trenches 1a, 2, 3 and 4 were subsequently extended as outlined above. At the beginning of August Trenches 1a, 1b, 2 and 3 were backfilled so that the farmer could resume using the northern field to graze cattle. Thereafter excavation focussed on Trench 4, which was further extended and deepened to investigate the levels below the stone buildings initially exposed, and on Trench 5, to expose the footings of the substantial wall uncovered towards the east end of that trench. All archaeological layers and features were excavated by hand with the exception of the ditch in Trench 5, which, owing to its depth, was dug by machine, with recording undertaken from outside the trench.

The excavation work was undertaken by around 70 volunteers from the local community, ranging in age from 7 to their 70s, under the direction of professional archaeologists supplied by the Archaeological Practice Ltd (*see photos 03-08*).



***Illus.07**: Final plan of trenches excavated at Archdeacon Newton, displayed over earthwork interpretation (in light grey) from the 1991 RCHME survey and geophysical survey results (refer to key) courtesy of Phase Site Investigations.*

3. RESULTS

3.1 Trench 1a and 1b

3.1.1 Trench 1a (*Illus. 08; Photo 09*)

A spread of small stones and gravel [104] extended for some 8m from the western end of Trench 1a, forming a rough metalled surface. Immediately beyond this to the east were the very disturbed remnants of a stone wall [105] (*Illus. 16*), running north-south across the width of the trench. Along with much of the unmortared core, most of the wall facing stones had been robbed, with only a couple of stones belonging to the west face surviving on the north side of the trench and a 0.60m length of the east face extending from the southern trench edge. As a result the wall's exact width and alignment were uncertain, but it probably followed a slightly oblique course across the trench and was perhaps between 0.7m and 08m in width.

Some 1.10-1.20m east of wall [105], a second structure was encountered. This comprised two lines of facing stones, which may have revetted either side of an earthen bank [102] (*Illus. 16*). The area between the two faces was largely devoid of stone except towards the northern edge of the trench, suggesting that this was not a conventional wall, but perhaps a revetted earthen bank instead, the whole structure being some 1m – 1.2m wide. In between wall [105] and revetted feature [102], spreads of stone [106] were present. All these features ([102], [105] and [106]) overlay an orange clay layer [103].

The remainder of the trench, extending a further 24m to the east of [102] was largely devoid of features. A mid-grey brown clay loam [113], perhaps a former plough soil, was exposed beneath orange clay [103] and in turn overlay the yellow orange natural clay subsoil [119], which was encountered at a depth of c. 0.45m. This ditch continued southward into the eastern arm of Trench 4 where it was examined in much greater detail (see Trench 4 below).

3.1.2 Trench 1b (*Illus. 09*)

This trench, aligned NNE-SSW and measuring 12.20m x 2.00m, sloped gently down from north to south. Excavation of the topsoil [108] revealed, at a depth of c. 0.50-0.70m, an orange clay [107] natural subsoil incorporating many small stones derived from the underlying bedrock, particularly towards the upper, northern end of the trench. A shallow and very irregular depression [118], containing a silty brown fill [113], extended across the southern end of the trench and was interpreted as a tree bowl. In the northern half of the trench, a shallow gulley [116] ran diagonally across the trench from a point near its north-west corner to its mid-point on the east side (*photo 10*). This ranged in depth from 0.18m to 0.28m. The gulley's fill [115] was a darker grey-brown colour than the natural, though similarly clayey in texture but with fewer stones and more silt content. This feature may correspond to one of two north-south aligned linear magnetic anomalies (M3) identified in this area by the geophysical survey. However the profile of the sides and base of the gulley appeared quite irregular, and this together with its relative shallowness suggested that it was perhaps a natural feature, such as an erosion gulley.

3.2 Trench 2 (*Illus. 10; Photo 11*)

The trench was excavated, extending 31.50m in a NNE direction across the apparent triangular plot at the northern end of Field 1. Ridge and furrow earthworks can be discerned on the surface, running roughly from west to east across the area. Beneath the turf and topsoil [201] there was a layer of sterile orange redeposited clay [202], interpreted as a ploughsoil. Across most of the trench the natural orange boulder clay subsoil [203] was encountered at an average depth of 0.40-0.45m (0.60m at the base of the plough furrows), but deepening to 0.60-0.80m towards its southern end. Here the trench intersected the shallow ditch or gully with a slight bank on its south side which were evident on the surface as linear earthworks, that appeared to demarcate the southern limit of the triangular area. Excavation revealed the ditch [204] (*Illus. 17-18; photos 12-13*) to be 1.90m wide where it cut the top of the subsoil and 1.40m wide at its base which was only slightly dished. It was filled with orangey silt clay [205/206]. A slight distinction in this fill was observable only in the east-facing section. At its lowest point the base of the ditch was 1m below present ground level and was cut to a maximum depth of 0.48m into the natural subsoil.

A posthole [208] (*photo 14*) was cut into the base of the ditch at its lowest point next to the west-facing section. This was up to 0.42m in diameter narrowing to 0.21m at the bottom and was 0.50m deep. Along the south edge of the ditch a low bank could be seen in profile, but the material making up the bank [207] was essentially indistinguishable from ploughsoil [202]. The difficulty in differentiating between ploughsoil, ditch fill and bank material was exacerbated by the very dry conditions which prevailed through June and July 2022.

The remainder of the trench to the north was largely featureless save for a series of plough furrows. Two branches were extended westward from the main trench to further sample the triangular plot. These too proved to be devoid of significant archaeological features with just the same topsoil [201] and ploughsoil [202] deposits as elsewhere. No traces of a medieval chapel were found or any dressed stone or rubble which might have derived from a demolished stone building. Moreover the pottery assemblage from Trench 2 was very small (just 9 sherds), which suggests this part of the site never experienced any kind of intensive occupation.

3.3 Trench 3 (*Illus. 11; Photo 15*)

Trench 3 originally measured 15.00m x 2.00m and was aligned broadly NE-SW. Removal of dark grey-brown topsoil [300] and mid orange-brown accumulated ploughsoil [301] revealed the widths of two substantial cobbled surfaces with parallel alignments. An extension measuring approximately 3.00m (east-west) by 4.50m (north-south) was added to the trench on its east side and 4.00m from its south end in order to expose more of the course of these surfaces.

Cobbled surface [302] was picked up c. 0.90m from the south end of the trench and was present for a further 4.50m. It consisted of fairly tightly packed large and medium cobbles and pebbles set into a matrix of mid grey-brown silty clay. A possible wheel rut was present c. 3.00m north of the southern edge of the feature. The last metre of the northern edge of the surface sloped off into probable ditch

[308] (below). After the trench was extended eastwards, a visible length of surface [302] measuring approximately 5.00m in length was present along the width of the trench, running on a NNE-SSW course.

Cobbled surface [305] (*photo 16*) was located to the north of surface [302]. It took a parallel NNE-SSW course, with the southern edge of [305] a consistent distance of c. 2.10m from the northern edge of [302]. Like [302], it consisted of fairly tightly packed large and medium cobbles and pebbles set again in a matrix of silty clay. In the original configuration of the trench, the southern edge of [305] was around 7.50m from the northern end of Trench 3, with the surface's northern edge around 2.80m from the northern end of the trench. This gave [305] a comparable width to [302]. After excavation of the eastern extension of Trench 3, cobbled surface [305] was shown to have a length of at least 4.90m.

The area between [302] and [305] consisted of at least one ditch (*Illus. 19*). Investigations focussed in the area adjacent to the descending north end of cobbled surface [302] produced more than half of a broken late medieval vessel lying in brown silty clay directly above natural [307]. This was concluded to represent the fill (assigned code [309]) of a ditch, [308]. Barring the visible cut at the base of ditch [308] into natural clay [307], no cuts or recuts were visible. However, given the primary nature of the deposition of late medieval vessel sherds in the base of ditch fill [309] (*photo 17*) and the recovery of finds at the same level from closer to [305] dating to at least two or three centuries later, it is probable that a later recut ditch [310] existed. The exact dimensions of this theorised recut were unable to be discerned in the dry conditions. This ditch or ditch complex appeared to share the NNE-SSW alignment of cobbled surfaces [302] and [305].

A possible third cobbled surface [306] was present in the last metre of the north end of the trench. Possible surface [306] consisted of more sparsely laid small and medium sized cobbles. Its course appeared to be broadly north to south, with the southern edge of [306] running diagonally across the north-east corner of Trench 3. The remainder of the trench revealed only mid orange-brown boulder clay and contained no discernible features.

3.4 Trench 4 (*Illus. 12*)

The main area of Trench 4 at its western end revealed a clear stratigraphic sequence, beginning with features cut into the natural subsoil and culminating in a series of rather irregular stone buildings, plus an associated enclosure wall and cobbled trackway.

3.4.1 Phase 1 Pit

The earliest feature was a sub-circular pit [466] (*Illus. 33-34*, *photo 18*), some 1.40m in diameter and 0.45m deep, cut into the natural yellow-brown sandy clay [430]. The pit had straight or steeply sloping sides and a flat bottom, and was filled with a dark grey silt clay [467] which spread over the sloping lip of the pit and was in turn surrounded and overlain by a spread of dark grey-brown silty clay [455], that appeared to fill a slight depression in the top of the natural.

3.4.2 Phase 2 Gullies

The northern edge of dark spread [455] was cut by a gully [425] (*Illus. 23-27, photo 19*), which was traced for a distance of 10.50m, running in a south-easterly direction from a point near the northernmost corner of the trench, extending beyond the limits of the excavation at both ends. The gully varied in width between 0.55m and 1.10m and was generally around 0.30m deep, featuring a V-shaped profile and slightly rounded bottom. For much of its length it was cut directly into the natural subsoil [430] and was filled throughout with a mid-grey-brown clay [424].

Further south, a second gully [437/445] (*Illus. 28-31*) was revealed, cut directly into the natural subsoil [436/444]. A 6.70m length of this feature was exposed, including the rounded terminal at its west end (*see photo 20*). As with gully [425], however, the full extent of gulley [437/445] was not revealed. It too was filled with grey-brown clay [438/446], and was 0.90-1.00m wide and up to 0.30m deep, though rather more flat-bottomed in profile than [425], particularly in the easternmost stretch exposed.

Discussion and dating

The function of these three features cut into the natural is uncertain. Pit [466] may have been a clay quarry pit associated with building work somewhere in the vicinity. It yielded no medieval pottery though six sherds were recovered from dark spread [455], mostly comprising Tees Valley ware A and earlier sandy wares with a date range extending from the late 12th to the early 14th century, supporting a date at the earlier end of the site's overall occupational chronology. The context did include a single small sherd of the somewhat later Tees Valley ware B/C but this may reflect the unsealed nature of this context.

There is no stratigraphic relationship between the two gullies, which were around 5m apart, so they may reflect different episodes though both were cut directly into the natural clay subsoil. Gully [425] clearly extended further west than [437/445] and, although they were both aligned roughly east-west, they certainly did not run exactly parallel, with gulley [425] following a more NW-SE course. Nevertheless their broadly similar size and form might suggest they had similar functions, perhaps related to drainage or some form of relatively ephemeral fencing (there is no indication that any post holes or stakeholes were set within either gully).

Charred cereal grain from the fill of gully [445] was radiocarbon dated to 1156-1228 cal. AD with 94.7% probability (864 +/- 21 BP). There was no pottery in fill [438/446], but there was a significant assemblage (16 sherds) of late 12th/14th century pottery in the fill ([424]) of the other gully.

3.4.3 Phase 3

The early features were covered by a very extensive layer of orange-brown clay [406/417/432] which extended right across the main area of the trench and average 0.45-0.50m in depth. At a relatively low level within this clay deposit, a surface formed of small cobbles [447/465] (*photo 21*) was seen in the north-east part of the trench, immediately north of gulley [425] and in a sondage cut north of wall [433]. Where the cobbles were not present, however, no differentiation could be made between upper and lower levels of the make-up which appeared of uniform composition.

The cobbles [447/465] covered an area stretching a least 3.20m NNW-SSE and 2.80m NNE-SSW, but their full extent was not revealed as they continued beneath the baulk on the east and north sides where later walls were left in situ. They sat at a level some 0.20m above the natural clay into which the gulley [425] was cut and there was evidence that this surface was maintained for a time, with some stones [448] having been trampled right into the underlying clay makeup and covered by more cobbles.

A charcoal-rich deposit [449] was contained within the clay makeup immediately beneath the cobbles. The deposit measured 0.90m x 0.40m and was some 0.20m thick. This yielded a C14 date of 1498-1386calBC (88.9% probability), placing it within the Middle Bronze Age. This implies that [449] was obtained from a location with preserved Bronze Age layers and redeposited in the area of Trench 4 as an intact lump of material within the overall make-up level.

3.4.4 Phase 4 – the buildings (*Illus 13; Photo 22*)

A series of stone-walls sat on top of clay makeup [406/417/432]. The large pottery assemblages from these makeup deposits predominantly fell within the 13th and 14th centuries, with relatively little (residual?) material that might belong to the 12th century (mostly from [406] and [417]) and even fewer sherds which might postdate the 14th century. These include a number of Reduced Greenware sherds which might extend into the early 15th century – but could be 14th century – and two sherds each of Late Medieval Sandy ware and German stoneware, some of which could continue into the 16th century. Since the deposits were mostly not sealed some degree of intrusive material is to be expected.

Only rarely did more than a single course survive of the stone walls and several were very fragmented making it difficult to discern an overall plan. Some consisted of little more than spreads of rubble with the occasional short alignment of facing stones traceable amongst the rubble. One building (Building 1) was clearly recognisable, at least in part, being situated in the eastern part of the main excavation area. A second building (2) was located immediately to the west of the first and its preservation was far inferior with only one very distinct length of walling, plus two rubble spreads with disturbed alignments and faint hints where some of the walling had been removed. These buildings did not directly line up and determining their sequential relationship was impossible. Attached to the south side of Building 1 was a substantial revetment wall [401], which extended south-west to the edge of the trench and may have bounded a garden plot or paddock to the east.

Building 1

Building 1 was by far the better preserved of the two buildings. It was apparently open towards the west, extending at least 5m E-W and 6.5m N-S. The south wall [402] (*photo 21*) was neatly constructed, with two lines of roughly faced sandstone and magnesian limestone boulders and a core of smaller boulders and more angular rubble, giving it an overall width of 0.80m. All the other walls were similarly constructed though, with the exception of [409] (*photo 21*), less well-preserved. The south face of wall [402] appeared to roughly butt up against the north face of Building 2 wall [416], and it is conceivable that the surviving length of [416] was incorporated, rather crudely, into the west end of Building 1, in which case the building would have been some 7.40m long.

The building's east wall [409] clearly butted up against the north side of [402] and its inner face had been reinforced by an additional line of facing stones [426], giving it a total width of 0.90m. It was interrupted by a 1.1m gap, which was interpreted as a possible doorway, a supposition supported by the presence of a very large iron nail in the centre [FS1], conceivably relating to a door stop. However, even the southern 'door jamb' was not neatly squared off (the northern was too damaged to provide definite evidence), so the gap could simply represent partial robbing of the wall. If it was indeed an entrance, its rather crude form may indicate it was a secondary feature. To the north, reinforcement [426] was missing from the continuation of the east wall [418], which might be a result of the markedly poorer preservation of this stretch of the wall.

East wall [418] appeared to butt up against north wall [427], though this was not quite as clear as the wall's relationship to the south wall. The north wall extended for at least 5m, but possibly as much as 6.5m, its western end being very disturbed. There was a 1.7m wide doorway in this wall filled only by a single line of facing stones [431] which probably represented a threshold. However, a complicating feature is the 1.8m long stretch of walling [428] located only 0.10-0.20 m to the north of [427] and lying parallel to it. The western end of [428] appeared to terminate in line with the eastern jamb of the doorway to the south, whilst the undisturbed stretch extended no further east than a point corresponding to the inner face of wall [418]. There was no evidence that this wall continued further west, beyond the doorway filled by [431], or that there were conjoining structures immediately to the north (but see [428E] below). The most likely interpretation of wall [428] is that it represents an earlier or later north wall of Building 1, the north-east corner being too poorly preserved to determine the sequence of these structures with certainty, though wall [428] did appear to be set at a slightly lower level than [427]. This enlarged version of Building 1 was 7.30m wide.

A further series of at least three stone alignments [428E], a little to the east, perhaps represent the fragmentary remains of very disturbed walls. They typically each presented a single face and were not exactly in line with wall [428] or each other, but rather laid out in echelon and no coherent pattern could be identified. They may have been related to other structures located beyond the bounds of the trench.

Building 2

Building 2 lay to the west of 1, but had been largely destroyed with only one fragment of walling surviving in a coherent condition, namely the south wall [416]. A 2m length of the latter was preserved and, as noted above, it may have been incorporated in Building 1, despite being slightly offset with the south wall of that building. It was constructed in a similar manner to the walls of Building 1, with two lines of large boulders facing a core of smaller rubble and clay.

Some 2m to the west, a patch of demolished walling [415], extending over an area measuring c. 1.5m x 2m, probably marks the approximate position of the building's west wall. A possible alignment of facing stones, c. 1m in overall length, could be discerned amongst this stone spread. A linear spread of light grey-brown clay with short alignments of rubble appeared to connect wall [416] to rubble spread [415]. This would give the structure a minimum length (E-W) of c. 4m and a minimum width (N-S) of c. 3m. The structure may conceivably have been open to the east, rather than the west like Building 1. However, so poor was its state of preservation, that any reconstruction of this building is inevitably very speculative.

Possibly related remains included another spread of rubble [429], covering an area roughly 1m square, a metre to the north-east of [415], plus a smaller setting or pad of stones [458], c. 0.5m in diameter, a further metre to the west of [415] and partially covered by the baulk at the edge of the excavation. A spread of stones c. 1.7m north of [458], also partially covered by the baulk, was investigated on site as a possible hearth [456] (*Illus. 32*), with the deposits the stones were set in recorded as [457]. Its visible remains measured 0.53m x 0.35m and included small amounts of charcoal embedded between stones. It was later concluded that in situ burning was unlikely to have occurred at this feature and that [456] might represent a setting or pad more akin to [458]. Features [429], [456] and [458] might represent further demolished and displaced fragments of structures, but there was no coherent form to the remains.

The revetment wall

A substantial revetment wall [401, 412] abutted the south side of Building 1 (*photo 25*). The excavation uncovered a 5.5m length of this revetment wall, which continued southward beyond the limit of the trench. The base of the revetment was faced on the west side only and comprised a single line of substantial boulders, including three particularly massive examples some 0.40-0.50m in length, which revetted the eastern edge of a depression located to the south-west of Building 1, and retaining earth to the east which may have built up due to cultivation of that area. A more conventional wall, composed of cobbles and faced on both sides, was set on top of the boulder revetment. Where the wall was attached to the south face of Building 1, some 1.20m to the east of the revetment, both faces were preserved, the wall being 0.50m wide at this point. It then appeared to curve round west then south-westwards to run along the top of the revetment, but only the east face was preserved along the bulk of its length, the wall having collapsed towards the west here, into the dip and over the edge of trackway [450] (see below). It is possible that the boulder revetment base and the wall sitting on top belonged to two separate stages and it is also conceivable that there were modifications to the wall which survive too poorly to be recognised.

The trackway

A cobbled trackway [450] (*photo 26*) ran just to the south-west of the buildings, across the corner of the trench, following a NNW-SSE alignment. This was c. 2-3m wide, broadening out to 4m or more at its southern end [464], where it extended up to the base of wall [401] and occupied part of the depression to the south of the buildings. The course followed by the track implies that it must have passed through the wall just beyond the southern edge of the excavation trench. It was composed of a mixture or larger rounded boulders, medium sized stones and small cobbles, with larger material predominating to the north and smaller to the south. A line of three stakeholes [459, 461, 462] (*Illus. 35*) ran along the west side of the cobbled trackway, perhaps marking the line of a fence beside the track. A coin of Henry VIII (*photo 27*) was found at the northern end of the trackway, but the pottery (42 sherds) found in association with the surface was predominantly medieval (late 12th/15th century), half the assemblage being composed of Tees Valley B, B Type and B/C wares of the late 13th-14th centuries.

3.4.5 The eastern boundary ditches (*Illus. 14*)

A pair of closely spaced, parallel ditches were located c. 10.60m east of Building 1, close to the eastern end of Trench 4. These probably represent two phases of a linear boundary perhaps marking the

eastern limit of the toft in which the buildings were situated. The two ditches were markedly different in form. The smaller ditch to the west [454] (*photo 28*) was only 1.30m wide and 0.55m deep with rounded profile. This was filled to a depth of 0.30m with a dark silt clay [452], which had probably built up gradually over time, and was in turn covered and almost entirely masked by a redeposited light yellow-grey clay [453] that was indistinguishable in colour and texture from the natural clay subsoil. The pottery from the lower fill of this ditch – two sherds of Tees Valley A Ware (early/mid 13th-early 14th century) and one of Gritty White Ware (late 12th-late 13th century) suggested a date at the earlier end of the site's medieval date range.

Directly to the east, ditch [423] (*photo 29*) was 2.35m wide and c. 55m deep, with a broad V-shaped form. This was filled with a very homogenous and plastic, dark grey silt clay [441], probably the result of gradual infilling with material eroding and washing into the ditch. This fill contained a large quantity of boulders and river-washed cobbles [422] in the eastern half of the ditch, but they were almost completely absent in the western half. More boulders were noted sitting on the eastern lip of the ditch. This most likely represents either the residue of a demolished wall (a replacement for the ditch?) or, more likely, stone which had been cleared from the field to the east during cultivation and dumped along the marginal headland between the ditch and the field.

It is likely that ditch [454] preceded its broader neighbour [423] with the natural clay dug out of the latter being used to fill in [454] over the pre-existing fill deposit [452]. The latter yielded a small pottery assemblage consisting of late 12th to late 13th-century White Gritty ware and Tees Valley A ware of the early/mid 13th to early 14th-century date, suggesting a date for the use of this ditch at the earlier end of the site's overall date range. The redeposited natural [453] contained a slightly later four sherd assemblage, mostly comprising 14th to 15th-century Reduced Greenware. A 14th-century radiocarbon date was obtained from the base of fill [441] in the larger eastern ditch (95.4% probability: 1297-1397calAD) and this was echoed by the two examples of Reduced Greenwares yielded by this context, spanning the 14th to early 15th century. It may be concluded that ditch [454] was taken out of use and replaced by [423] at some stage in the 14th century. The duration that the latter ditch remained in use is uncertain due to the small quantity of pottery found in the fill.

Overlying the ditch fills and natural clay subsoil to the east and west of the ditches was a reddish brown, rust coloured clay loam [421], perhaps an agricultural soil. This contained an assemblage of residual medieval pottery (11 sherds). A linear depression in the surface of this layer up to 0.40m deep showed that the course of the underlying ditch was probably not entirely erased despite prolonged cultivation. Even after a deposition of a further similar fill [420], also containing only residual medieval pottery, a shallow ditch, 0.33m deep, remained. This was finally infilled by two further dark clay deposits [408, 419], both containing 19th-century pottery, with a red earthenware land drain [443] also sitting at the base of the lower of the two deposits [419]. A second field drain [442] was inserted right down in the top of the medieval ditch fills [422, 441]. The cut for this drain was very difficult to distinguish because it had been backfilled immediately with the same material which had been dug out of the trench, in particular red-brown clay [421], whilst the bottom of the cut was obscured by two stones immediately overlying the drain which probably represent displaced examples of cobbles [422]. The rim of a white Creamware pie dish (c. 1740 – c.1820) in context [441] was probably intruded as a result of the digging of this field drain trench.

Palaeoenvironmental analysis of a sample was taken from the base of ditch fill [441] indicated that the ditch [423] held shallow stagnant water and was probably bordered by a hedgerow. The surrounding landscape comprised open disturbed grassland with some arable cultivation. Manure and other farm waste from outbuildings (perhaps the structures excavated to the west) was periodically disposed of in the ditch (see Appendix 3: Palaeoenvironmental Analysis for more detail).

3.5 Trench 5 (*Illus 15*)

The trench was excavated across the eastern ditch or linear pond noted on the historic maps and most likely associated with the hall complex. The ditch [509] was originally cut through the natural yellow sandy clay [503] and underlying grey-brown boulder clay [507]. Its profile was a wide shallow cut with a rounded base, some 19m broad overall and reaching a maximum depth of 2.10m. The western (internal) side of the cut was stepped.

The eastern side of this ditch was bordered by a north-south oriented sandstone wall [508] (*photo 30*), of which three courses survived on its east face. This was substantial, being some 1.35m broad, and hence wider than any of the current fieldwalls and was set within a very shallow construction cut. It is likely to have been a boundary wall around the outer line of the ditch and was built with a clay-bonded cobble core, faced by roughly shaped sub-rounded sandstone cobbles. A single re-used block, decorated with a roll-moulding, was found within this wall, indicating that it was built incorporating some re-used stonework from another structure on the site.

It would appear that the ditch itself had been regularly cleaned out and maintained, as the earliest remaining deposit at the base of the feature was a thin waterlogged layer [506] of humic grey-black organic matter and grey silt. This deposit represents natural silting and plant/shrub growth within the base of the ditch. Post-medieval pottery visible within the upper part of this layer indicates that it is unlikely to have been of medieval origin, and that any such earlier material had been previously removed in order to keep the ditch open.

Above this layer was a thick deposit of fairly clean brown clay [502/505] which is likely to represent a single episode of backfilling, indicating that the original ditch went out of use at some stage in the post-medieval era.

A smaller ditch [510] had subsequently been cut along the line of the backfilled ditch. At 5m wide and 1.25m deep, this was both narrower and shallower than the original. This feature was slightly steeper on the western (inner) side, and contained a fill [504] of mixed loam with modern ceramics, asbestos tiles, ash and brick.

3.6 The Old Hall – building recording

As part of the programme of works undertaken by The Archaeological Practice Ltd for the Bright Water Landscape Partnership, building recording work was undertaken on the Old Hall, the surviving

component of the medieval manor house presumably belonging to the Archdeacon of Durham. This work, which was undertaken with historic buildings specialist Peter Ryder, amended and expanded his previously published report (1991), with access being gained to the interior of the building, neatly complementing the excavation, and is reported on separately. The standing building represents a service cross range which would stood at the west end of a H-plan structure also comprising a solar cross wing at the east end with the main hall linking the two wings. The range was converted into a farmhouse in the late 16th/early 17th century, and later adapted into a farm building from the 18th century onward.

4. CONCLUSIONS

The excavations at Archdeacon Newton during June-August 2021 were largely successful in characterising occupation across the different parts of the medieval village site.

Extensive evaluation of the elevated area at the northern end of the site by Trench 2 revealed no trace of any medieval chapel remains and very little indication of any intensive medieval occupation. No dressed stone or rubble was found, such as might have derived from a chapel, and the pottery assemblage from the entirety of Trench 2 was very small, comprising only nine sherds, eight of which were medieval. The area was covered by extant ridge and furrow earthworks and these were reflected in deep deposits of ploughsoil. It is possible that this parcel of ground always lay outside the built-up zone of the village.

Only at the southern end of Trench 2 were features revealed, in the form of a ditch with a low bank along its south side. Both of these were visible on the ground as low earthwork features. The ditch was found to contain a posthole in its base. The existence of these features combined with the paucity of medieval material prompt the question as to whether the elevated triangular area at the northern end of the site might represent an earlier enclosure, conceivably of prehistoric or Romano-British date, with any internal occupation features and deposits having been ploughed away in the Middle Ages. However the present-day morphology of this part of the site may be a little deceiving, its triangular form having been created by the course of Newton Lane along its north side. There is no indication that the ditch continued around the west and north sides to fully enclose the platform, though the ground does fall away on those sides and it is possible that some medieval or later scarping of the profile has taken place, particularly for the creation of the pond below the west side which can be seen on the 19th-century tithe map. On balance, the most likely interpretation of the ditch and bank is that they mark the northern boundary of the toft situated immediately to the south, which itself probably represents the northernmost occupation on this side of the village. Unfortunately there no dateable material was recovered from either the ditch or the posthole (the single, very abraded fragment of Reduced Greenware associated with the ditch came from the very top of the fill and cannot be considered securely stratified). Three sherds spanning the period from the late 12th to the 14th century were found within the bank material, however.

The remains revealed in Trench 3 – two cobbled trackways and an intervening ditch – close to the northern entrance to the present-day hamlet, relate to the more recent periods of the settlement's occupation. This area yielded a very wide range of pottery wares, ranging from those of the medieval era to 18th and 19th-century types. Medieval wares were in a minority, however, with both Tees Valley wares and Reduced Greenwares absent, and early modern wares were particularly common, a very different assemblage pattern to that encountered in the other trenches (see Appendix 1).

No trace was uncovered of the small rectangular building marked in this area on the 19th century tithe plan (see Illus. 05), but this was hard to position with precision, due to the lack of points of reference between that map and the subsequent Ordnance Survey series, and probably lay somewhere beyond the limits of Trench 3. Further work in this area could well succeed in locating it. What is clear is that

whenever the tithe map was surveyed the area of Trench 3 still lay within the broad, north-south oriented corridor, providing access to the hamlet and had not yet been enclosed within adjoining field to the east. This was effectively common land or green and the cobbled trackways clearly relate to access between the settlement and Newton Lane and perhaps also leading to a gate into the field. The date of the transition to the current layout – with the field enclosures having been extended to leave only a narrow lane leading southward – is uncertain. It had certainly occurred by the time of the 1st edition Ordnance Survey (1855). However, the layout shown on the tithe map (which purportedly dates to 1847) differs so greatly from that depicted on the 1st edition OS that it must be suspected that it represents a much earlier survey recycled to satisfy the requirements that the Tithe Commutation Act of 1836 placed on local landowners.

The area investigated in most detail was encompassed by Trench 4, located in the southern field, to the north of Hall Farm. A stratigraphic sequence was recorded here beginning with a pit and two gulleys cut in the subsoil (one of the gulleys being demonstrably later, stratigraphically, than the pit). A thick layer of makeup was then laid over the main area of the trench and a series of structures erected on top, including at least one and probably two distinct buildings, plus a substantial revetment wall, perhaps bounding a garden, croft or paddock to the south of the buildings. Evidence for other extremely ephemeral structures was also noted. The only differentiation within the makeup was an area of cobbled surfacing, located in the north-east part of the trench and laid at relatively low level within the makeup. This might imply that the deposition of the makeup took place over an extended period with pauses in the depositional process when unspecified other activities occurred there.

The pottery assemblage from Trench 4 was the largest from the site (1359 sherds). It was predominantly medieval in date with only a small quantity of later wares. These latter might well relate to the demolition or robbing of already abandoned structures. This implies that the occupation sequence uncovered in Trench 4 fell entirely within the medieval period, with this part of the settlement having been largely abandoned by c. 1450, and witnessing only limited residual activity thereafter. There is no significant evidence for pre-medieval occupation, with only three sherds of Roman pottery being recovered from the entire site (all from Trench 4). The only conflicting evidence is represented by the charcoal deposit beneath the cobbles in the north-east part of the trench, which yielded a radiocarbon date in the Middle Bronze Age. The stratigraphic sequence excludes the possibility of in situ Bronze Age activity in this part of the site, leaving the redeposition of material from a site with Bronze Age occupation somewhere in the vicinity as the preferred explanation for the date of the charcoal, but it remains perplexing.

Trenches 1a and 1b yielded only limited structural evidence. There was insufficient scope to explore these areas extensively, as work in other areas was initially prioritised, with only a slight westward extension to 1a being undertaken before work in the northern field was brought to a close to permit renewed grazing of the field. Nevertheless, overall the results here echo, on a much smaller scale, those in Trench 4, with structures more characteristic of the rear of toft plots (a possible rear boundary wall and a lean-to structure set against it) being revealed in 1a. Likewise the pottery assemblages were overwhelmingly weighted towards the medieval period (up to c. 1450), the only later material being two sherds of late 18th to 19th-century Mottled Yellow Glazed Coarseware, implying that occupation in this part of the settlement may have ceased before the end of the 15th century.

In Trench 5 the profile of the ditch was established, though it is conceivable that this was a relatively late recutting as modern pottery was observed in section (but not recovered) from the top of the fill deposit of grey silt and humic grey-black organic matter [506]. The historic map evidence shows this ditch as lying parallel and immediately to the east of the main eastern arm of the manorial moat ditch, but unconnected to the latter. It could therefore have formed an earlier eastern arm of the moat, an outer fishpond or perhaps a moat ditch which was converted into a separate fishpond.

The main unexpected discovery in Trench 5 was a stone wall on the eastern lip of the ditch. This was well over a metre wide and certainly no mere field wall. its reuse of a piece of carved medieval stone work, with a rounded moulding, suggests it was more likely to be associated with the remodelled farmhouse of the 16th/17th centuries, rather than the archdeacon's moated medieval manor house. It can in retrospect be traced on the geophysical survey as a linear feature and its course shown on the tithe map and apparently continued northwards to the east of the toft earthworks.

The wider environment and landuse in the area around the village is illuminated by the palaeoenvironmental analysis of the fill deposit from easternmost boundary ditch, with consistent evidence from the plant macrofossils, pollen and insects for a landscape comprising open disturbed grassland with some arable cultivation. This arable cultivation included oats, bread wheat, barley, rye and peas, based on macrofossils and/or pollen from the ditch. These are typical medieval crops for this region (Hall & Huntley 2007). The ditch itself held shallow stagnant water and was probably bordered by a hedgerow, and stable manure and other farm waste from outbuildings was evidently disposed of periodically within it. There is also some evidence for the use of fibre/oil crops, in addition to pot herbs grown for ornamental or medicinal use.

5. REFERENCES

COOKSON, G, 2003, *The Townscape of Darlington*. Victoria County History & Boydell & Brewer; Woodbridge.

FORDYCE, W, 1857, *The History and Antiquities of the County Palatine of Durham*. 2 vols, Newcastle upon Tyne, London & Edinburgh.

HUTCHINSON, W. 1785, 1787, 1794, *The History and Antiquities of the County Palatine of Durham*. 3 vols, Newcastle/Durham.

LONGSTAFFE, W H D, 1854, *The History and Antiquities of the Parish of Darlington in the Bishoprick.*

MACKENZIE, E, and ROSS, M, 1834, *An Historical, Topographical and Descriptive View of the County Palatine of Durham*. 2 vols, Newcastle upon Tyne.

PAGE, W, 1905, *A History of the County of Durham*. Vol. I, The Victoria History of the Counties of England, London

PETTS, D with GERRARD, C, 2006, *Shared Visions: The North-East regional Research Framework for the Historic Environment*. Durham County Council.

PEVSNER, N S, and WILLIAMSON, E, 1983, 1985*, The Buildings of England: County Durham*. Second Edition (repr. 2002); Yale University Press, London.

PHASE SITE INVESTIGATIONS, 2020, *Archdeacon Newton Shrunken Medieval Village, Darlington, County Durham: Archaeological Geophysical Survey*. Unpublished report Project No ARC/2573/1079, August 2020.

ROBERTS, B K, 1972, Village plans in County Durham: a preliminary statement, *Medieval Archaeology* **16**, 33-56.

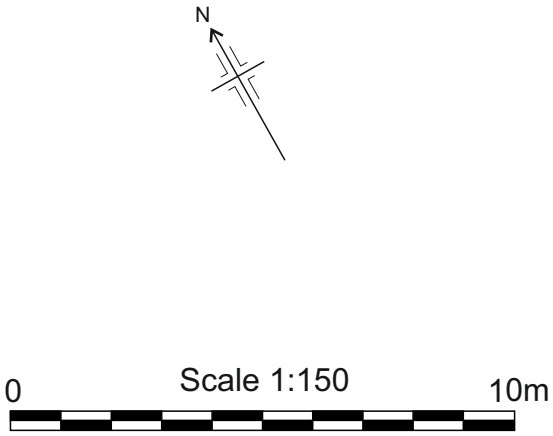
ROBERTS, B K, 1977, *The Green Villages of County Durham*. Durham County Library Local History Publication **12**; Durham.

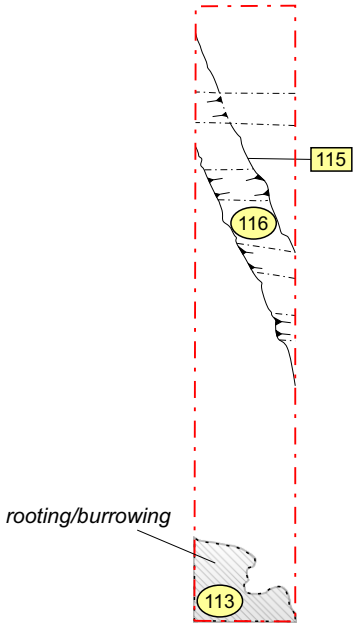
RYDER, P F, 1991, A medieval building at Archdeacon Newton, Darlington, *Durham Archaeological Journal* **7**, 129-133.

SUNDERLAND, N, 1967, *A History of Darlington*. Darlington Historical Society.

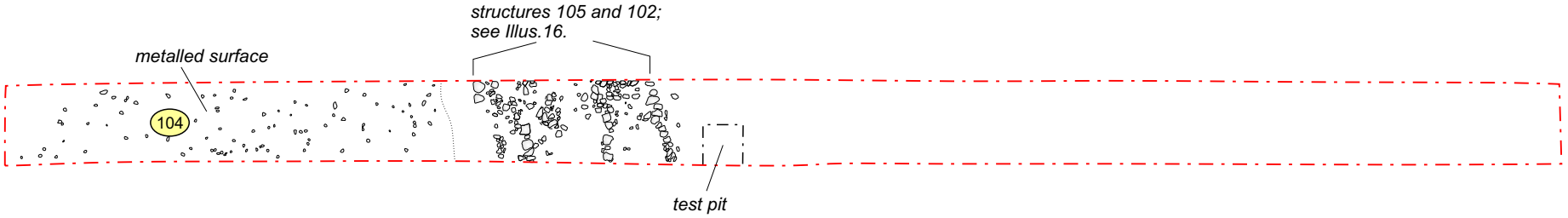
SURTEES, R 1816, 1820, 1823, 1840 *History and Antiquities of the County Palatine of Durham*. 4 vols, London.

WOOLER, E, and BOYDE, A C, 1913, *Historic Darlington*.

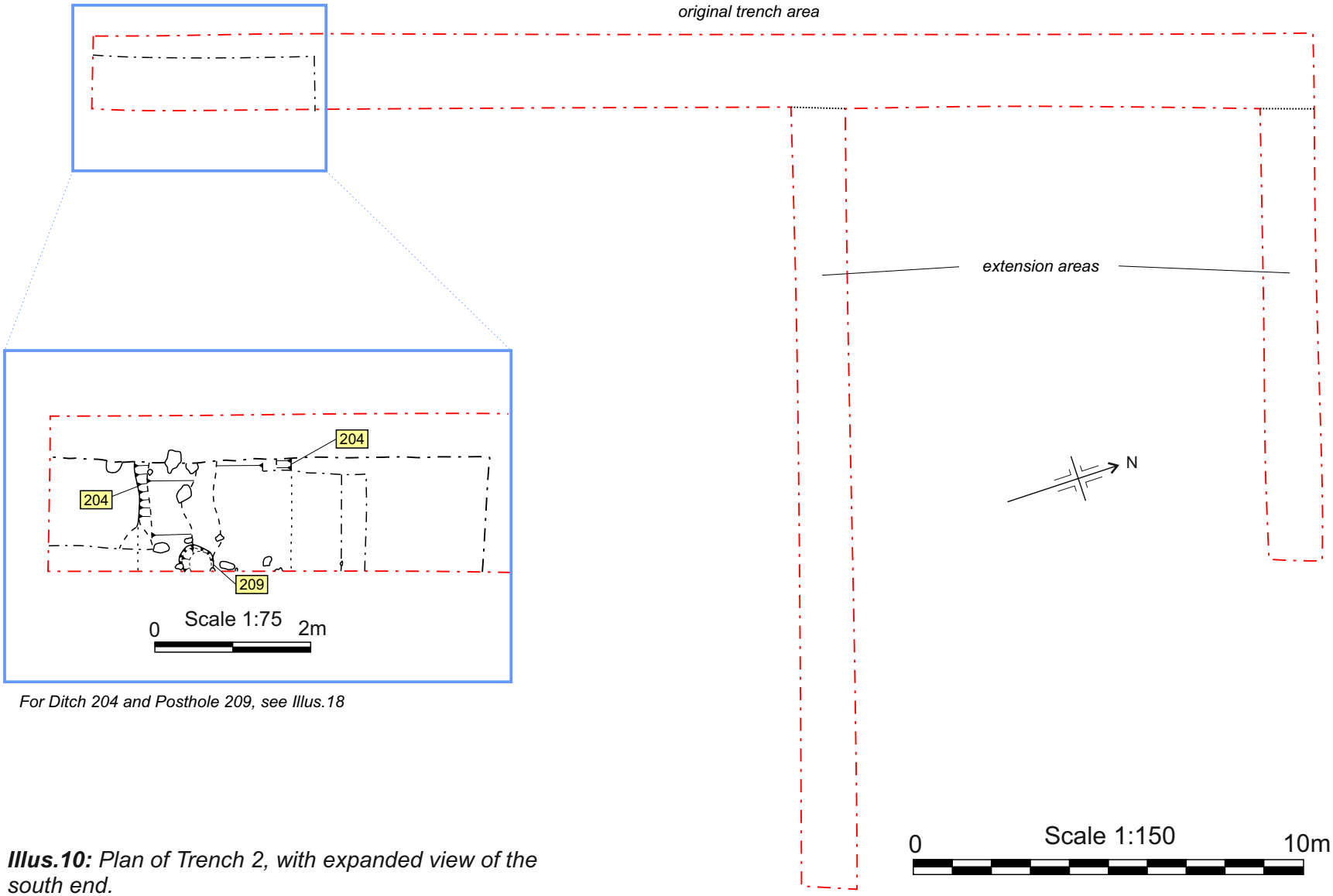




Illus.09: *Plan of Trench 1B.*

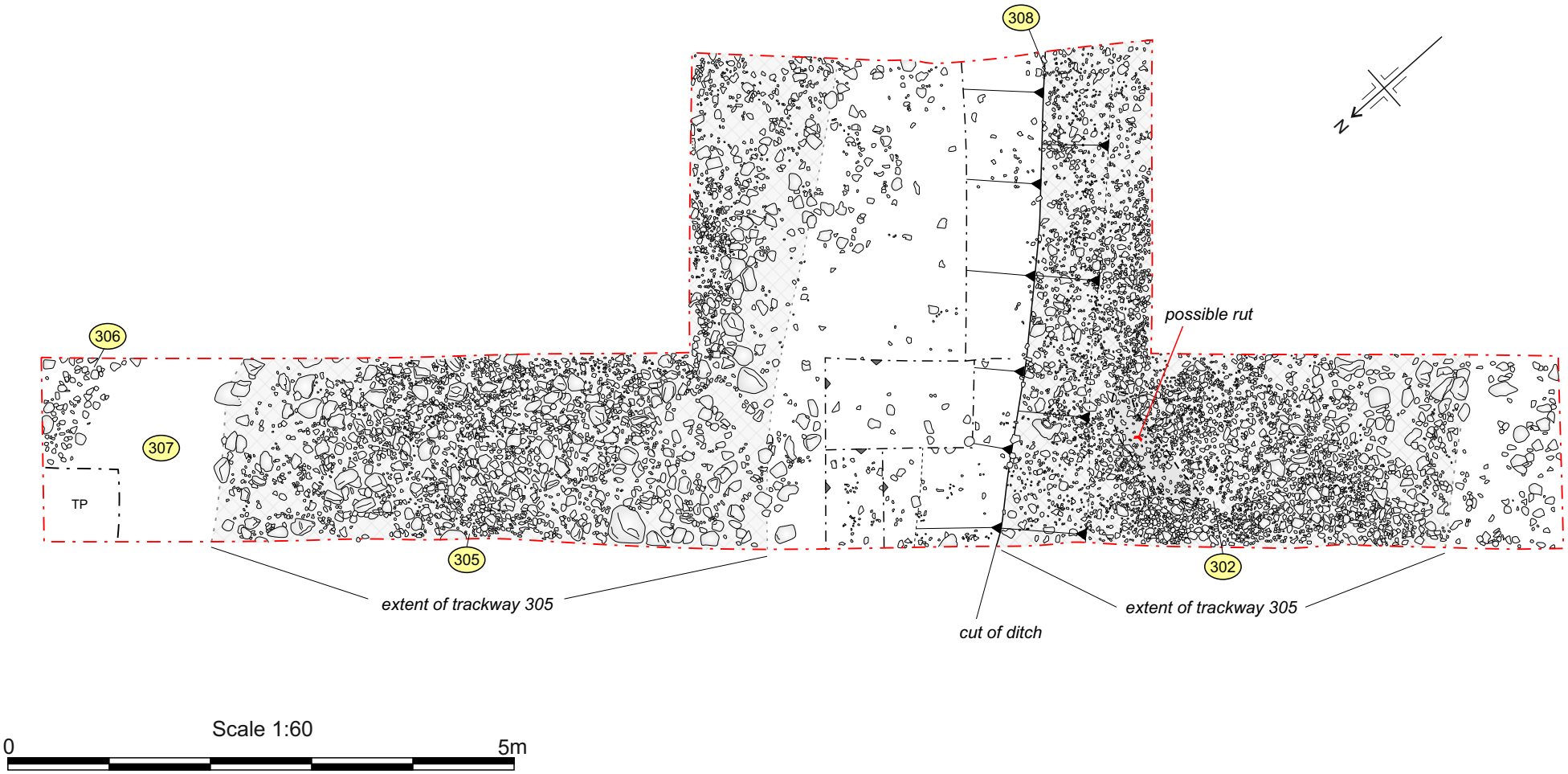


Illus.08: *Plan of Trench 1A.*



For Ditch 204 and Posthole 209, see Illus.18

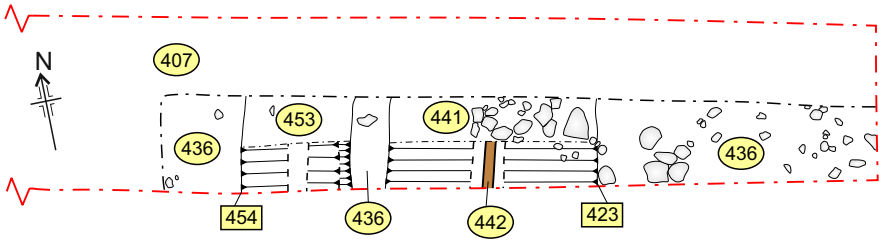
Illus.10: *Plan of Trench 2, with expanded view of the south end.*



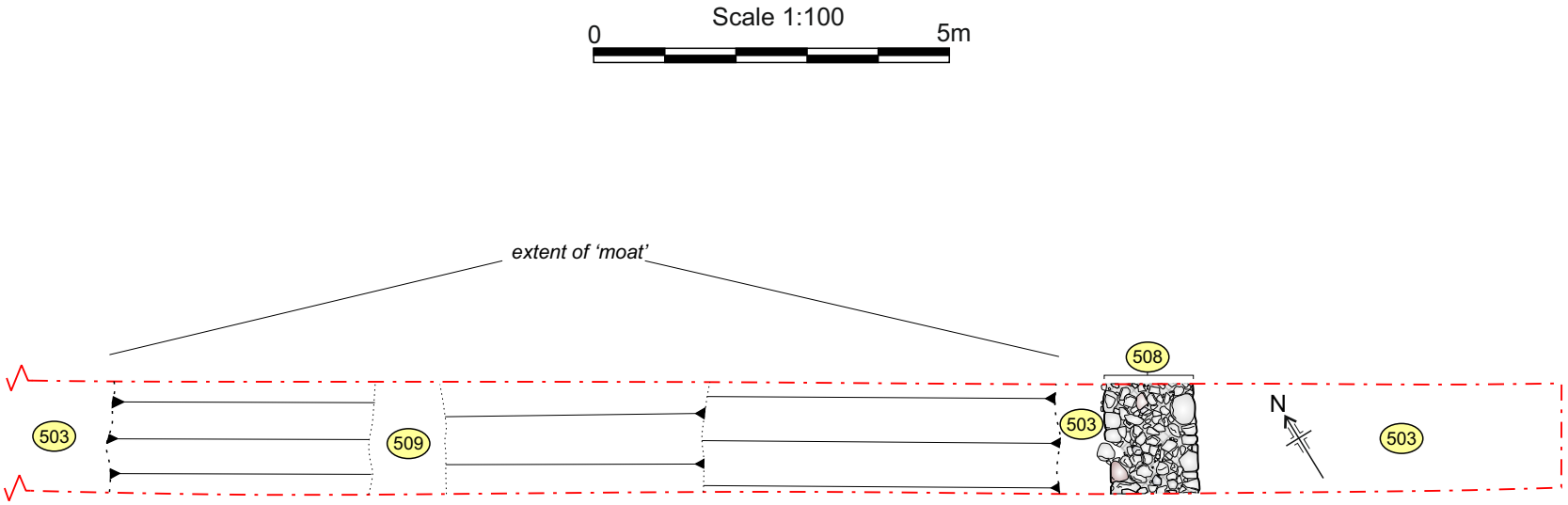
Illus. 11: *Plan of Trench 3. Context Nos. are bound in yellow; selected Palaeo-environmental Samples are bound in green.*

***Illus.12**: Plan of main body of Trench 4 in its final form. NB. Context Nos. are bound in yellow, selected levels in dark green.*

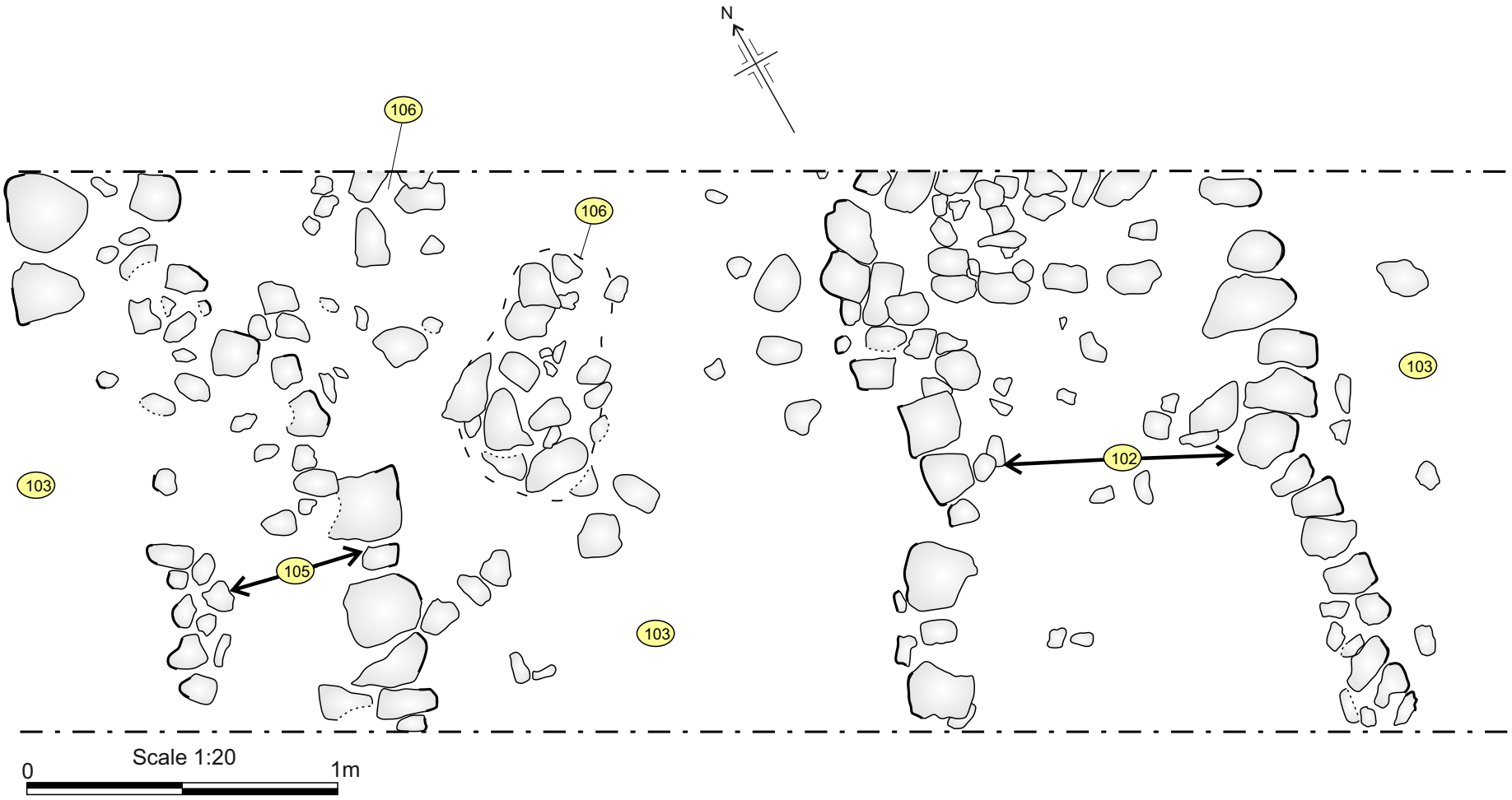
Illus.13: *Plan of main body of Trench 4. NB. Context Nos. are bound in yellow; selected Palaeo-environmental Samples are bound in green.*



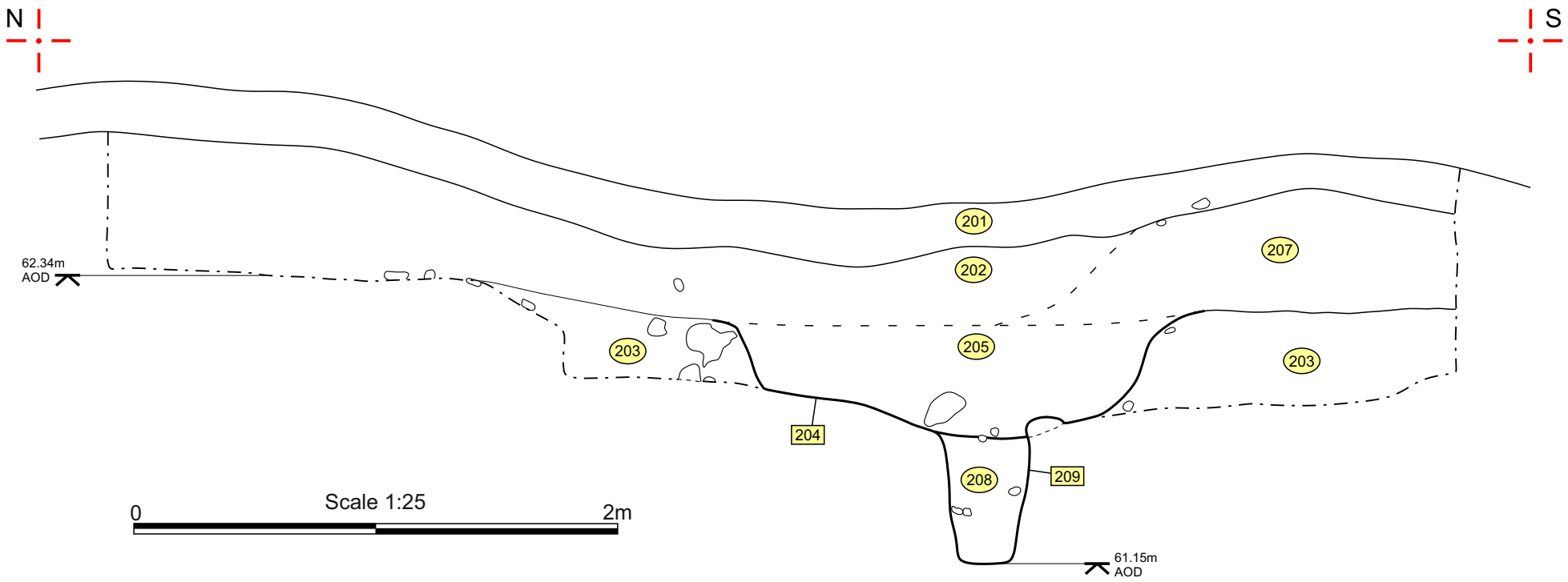
Illus.14: *Plan of east end of Trench 4, continued from Illus.12.*



Illus.15: *Plan of Trench 5*

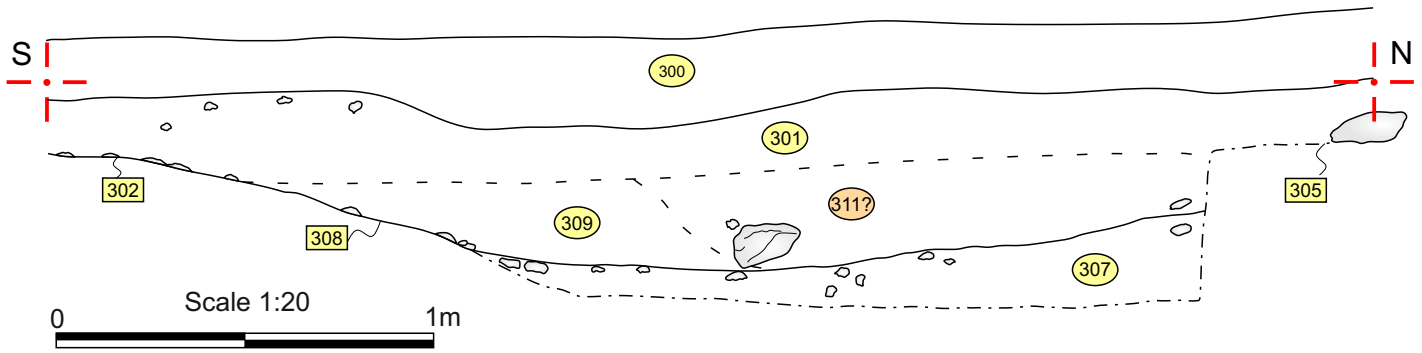


Illus. 16: *Plan of structures 102 and 105 in Trench 1.*

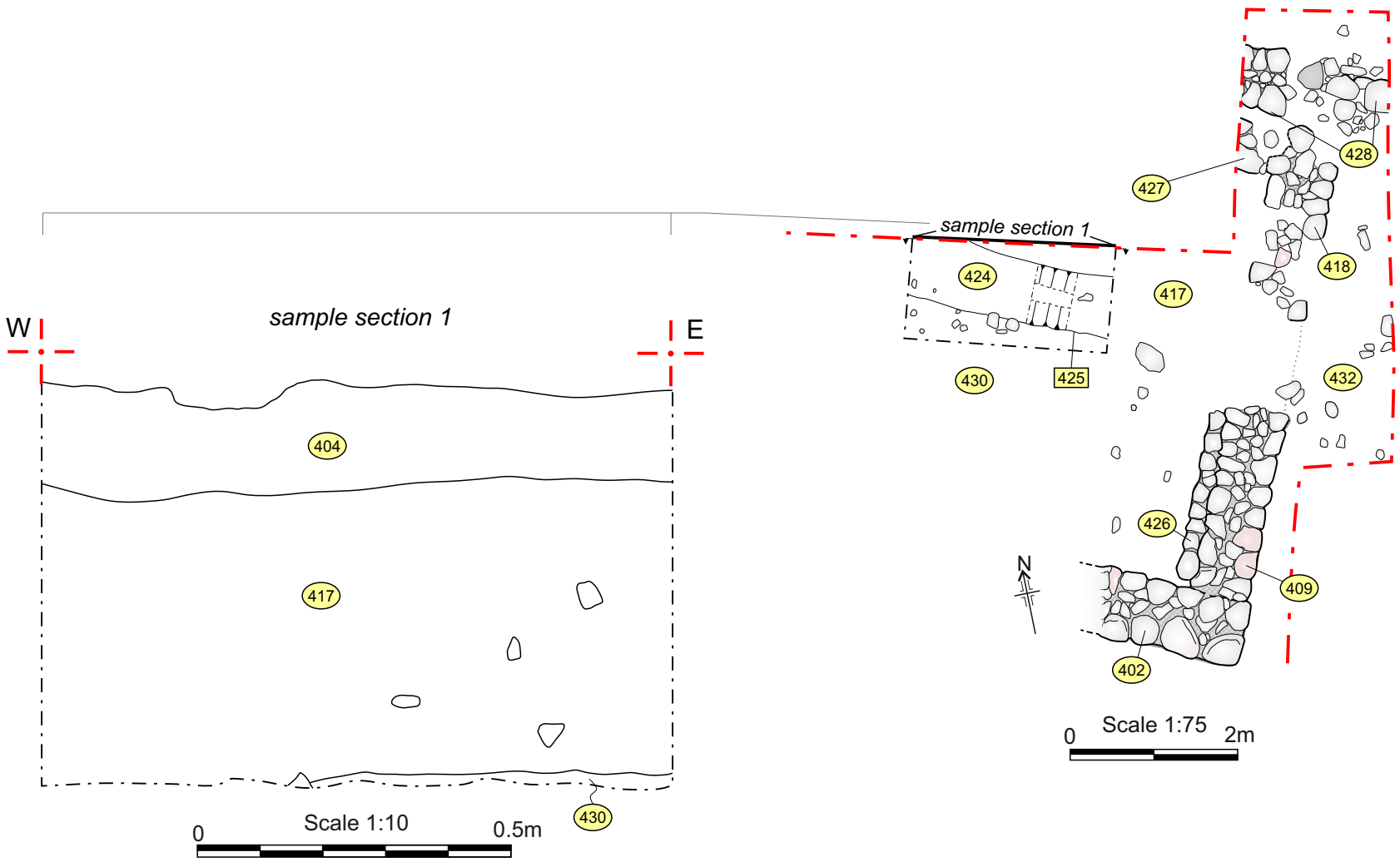


Illus. 17: *Section of Ditch 204.*

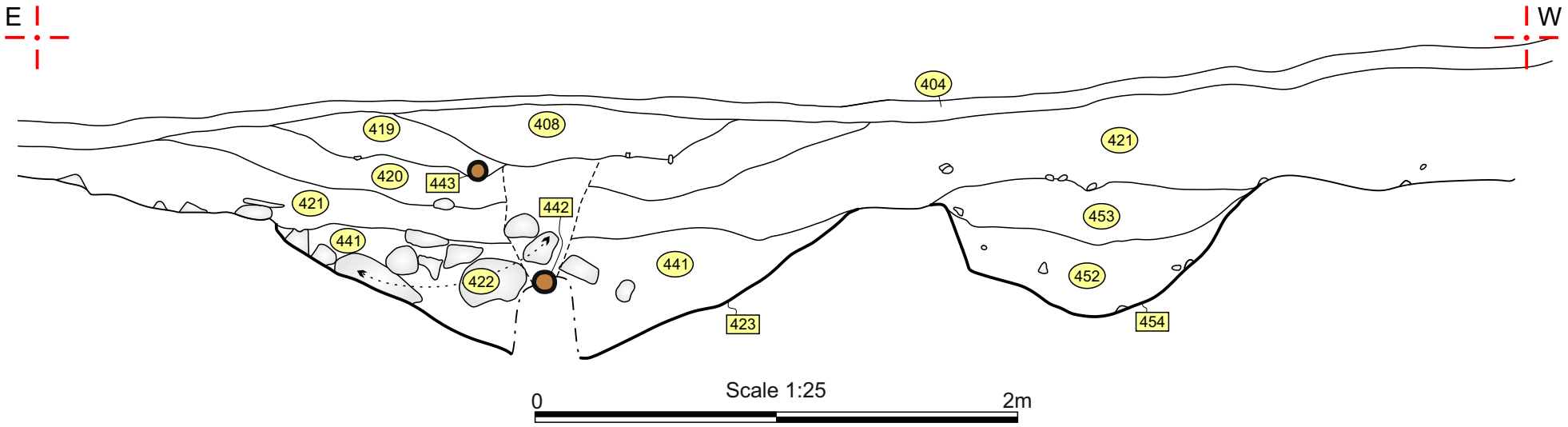
Illus. 18: *Plan of Ditch 204.*



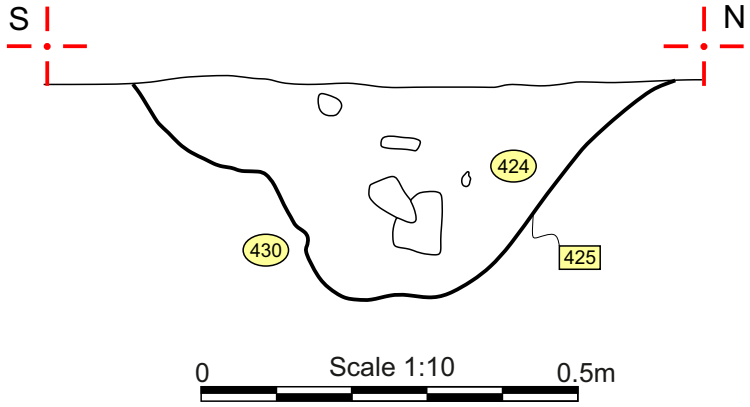
Illus. 19: *Section showing Ditch [308] between surfaces 302 and 305. N.B. (311) belongs to a theorised recut, [310], which was suggested on the basis of finds, but was unidentifiable in section.*



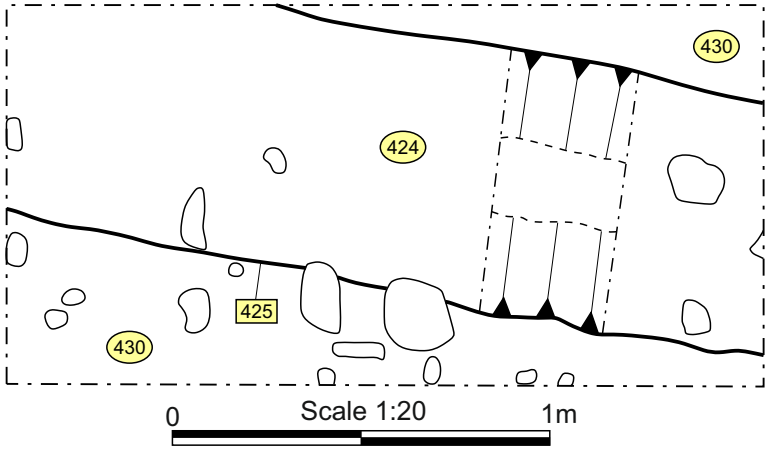
Illus. 20: *Sample Section 1 in Trench 4, showing the depth of made ground 417 under turf and topsoil 404. A location plan is included on the right, showing the stage at which sample section 1 was recorded.*



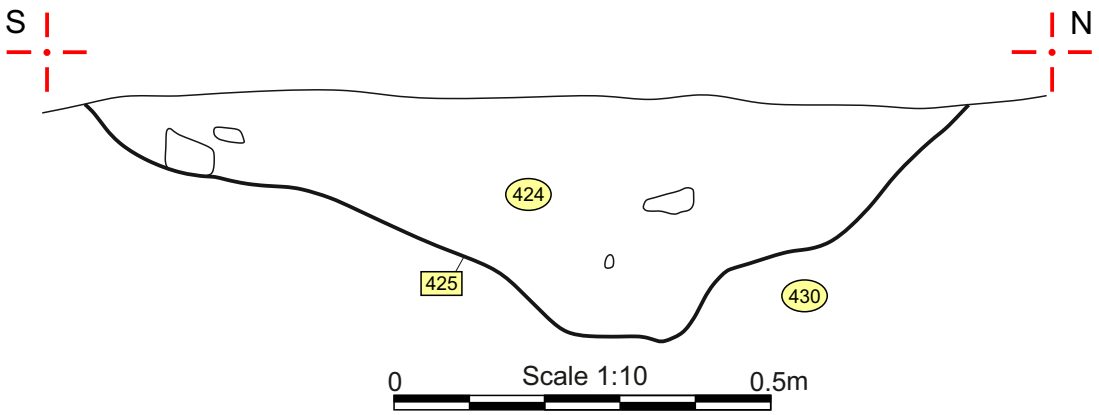
Illus. 21: *Section of Ditches 423 and 454.*



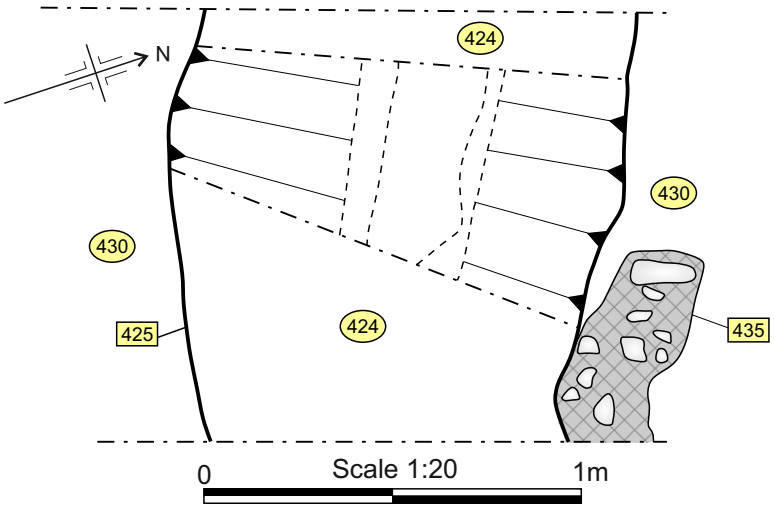
Illus. 22: *Section of Gully 425, Slot A*



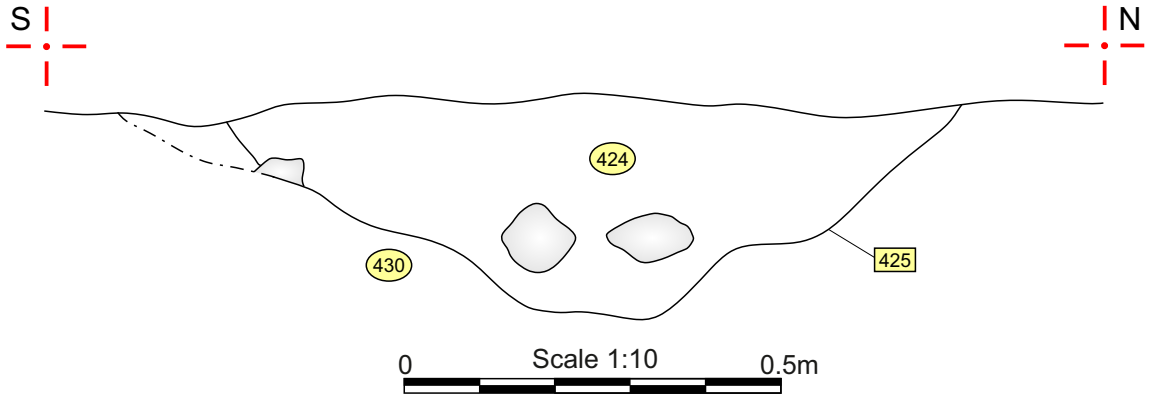
Illus. 23: *Plan of test pit containing Gully 425, Slot A*



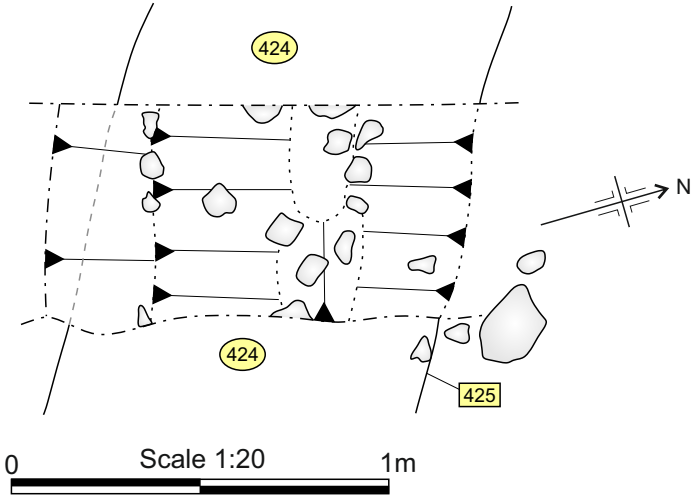
Illus. 24: *Section of Gully 425, Slot B*



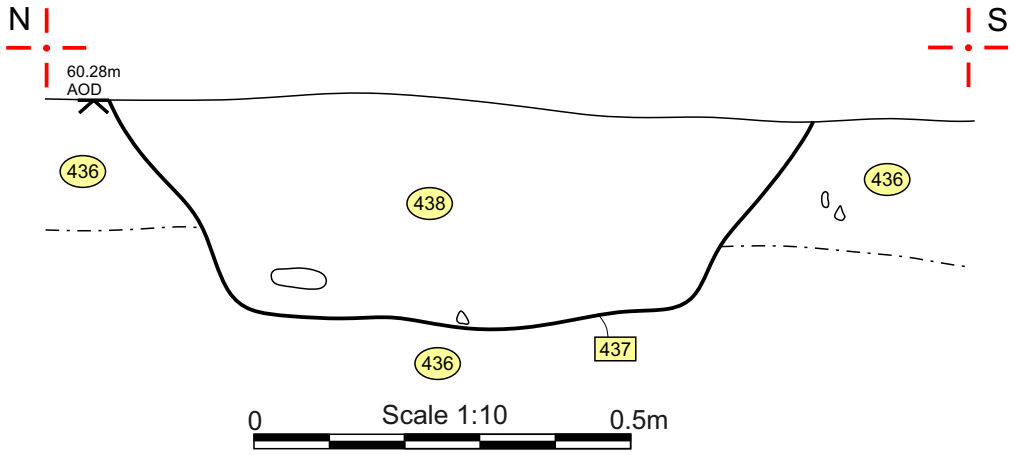
Illus. 25: *Plan of Gully 425, Slot B.*



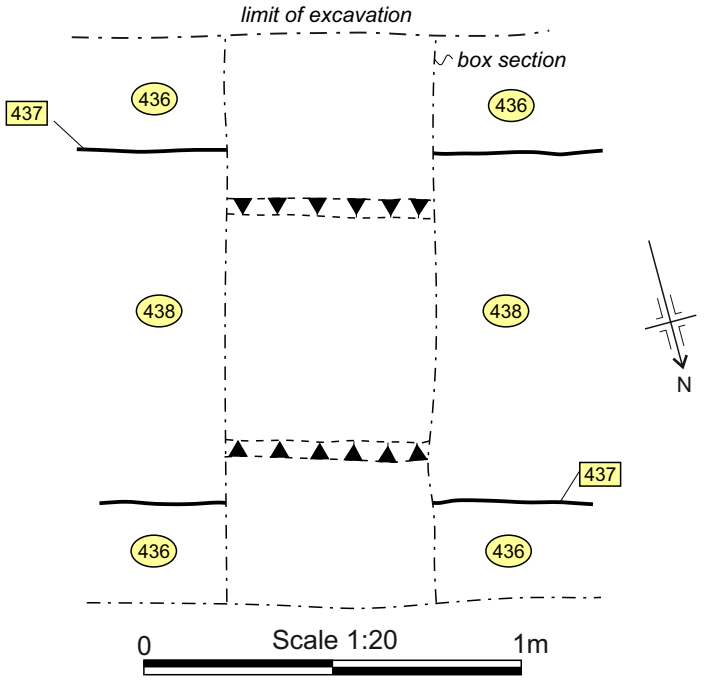
Illus. 26: *Section of Gully 425, Slot C*



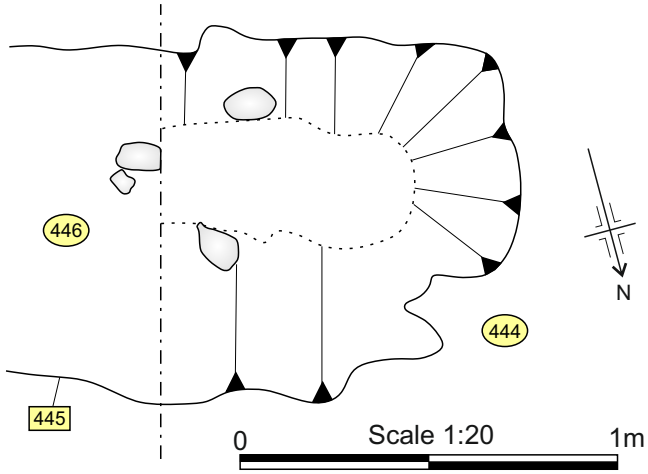
Illus. 27: *Plan of Gully 425, Slot B.*



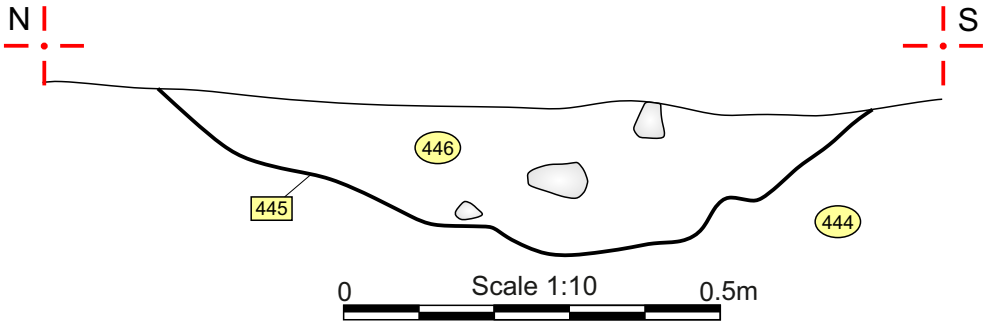
Illus. 28: *Section of Gully 437.*



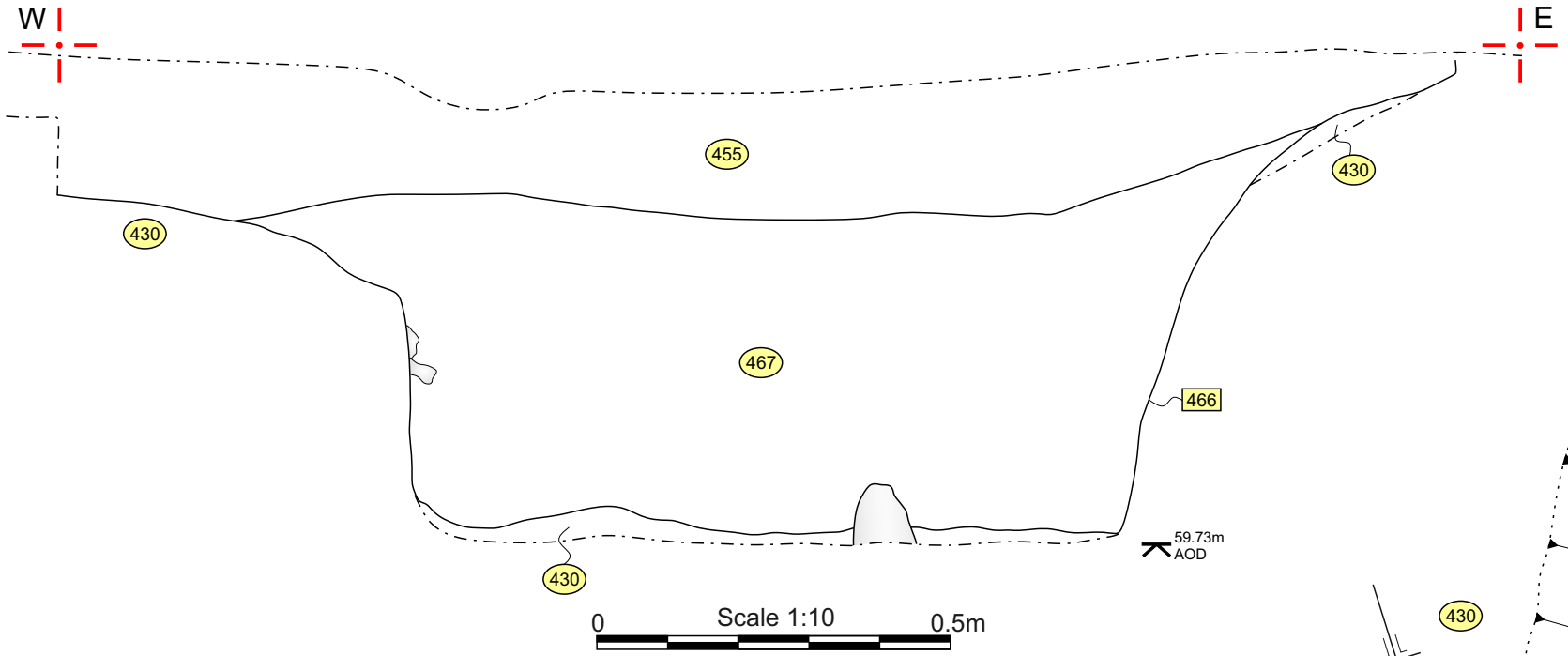
Illus. 29: *Plan of Gully 437.*



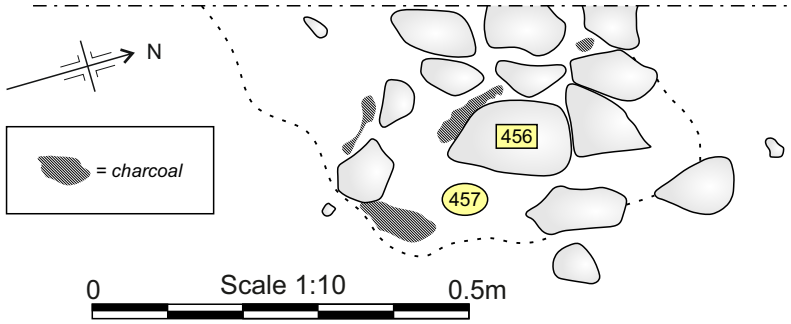
Illus. 31: *Plan of Gully 445.*



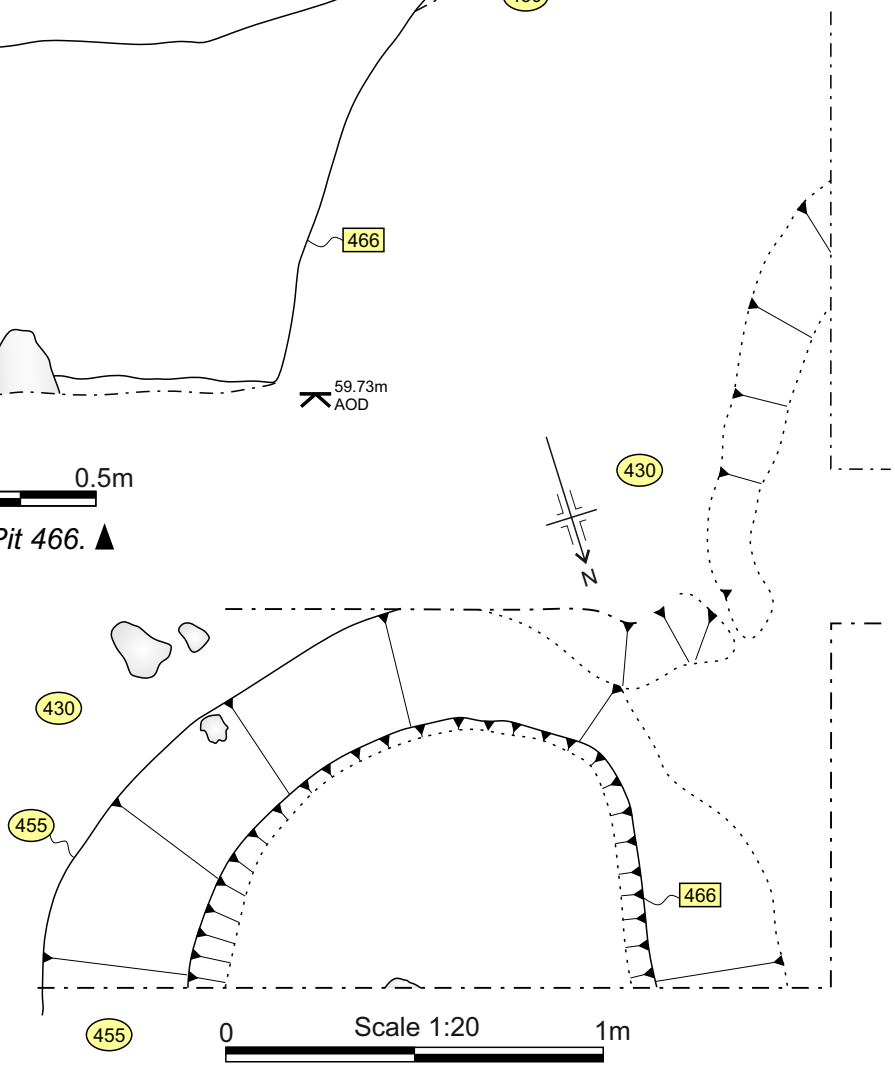
Illus. 30: *Section of Gully 445.*



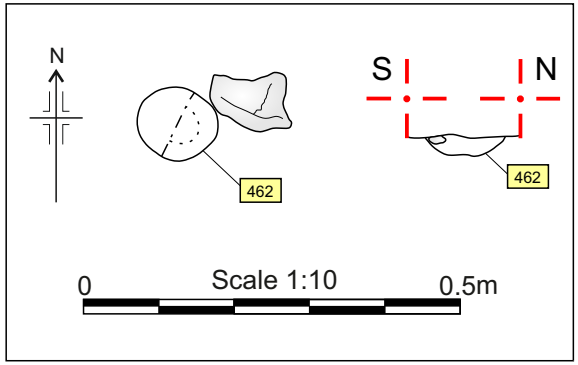
Illus. 33: *Section of Pit 466.*

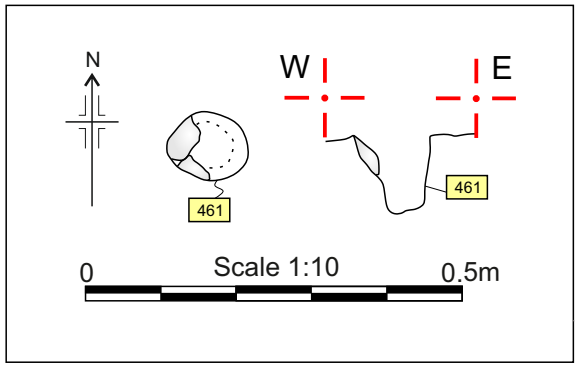


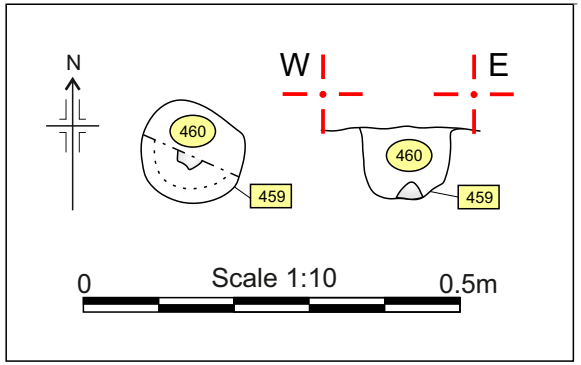
Illus. 32: *Plan of possible Hearth 456.*

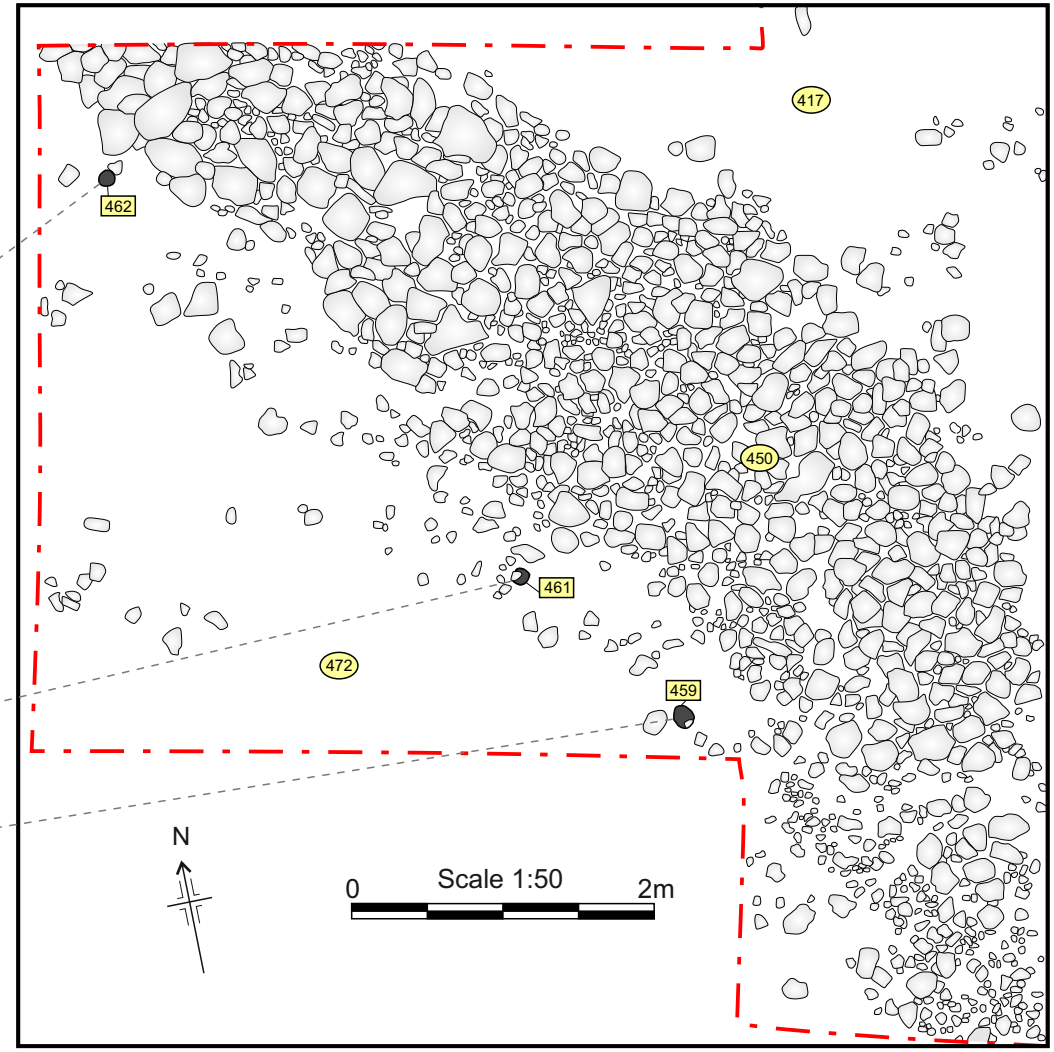


Illus. 34: *Plan of Pit 466.*









Illus. 35: *Figure showing the location of stakeholes 459, 461 and 462 along the west edge of trackway 450.*

Photo 01: 'Old Hall', south-west view.

Photo 02: 'Old Hall', north view.

Photo 03: Volunteers working at Archdeacon Newton.

Photo 04: Volunteers working at Archdeacon Newton

Photo 05: Volunteers working at Archdeacon Newton

Photo 06: Volunteers working at Archdeacon Newton.

Photo 07: Volunteers working at Archdeacon Newton

Photo 08: Volunteers working at Archdeacon Newton

Photo 09: Trench 1A overview, aerial view.

Photo 10: Trench 1B, north-north-east view showing gulley [116].

Photo 11: Trench 2 overview, aerial view.

Photo 12: Ditch [204] and posthole [208], north-east view.

Photo 13: Ditch [204] and posthole [208], north view.

Photo 14: Posthole [208], east view.

Photo 15: Trench 3 overview, aerial view.

Photo 17: In situ pottery in the base of ditch [308].

Photo 16: Trench 3 overview, south-south-west view showing trackways [302] and [305].

Photo 18: Pit [466], north view.

Photo 20: North-east view of Trench 4, showing the terminus of gulley [445].

Photo 19: Gulley [425], west-north-west view.

Photo 21: Cobbled surface [447], north-west view.

Photo 22: Trench 4 main body overview, south view.

Photo 23: West view of walls [402] and [409], together forming a corner of Building 1.

Photo 24: Trench 4 main body overview, south-east view showing parts of Building 1 and Building 2.

Photo 25: Structure 401, east view.

Photo 26: Trackway 450, south-east view.

Photo 27: Henry VIII coin from trackway [450].

Photo 28: Ditch [454], south-east view.

Photo 29: Ditch [423], south view.

Photo 30: Wall [508], west view.

APPENDIX 1:
MEDIEVAL AND LATER POTTERY FROM ARCHDEACON NEWTON, DARLINGTON (AN21)

C.G. Cumberpatch BA PhD
Freelance Archaeologist

Introduction

The pottery assemblage from the deserted medieval village of Archdeacon Newton near Darlington (AN21) was examined by the author between the 17th May and 3rd June 2022. It consisted of 2258 sherds of pottery weighing 14271.75 grams representing a maximum of 2174 vessels. The assemblage was recovered from four trenches (one of them sub-divided) and from an unstratified context. The data are summarised in Tables 1 to 6. A small quantity of ceramic building and other material was included with the pottery and is listed in Table 7. The composition of the whole assemblage is summarised in Table 8.

The pottery

While the assemblage was a diverse one, the wide range of types present should not distract from the fact that 57.7% of the total consisted of Tees Valley wares and 16.9% of Reduced Greenware (plus 1.4% Early Reduced ware). The distribution of the various types of pottery across the site is dealt with in the following section.

The earliest sherds in the assemblage were of Roman date and included one, possibly two, sherds of Samian ware (contexts 414 and 465) and a sherd of coarse Greyware (context 404). All of these sherds were heavily abraded and can be considered residual in later contexts.

The earliest medieval pottery consisted of a range of Buff Sandy and Buff Gritty wares and a number of closely related types which have been distinguished by names describing their most obvious characteristics (Brown Gritty ware, Brown Sandy ware, Red-Brown Sandy ware, Buff-Grey Sandy ware, Buff Coarse Sandy ware, Buff-Orange Coarse Sandy ware, Buff-Orange Sandy ware, Buff-Orange Gritty ware, Buff-White Sandy ware, Coarse Sandy ware, White Gritty ware, White Sandy ware and splash-glazed Sandy ware). These various wares together constituted less than 4% of the total and they include wares dating from the later 12th century onwards. Vessel forms included jars and cooking pots. Many sherds, particularly the bases, bore soot and carbonised residues on the external surfaces, as noted in the data tables.

The range of names reflects the variations in what are essentially similar wares distinguished mainly by differences in colour and in the size and density of the inclusions (principally quartz and rock fragments), as noted in the data tables. How far these distinctions relate to differences between individual firings, different potteries or changes in the procurement and processing of clay over time is unclear. Even within a specific type such as Tees Valley ware (described below), the extent of variation within the type has yet to be fully defined and explained.

Amongst the Buff and Buff-White wares, there may be some sherds which belong to the Tees Valley ware A group and the same is true of the orange-firing wares and Tees Valley ware B. Conversely, the broad 'Tees Valley type' wares may include sherds which belong more properly in other groups; at present the range of variability within the Tees Valley wares is poorly known and documented, leaving wares on the margins in a state of ambiguity.

The Tees Valley ware industry has been discussed at some length by Wrathmell (1987, 1990) and Didsbury (2010). In this report I have followed Didsbury's dating and fabric typology. Tees Valley wares A and B are judged to be distinct types while Wrathmell's Tees Valley C ware, distinguished by the use of buff slip to obscure the orange coloured Tees Valley ware B type body, has been referred to as Tees Valley B/C ware, reflecting the fact that it appears to be a modified version of the B ware rather than a distinct type or sub-type. The use of buff slip, a functionally unnecessary step in the production process, presumably reflects consumer preference for buff-firing wares over the orange firing wares. The technique itself may owe something to northern French practice although the exact relationship is obscure.

Taken together, the Tees Valley wares constituted 57.7% of the total with A and A-type on 11.6%, B and B type on 3.5% and B/C on 9.9%. Sixty sherds, 2.75% of the total, were deemed to be of general Tees Valley ware type. Vessel forms included jugs and jars and showed a similar range of variations in form and decoration to the examples documented by Wrathmell; in some cases the parallels were so close to vessels illustrated in the reports on the sites in Hartlepool that it has been possible to cite individual illustrations in the 'Notes' columns in the data tables. Decoration, including the use of applied pellets and green-on-clear glaze, also closely resembled the descriptions given by Wrathmell and Didsbury. In two cases (both from context 417) sherds were identified as parts of the beards of face jugs, a very distinctive type of highly decorated jug discussed in more detail elsewhere (Cumberpatch 2006, Green 2015).

The late 13th and early 14th centuries saw the start of a move away from buff and orange firing wares and towards reduced wares. The exact reasons for this change, its speed, the question of change within existing potteries and the possible establishment of new potteries has yet to be tackled in any detail, despite the fact that the change has been well documented on an empirical basis. In practical terms the change appears first in the form of Early Reduced wares, distinguished by their relatively coarse, quartz tempered fabrics with grey cores and dull, buff-orange or buff-grey margins under thin, often patchy, green glaze. Examples of this type formed 1.4% of the total assemblage. A larger quantity, constituting 16.9% of the total, were identified as Reduced Greenwares, a broad type also referred to as Late Reduced ware (Didsbury 2010) and, most recently, as 'later medieval reduced greenwares' (Gutierrez, Badreshany and Lowrey 2020; the lack of conventional capitalisation used by these authors remains unexplained). Variation within the type is considerable and it has been suggested that the fabrics became finer over time with 15th and 16th century wares having very fine, smooth fabrics. While it is possible to over-emphasise the significance of this change (Sage pers. comm.) it does seem to have some basis in reality although it is an unreliable indicator of absolute dates. No consistent attempt to sub-divide the type has been made here although the date ranges cited in the data tables are based upon the characteristics of individual sherds; these should be regarded as indicative rather than precise. Three sherds with particularly fine fabrics were classified as Late Reduced Greenware (contexts 300 and 424).

The Reduced Gritty and Reduced Sandy ware types represent degrees of variation from the norm which were too great to allow them to be included in the Early Reduced ware / Reduced Greenware categories. In some cases this was because the sherds were overfired or too heavily abraded to be readily identifiable but other variants bore splashed glaze and as such seemed anomalously early. These groups formed just 0.9% and 1.9% respectively of the total.

Small groups of sherds in distinctive fabrics which could not be assigned to known ware types were assigned generic names and date ranges based upon the characteristics of the individual sherds. These included Fine Sandy ware, Sandy ware, Gritty ware and Oxidised Gritty and Sandy wares. The individual sherds involved are described in the data tables together with putative date ranges.

Late medieval and post-medieval wares were represented by a limited number of sherds and ware types. These included fifteen sherds of unidentified Late Medieval Sandy wares, one sherd of Cistercian ware, three sherds of Yellow ware and thirty-two sherds of Green Glazed Sandy ware. While Cistercian ware is indicative of the change from green-glazed reduced wares in the medieval tradition to the black and purple wares typical of the post-medieval period (Cumberpatch 2003), the Green Glazed Sandy wares, probably manufactured in potteries located on the western side of the North York Moors, represent the final phase of the medieval tradition. Even amongst these wares however evidence of the change from the medieval to the post-medieval tradition is clear; in contrast to medieval wares, wide shallow dishes and bowls are the commonest type. A notable exception to this is the substantially complete jug from context 309 which was notable for its thick green glaze, applied both internally and externally, another deviation from medieval practice.

Later post-medieval wares were also rare with one sherd of Blackware identifiable as of 17th century date together with a group of Redwares, the majority from Trench 3. One of these sherds was partially slipped (context 300; Slipped Redware). It is possible that some of the wares mentioned above also continued into the later post-medieval period.

A small number of sherds were identified as of European origin and a late medieval or post-medieval date. These included three sherds of Frechen-Koln stoneware and two sherds of unidentified German stoneware (all from Trench 4). A sherd of possible Martincamp ware (context 401) is perhaps unlikely to be of European origin, given recent work at Ticknall (Derbyshire) where the production of the distinctive flasks or bottles has been clearly demonstrated (Brown and Spavold 2019). Two sherds of Westerwald stoneware (contexts 300 and 301) were of a 17th to 18th century date.

The assemblage also included a group of Tin Glazed Earthenwares (contexts 300, 301 and 309) spanning the period between the mid 16th and mid 18th centuries. The type was popular in the period preceding the development of refined earthenware bodies and European porcelain as it offered the possibility of brightly coloured decoration on a white background. The drawback was that the type is less than robust with a soft fabric and brittle, easily damaged glaze. It was manufactured widely in the Netherlands and Britain but identifying sherds to their source is difficult if the painted designs do not survive, as is commonly the case with archaeological examples.

In contrast to the relative sparsity of post-medieval wares, early modern types (spanning the period between c.1720 and c.1840) were common and diverse in character. The tripartite distinction within early modern pottery assemblages has been set out at some length elsewhere (Cumberpatch 2014) and those distinctions (between vernacular tablewares, formal tablewares and utilitarian wares) have been followed here.

Vernacular tablewares, manufactured in small-scale 'country potteries', were represented by Late Blackware, Slip Coated ware, Slipware and Fine Redware. Unusually, the Slipware group consisted almost entirely of sherds from hollow wares; the distinctive press-moulded slipware dishes, normally a major feature of any 18th century assemblage, were limited to a single sherd (context 300). Slip Coated wares, as the name implies bore a thin layer of red slip which seems intended to mask the buff or pale orange fabrics and to give a finish similar to that seen on the Late Blackwares. Fine Redware

was distinguished from Late Blackware by the use of clear rather than black or dark brown glaze on a red body. Hollow wares predominated but context 300 produced part of a candlestick.

Formal tablewares consisted of White Salt Glazed Stoneware and Creamware (including Banded and Mottled Creamware) and with a smaller quantity of plain and transfer-printed Pearlware (also from Trench 3) and two sherds of 18th century Porcelain, possibly imported. Two sherds of Cabled Slipware may also be of late 18th or early 19th century date although a slightly later date cannot be ruled out. Although relatively small in terms of quantity, the presence of all of the major types of fine tableware may suggest a consistent attempt by the inhabitants of the site to obtain fashionable tablewares throughout the 18th and early 19th centuries. The co-occurrence of formal and vernacular tablewares has been documented across many 18th century sites and seems to imply that both classes of pottery were in use even in aspirational households, presumably in different social contexts.

Utilitarian wares were represented by Brown and Yellow Glazed Coarseware with the latter including the distinctive Mottled Yellow Glazed Coarseware on which the white slip was modified by the use of brown colour on the white slip, prior to glazing. Dating these wares with any degree of precision is difficult given the lack of detailed study of such vessels and the essential similarity of vessels (particularly large bowls and pancheons) from the early 18th century into the later 19th and even early 20th century (Cumberpatch 2014).

Three sherds of Brown Salt Glazed Stoneware also appeared to be of 18th or early 19th century type, as did two sherds of white stoneware which were not of the conventional White Salt Glazed Stoneware type (context 415).

Recent wares were diverse in character but not abundant. In addition to a small quantity of plain and transfer printed Whiteware, sherds included Cane Coloured ware, Colour Glazed ware and a sherd of Late Redware. Three sherds of Unglazed Red Earthenware, probably from flowerpots, were of mid 19th to early 20th century type. In addition a sherd of stoneware from context 404 was also of mid 19th to early 20th century type.

Discussion

The following discussion is based upon the finds inventory supplied with the pottery. No site plans or stratigraphic narratives were available at the time of writing.

Trench 1A

The pottery assemblage from Trench 1 consisted of forty-seven sherds of pottery weighing 340 grams representing a maximum of forty-six vessels (Table 1).

With the exception of two sherds of Mottled Yellow Glazed Coarseware (contexts 100 and 101) all of the pottery from Trench 1A was of medieval date. Tees Valley wares predominated but contexts 100, 101, 104 and 106 also included sherds of Reduced Greenware, perhaps suggesting a degree of residuality in these contexts. Other wares included Buff, Brown and White Sandy wares and a sherd of splash-glazed Sandy ware (context 106).

Trench 1B

The assemblage from Trench 1B consisted of 475 sherds weighing 2526.5 grams representing a maximum of 472 vessels (Table 2). Of this total, a high proportion came from contexts 107 and 108, ploughsoil and turf/topsoil contexts respectively. Despite this, both contexts contained medieval assemblages which appeared to be of a largely homogeneous character. Context 108 included a sherd of Late Medieval Sandy ware but apart from this later wares were absent although context 107 contained Reduced Greenwares alongside Tees Valley wares. This was not the case with context 108 which had an earlier appearance than other contexts in the trench.

The assemblages from contexts 113 and 116 both contained small numbers of sherds of Reduced Greenware but were dominated by Tees Valley wares of all three sub-types with smaller quantities of other earlier medieval wares. Contexts 108 and 113 were linked by a cross-context join between two sherds from the base of a Tees Valley ware B jug or jar.

Trench 2

Trench 2 produced a small quantity of pottery; nine sherds weighing 49 grams (Table 3) from four contexts (201, 202, 204 and 207). Context 201 contained a sherd of Mottled Yellow Glazed Coarseware with a sherd of Tees Valley B ware but of the remaining contexts (202, 204 and 207), 202 and 207 produced typical medieval assemblages which included Tees Valley wares and Reduced Greenware. Context 204 contained just one sherd of pottery, a heavily abraded fragment of Reduced Greenware.

Trench 3

Trench 3 produced an assemblage consisting of 341 sherds weighing 2424.25 grams representing a maximum of 293 vessels (Table 4) from five contexts; 300, 301, 302, 304 and 309. The largest group came form the topsoil context, 300. This included a very wide range of pottery ranging from medieval wares to 18th and 19th century types although it was notable that medieval wares were in a minority and b0th Tees Valley wares and Reduced Greenwares were absent. Early modern wares were particularly common and included both formal and vernacular tablewares, a group of Tin Glazed Earthenwares and utilitarian types.

The Slipwares from context 300 were notable for their hard, red fabrics, very similar to those of the Fine Redwares. It is possible that some of the latter could belong to Slipware vessels with the sherds being from unslipped areas of the pots.

Context 301, described as a ‘layer’, contained an assemblage that was very similar to the one from context 300. Early modern wares predominated with a group of Green Glazed Sandy wares perhaps representing a slightly earlier element.

The assemblage from context 302 was notable for containing a small group (seven sherds) of very late medieval or post-medieval wares; Green Glazed Sandy ware and Late Medieval Sandy ware and no earlier or later material.

Context 304 also contained a small group of sherds although this more closely resembled those from 300 and 301 than it did 302 in that it was diverse and of probable early modern date with the sherd of Green Glazed Sandy ware being residual in character.

Context 309, the fill of a possible ditch, contained a slightly more diverse assemblage than did other contexts but still with the emphasis of early modern wares alongside a group of Green Glazed Sandy wares, including a substantially complete jug, a rather unusual form in this fabric.

The evidence from Trench 3 raises questions about the survival of the Green Glazed Sandy ware industry into the early 18th century but without more definite data, this must remain speculative.

Trench 4

Trench 4 produced the largest assemblage of pottery from the site; 1359 sherds weighing 8811 grams representing a maximum of 1327 vessels (Table 5)

In contrast to Trench 3, the assemblage from Trench 4 more closely resembled those from Trenches 1 and 2, albeit with a small quantity of later wares across the various contexts. All three of the Roman sherds came from contexts in Trench 4 (contexts 404, 414 and 465) while other contexts, notably 417, also contained interesting and distinctive items, as described below.

Context 404, the turf and topsoil layer contained an assemblage which, while mixed, consisted predominantly of Tees Valley wares (A, B and B/C). Other medieval wares included Reduced Greenware, Early Reduced ware and Late Medieval Sandy ware. Early modern and recent types were also present in small numbers (Fine Redware, Colour Glazed ware, Stoneware, Slip Banded Cane Coloured (CC) ware and Whiteware).

Contexts 401 and 402, associated with walls, contained assemblages which were largely medieval in the case of 401 and wholly so in the case of 402. The presence of sherds of Yellow Glazed Coarseware and a Martincamp flask / Ticknall bottle might suggest a later date for context 401. Context 409, also associated with a wall, produced a similar assemblage with medieval pottery (Tees Valley ware and Reduced Greenware) predominant but also a small sherd of Frechen-Koln stoneware of a somewhat later date. Wall 427 produced a single sherd of Reduced Greenware while context 431 (wall/step) produced the strap handle of a jug in Tees Valley ware B/C.

Wall 416 contained a small group (seven sherds) of medieval wares spanning the 13th and 14th centuries. Wall 418 produced a typically mixed medieval assemblage which included buff and brown sandy wares alongside Reduced Greenware and Tees Valley wares.

Contexts 403, 405, 406, 407, 408, 414, 417, 419, 420, 432, 434 and 472 were all described as layers and produced the majority of the pottery from the trench. Of these assemblages, the majority consisted largely of medieval pottery (principally Tees Valley ware) although 408, 420 and 472 were notable for including early modern and recent wares in varying proportions while the four sherds from context 419 were all of 19th century date, indicating an unusually late date for this layer.

Layer 417 was of particular interest in that it produced a substantial assemblage which included some notable items. Tees Valley wares predominated and included both of the fragments of face pots (Tees Valley ware A type and Tees Valley ware type) from the site. Although more typically associated with the Scarborough ware industry, Didsbury has noted the existence of such vessels in Tees Valley ware fabrics (2010:224). The high proportion of Tees Valley ware A type sherds reflects the fact that these sherds were somewhat coarser than normal, verging into the Buff Gritty ware category. This would seem to underline the suggestion that the range of variation within the Tees Valley ware needs more attention and the exact parameters defining the type are, at present, unclear.

The Red-Brown Sandy wares consisted of a small group of larger sherds, mainly bases, in a distinctive fabric which resembled a coarser version of Staxton / Potter Brompton ware with the significant difference that these vessels were clearly wheel-thrown rather than being hand-made and wheel-finished, as Staxton / Potter-Brompton wares were. The fabric was a dull reddish brown colour and contained common, well-sorted sub-round to round quartz up to 1mm in size but mainly between

0.5 and 1mm. The bases appeared to be rounded or slightly sagging and were slightly uneven on the internal surface. It was unclear how this type relates to Didsbury's Early Sandy ware group other than that both were wheel-thrown rather than hand-made. The date range was unclear but has been suggested to lie within the later 12th to later 13th centuries on the basis of the similarity to Staxton Potter-Brompton ware and the occurrence of the sherds alongside Tees Valley ware A and Tees Valley ware B.

A second unusual group was designated 'Fine Sandy ware'. This was a small group of sherds in an unusually fine sandy textured fabric containing fine quartz (<0.2mm with occasional grains up to 0.5mm) The sherds generally have a reduced core with pale buff-orange internal and external margins. The sherds were all abraded and it is unclear whether they are a fine version of Early Reduced ware / Reduced Greenware or a distinct type. The proposed date range is conjectural, based upon their association with earlier medieval wares.

Context 417 also contained a small sherd of an unidentified German stoneware, probably the latest sherd in the group.

Context 415 (stone tumble) contained a mixed medieval and early modern assemblage, the medieval material being presumably residual in a later context. The earlier wares included Tees Valley wares and Reduced Greenwares while later pottery included a sherd of Frechen-Koln stoneware, Green Glazed Sandy wares, Late Blackware, Slipware, Fine Redware and Yellow Glazed Coarseware (plain and mottled). The early modern element resembles the assemblage from Trench 3 in terms of its composition.

Contexts 421 and 441 constituted the fills of ditch 423. While the pottery from 421 was of exclusively medieval date (principally Tees Valley wares with sherds of Oxidised Sandy ware and Reduced Greenware), context 441 contained the rim of a Creamware pie dish alongside two sherds of Reduced Greenware.

Context 452, the fill of ditch 454, produced just three sherds; two of Tees Valley ware A and one of White Gritty ware, perhaps suggesting a date at the earlier end of the date range as a whole. The same may be true of context 455 which also contained Tees Valley ware A and earlier sandy wares although also a small sherd of Tees Valley ware B/C.

Context 424, the fill of gully 425, contained small group of Tees Valley B and B/C ware with a sherd of Reduced Greenware and a sherd of Late Reduced Greenware. The latter may indicate a later medieval date for the context, but it was small (2 grams) and could be considered intrusive in an earlier context. A second context, labelled 424C, presumably also belonged to the same feature and contained a slightly wider range of material, as detailed in Table 4.

Context 435 and context 439, a stone kerb and possible surface respectively, produced very similar assemblages consisting of Tees Valley ware and Reduced Greenware.

The assemblage from context 450, a cobbled surface or trackway, consisted mainly of Tees Valley wares (B and B/C) with a smaller quantity of Reduced Greenware and small quantities of both earlier and later pottery. The later material included a sherd of Cistercian ware, a sherd of Late Medieval Sandy ware and a small fragment of Mottled Yellow Glazed Coarseware. The small size of these later sherds raises the possibility that they were intrusive in a medieval context although this is difficult to demonstrate with any certainty.

Another cobbled surface, 465, contained a small group of Early Reduced ware and Tees Valley ware (B and B/C) with a small abraded chip that may be Samian ware.

Context 453, a layer of redeposited clay, produced five sherds, four of them of Reduced Greenware and one of Tees Valley ware type.

A clay deposit, context 457, contained a single sherd of Tees Valley ware B .

Unstratified pottery

A small group of unstratified pottery consisted of twenty-seven sherds weighing 121 grams (Table 6). The assemblage contained a familiar range of material, principally Tees Valley wares (A, B and B/C) with various other medieval wares and a small sherd of 17th century Blackware.

Discussion

The preceding description of the assemblage suggests that the areas excavated can be divided into two parts. Trenches 1, 2 and 4 appear to have identified areas of activity dating primarily to the earlier part of the medieval period while Trench 3 seems to have been located in an area of later activity. The scarcity of late medieval and early post-medieval pottery would seem to suggest some change of activity or the focus of activity on the site but further work would be required to investigate this further.

The pre-eminent importance of Tees Valley wares in the assemblage highlights its importance as regional industry and it is notable that the wide distribution includes assemblages from Richmond Castle and Thornton-le-Street on the southern and western edges of the distribution zone (Didsbury 2010: Figure 8.10), which also contained very high proportions of the type.

Archiving and curation

Once the report on the site has been completed, the assemblage should be deposited in the appropriate local museum or finds depository where it will be available for further work in the future. As should be clear from the report, much remains to be learned about the medieval pottery industry in north-east England and until a comprehensive programme of work aimed at resolving the outstanding issues, there should be no question of discarding, downsizing, dispersing or destroying pottery assemblages.

Bibliography

Brown, S and Spavold, J. 2019 **Excavation at Staunton Lane End Cottage, Ticknall, Derbyshire (TSL14)** Ticknall Archaeological Research Group / National Trust

Cumberpatch, C.G. 2003 *The transformation of tradition; the origins of the post-medieval ceramic tradition in Yorkshire*. **Assemblage** 7
http://archaeologydataservice.ac.uk/archives/view/assemblage/html/7/cumberpatch.html#phen

Cumberpatch, C.G. 2006 *Face to face with medieval pottery: Some observations on medieval anthropomorphic pottery in north-east England* **Assemblage** 9
http://www.assemblage.group.shef.ac.uk/issue9/cumberpatch.html

Cumberpatch, C.G. 2014 *Tradition and Change: the production and consumption of early modern pottery in South and West Yorkshire* In: C. Cumberpatch and P.W. Blinkhorn (Eds) **The Chiming of**

Crack'd Bells: current approaches to artefacts in archaeology British Archaeological Reports International Series 2677 Archaeopress, 73-97

Didsbury, P. 2010 *Medieval pottery* In: R. Daniels (Ed.) **Hartlepool: An archaeology of the medieval town** Tees Archaeology monograph series 4; 218-246

Green, K. 2015 **Constructing masculinity through the material culture of dining and drinking in later medieval England: a study of the production and consumption of anthropomorphic pottery in selected sites from Eastern England, the Midlands, and the South West, c.1250 – 1450** Unpublished PhD thesis, Department of Archaeology, University of Sheffield

Gutierrez, A., Badreshany, K. and Lowrey J.R 2020 *Evidence for pottery production from Brandling Street, Gateshead, Tyne and Wear* **Medieval Ceramics** 41; 67-82

Wrathmell, S. 1987 *The Pottery* In: G.A.B. Young *Excavations at Southgate, Hartlepool, Cleveland 1981-82*. **Durham Archaeological Journal** 3, 15-55

Wrathmell, S. 1990 *Pottery* In: R. Daniels *The development of Medieval Hartlepool: excavations at Church Close, 1984-85*. **Archaeological Journal** 147, 376-410

APPENDIX 2:

ARCHDEACON NEWTON FINDS CONCORDANCE.

AN21 - Archadeacon Newton SMV Finds Concordance

Feature	Context	Trench	Description	Slot	Calibrated C14 Dates (95.4% Conf.)	Pottery (sherds)g	CBM (g)	A. Bone (g)	Flint ((flakes) g	Other
	U/S		Unstratified - Trench Unknown			(27) 123g		182		Fe. Fragment (1) 8g Glass (3) 4g Pb. ?Musket Ball - 13g
	100	1A	Unstratified Material - Trench 1A			(3) 70g				
	101	1A	Turf & Topsoil - Trench 1A			(12) 82g				Cu. Alloy Fragments (2) 3g Fe. Fragments (3) 39g
	103	1A	Layer - Plough Soil			(4) 18g		6		
104		1A	Metalled Surface			(10) 41g		40		Slag (1) 4g
106		1A	Stone Spread			(13) 103g		62		Fe. Fragment (1) 68g
	107	1B	Layer - Plough Soil			(347) 1563g		104	(1) 1g	Clay Pipe Stem (1) 2g Fe. Fragments (4) 17g Fired Clay (7) 15g Slag (5) 162g
	108	1B	Turf & Topsoil - Trench 1B			(66) 352g				
	113	1B	Deposits Associated with Burrowing			(98) 440g		2		
	114	1A	Layer - Clay			(5) 14g		48		
115	116	1B	Fill of Gully			(28) 121g				Fired Clay (1) 2g
	201	2	Turf & Topsoil - Trench 2			(3) 4g	22	1		?Coal - 1g
	202	2	Layer - Plough Soil			(7) 23g				
204	205 206	2 2	Upper Fill of Ditch Lower Fill of Ditch			(1) 2g				 Stone ?Tile Fragment - 295g
	207	2	Bank Material South of [204]			(3) 8g				
	300	3	Turf & Topsoil - Trench 3			(202) 1160g	2091	251		Clay Pipe Stem Fragments (15) 42g Cu. Alloy Button - 1g Cu. Alloy Fragment - 1g

										Fe. Fragments (83) 1329g Glass (38) 384g Shell - 1g Slag (11) 1312g
	301	3	Layer			(106) 549g	782	302		Ceramic ?Bead - 1g Clay Pipe Stem Fragments (18) 38g ?Cu. Alloy Buttons (2) 11g Fe. Fragments (126) 718g Glass (36) 476g Pb. ?Musket Ball - 7g Slag (4) 115g
302		3	Metalled Surface			(7) 33g		136		Fe. Fragments (4) 17g
	304	3	Layer			(5) 22g	120	19		Fe. Fragment (3) - 17g Glass (2) 80g
308	309	3	Fill of Probable Ditch			(58) 634g	186	98		Clay Pipe Stem Fragments (4) 16g Glass (9) 17g
	400	4	Unstratified Material - Trench 4							?Dressed Stone (1) - 492g
401		4	Structure - Wall			(42) 193g	7	144		Coal - 8g Clay Pipe Stem Fragment (1) 1g Fe. Fragments (4) 21g Glass (1) 1g ?Slag (1) 21g
402		4	Structure - Wall			(4) 13g				
	403	4	Layer			(24) 256g		6		Coal - 2g Fe. Fragment (1) 1g ?Fired Clay - 18g
	404	4	Turf & Topsoil - Trench 4			(290) 1173g	344	681		Clay Pipe Stem Fragments (2) - 1g Coal - 31g Cu. Alloy Bullet Fragment (1) 3g ?Dressed Stone (2) 3390g Fe. Fragments (13) 238g Glass (2) 3g Golf Ball - 41g

										?Slag (7) - 295g
	405	4	Layer			(24) 88g		6		Fe. Fragments (2) 8g
	406	4	Layer			(37) 246g		243		
	407	4	Layer			(8) 33g		22		
	408	4	Layer			(15) 51g		45		Clay Pipe Stem Fragments (2) 1g Clinker (2) 13g Fe. Fragments (17) 93g Glass (9) 12g
409		4	Wall			(25) 179g				Cu. Alloy Button Fe. Fragment (1) 11g
	414	4	Layer			(15) 176g	11	78		Fe. Fragments (8) 25g
415		4	Stone Tumble			(54) 268g	255	69		Fe. Fragments (21) 238g Glass (1) 2g
416		4	Possible Wall			(6) 21g				Coal - 7g Fe. Fragments (2) 9g Slag (2) 60g
	417	4	Layer			(422) 3076g	7	452	(1) 2g	Coal - 170g Dressed Stone (1) >10kg Fe. Fragments (12) 305g Glass (1) 62g Slag (3) 701g ?Worked Stone (1) 109g
418		4	Wall			(34) 119g		1		Coal - 46g Fe. Fragments (2) 2g Slag (1) 127g
	419	4	Layer			(6) 28g				Glass (1) 20g
	420	4	Layer			(9) 71g		410		
423	421	4	Fill of Ditch [423]			(20) 167g		107		Slag (1) 41g
	441	4	Lower Fill of Ditch [423]		1297-1397 AD	(3) 99g		396		?Fired Clay/?Daub - 83g Wood - 38g
425	424	4	Fill of Gully [425]			(5) 22g		320		Fe. Fragment (1) 8g Worked Stone - 845g
				A				17		

				B C		(13) 36g (4) 19g		119 556		
427		4	Wall			(1)15g				
431		4	Wall/Entrance Step			(1) 220g				
	432	4	Layer			(162) 1067g	9	185		Clay Pipe Stem Fragments (3) 4g Coal - 63g Fe. Fragments (10) 49g Pb. Fragment (1) 4g Slag (5) 25g
	434	4	Layer			(6) 19g		2		
435		4	Stone "Kerb"			(10) 30g				
439		4	Possible Surface			(3) 45g		5		Fe. Fragments (2) 50g Glass (4) 2g
445	446	4	Fill of Gully [445]		1156-1228 AD			19		
450		4	Cobbled Surface/Possible Trackway			(124) 822g	3	464		Ag. Henry VIII Coin Fe. Fragments (7) 122g ?Leather - <1g
454	452	4	Fill of Ditch [454]			(3) 14g		37		Glass (1) 15g
	453	4	Layer - Redeposited Clay			(5) 30g		7		
	455	4	Spread			(6) 38g				
456	457	4	Clay Deposit Associated with [456]			(1) 17g				
465		4	Cobbled Surface			(6) 30g		8		
472		4	Layer			(27) 166g		35		Clay Pipe Stem Fragment - 2g
	500	5	Unstratified Material - Trench 5							Dressed Stone (1) >10kg ?Slag (1) 1g

ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
The Archaeological Practice Ltd

Archdeacon Newton
County Durham

palaeoenvironmental analysis

report 5789
June 2022

Durham University

Contents

Figures

South Road · Durham · DH1 3LE · tel 0191 334 1121
archaeological.services@durham.ac.uk · www.dur.ac.uk/archaeological.services

1. Summary

The project

1.1 This report presents the palaeoenvironmental analysis of waterlogged ditch fill [441], sampled during archaeological works at Archdeacon Newton, County Durham.

1.2 The works were commissioned by The Archaeological Practice Ltd and conducted by Archaeological Services Durham University.

Results

1.3 There is consistent evidence from the plant macrofossils, pollen and insects that ditch [F423] was located in a mixed arable/pastoral farming setting. Stable manure and other farm waste from outbuildings were periodically disposed of within the feature, which held shallow stagnant water. The ditch margins were well-vegetated and probably bordered by a hedge. There is some evidence for the use of fibre/oil crops, in addition to pot herbs grown for ornamental or medicinal use.

2. Project background

Location and background

2.1 An archaeological excavation was conducted by The Archaeological Practice Ltd at Archdeacon Newton, County Durham. Palaeoenvironmental assessment of ditch, pit and gully fills produced small charred macrofossil assemblages generally consistent with the provisional medieval date of the site (Archaeological Services 2022). Waterlogged conditions within ditch fills [506] and [441] resulted in the preservation of large quantities of organic remains. This report presents analysis results of plant macrofossil, wood, pollen and insects from the primary fill [441] of ditch [F423]. Radiocarbon analysis of a waterlogged plum fruitstone from this fill indicated a 14th century date (Appendix 1).

Objective

2.2 The objective of the scheme of works was to analyse the palaeoenvironmental remains within ditch fill [441] with the aim of reconstructing the local environment and land use patterns during the medieval period.

Dates

2.3 Analysis and report preparation was conducted between April and June 2022.

Personnel

2.4 Specialist reporting was by Dr Charlotte O'Brien (plant macrofossils/wood), Dr Suzi Richer (pollen), Dr Stephen Davis (insects) and Eva Kourela (insects).

Archive

2.5 The site code is **AN21**, for **A**rchdeacon **N**ewton 20**21**. The finds are currently held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University awaiting collection. The flots and plant remains will be retained at Archaeological Services Durham University.

3. Plant macrofossil analysis

Methods

3.1 Five litres of ditch fill [441] were manually floated and sieved through a 500μm mesh. To recover additional waterlogged plant remains, a further 0.2l subsample was washed through a stack of sieves (150μm, 250μm, 500μm) and examined wet. Flots were examined at up to x60 magnification using a Leica MZ7.5 stereomicroscope for botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University, and by reference to relevant literature (Cappers *et al.* 2006). Plant nomenclature follows Stace (2010). Habitat classifications follow Preston *et al.* (2002). Waterlogged seeds were scored from 1 to 5, where 1 = 1-2 seeds, 2 = 3-10 seeds, 3 = 11-40 seeds, 4 = 41-200 seeds, 5 = >200 seeds.

3.2 Fourteen roundwood fragments were randomly selected for wood species identification. For this, the transverse, radial and tangential sections were examined at up to x500 magnification using a Nikon Eclipse microscope. Identifications were assisted by the descriptions of Gale & Cutler (2000), Hather (2000) and Schweingruber (1990), and modern reference material held in the

Palaeoenvironmental Laboratory at Archaeological Services Durham University. Where comparable anatomical properties prevent secure identification, wood remains are recorded to genus level or assigned to family groups. *Prunus* sp includes blackthorn, plum, bird or wild cherry. Willow and poplar are grouped as Salicaceae (willow family), and apple, hawthorns and whitebeams are represented by the subfamily Maloideae.

3.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Petts & Gerrard 2006; Hall & Huntley 2007; Huntley 2010).

Results

3.4 The sample is dominated by woody material, comprising small twigs/branches, bark, buds and a few thorns. The wood fragments range in diameter from 5-18mm comprising 3-14 growth rings with identified species including Salicaceae, Maloideae, ash, hazel and *Prunus* sp. Small trees/shrubs are also indicated by fruitstones of hawthorn, wild plum and elderberry, the latter being present in large numbers. A predominance of heterogeneous rays was noted for the Salicaceae fragments, suggesting they probably derive from willow rather than poplar.

3.5 Wet conditions within and beside the ditch are reflected in the presence of aquatic marginal plants such as crowfoots (*Ranunculus* subgenus *Batrachium*), bulrush (*Typha* sp), hemlock (*Conium maculatum*), sedges (*Carex* sp), bittersweet (*Solanum dulcamara*) and rushes (*Juncus* sp). Standing water is further suggested by the presence of cladoceran ephippia (water flea resting eggs) in addition to traces of vivianite, a blue mineral indicative of organic material in wet or waterlogged conditions (McGowan & Prangnell 2006).

3.6 Taxa of disturbed, nutrient-rich habitats are common, particularly nettle (*Urtica dioica*), with redshank (*Persicaria maculosa*) and common chickweed (*Stellaria media*) also present. Indicators of rough grassland include sow-thistles (*Sonchus asper* and *S. oleraceus*), selfheal (*Prunella vulgaris*) and buttercups (*Ranunculus* sp), with smooth sow-thistle frequently occurring in trampled grassland. An achene of stinking chamomile (*Anthemis cotula*) points to the presence of this troublesome arable weed amongst the local cereal crops. A few hemp seeds (*Cannabis sativa*), and a single fruit of pot marigold (*Calendula officinalis*) are also noted.

3.7 The only charred remains are two poorly preserved cereal grains (oats and cf. barley) and a trace of charcoal (*Prunus* sp).

Discussion

3.8 The plant macrofossil evidence is consistent with *in situ* deposition in a wet ditch. Small willow trees will have favoured these damp conditions, with the ubiquity of common hedgerow species such as hazel, elder, ash, hawthorn and wild plum suggesting the ditch was bordered by a hedge. There is evidence for open disturbed grassland with some areas of arable cultivation within the wider landscape.

3.9 Some of the wild taxa, particularly those associated with rough grassland, may derive from herbivore dung, the presence of which is indicated by the insect and pollen data (discussed below). Other than stable manure, however, there is little evidence for large scale disposal of occupation waste in the feature.

3.10 The presence of hemp is unsurprising, as this was an important fibre and oil crop in the medieval period. While there is evidence that waterlogged ditches and moats were used for retting (Hall & Huntley 2007), the few seeds recorded here are perhaps more likely to derive from casual weeds. Pot marigold (*Calendula officinalis*) is uncommon in the archaeological record of this region (Hall & Huntley 2007) and may have been grown as a pot-herb, or for medicinal or ornamental purposes (Preston *et al.* 2002).

4. Pollen analysis

Methods

4.1 A single 2 ml subsample from ditch fill [441] was extracted by Suzi Richer (Richer Environmental) and submitted to the laboratories at Quaternary Scientific (QUEST), University of Reading for chemical preparation. The pollen was extracted as follows (1) sampling a standard volume of sediment (1ml); (2) adding two tablets of the exotic clubmoss *Lycopodium clavatum* spores to provide a measure of pollen concentration in each subsample; (3) deflocculation of the subsample in 1% sodium pyrophosphate; (4) sieving of the subsample to remove coarse mineral and organic fractions (>125 µm); (5) acetolysis; (6) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0 g/cm^3); (7) mounting of the subsample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough subsample cleaning in filtered distilled water.

4.2 An Olympus binocular polarising microscope was used for identification at x400 magnification. The pollen reference manuals by Moore *et al.* (1991) and Beug (2004) were used to aid in pollen identification alongside the author's own reference collection. Nomenclature for pollen follows Beug (2004). Reference photographs and criteria from van Geel (1978) were used to aid in the specific identification of NPPs. Types of microscopic charcoal were identified according to Courtney Mustaphi & Pisaric (2014).

4.3 Analysis involved recording pollen, spores and non-pollen palynomorphs (NPPs) until a count of 300 total land pollen grains (TLP) was achieved.

Results

4.4 The pollen results are presented in Appendix 3. Pollen and microcharcoal were present in good concentrations, but in varying states of preservation. Many grains were folded and crumpled which precluded identification but suggested that the grains had been transported or subject to compaction, possibly through the drying out of the sediments (Delcourt & Delcourt 1980).

4.5 The pollen assemblage contained primarily herbaceous taxa from grasses (Poaceae) and dandelion (*Crepis*-type), with plantains (*Plantago* sp.) and brassicas (Brassicaceae) also forming a strong component of the assemblage. In addition, the carrot family (Apiaceae), knapweed (*Centaurea jacea*-type), goosefoot (Chenopodiaceae), meadowsweet (*Filipendula*), knotweed (*Polygonum aviculare*) and buttercup (*Ranunculus acris*-type) were also present in significant quantities. A single grain of cornflower (*Centaurea cyanus*-type) pollen was also noted.

4.6 Whilst the plantain is evidence of trampled ground, further evidence of human activity was present in the form of cereal pollen grains, both from unidentified species and from wheat/oat (*Triticum/Avena*) and rye (*Secale*).

4.7 Tree and shrub pollen was present in low amounts from oak (*Quercus robur-pubescens*-type), Scots pine (*Pinus sylvestris*) and willow (*Salix* sp.).

4.8 Pollen from sedges (Cyperaceae), bulrushes (*Typha latifolia*) and algal spores all allude to watery contexts nearby, which varied from open water (bulrushes) to damp ground (sedges). The microcharcoal in the sample was primarily from the burning of wood, rather than leaves and grasses. Two whipworm eggs (*Trichuris trichiura/suis*) were present, indicating that faecal matter was entering the deposit.

Discussion

4.9 Overall, the pollen suggested a landscape that primarily consisted of open disturbed grassland, with some arable agriculture and trees in the vicinity. There was evidence of a variety of wet environments in the wider area, from boggy/damp ground to open water (indicated by the bulrushes). The strong presence of grasses in conjunction with plantain would suggest that the ground had been well trampled or disturbed (Behre 1981).

4.10 There was evidence for waste disposal, indicated by the presence of whipworm eggs, suggesting that faecal matter was present or disposed of here. Other medieval moated sites have also revealed similar pollen profiles with whipworm eggs (e.g. Hartlebury Castle, Worcestershire (Richer 2021b); Hinckley Castle, Leicestershire (Richer 2022)), which would lend favour to the interpretation that this feature was a moat in the medieval period. In addition, evidence of cornflower pollen was found, which is significant because it does not travel far from its source plant and its insect-pollinated nature. As well as being an indication of arable agriculture (Bakels 2012), in medieval sites its presence suggests crop-processing waste, particularly from straw that was likely used as bedding/flooring material (e.g. Richer 2020, Richer 2021a).

5. Insect analysis

Methods

5.1 The single 5 litre sample of ditch fill [441] was processed using a standard paraffin flotation method (Kenward *et al.* 1980). The sample was provided ready-sieved to 300μm. However, it was rewashed through a 300μm sieve until the water ran clean. The washed sample was mixed with a small amount of paraffin and topped up with cold water, then left to settle for 5-10 minutes. The floating material was decanted off and the flotation process from the addition of cold water repeated three times, after which no further insect remains were observed to float. The flot was then washed with detergent and warm water to remove the paraffin, and then stored in 100% ethanol for analysis. The computer package BugsCEP (Buckland & Buckland 2006) was used to provide ecological information for individual taxa. Taxonomy follows that adopted by Lucht (1987) with revisions by Böhme (2005).

5.2 For the purpose of interpretation, insects were assigned to one of the following ecological groupings (modified from Robinson 1981; 1983) using ecological information derived from Koch (1989, 1989a 1992): **AD** = arable or disturbed ground

taxa; **AQ** = aquatic taxa; **AM**= aquatic/marsh (generally waterside vegetation); **CAR** = carrion; **LATH** = mould beetles and their affiliates; **M** = meadow taxa (especially weevils of the genera *Sitona* and *Apion*); **PHT** = Phytophages (with the exception of those taxa in the M category); **PD** = pasture or dung indicators; **REF** = refuse taxa; **SYN** = synanthropic taxa; **T** = woodland taxa. Taxa which could not clearly be assigned an ecological grouping were deemed 'unclassified' and not counted in the final sum for percentage calculations. The overall proportion of these groups is shown in Figure 1 and the species list in Appendix 4.

Results

5.3 Although the sample was small in volume, it yielded abundant and diverse insect remains (229 individuals; 73 taxa). A diverse group of aquatic insects was recovered. Most of these are indicative of stagnant water such as *Agabus bipustulatus, Ochthebius dilatatus*, and *Ilybius* sp. (Friday 1988). The hydrophilid *Helophorus grandis* is typical of muddy, grassy locations at the margins of pools or ponds (Merritt 2006). While some taxa recovered are capable of living in running water (e.g. *Limnebius truncatellus* - Hansen 1987), no taxa characteristic of fast flowing, well-oxygenated waters were recovered. Large numbers of *Daphnia* ephippae were also observed in the sample, again indicating that the water was likely at most very slow moving. Other indications of a damp, waterside environment were recorded, including the carabid *Elaphrus cupreus* which lives in vegetation beside pools or ponds (Lindroth 1974), the staphylinids *Lesteva longoelytrata*, typical of wet moss by streams (Atty 1983), and the scirtid *Cyphon coarctatus* which can be found in all kinds of vegetation on the banks of standing water, as well as in damp woodland (Koch 1989; Duff 1993).

5.4 Refuse taxa were well-represented, some of which indicate quite foul conditions. The staphylinid *Xylodromus concinnus* is often found in settlement debris (Hinton 1945) and could be regarded as a facultative synanthrope. *Anotylus complanatus*, can be found in decaying vegetation or sometimes in herbivore dung (Koch 1989) while *A. nitidulus* can also be found in decomposing organic matter and carrion (Backlund 1945). More specific indicators of herbivore dung include a number of *Aphodius* dung beetles, mostly not identifiable to species and the oxytelline staphylinids, *Platystethus arenarius* and *Anotylus tetracarinatus* (e.g. Lipkow & Irmler 2016).

5.5 A small synanthropic fauna was identified, along with taxa indicative of mouldy vegetation (e.g. *Latridius minutus* grp.; *Corticaria* sp.; *Monotoma* sp.; *Atomaria* sp.). These include some species characteristic of Kenward & Hall's (1995) 'house fauna' such as the mycetophagid *Typhaea stercorea* and a ptinid 'spider beetle'. Nitulids of the genus *Carpophilus* are primarily pests of stored vegetable foodstuffs (Duff 2020, 356-358), as is the red flour beetle *Tribolium castaneum*, which is principally a pest of stored grain (Georghiou 1977). Two individuals of the trogid *Trox scaber* were also identified. While this species is known from natural environments such as birds' nests (e.g. Alexander 1994) this species is more usually associated with carrion, especially with old bones (Duff 1993). As such it is regarded as key indicator species of tanneries (Hall & Kenward 2011). A single individual of the human flea *Pulex irritans* was also recovered; however, despite its name *P. irritans* is not restricted to human hosts, and may be associated with other domesticates, especially pigs (e.g. Reilly 2014). Furthermore, the characteristic house floor species (e.g. *Aglenus brunneus*; *Mycetaea subterranea*) are absent; these taxa are found in compost-like

flooring material at numerous medieval sites (e.g. Anglo-Scandinavian York – Kenward & Hall 1995; Deer Park Farm, Co. Antrim – Kenward *et al.* 2011). This may imply that the refuse was derived from an outbuilding rather than an actual dwelling, perhaps a pigsty.

5.6 The sample included a diverse group of phytophagous taxa, mostly characteristic of wet meadow environments. These include 'flea beetles' such as *Phyllotreta atra*, *P. aerea* and *P. consobrina* all of which live on brassicas, as does the weevil *Ceutorhynchus contractus*. The chrysomelid *Chaetocnema concinna* feeds on members of the Polygonaceae (primarily *Rumex* spp.) (Bullock 1993). The distinctive apionid weevils *Oxystoma pomonae* and *Oxystoma craccae* primarily live on vetches (Koch 1992; Anderson 1996; Gønget 1997).

5.7 A small group of insects indicative of timber was also recovered, including the scolytid *Leperesinus orni*, characteristic of small branches of ash (*Fraxinus excelsior*), the woodworm, *Anobium punctatum*, the closely-related *Ptilinus pectinicornis*, characteristic of heartwood of deciduous trees (Duff 1993), and a single fragment of *Rhizophagus* sp., which are predatory on bark beetles. Other than the woodworm this is more a fauna of natural woodland/coarse woody debris than of timber construction and most likely implies the presence of established woodland in the vicinity of the site.

5.8 The combination of dung/refuse taxa, abundant phytophages, some house fauna and structural pests (admittedly here only represented by *A. punctatum*) is often regarded as indicative of 'stable manure' (e.g. Kenward & Hall 1997; Hall & Kenward 1998).

Discussion

5.9 The assemblage recovered is overwhelmingly dominated by waterside and aquatic taxa, including typical floodplain phytophages of brassicas and Polygonaceae. No fast-flowing water is indicated. There are also strong indications of herbivore dung although none of the *Aphodius* spp. recovered is indicative of a particular animal species. Many of the refuse taxa recovered are likely to have also lived in herbivore dung or dung-rich environments. The group of woodland taxa recovered are more likely to indicate well-established woodland, including some ash, than to be indicative of buildings. This mirrors the wood analysis results which suggest the proximity of a hedgerow (Section 3).

5.10 Alongside this typical rural assemblage is a small group of insects related to settlement. The assemblage ticks many of the requisite boxes for the 'stable manure' indicator group but also includes some slightly more unusual elements such at *Trox* scaber, which is more usually seen in urban situations, especially in tanneries and indicators of stored products.

5.11 Overall, the assemblage probably represents a boundary ditch within a mixed-use arable/pastoral farming setting, holding stagnant water and bordered by lush vegetation, into which some farm waste and/or herbivore dung is collecting.

6. Conclusion

6.1 There is consistent evidence from the plant macrofossils, pollen and insects for a landscape comprising open disturbed grassland with some arable cultivation. Macrofossils and/or pollen from the ditch and other features indicate this arable cultivation included oats, bread wheat, barley, rye and peas, which are typical medieval crops for this region (Hall & Huntley 2007). Stable manure and other farm waste from outbuildings was periodically disposed of within the ditch, which held shallow stagnant water and was probably bordered by a hedgerow. There is some evidence for the use of fibre/oil crops, in addition to pot herbs grown for ornamental or medicinal use.

7. Sources

Alexander, K N A, 1994 *An Annotated Checklist of British Lignicolous & Saproxylic Invertebrates.* National Trust Estates Advisors' Office, Cirencester (Draft).

Anderson, R, 1996 *Species inventory for Northern Ireland. Carabid beetles*. Belfast

Archaeological Services 2022 *Archdeacon Newton, County Durham: palaeoenvironmental assessment*. Unpublished report **5709**, Archaeological Services Durham University

Atty, D B, 1983 *Coleoptera of Gloucestershire*. Cheltenham

Backlund, H O, 1945 *Wrack Fauna of Sweden and Finland*. Opuscula Entomologica Suppl. **5**

Bakels, C, 2012 The early history of Cornflower (Centaurea cyanus L.) in the Netherlands. *Acta Palaeobotanica* **52(1)**, 25–31

Behre, K-E, 1981 The interpretation of anthropogenic indicators in pollen diagrams. *Pollen et Spores* **23**, (2), 225-245

Beug, H-J, 2004 *Leitfaden der Pollenbestimung*. Munich

Böhme, J, 2005 *Die Käfer Mitteleuropas. K. Katalog (Faunistiche Übersicht)* 2nd ed. Munich

Bronk Ramsey, C, 2009 Bayesian analysis of radiocarbon dates. *Radiocarbon* **51(1)**, 337-360

Bronk Ramsey, C, 2020 OxCal 4.4.2 Manual. https://c14.arch.ox.ac.uk/oxcal.html

Buckland P I, & Buckland P C, 2006 *Bugs Coleopteran Ecology Package*

Bullock, J A, 1993 Host Plants of British Beetles: A List of Recorded Associations. *Amateur Entomologist* **11a**, 1-24

Cappers, R T J, Bekker, R M, & Jans, J E A, 2006 *Digital Seed Atlas of the Netherlands*. Groningen

Courtney Mustaphi, C J, & Pisaric, M F J, 2014 A classification for macroscopic charcoal morphologies found in Holocene lacustrine sediments. *Prog Phys Geog* **38 (6)**, 734–754

Delcourt, P, & Delcourt, H, 1980 Pollen preservation and quaternary environmental history in the southeastern United States, *Palynology* **4**, 215–231

Duff, A, 1993 *Beetles of Somerset: their status and distribution*. Taunton

Duff, A, G, 2020 *Beetles of Britain and Ireland. Volume 3: Geotrypidae to Scraptiidae*. Norfolk

Friday, L E, 1988 A key to the adults of British water beetles. *Field Studies* **7**, 1-151

Gale, R, & Cutler, D, 2000 *Plants in archaeology; identification manual of vegetative plant materials used in Europe and the southern Mediterranean to c.1500*. Otley

Georghiou, G, P, 1977 *The insects and mites of Cyprus, with emphasis on species of economic importance to agriculture, forestry, man and domestic animals.* Athens

Gønget, H, 1997 The Brenthidae (Coleoptera) of Northern Europe. *Fauna Entomologica Scandinavica* **34**. Leiden

Hall, A R, & Huntley, J P, 2007 *A review of the evidence for macrofossil plant remains from archaeological deposits in northern England*. Research Department Report Series no. **87**. London

Hall, A R, & Kenward, H K, 1998 Disentangling dung: pathways to stable manure. *Environmental Archaeology* **1**, 123-126

Hall, A R, & Kenward, H K, 2011 Plant and invertebrate indicators of leather production, in Thomson, R, & Mould, Q, (eds) *Leather Tanneries; the Archaeological Evidence*. London

Hansen, M, 1987 *The Hydrophiloidea (Coleoptera) of Fennoscandia and Denmark,* Fauna Entomologica Scandinavica, **18**. Leiden

Hather, J G, 2000 *The identification of the Northern European Woods: a guide for archaeologists and conservators*. London

Hinton, H E, 1945 *A Monograph of the Beetles associated with stored products*, **I**. London

Huntley, J P, 2010 *A review of wood and charcoal recovered from archaeological excavations in Northern England*. Research Department Report Series no. **68**. London

Kenward, H K, Hall, A R, Allison, E P, & Carrott, J, 2011 Environment, activity and living conditions at Deer Park Farms: evidence from plant and invertebrate remains in Lynn, C J, & McDowell, J A, (eds), *Deer Park Farms: the excavation of a raised rath in the Glenarm valley, Co. Antrim, 497-548*. North Ireland Archaeological Monograph **9**. Belfast

Kenward, H K, & Hall, A R, 1995 Biological Evidence from Anglo-Scandinavian Deposits at 16-22 Coppergate. Archaeology of York 14/7. Council for British Archaeology for York Archaeological Trust, York

Kenward, H, & Hall, A, 1997 Enhancing bioarchaeological interpretation using indicator groups: stable manure as a paradigm. *J Arch Sci* **24 (7)**, 663-673

Kenward, H K, Hall, A R, & Jones, A K G, 1980 A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits. *Sci Archaeol* **22**, 3–15

Koch, K, 1989 *Die Käfer Mitteleuropas. Ökologie, 1*. Krefeld

Koch, K, 1989a *Die Käfer Mitteleuropas. Ökologie 2*. Krefeld

Koch, K, 1992 *Die Käfer Mitteleuropas. Ökologie 3*. Krefeld

Lindroth, C H, 1974 *Coleoptera: Carabidae. Handbooks for the identification of British insects* **IV**, 2. London

Lipkow, E, & Irmler, U, 2016 Habitat choice experiments with dung beetles (Coleoptera: Staphylinidae,Hydrophilidae, Scarabaeidae). *Faun-Ökol. Mitt.* **9**, 471-481

Lucht, W H, 1987 *Die Käfer Mitteleuropas, Katalog*. Krefeld

McGowan, G, & Prangnell, J, 2006 The significance of vivianite in archaeological settings. *Geoarchaeol* **21(1)**, 93-111

Merritt, R, 2006 Atlas of the water beetles (Coleoptera) and water bugs (Hemiptera) of Derbyshire, Nottinghamshire and South Yorkshire, 1993-2005 *Sorby Record Special Series* **14**

Moore, P D, Webb, J A, & Collinson, M E, 1991 *Pollen Analysis*. Oxford

Petts, D, & Gerrard, C, 2006 *Shared Visions: The North-East Regional Research Framework for the Historic environment*. Durham

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

Reilly, E, 2014 From Christchurch Place to Fishamble Street: Developments in archaeoentomology in Dublin, Ireland, since 1981. *Quaternary International* **341**, 143-151

Reimer, P, Austin, W, Bard, E, Bayliss, A, Blackwell, P, Bronk Ramsey, C, . . . Talamo, S, 2020 The IntCal20 Northern Hemisphere Radiocarbon Age Calibration Curve (0–55 cal kBP). *Radiocarbon* **62(4),** 725-757

Richer, S, 2020 *Valkensdorf gate 30, Trondheim, Norway, pollen and non-pollen assessment report*. Unpublished report QUEST

Richer, S, 2021a *Pollen Assessment Report, Lenton, Nottingham.* Unpublished report Richer Environmental **21/05**

Richer, S, 2021b *Pollen Assessment Report, Hartlebury Castle, Worcestershire*. Unpublished report Richer Environmental **21/20**

Richer, S, 2022 *Hinckley Castle Bailey Ditch, Argents Mead, Hinckley, Leicestershire, Pollen Assessment Report.* Unpublished report Richer Environmental **22/04**

Robinson, M A, 1981 The use of ecological groupings of Coleoptera for comparing sites. in M Jones & G Dimbleby (eds) *The Environment of Man: The Iron Age to the Anglo-Saxon Period*. BAR **S87**, 251-286. Oxford

Robinson, M A, 1983 Arable/Pastoral ratios from insects, in M Jones (ed) *Integrating the Subsistence Economy*. BAR **S181**, 19-47. Oxford

Schweingruber, F H, 1990 *Microscopic wood anatomy*. Birmensdorf

Stace, C, 2010 *New Flora of the British Isles*. Cambridge

van Geel, B, 1978 A palaeoecological study of Holocene peat bog sections in Germany and The Netherlands, based on the analysis of pollen, spores and macro-and microscopic remains of fungi, algae, cormophytes and animals. *Rev Palaeobot Palynol* **25**:1–120

Appendix 1: Summary of radiocarbon dating

Laboratory code	Sample	Context	Context description	Material used for radiocarbon dating	$\delta^{13}C$ ‰	Radiocarbon Age BP	Calibrated date 68.2% probability	Calibrated date 95.4% probability
SUERC-104158 GU61242	7	441	Primary fill of waterlogged ditch F423	*Prunus domestica* (plum) waterlogged fruitstone	-28.1	625 ± 24	1302 (30.7%) 1325 cal AD 1353 (19.4%) 1369 cal AD 1379 (18.1%) 1393 cal AD	1297 (95.4%) 1397 cal AD
SUERC-104159 GU61243	8	446	Linear gully	Charred bread wheat-type grain	-22.7	864 ± 21	1175 (68.3%) 1217 cal AD	1054 (0.8%) 1060 cal AD 1156 (94.7%) 1228 cal AD
SUERC-104160 GU61244	9	449	Small pit cut into cobble layer 448	Ash charcoal (2 wide growth rings - stemwood)	-26.0	3148 ± 25	1491 (5.8%) 1483 cal BC 1450 (62.5%) 1402 cal BC	1498 (88.9%) 1386 cal BC 1339 (6.5%) 1319 cal BC

[The calibrated age ranges are determined using OxCal4.4.2 (Bronk Ramsey 2009; 2020); IntCal20 curve (Reimer *et al.* 2020)]

Appendix 2: Plant macrofossil data

Sample		**7**
Context		**441**
Feature number		**423**
Feature		**Ditch**
Calibrated C14 date (95.4% probability)		Cal AD 1297 – 1397
Volume processed (l)		6
Volume of flot (ml)		300
Flot matrix		
Beetle / insect		++
Charcoal		(+)
Cladocera (water flea)	ephippia	++
Leaf fragments	indet.	+
Moss		+
Vegetative material (uncharred)		+++
Vivianite		+
Wood (twigs / branches)		+++
Charred remains (total count)		
(c) *Avena* sp (Oat species)	grain	1
(c) Cerealia indeterminate	grain	1
Waterlogged remains (abundance)		
(a) *Anthemis cotula* (Stinking Chamomile)	achene	1
(c) *Calendula officinalis* (Pot Marigold)	fruit	1
(c) *Cannabis sativa* (Hemp)	seed	2
(q) *Ranunculus* subgenus *Batrachium* (Crowfoots)	achene	2
(r) *Persicaria maculosa* (Redshank)	nutlet	3
(r) *Sonchus asper* (Prickly Sow-thistle)	achene	1
(r) *Sonchus oleraceus* (Smooth Sow-thistle)	achene	1
(r) *Stellaria media* (Common Chickweed)	seed	2
(r) *Urtica dioica* (Common Nettle)	achene	5
(t) *Crataegus monogyna* (Hawthorn)	fruitstone	2
(t) *Prunus domestica* ssp *insititia* (Wild Plum)	fruitstone	2
(t) *Sambucus nigra* (Elder)	fruitstone	4
(w) *Carex* sp (Sedges)	trigonous nutlet	1
(w) *Conium maculatum* (Hemlock)	fruit	2
(w) *Juncus* sp (Rushes)	seed	1
(w) *Solanum dulcamara* (Bittersweet)	seed	1
(w) *Typha* sp (Bulrush)	seed	1
(x) *Prunella vulgaris* (Selfheal)	nutlet	1
(x) *Ranunculus* subgenus *Ranunculus* (Buttercup)	achene	2
(x) *Rumex* sp (Docks)	nutlet	2
(x) *Stachys* sp (Woundworts)	nutlet	1
Identified wood (✓presence)		
Corylus avellana (Hazel)		✓
Fraxinus excelsior (Ash)		✓
Maloideae (Hawthorn, apple, whitebeams)		✓
Prunus sp (Cherries-blackthorn, plum, wild and bird cherry)		✓
Salicaceae (Willow, poplar)		✓

[a-arable; c-cultivated; q-aquatic; r-ruderal; t-tree/woodland; w-wet/damp ground; x-wide niche.
(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant
Waterlogged remains are scored from 1-5 where 1: 1-2; 2: 3-10; 3: 11-40; 4: 41-200; 5: >200]

Appendix 3: Pollen data

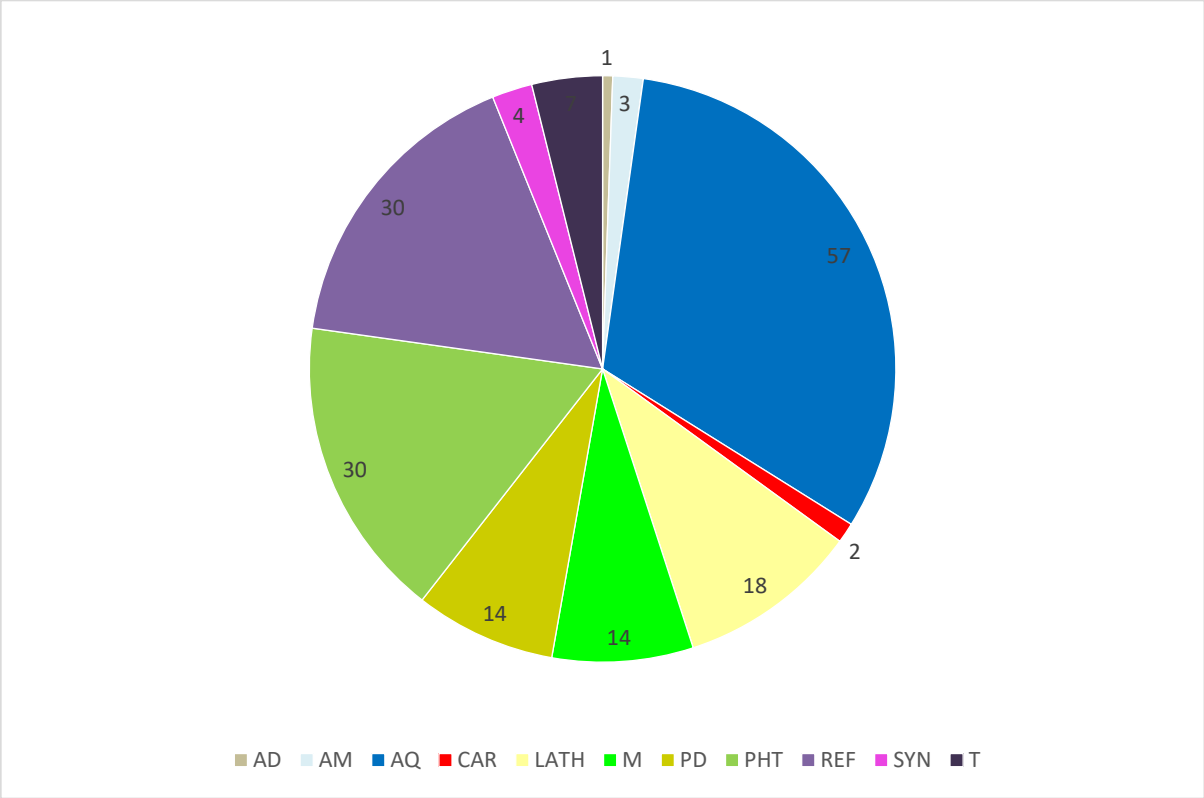
Sample	**7**
Context	**441**
Feature number	**423**
Feature	**Ditch**
Trees	
Alnus	1
Pinus sylvestris	2
Quercus	7
Shrubs	
Coryloid-type	1
Prunus-type	1
Salix	14
Heaths	
Calluna vulgaris	1
Herbs	
Poaceae undiff.	83
Ceralia: undiff	11
Cerealia: *Triticum/Avena*	4
Cerealia: *Secale*	2
Cyperaceae	21
Apiaceae	12
Asteraceae	10
Brassicaceae	23
Bupleurum-type	2
Centaurea jacea-type	4
Centaurea cyanus	1
Chenopodiaceae	5
Cirsium-type	1
Crepis-type	49
Filipendula-type	7
Matricaria-type	4
Plantago sp.	31
Polygonum aviculare-type	7
Ranunculus acris-type	4
Rhinanthus-type	7
Sucissa-type	1
Trifolium repens-type	1
Aquatics	
Tyhpa latifolia-type	20
Spores	
Sphagnum	3
Algal spore	9
NPPs	
Cercophera-type	1
Glomus sp.	1
Sporormiella-type	3
Trichuris trichura/suis	2
Others	
Microcharcoal: wood	288
Microcharcoal: leaf/grass	23
Folded	10
Exotic marker counted	177
Total Land Pollen	317

Appendix 4: Insect data

Sample	**7**
Context	**441**
Feature number	**423**
Feature	**Ditch**
Carabidae	
Elaphrus cupreus Duft.	1
Clivina fossor (L.)	1
Dyschirius aeneus (Dej.)	1
Bembidion lampros (Hbst.)	1
Bembidion sp.	2
Pterostichus melanarius (Ill.)	2
Dytiscidae	
Hydroporus sp.	1
Agabus bipustulatus (L.)	1
Ilybius sp.	1
Hydraenidae	
Hydraena riparia Kug.	4
Ochthebius dilatatus Steph.	2
Ochthebius sp.	22
Limnebius truncatellus/papposus (Thun.)/Muls.	1
Hydrophilidae	
Helophorus grandis Ill.	5
Helophorus brevipalpis Bedel	17
Helophorus spp.	1
Cercyon obsoletus (Gyll.)	1
Cercyon sp.	2
Megasternum obscurum (Marsham)	1
Anacaena sp.	1
Laccobius sp.	2
Corylophidae	
Orthoperus nigrescens Steph.	1
Staphylinidae	
Micropeplus porcatus (F.)	1
Omalium sp.	2
Xylodromus concinnus (Marsham)	1
Lesteva longoelytrata (Goeze)	7
Carpelimus bilineatus Steph.	8
Carpelimus elongatulus (Er.)	1
Anotylus rugosus (F.)	4
Anotylus nitidulus (Grav.)	3
Anotylus complanatus (Er.)	1
Anotylus tetracarinatus Block	2
Platystethus arenarius (Geoff.)	3
Stenus sp.	2
Xantholinus sp.	2
Tachyporus hypnorum (F.)	1
Aleocharinae indet.	26
Cantharidae	
Cantharis sp.	1
Scirtidae	
Cyphon coarctatus Payk.	2
Nitidulidae	
Carpophilus sp.	1
Meligethes sp.	6
Monotomidae	2
Rhizophagus sp.	1
Monotoma sp.	2
Cryptophagidae	
Cryptophagus sp.	2
Atomaria sp.	2
Latridiidae	
Latridius minutus grp.	3
Corticaria sp.	5
Mycetophagidae	
Typhaea stercorea (L.)	1

Anobiidae	
Anobium punctatum (Deg.)	3
Ptinidae	
Ptilinus pectinicornis (L.)	1
Ptinus sp.	1
Tenebrionidae	
Tribolium castaneum (Hbst.)	1
Trogidae	
Trox scaber (L.)	2
Scarabaeidae	
Aphodius ater (Deg.)	1
Aphodius sp.	7
Cerambycidae indet.	1
Chrysomelidae	
Phyllotreta atra (F.)	1
Phyllotreta aerea All.	6
Phyllotreta consobrina (Curtis)	2
Phyllotreta sp.	5
Longitarsus sp.	2
Chaetocnema concinna (Marsham)	4
Curculionidae	
Leperisinus orni (Fuchs)	1
Apion sp.	7
Ceratapion gibbirostre (Gyll.)	1
Oxystoma craccae (L.)	1
Oxystoma pomonae (F.)	1
Otiorhynchus sp.	1
Sitona lineatus (L.)	3
Tanysphyrus lemnae (Payk.)	1
Dorytomus sp.	1
Ceutorhynchus contractus (Marsham)	9
Siphonaptera	
Pulex irritans	1

Figure 1: Proportion of ecological category within the insect assemblage (excluding *Pulex irritans* and taxa considered 'Unclassified'). **AD** = arable or disturbed ground taxa; **AQ** = aquatic taxa; **AM**= aquatic/marsh; **CAR** = carrion; **LATH** = mould beetles and their affiliates; **M** = meadow taxa (especially weevils of the genera *Sitona* and *Apion*); **PHT** = Phytophages; **PD** = pasture or dung indicators; **REF** = refuse taxa; **SYN** = synanthropic taxa; **T** = woodland taxa.



ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
The Archaeological Practice Ltd

Archdeacon Newton
County Durham

palaeoenvironmental assessment

report 5709
March 2022

Durham University

Contents

South Road · Durham · DH1 3LE · tel 0191 334 1121
archaeological.services@durham.ac.uk · www.dur.ac.uk/archaeological.services

1. Summary

The project

1.1 This report presents the palaeoenvironmental assessment results of ten bulk samples taken during archaeological works at Archdeacon Newton, County Durham.

1.2 The works were commissioned by The Archaeological Practice Ltd, and conducted by Archaeological Services Durham University.

Results

1.3 Most of the deposits have limited evidence of occupation waste. Cereal crops characteristic of the medieval period, namely bread wheat and oats, are noted in fills [446, 449, 452 and 424]. Other than that, the palaeoenvironmental remains provide no firm dating evidence.

1.4 The palaeoenvironmental evidence for fills [506] and [441] is consistent with *in situ* deposition in a wet ditch, moat or pond, but it is not possible to distinguish between these habitats. However, the plant remains do suggest it was bordered by a hedge.

Recommendations

1.5 If a date is established for the organic-rich deposits [506] and [441], then further analysis of the plant macrofossil, pollen and beetle remains would be worthwhile.

1.6 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination. Unprocessed material from [441] and [506] was retained for possible further analyses.

2. Project background

Location and background

2.1 An archaeological excavation was conducted by The Archaeological Practice Ltd at Archdeacon Newton, County Durham. This report presents the palaeoenvironmental assessment results of ten bulk samples, taken from features thought to be mainly medieval in date. These include ditches, pits and gullies, and a possible moat deposit.

Objective

2.2 The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material, and provide the client with appropriate recommendations.

Dates

2.3 The samples were received by Archaeological Services in November 2021. Assessment and report preparation was conducted in March 2022.

Personnel

2.4 Assessment and report preparation was conducted by Lorne Elliott. Sample processing was by Shauna Townsend, Jeff Lowrey and Ronan O'Donnell.

Archive

2.5 The site code is **AN21**. The finds are currently held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University awaiting collection. The flots and charred plant remains will be retained at Archaeological Services Durham University.

3. Methods

3.1 The bulk samples were manually floated and sieved through a 300μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identifications were aided by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University, and by reference to relevant literature (Cappers *et al.* 2006). Plant nomenclature follows Stace (2010). Habitat classification follows Preston *et al.* (2002).

3.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating and to determine the nature and condition of the assemblages. The transverse, radial and tangential sections were examined at up to x500 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990), Gale & Cutler (2000) and Hather (2000), and modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University.

3.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Petts & Gerrard 2006; Hall & Huntley 2007; Huntley 2010).

4. Results

4.1 Most of the samples produced relatively small flots comprising small amounts of fragmented charcoal and cindered coal, with low numbers of cindered plant remains. The latter includes cereal grains of oats, bread wheat and barley (in order of abundance) and rare occurrences of pea (*Pisum sativum*). The exception to this is pit fill [449], which has a modest amount of charcoal comprising ash, oak, hazel and Maloideae (cf. hawthorn).

4.2 In contrast, fills [501] and [441] are organic-rich with well-preserved plant remains. They have a similar make-up that is dominated by woody material (twigs/bark/buds) and includes a range of plant macrofossils (seeds, fruitstones, achenes and thorns). Most of the noted species are characteristic of hedge banks or are aquatic marginal plants, while the presence of cladoceran ephippia (water flea resting eggs) and caddisfly larvae, provides further evidence that these features once held standing water. Furthermore, traces of vivianite recorded in ditch fill [441] are noteworthy, as this blue mineral is indicative of organic material in wet or waterlogged conditions (McGowan & Prangnell 2006).

4.3 Material for radiocarbon dating is available, although in some cases, the combination of small size, poor condition and mineral-encrusting may mean there is insufficient carbon. Detailed palaeoenvironmental results and a provisional date for each context are presented in Appendix 1

5. Discussion

5.1 Most of the deposits have limited evidence of occupation waste. Cereal crops characteristic of the medieval period, namely bread wheat and oats, are noted in fills [446, 449, 452 and 424]. Other than that, the palaeoenvironmental remains provide no firm dating evidence. There is certainly nothing to indicate pre-medieval activity.

5.2 The palaeoenvironmental evidence for fills [506] and [441] is consistent with *in situ* deposition in a wet ditch, moat or pond, but it is not possible to distinguish between these habitats. However, the plant remains do suggest it was bordered by a hedge.

6. Recommendations

6.1 If a date is established for the organic-rich deposits [506] and [441], then further analysis of the plant macrofossil, pollen and beetle remains would be worthwhile.

6.2 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination. Unprocessed material from [441] and [506] was retained for possible further analyses.

6.3 The following remains are the best options for radiocarbon dating and are ranked in order of their suitability; other material is available if required :-

1. Plum fruitstone from waterlogged deposit [441]
2. Hawthorn fruitstone from waterlogged deposit [506]
3. Ash or hazel charcoal from pit fill [449]
4. A charred bread wheat grain from gully fill [446]
5. A charred pea from ditch fill [452] and/or from pit fill [467]

7. Sources

Cappers, R T J, Bekker, R M, & Jans, J E A, 2006 *Digital Seed Atlas of the Netherlands*. Groningen

Gale, R, & Cutler, D, 2000 *Plants in archaeology; identification manual of vegetative plant materials used in Europe and the southern Mediterranean to c.1500*. Otley

Hall, A R, & Huntley, J P, 2007 *A review of the evidence for macrofossil plant remains from archaeological deposits in northern England*. Research Department Report Series no. **87**. London

Hather, J G, 2000 *The identification of the Northern European Woods: a guide for archaeologists and conservators*. London

Huntley, J P, 2010 *A review of wood and charcoal recovered from archaeological excavations in Northern England*. Research Department Report Series no. **68**. London

McGowan, G, & Prangnell, J, 2006 The significance of vivianite in archaeological settings. *Geoarchaeol* **21(1)**, 93-111

Petts, D, & Gerrard, C, 2006 *Shared Visions: The North-East Regional Research Framework for the Historic environment*. Durham

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

Schweingruber, F H, 1990 *Microscopic wood anatomy*. Birmensdorf

Stace, C, 2010 *New Flora of the British Isles*. Cambridge

Appendix 1: Data from palaeoenvironmental assessment

Sample	Context	Feature	Volume processed (l)	Flot volume (ml)	C14 available	Rank	Notes
1	506	humic deposit ditch/moat/pond	6	1700	Y	****	The flot material of this waterlogged deposit is very organic and rich in plant remains without any super-abundant seeds. Woody material comprising twigs/bark/buds is common and there are a range of plant remains including seeds, fruitstones, thorns and achenes. Noted species are hawthorn, elder, nettle, raspberry, buttercup, docks, sedges, crowfoots and water-plantain. Additional remains indicating the feature held standing water include caddisfly larvae and cladoceran ephippia (water fleas). Beetle remains are present. **Medieval or Post-medieval?**
2	206	F204 - ditch	7	20	?	*	This sample produced a relatively small flot with modern roots/straw and roughly equal amounts of fragmented (mostly <4mm) coal and cinder. There are also a few fragments of charcoal that are similarly small, and in relatively poor condition due to the absorption of precipitating minerals. Identified fragments include Maloideae (cf. hawthorn), ash and Fabaceae (broom or gorse). There are no other charred plant remains and no definite dating evidence. **Uncertain**
4	208	F209 - posthole	9	<10	N	-	The flot contains flecks of coal and traces of modern roots. There is no ecofactual or artefactual evidence. **Uncertain**
6	309	ditch	9	50	N	*	The sample contains a small amount of coal and cinder (fragments <20mm), and traces of calcined bone, hammerscale and charcoal. The charcoal is Fabaceae (broom or gorse). **Medieval or Post-medieval?**
7	441	F423 - ditch	5	300	Y	****	This is also a waterlogged deposit. The flot material is very organic and rich in plant remains without any super-abundant seeds. Woody material comprising twigs/bark/buds is common and there are a range of plant remains including seeds, fruitstones and achenes. The list of noted species includes plum, elder, hawthorn, nettle, buttercup, docks, crowfoots, sow-thistles, bittersweet, woundworts, hemlock and hemp. Additional remains indicating the feature held standing water include cladoceran ephippia (water fleas) and vivianite. Beetle remains are present. **Medieval or Post-medieval?**
8	446	linear gully	12	20	?	**	The flot contains fragmented (mostly <4mm) charcoal and cindered coal, and a small assemblage of charred plant macrofossils. The charcoal is mineral-encrusted Salicaceae (cf. willow) and hazel branchwood. The charred plant remains are mainly cindered cereal grains - predominantly oats with lower numbers of bread wheat and barley - some are indeterminate due to their poor condition. There is also a charred sedge nutlet (trigonous). The residue has pieces of burnt clay (magnetic). **Medieval?**
9	449	small pit cut into cobble layer 448	9	70	Y	***	Charcoal is common, but is mainly present in the residue due to mineral precipitates increasing fragment weight (all fragments ≤ 20mm) - includes hazel, Maloideae (cf. hawthorn), ash and oak (stemwood and branchwood). There is evidence of worked wood and signs of managed growth (particularly wide growth rings noted in some ash fragments). Charred plant macrofossils are sparse, just two poorly preserved (cindered) bread wheat grains. **Medieval?**
11	452	F454 - ditch	14	20	Y	**	The sample produced traces of fragmented charcoal and cindered coal, and a small assemblage of plant remains (charred and uncharred). The charcoal is encrusted oak stemwood. Charred plant remains are spare - a few cindered bread wheat and indeterminate grains and a large pea (>2mm fraction). Uncharred plant remains comprise a modest number of elder fruitstones, which may be contemporary with the feature as this is one of the more decay-resistant plant remains. **Medieval?**
13	424	F425 - gully	13	50	?	**	The sample produced cindered coal (relatively large <30mm) and a few cindered cereal grains (oats and bread wheat). Finds (2 x pot sherds; animal tooth). **Medieval?**
15	467	F466 - pit	10	30	?	**	The sample produced small amounts of fragmented charcoal and cindered coal, and a small charred pea (1mm fraction). The charcoal is encrusted and includes oak, ash and hazel. **Medieval or Post-medieval?**

[Rank: *: low; **: medium; ***: high; ****: very high potential to provide further palaeoenvironmental information. ? = material may be unsuitable for AMS dating due to small size or long-lived species]

APPENDIX 5:

ARCHDEACON NEWTON RADIOCARBON DATING CERTIFICATES

by Scottish Universities Research Environmental Centre (SUERC)

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

01 June 2022

Laboratory Code	SUERC-104158 (GU61242)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Archdeacon Newton, County Durham (AN21)
Context Reference	441
Sample Reference	AN21-7
Material	Uncharred fruitstone : Prunus domestica
$\delta^{13}C$ relative to VPDB	-28.1 ‰
Radiocarbon Age BP	625 ± 24

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

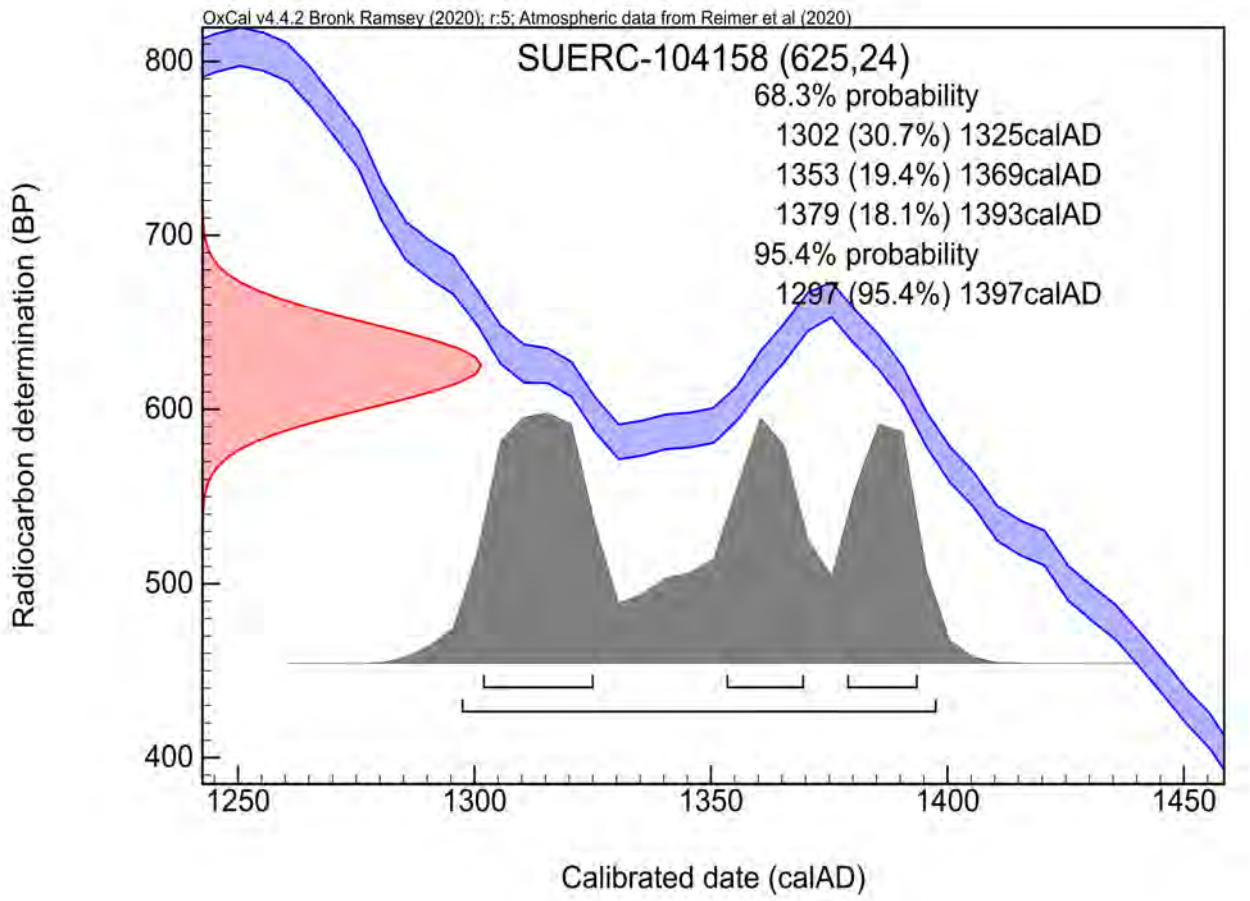
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by :

Checked and signed off by :



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

01 June 2022

Laboratory Code	SUERC-104159 (GU61243)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Archdeacon Newton, County Durham (AN21)
Context Reference	446
Sample Reference	AN21-8
Material	Charred cereal grain : Triticum cf aestivum
$\delta^{13}C$ relative to VPDB	-22.7 ‰
Radiocarbon Age BP	864 ± 21

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

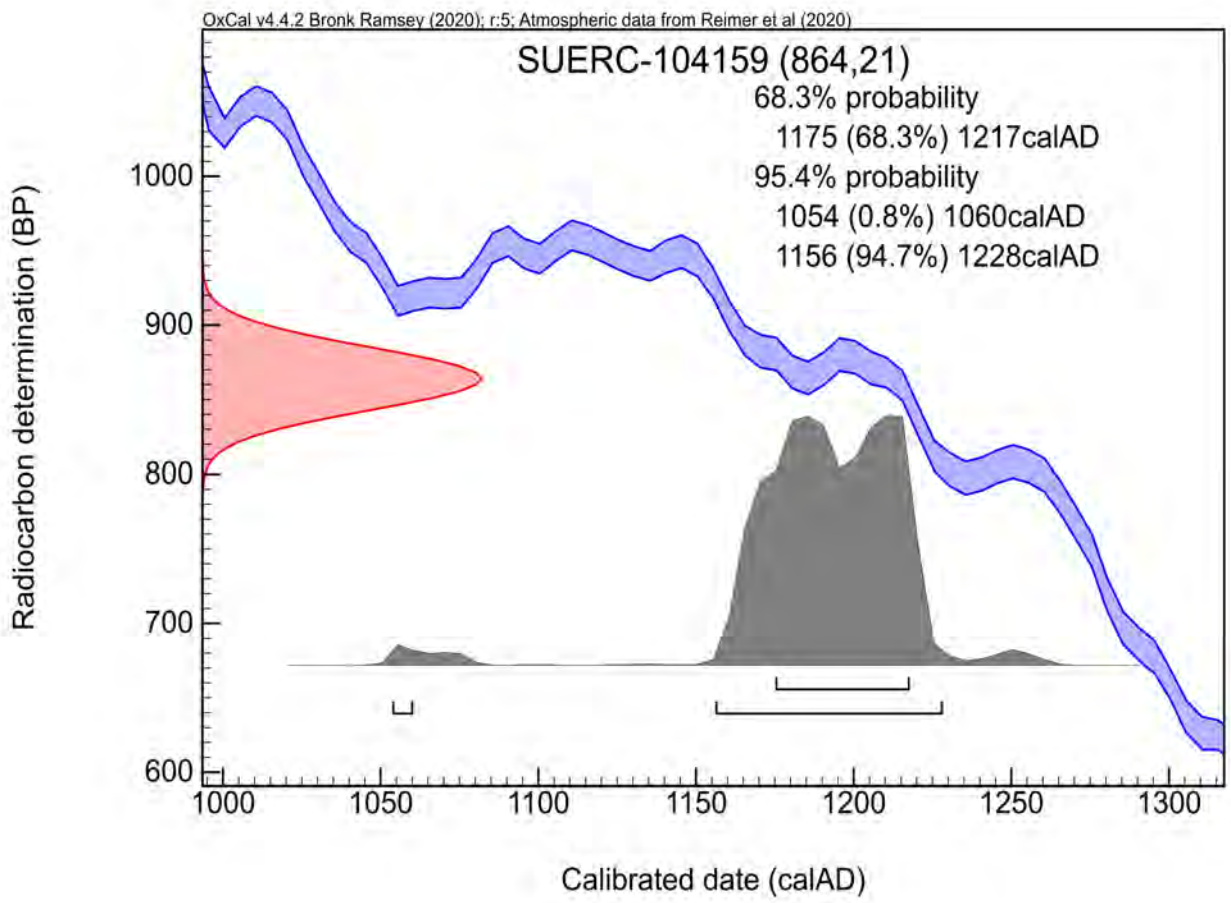
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by :

Checked and signed off by :



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

01 June 2022

Laboratory Code	SUERC-104160 (GU61244)
Submitter	Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE
Site Reference	Archdeacon Newton, County Durham (AN21)
Context Reference	449
Sample Reference	AN21-9
Material	Charcoal : Fraxinus excelsior
$\delta^{13}C$ relative to VPDB	-26.0 ‰
Radiocarbon Age BP	3148 ± 25

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

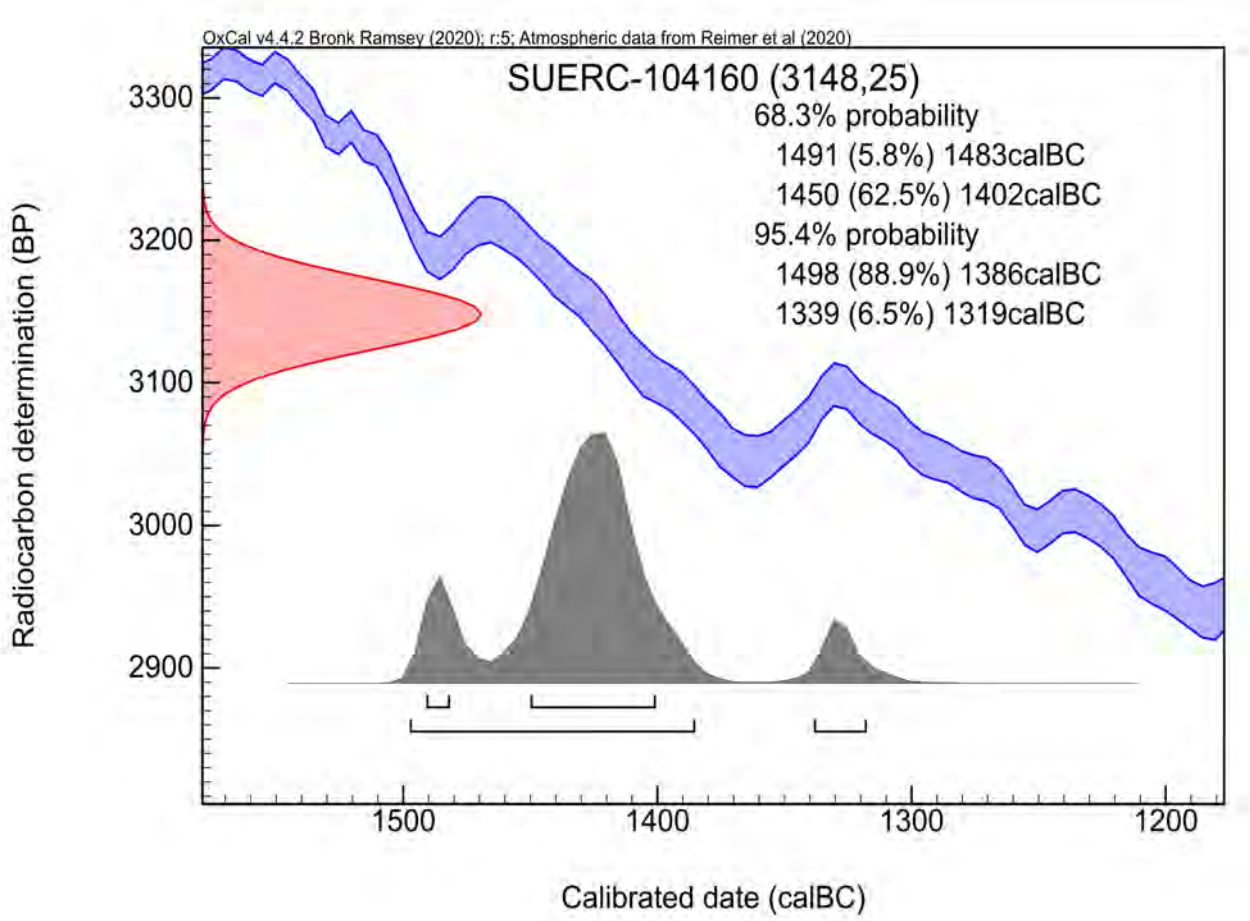
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by :

Checked and signed off by :



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

APPENDIX 6:

ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON, COUNTY DURHAM - Written Scheme of Investigation for an Archaeological Excavation, Prepared for Bright Water Landscape Partnership & Durham County Council, Archaeology Section, by The Archaeological Practice Ltd.

ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE
DARLINGTON
COUNTY DURHAM

Written Scheme of Investigation for an Archaeological Excavation

Prepared for:

Bright Water Landscape Partnership & Durham County Council Archaeology Section

By:

The Archaeological Practice Ltd.

September 2020

The Archaeological Practice Ltd.

CONTENTS

ILLUSTRATIONS

1. INTRODUCTION AND RESEARCH BACKGROUND

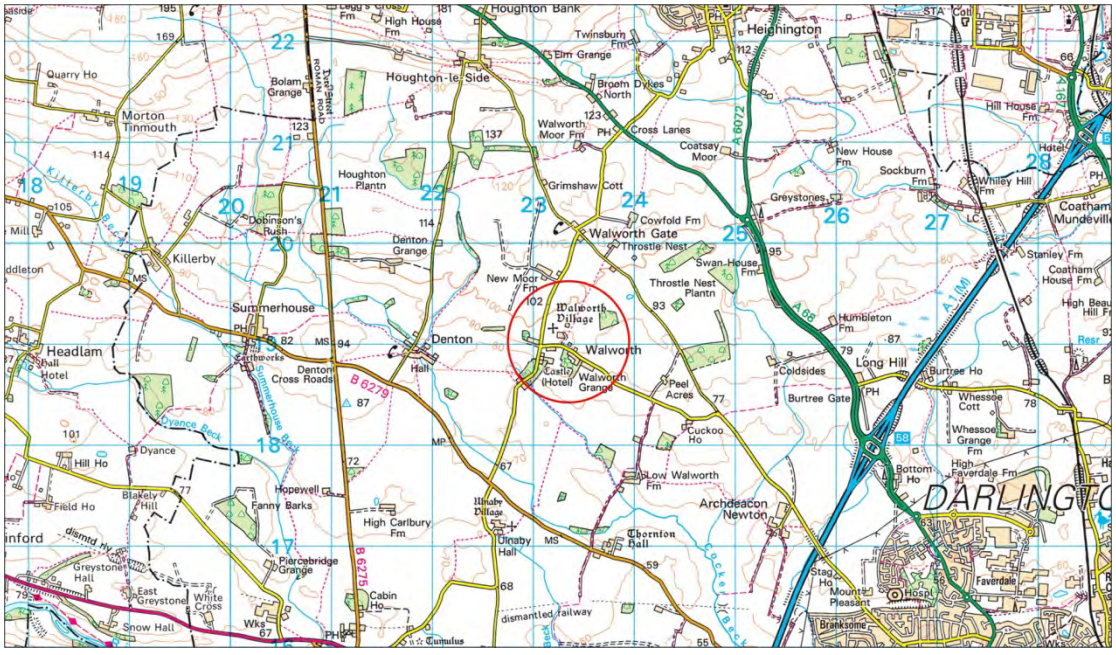
1.1 Deserted and Shrunken Medieval Villages of the Bright Water landscape area

The numerous, well-preserved deserted and shrunken village sites (DMVs & SMVs), dating to the later medieval period and its immediate aftermath, which survive as earthwork monuments in the area, represent one of the cultural heritage highlights of the Bright Water Landscape Partnership area, which encompasses the catchment area of the River Skerne in south-central County Durham. Yet surprisingly little archaeological research has been focussed on these sites. Though several were surveyed in detail by the RCHME, very little excavation has taken place prior to the Bright Water programme, with only Ulnaby having been subjected to a co-ordinated programme of documentary analysis, topographic survey and excavation (the latter a Time Team excavation of limited scale). Hence, the proposed programme of geophysical survey and excavation at Walworth, Archdeacon Newton and Woodham represents an outstanding opportunity to advance our state of knowledge regarding this class of site and learn more about the lives of medieval rural communities in the region. Standing medieval buildings survive at both Archdeacon Newton and Walworth in the form of Old Hall, a service wing formerly attached to a manorial hall, further rebuilt in the 16th/17th-century and now serving as a barn at Archdeacon Newton, plus the 12th-century chapel, now a barn, encapsulated with the farm building complex at Walworth North Farm, and parts of the south range of Walworth Castle. This document outlines the programme of excavation proposed at the second of these DMV sites, Archdeacon Newton, providing a full written scheme of investigation.

1.2 Archdeacon Newton DMV

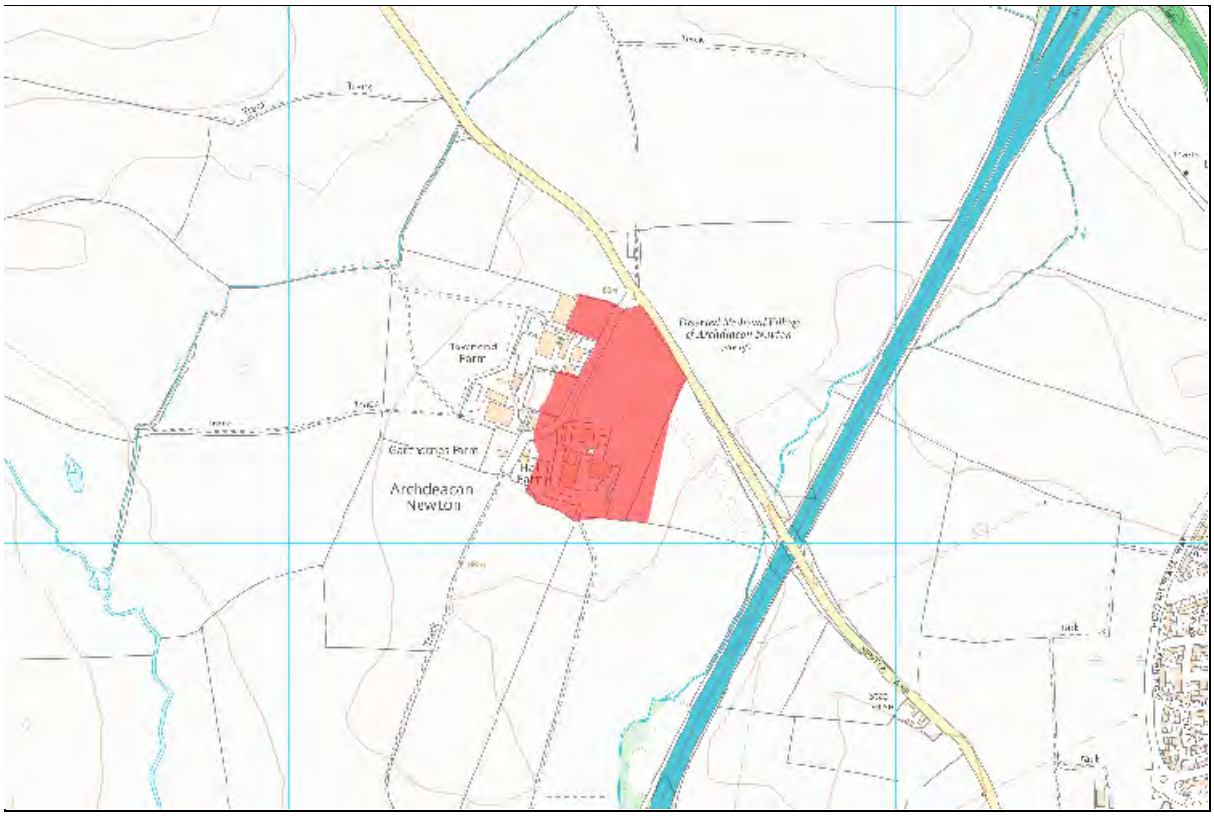
1.2.1 Location

The hamlet of Archdeacon Newton is situated *c*. 1km north-west of Darlington conurbation (4.5km from the town centre) in the southern County Durham, just beyond the A1(M) motorway.



Illus. 1: *The location of Archdeacon Newton north-west of Darlington*

The earthwork remains of the DMV are located to the east and north of the present-day settlement, which is comprised of three farm complexes: Townend Farm, Garthorne Farm (Acorn Dairy) and Hall Farm located on the south side of Newton Lane.



Illus 2: *The location of the scheduled extent of Archdeacon Newton SMV, with the present farm hamlet settlement to the south and west.*

1.2.2 Description

Archdeacon Newton moated site, deserted manorial settlement and section of rig and furrow is a scheduled ancient monument (List entry no. 1015841 (Legacy UID: 28547); National Archaeological Record Monument No. 23602; DHER H1524, R41505; NGR: NZ 25522 17222). The scheduling incorporates the area of visible earthworks, most prominently in Village Field on the east side of the settlement, but also extending into two paddocks in on the west side of the north-south access lane leading off Newton Lane. The scheduling also encompasses the site of the moated manor house at the south-east corner of the hamlet, beneath the buildings of Hall Farm. The built areas of Garthorne Farm and Townend Farm on the west side of the hamlet are excluded from the scheduling, however.

The earthworks in Village Field take the form of a series of E-W aligned toft compartments. At the north end of the field a triangular platform standing around 2m high has been suggested as the site of a chapel mentioned in a documentary source of 1414. To the south, Hall Farm marks the site of a moated manorial enclosure which would have contained the manor house plus ancillary structures and the buildings associated with the lord's demesne farm. A barn, known as 'Old Hall', situated 100m east of Hall Farmhouse, represents the surviving service cross-wing of the manor house (Listed Building – Grade II*: 1322949; DHER: H1525/H1526/H36699/R11545; cf. Ryder 1991). The manorial

hall, which would have been attached to the east side of this building, has not survived. The moat is now mostly infilled (save for one linear pond on the east side of the farm), but historic maps – tithe map and 1st edition OS – show that it was still present along the east and south sides and around the SW corner during the mid-19th century, with a double moat ditch on the east side (the outer perhaps functioning as a fish pond).

The monument is described in more detail as follows in the Historic England Scheduled Monument List entry (no. 1015841):

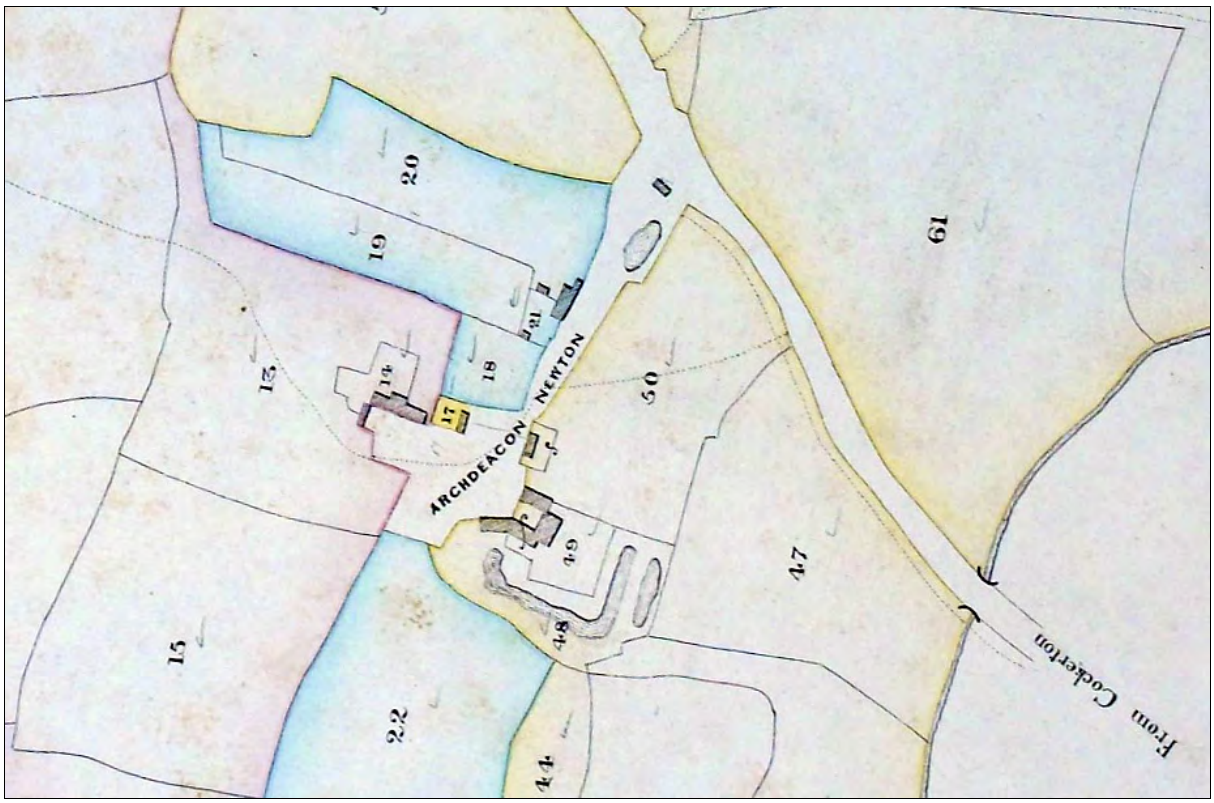
> *The monument includes the remains of a medieval settlement, a moated manorial site and a fragment of rig and furrow at Archdeacon Newton, situated on the East Durham Plateau. The remains of the Archdeacon of Durham's manor are contained within an irregularly shaped enclosure. This enclosure measures 365m north to south by 210m east to west and is bounded by a bank, which in places is flanked by the remains of an outer ditch. The enclosing bank is clearly visible as an earthwork on the eastern side of the monument and at the north western corner where it stands up to 1m high. Parts of the western side are visible as slight earthworks and it is thought that the buried remains of the bank also survive on this side. The moated site is situated at the southern end of the monument and is visible as the fragmentary remains of a strongly defended rectangular ditched enclosure with double defences on its eastern side. The ditch is most pronounced at the north west and south west angles where it is 20m wide and up to 2m deep. Elsewhere, the moat has become infilled but it survives above ground as a slight earthwork and below ground level as a buried feature. The island of the moat is occupied by a group of late 18th or 19th century buildings but one medieval building survives on the island. This building known as the Old Hall is thought to be the remains of a service wing which was attached to the original medieval manor house of which there are no surface remains. The size and nature of the stonework of the service wing suggest that the manor house itself was a large complex. Indeed, a document of 1570 which is thought to refer to the Manor House lists the Hall, the Parlour above the Hall, the Chamber over the Hall, the New Chamber, The Little Chamber, the Loft beneath the Doors, the Buttery, the Kitchen and the Stable. The northern part of the monument is divided into a series of small rectangular enclosures, orientated east to west, by parallel linear banks standing 0.6m high and ditches 0.3m deep. At the extreme northern end of the monument there is a large raised triangular platform up to 2m high bounded by a ditch on its south side. This is thought to be the site of a chapel referred to in a document of 1414 in which Robert Fisher, John Nicholson and John Deves were granted licence for divine service to celebrated in a chapel at Archdeacon Newton. Immediately west of the western side of the settlement enclosure wall there is a section of medieval rig and furrow cultivation. This cultivation is part of the once extensive field system which surrounded the medieval settlement. The exact relationship between the cultivation and the enclosure wall is uncertain but the rig and furrow appears to be later in date. This area is included in the scheduling. A number of features within the area are excluded from the scheduling; these are the metalled surfaces of all roads, drives, paths, hard-standing areas and farmyards as well as all stone walls, fences, gate posts and hedges which cross the monument. Also excluded are all buildings and associated structures situated on the island of the moated site including the medieval building which is Listed Grade II*; the ground beneath these features is included. The water tank constructed by North East Water on the island of the moat is totally excluded from the scheduling.*

Illus. 04: *RCHME 1991 survey of the earthwork remains of Archdeacon Newton DMV.*

1.2.3 Morphology – Discussion and Interpretation

The earthworks suggest that the medieval settlement of Archdeacon Newton too the form of a single row of peasant tenements laid out on the east side of a street or green, with a moated manor house to the south and perhaps a chapel to the north, next to Newton Lane. However the form and layout of the surviving earthworks must be compared with the historic map evidence, principally the tithe map of 1847 (DDR/EA/TTH/1/1) and the 1st edition Ordnance Survey map (surveyed 1855, published 1859). Although scarcely a decade separates the appearance of these two maps, there are substantial differences between the two, too great to be accounted for by the inferior accuracy of the tithe map, implying that a significant reorganisation, particularly of the remaining common areas – the lanes, outgangs and remnants of the green, had occurred in the intervening period between

the two surveys.[1] The tithe map, especially, provides intriguing clues into the earlier layout of the settlement, suggesting its form may have been more complex.



Illus. 05: *Extract from the tithe map of Archdeacon Newton (DDR/EA/TTH/1/1), dated 1847, showing the farm hamlet and site of the medieval village.*

Both Newton Lane, running NW-SE, and the access lane leading from it to the settlement are shown as much broader on the tithe map than they are on the Ordnance Survey plan. The access lane in particular forms a broad corridor, widening to the north, like a funnel, as it gets further away from the hamlet, a classic outgang form. At the southern end the lane opened onto a large, roughly square, open area surrounded by the buildings of the two farms (unnamed but equivalent to the present-day Hall and Garthorne farms). The field immediately to the south, numbered 22 on the tithe map, was entitled Town Green Field in the associated apportionment schedule, implying that outgang corridor and open area to the south represented the earlier village green, in part at least. The buildings of the three farms appear much less developed than shown on the OS 1st edition, particularly noticeable in the case of Townend Farm to the north, another clue as to the much earlier date of the survey. Finally, the two long narrow fields on the west side of the green/outgang lane, numbered 19 and 20 on the map, are both labelled 'garth' in the apportionment, whilst the smaller square paddock 18 immediately to the south is named Little Garth. Garth is a name often given to areas of former village tofts and crofts.[2] It is possible, therefore, that there was a second row of

[1] Tithe maps sometimes copied or incorporated material from earlier surveys to save landowners the cost of producing a newly surveyed map, so the actual time period between the two surveys – tithe and 1st edition OS – might be significantly greater than the dates would indicate.

[2] Thus field 50, which roughly corresponds to Village Field today, is labelled Well Garth, whilst field 47, immediately to the east, is labelled 'garths', perhaps implying that a series of crofts extended eastward from the toft row in Village Field/Well Garth.

tenements laid out on the west side of the lane, which have not survived as earthworks, having perhaps been ploughed level at some stage.

Illus. 06: *Archdeacon Newton as shown on the 1st edition Ordnance Survey 6in to the mile (1855).*

1.2.4 Historical and Documentary Background

> *Of Archdeacon Newton, nothing occurs worth noting* (Hutchinson 1794, 195).

As Hutchinson's terse statement emphasises, the history of the township and manor of Archdeacon Newton is very obscure. Subsequent county historians – Surtees (1823, 375), Mackenzie and Ross (1834, II, 156), and Fordyce (1857, I, 498) published longer entries, but these actually provide no more substantive information relating to the vill's medieval history. Page (1905, I, 360) does include a discussion of the village earthworks. The various histories of Darlington focus on the town itself, however, and largely exclude the rural townships of the wider parish, including Archdeacon Newton. Unfortunately this policy was continued by Volume IV of the History of the County of Durham, recently published by the Victoria County History (Cookson 2005), and the accompanying volume on Darlington's townscape (Cookson 2003). Longstaffe (1854, 279-81) does include some interesting late 16th-century wills relating to inhabitants of Archdeacon Newton, whilst an early 17th-century inventory has recently been published by the Surtees Society (Atkinson et al. 1993: Ralph Thursbey, 1622). Sunderland (1967, 20) mentions the grant of a licence for the celebration of divine service in a chapel at Archdeacon Newton in 1414, but does not cite the original documentary source.

It is assumed that the township was held by the Archdeacon of Durham during the Middle Ages, as was the case in the post-medieval era documented by the county historians, and as reflected by the name of the village. However Archdeacon Newton does not figure in either of the two great medieval surveys of the episcopal estate, the Boldon Book of c. 1183 and Bishop Hatfield's survey of 1381. While it is conceivable that the village was founded at some point after the compilation of the Boldon Book, it certainly pre-dated the Hatfield Survey, as confirmed by the limited evidence. Hence, either the township was held by the archdeacon separately from the main episcopal estate and the relevant records have not survived or perhaps it was initially granted to one of the bishop's feudal tenants – thereby avoiding mention in two estate surveys – and only later came into the possession of the archdeacon. Archdeacon Newton certainly features as a place-name by the late 16th century, but earlier on the settlement may simply have been referred to as Newton, one of many villages with that name in the bishopric of Durham, its existence thereby obscured. The records of Darlington contain at least one reference to an individual with the name *de Newton* who almost certainly took his name from the township (see Longstaffe 1854, 7: *Hugo de Newton*, *c.* 1355).

The place-name implies that Archdeacon Newton was established as a new settlement at some point during the Middle Ages, rather than representing an ancient vill dating back long before the Norman Conquest. It is logical to assume that it was carved out of Cockerton, the adjoining vill in Darlington parish, which was certainly held by the bishop, like the parish's other townships, Blackwell, and the borough and township of Darlington itself.[3]

The history of the collegiate organisation of Darlington's parish church of St Cuthbert provides some clues helping to narrow down the settlement's foundation date. In 1439, Bishop Neville reformed the college of secular canons, replacing the post of vicar with that of Dean, and his ordinance describes in detail the organisation that had hitherto prevailed (Surtees 1823, 361-62; Longstaffe 1854, 195-96; Cookson 2005, 194). In addition to the vicar, who had the cure of souls and was, in theory at least, resident in the parish, there were four secular canons, known as prebendaries, who drew a substantial income from the parish and were typically absentee clerics. Each post, or prebend, took its title from one of the four townships of the parish, Darlington, Cockerton, Newton or Blackwell. In addition to revenue from various lands and properties, the prebendaries received the tithes in grain and hay from the four townships on a 12 yearly rotational cycle, receiving the tithes from each township in turn for three years. These arrangements had prevailed for a considerable period. The ecclesiastical tax assessments of 1292 and 1318 listed four named canons and a vicar in relation to Darlington church, and it is likely that this organisational structure dates back to the foundation or refoundation of the college by Bishop Hugh du Puiset in the late 12th century (Cookson 2005, 193; Longstaffe 1854, 194-95; Scammell 1956, 110; *Tres scriptores*, 14).[4] It is even possible that the college originated in a measure traditionally attributed to Bishop William de St Calais to make provision for some of the secular priests of the Community of St Cuthbert at Durham who had refused to make the transition to the newly established Benedictine priory (cf. Rollason (ed.), *Symeon of Durham*, 230-31). However, even if this was the case, there is no guarantee that the arrangements and number of canons were precisely the same in the late 11th

[3] Oxenhall or Oxneyfield, which formed a detached portion of Darlington township at the southern end of the parish beside the Tees, was a manor in its own right, listed separately in the Boldon Book and Hatfield Survey, and sometimes treated like a township.

[4] The foundation charter has not survived and the precise date of Bishop du Puisset's reorganisation is uncertain.

century as they were later on after du Puisset's reorganisation. Nevertheless this does strongly suggest that Newton was already in existence by the late 13th century, and most probably by the late 12th century, when it is likely the number of prebendaries in Darlington was set at four by Bishop du Puiset to reflect the number of townships then existing in the parish of Darlington.

1.2.5 Previous Archaeological Investigation

Relatively little archaeological work has taken place at Archdeacon Newton prior to the initiation of the Bright Water programme.

HER no.	Date	Investigation
H1524	05-09-1991	**Survey**: The Ordnance Survey plan of the DMV was revised by the RCHME in as part of the Durham SAMs programme.
Cf. H1525, H36699	1991	**Historic Building Study:** Analysis of the Old Hall – the surviving medieval service wing of the manor house, by Peter Ryder (published Ryder 1991).
	11-1996	**Desk-based-Assessment:** Proposed East Coast High Pressure Gas Pipeline – included coverage of Archdeacon Newton.
E9116	01-2006	**Watching brief** undertaken by Brigantia Archaeological Practice during excavation of an electricity supply trench at Garthorne Farm. No archaeological features were observed.
	05-2011	**Historic Impact Assessment** of a proposed wind turbine for Acorn Dairy, Archdeacon Newton, by Archaeo-Environment Ltd.
H60569 E60567	04/05-2015	**Geophysical Survey** at Garthorne Farm by Archaeological Services Durham University. Covered a 0.2 hectare area on the W side of the access lane. Only extant earthworks (ridge and furrow and a boundary bank) were revealed.
H60998 E60996	02-2016	**Watching brief** at Garthorne Farm by Archaeological Services Durham University. Only truncated remains of ridge and furrow and a later field boundary ditch were encountered.

1.3 Geophysical Survey 2020

As the first component of the Bright Water programme of investigative fieldwork, a geophysical survey, employing three different techniques – magnetic gradiometry, earth resistivity, and electromagnetic conductivity – was undertaken by Phase Site Investigations between 1st and 8th June 2020. This encompassed the entirety of the two fenced field enclosures collectively known as Village Field, but excluded other components of the scheduled monument area, namely Hall Farm to the south, which was the site of the moated manorial complex, and the paddocks to the west and south-west. Hall Farm is covered by standing buildings and modern hard standings and is thus unsuitable for survey, whilst time constraints prevented survey of the small paddocks.

1.3.1 The Geophysical Survey Results

The full report of the geophysical survey is attached as a supplementary document, whilst the report's Summary and Conclusions are set out below (in italics). This following discussion is designed to highlight some of the results which may have a bearing on the research questions set out below.

> *The geophysical survey has identified numerous anomalies indicative or suggestive of anthropogenic features / activity and a number of anomalies of uncertain origin. A number of anomalies correspond with visible earthworks and the different datasets have identified*

different characteristics of features. Some responses will relate to the bank, others to the base of slopes and some are possibly infilled ditches. Some earthworks do not have clear anomalies associated with them, possibly suggesting that the composition of the earthworks may vary across the site, although this could also because the subtle anomalies are masked by changes in material / soils over the features. There are anomalies that are not directly associated with earthworks, indicating the presence of additional features.

An area of strong responses in the south of the area corresponds with a part of the moat or a pond and will be caused by material infilling this feature.

A variation in the EM data may confirm that the access lane was once significantly wider than the current layout.

It has been suggested that the triangular platform in the north of the site may have been the site of a chapel but there is no evidence for structural remains on the top of the platform in the geophysical data. There are responses related to ridge and furrow on the platform and several anomalies of uncertain origin but these are not suggestive of the remains of a church.

There are a number of anomalies suggestive of relatively modern features, such as drains or pipes. One such anomaly appears to connect to a manhole cover, which corresponds with the location of a well shown on historic maps.

A number of responses are present that are suggestive of anthropogenic features / activity which do not correspond with earthworks. It is not certain if these are related to additional archaeological features or if they are caused by more modern features / activity. Some responses form regular shapes that could suggest they are related to archaeological features but some of the anomalies could be related to drainage or possibly water pipes and so care should be taken if they are investigated.

A significant number of responses are present that are relatively weak or short / fragmented. The cause of these anomalies is not certain as they are too weak and short to reliably interpret. Some could relate to sub-surface features but many could be a product of natural variations, agricultural or other relatively modern activity.

There are several areas of relatively strong responses suggestive of a spread of material and there are numerous isolated responses. Anomalies of these types are usually related to relatively modern material but it is possible that some of the responses could be related to material associated with the former medieval village. There are some areas where strong responses from modern features / material dominate the surrounding data. It should be recognised that the strength of the strong responses could mask anomalies from other subsurface features in the area.

1.3.2 Discussion

Toft enclosures and house platforms

The toft enclosures of the settlement are clearly defined both as earthworks and as geophysical anomalies, but house platforms or associated remains cannot be traced, with the occasional possible exception. Geomagnetic anomalies M3, which straddle the plot immediately south of the triangular enclosure at the north end of the field, might indicate the presence of a house, perhaps representing drip gulleys or a continuous post or beam trench. With its long axis aligned N-S, this house would

face on to the green to the west. However this plot shows traces of ridge-and-furrow ploughing (as earthworks and geomagnetic anomalies) so the surviving medieval settlement remains here may be degraded by later (early modern?) plough damage.

The suggested chapel site

The geophysical survey did not provide any definite evidence for the existence of a building in the triangular area at the north end of Village Field, which has traditionally been identified as the site of a chapel (cf. Ryder 1991, 129). The area is, however, covered by ridge-and-furrow earthworks (also apparent on the magnetometry survey plot – see Drawing ARC_2573_1079_03), so any remains may have been damaged by this ploughing making them difficult to detect, particularly if it only had shallow footings.

The street frontage

The survey data provided some degree of confirmation for the tithe map evidence that the present N-S aligned lane to the west of the tofts was initially much wider. Moreover the surviving earthworks hint that the toft frontages to the south of the triangular area may originally have been set back even further to the east than implied by the tithe map. Certain of the geophysical anomalies also support this suggestion, notably R6, M3 and (parts of) E2. It is uncertain whether the subsequent westward extension of the toft plots will have resulted in the relocation of the peasants' farmhouses or simply the creation of gardens in front of the houses. Alternatively these features might be interpreted as front house plots with separate croft enclosures to the rear.

The manorial moat

The infilled moat/related pond along the eastern side of the manorial enclosure at the southern end of the settlement was clearly represented in the magnetic and electromagnetic surveys by anomalies M12 and E10.

1.4 Research Questions

1.4.1 Regional Research Agenda Questions

The Bright Water programme to investigate the DMVs in the Skerne Catchment in South Durham will address the following Key Research Themes and Priorities from the North-East Regional Research Framework (NERRF: Petts & Gerrard 2006, 158-59, 168-70, 175):

Early Medieval research priority: EMii. Settlement.

Later Medieval research theme: MD3. Medieval vernacular architecture;

Later Medieval research priorities: MDi. Settlement; MDxi. The medieval to post-medieval transition.

1.4.2 Project Research Questions

The geophysical survey results, the overall plan of the earthworks and the history the settlement give rise to a number of site specific questions. These in turn feed into broader themes of rural settlement formation, growth and decline and the relationship between manorial lords and their subordinate communities of agricultural tenants:

1. When was the settlement established?
   1.1 Does it exhibit a regular, planned layout consistent with a creation of a single period?

2. Is there any evidence for substantial later remodelling of the settlement at any stage?
   2.1 Were the toft plots extended westwards over part of the green at some stage as hinted at by the earthwork remains?
   2.2 Did any shift in the position of the street frontage involve relocation of the peasant farmhouses or did it perhaps simply entail the creation of enclosed garden plots in front of the existing houses?
3. What are the stages and chronology of the settlement's desertion and abandonment?
4. Is the triangular platform at the N end of the settlement the site of the chapel mentioned in 1414?
5. Does the moat, and the deposits it contains, preserve any evidence of the history of the manorial hall and the wider settlement?

2. EXCAVATION PROGRAMME & METHODOLOGY

2.1 Overall Project Aims

The excavation project is guided by the following overall aims:

- To define and identify the nature of archaeological deposits on site, and date these if and where possible, establishing whether the features/deposits represent part of the medieval settlement. A particular focus for the team will be identifying how occupation ceased.
- to attempt to characterise the nature of the archaeological sequence and recover as much information as possible about the spatial patterning of features present on the site.
- To address the research questions identified in the previous section of this document (*see* 1.4)
- Provide training in archaeological methods and techniques to volunteers wishing to investigate their area's past, equipping them with the relevant new skills.
- Further the understanding of the site and its environment by all members of the community.
- Reinforce and develop the volunteers' existing sense of place and belonging within the area.
- To provide a springboard for further community-led initiatives in the field of archaeology.

2.2 Excavation Strategy and Trench Positioning

The positioning of the trenches is based on the results of the geophysical survey combined with scrutiny of the surviving earthworks (using the RCHME topographic survey, aerial photography and walkover examination). The scope of work proposed is aspirational and it is conceivable that not all trenches will be excavated in the 2020 season, but it is intended to allow flexibility to follow up promising results and also to undertake a further season of investigation if the opportunity and requisite funding were to become available.

2.2.1 Location and Purpose of Trenches

General: All trenches are designed to elucidate the developmental stages of the village settlement, its origins, duration and desertion, identifying changes in layout and other modifications which may relate to different phases in the occupation of the site and hopefully yield dateable finds and deposits which will provide a chronology for those processes. The locations of the initial trenches are given below. Several of these trenches is set within a defined area within which the trenches may be

extended as deemed appropriate in consultation with the Historic England (HE) Inspector of Ancient Monuments and Durham County Archaeologist in order to further investigate features of interest revealed by the initial trench and answer questions generated (*see* Appendix 1: Archaeological Trench Location Plan). In each case a maximum proportion of extension in relation to the initial trench is specified (an additional 100% in relation to the longer trenches and 200% in relation to the shorter ones). This methodology is particularly necessary because neither the geophysical surveys nor the earthwork record have identified distinct house sites within the toft enclosures.

Excavation schedule: The area with the well-preserved SMV earthworks known as Village Field is presently subdivided into two fenced field enclosures. To comply with the farmer's stock management operations the excavations will only take place in one of the two fields at any one time. It is envisaged that the excavation will begin in the northern field (Field 1) and shift to the southern field (2) half way through the dig, though that order might be reversed if necessary.

Trenches 1a & 1b

Dimensions and orientation: An ESE-WNW orientated 30m x 2m excavation trench (Trench 1a) within a wider 40m x 40m box area (Area 1). It is intended to widen the trench upon locating the remains of a house.

A subsidiary NNE-SSW aligned trench (Trench 1b), measuring 10m x 2m, will be excavated in the northern part of the same box (to investigate geomagnetic anomaly M3 in the adjoining toft – Trench 1b – see below).

Additional excavation will be limited to total areas equivalent to 100% of Trench 1a and 250% of Trench 1b.

Location: Field 1 – Over the distinct toft enclosure towards the southern edge of Field 1 (T1a) and over anomaly M3 to the north of the visible toft earthworks (T1b).

Research purpose: To examine a typical toft enclosure, identifying the site of the house within, to try and understand the development of the site from origins to abandonment of the tenement.

The subsidiary trench (Trench 1b) would test whether anomaly M3 was related to a house site in the neighbouring toft to the north and to what degree the remains have survived ridge-and-furrow ploughing.

Trench 2

Dimensions and orientation: A NNE-SSW aligned trench measuring up to 35m x 2m within a wider area box measuring 40m NNE-SSW x 30m ESE-WNW (Area 2).

The total extent of additional excavation will be limited to an area equivalent to 100% of Trench 2.

Location: Field 1 – traversing the triangular platform at the north end of the site. The trench will extend from the northern boundary bank of the toft enclosure to the south.

Research purpose: To determine whether the chapel mentioned in a document of 1414 was located here, as previously suggested, and, if identified, to investigate its remains and history.

The trench will also examine the composition of the visible boundary bank of the toft to the south, plus the edge of the platform and will sample the deposits in the shallow waterlogged ditch along the southern edge of the platform (cf. anomaly M2).

Trench 3

Dimensions and orientation: A 15m x 2m trench aligned NE-SW within a wider area box measuring 20m NE-SW x 15m NW-SE (Area 3).

The total extent of additional excavation will be limited to an area equivalent to 250% of Trench 3.

Location: Field 1 – located in the northern apex of the field across the low oval mound adjoining the north angle of the triangular platform.

Research purpose: To investigate the oval mound. A small rectangular building is shown in this position on the tithe map, at the entrance to village lane. Its date and purpose are uncertain but its location might imply a communal function. The mound may represent the demolished remains of this structure.

Trench 4

Dimensions and orientation: An ESE-WNW orientated trench measuring 30m x 2m within a wider 50m (E-W) x 35m (N-S) box (Area 4). The trench will be widened upon locating the remains of a house.

The total extent of additional excavation will be limited to an area equivalent to 100% of Trench 4.

Location: Field 2 – Over the distinct toft enclosure in the northern part of Field 2.

Research purpose: The trench will focus on the western part of the toft enclosure to test whether the part represents a secondary extension to create a new street frontage and whether this involved relocating the farmhouse within the toft.

Trench 5

Dimensions and orientation: An ESE-WNW orientated trench measuring 25m x 2m.

Location: Field 2 – Cutting a section across the infilled moat.

Research purpose: To reveal the profile of the moat ditch and obtain samples for environmental analysis, particularly from the bottom which may be less disturbed the modern infilling operation.

2.3 Excavation Timetable & Duration

The excavations are currently scheduled to be undertaken over a four week period during autumn (late September-October).

2.4 Site management and volunteer supervision

The excavation will be run by a site director. Groups of excavators will work under supervisors, in a ratio of not more than 7:1, with a minimum of 2 professional staff on site at all times during working hours. Excavators will include experienced volunteers acting as informal supervisors who will be paired with less experienced volunteers. The tasks of the excavators will include recording as well as excavation, with the supervisor providing training in both excavation and recording to volunteers who will, as far as possible record the same contexts that they have excavated.

In order to organise volunteers and balance numbers, volunteers will be asked to notify Bright Water of which days they are intending to be on-site. A data-base will be held in Excel recording the number of projected participants for each day, including the names of participants and any particular requirements they may have. This will be backed up by paper attendance sheets (attached to the site risk assessment and health & safety statements) to be filled in by volunteers when they arrive on site. An attempt will be made to ensure that volunteers can be best matched with the

nature of work required and the division of tasks available for each day. The constituent specialised tasks, besides general excavation, are set out below:

2.5 Covid-19 Mitigation Strategy

Working practices will be adapted to minimise the risk of Covid-19 transmission, following the methodology developed in conjunction with Northumberland National Park Authority for the *Revitalising Redesdale* excavation at Rattenraw in July. This will be set out fully in the Site Risk Assessment. A summary is provided below:

2.5.1 Volunteer numbers on site on any given day will be restricted to no more than 20.

2.5.2 Site workers will remain at least 2m apart at all times, unless members of the same household bubble.

2.5.3 Gloves to be worn and face coverings offered (but wearing of face coverings not currently considered mandatory).

2.5.4 No sharing of equipment during a working day. Larger tools and equipment to be disinfected at the end of each working day.

2.5.5 No equipment or other items (incl. rubbish) to be left on site after completion of the work.

2.5.6 Where it is not possible to follow government guidance, site work will cease.

2.5.7 Site visitors not part of the project team will be subject to the same conditions as formal volunteers.

2.6 Finds Processing

A team of two/three volunteers will be required at all times for finds processing, intermittently supervised by a designated member of the supervisorial team. Tasks here will involve collection of finds from the excavators, washing, basic sorting, drying and bagging and labelling by context.

2.7 Visitor Guide

A volunteer guide will be available at all times to assist with guiding visitors around the site, explaining the purposes and background of the work and advising on finds up to date. This will reduce the pressure on supervisorial staff when monitoring critical aspects of the excavation process. The visitor guides will be monitored and trained by the project team.

2.8 Archaeological Survey

In addition to the excavators-recorders, a survey team will be required intermittently, but regularly, to carry out survey work to record the location and heights aOD of excavated features and finds. This work will be carried out using professional survey equipment (EDM), assisted at any one time by a single volunteer.

2.9 Additional Specialist Photography

Elevated views of the excavation trenches will be taken at its conclusion using a UAV, where appropriate.

2.10 Fieldwork Skills Training

A programme of training and assistance will be delivered to the volunteers through training sessions, guided walks, project meetings and on-site advice. Specific training will include:

Fieldwork techniques; recording & surveying methods – to be carried out on-site, enhanced by two training workshops, each up to ½ day in duration, run by individual members of the project team concurrently with the excavations.

Recognition and treatment of small finds and ecofacts – A session to be held during the excavation using finds recovered from the fieldwork or, if necessary, brought in from research collections.

2.11 Guided Walks

During the course of the excavation Peter Ryder will lead the volunteers around the adjacent surviving medieval standing building, the Old Hall (the service wing of a 14th-century manor house remodelled in the late 16th/17th century), so that the volunteers can gain a clear impression of the relationship of the rural village settlement to its associated manorial farm complex and elite residence, and thereby a fuller understanding of the overall layout and functioning of such sites.

2.12 Monitoring of Community Engagement

Separate lists, compiled on a daily basis, will be compiled for three categories of participants: Fieldwork Volunteers, Training Recipients and Visitors. The lists will be maintained on paper forms with the results regularly updated to a database.

'Fieldwork volunteers' include those people volunteering on a daily basis for fieldwork activities, while 'Training recipients' include those people attending any training events, guided walks or dissemination events organised during or following the fieldwork phases, including work with schools or societies. 'Visitors' are those attending site in an organised, pre-arranged capacity or casually - it is proposed to organise an 'open access' site, allowing visitors to view the excavations from a temporary site barrier and to speak with staff and finds processing volunteers.

In addition to monitoring by recording numbers, it is proposed to monitor the quality of volunteer experience, in terms of learning and enjoyment, by asking each participant to complete a simple form in advance of, and following, their involvement in the project, using a similar approach to that taken during recent projects managed by the Archaeological Practice in County Durham, Northumberland and southern Scotland. The aim of this is to introduce a qualitative as well as quantitative element to the process.

2.13 Outreach

Outreach work to be carried out during the course of excavation will include visits to local history groups or other local societies by members of the project team, who will tailor their visits according to the nature of finds from the excavation. At least two local schools will be contacted in order to seek to involve the schoolchildren in aspects of the project, potentially including excavation.

2.14 Dissemination

Archaeological Practice staff will assist Durham County Council Archaeology Section (DCCAS) and Bright Water Landscape Partnership in preparing press releases during the course of the excavations and regular updates via social media. A closing, celebratory event for the excavations will be held on the last day of fieldwork. The venue will be on the site of fieldwork (weather permitting) or a local

venue and will include a poster exhibition of interim findings, a pottery making/firing demonstration replicating finds from the excavation.

Archaeological Practice senior staff will give at least two public lectures locally in each year of the project and will offer another at the annual County Durham Archaeology Day.

A **website** which will include the final report as well as additional material derived from the excavations. **Social media** will be used, as exemplified by the Wheatley Hill-Thornley Atlas Project the Flodden 1513 project and numerous others in which The Archaeological Practice Ltd is participating, in order to disseminate interim results on a daily basis through site reports and illustrated blogs written by participants. This work will be carried out and co-ordinated by Marc Johnstone who, in addition to facilitating schools involvement with this aspect of the project, will engage adult community volunteers in basic web-management training – as carried out for the *Epiacum* project, amongst others.

2.15 Reporting

An interim report on the excavations will be produced within two weeks of completion of the fieldwork and a final report produced according to the timetable of the Project Brief. The final report will be in a loose leaf, A4 format, illustrated with appropriate maps, drawings and photographs selected from the project archive. This may form the basis for a subsequent publication in a local journal, if the HE Inspector of Ancient Monuments and DCC principal archaeologist determines that it is merited by the results, as well as summary reports for popular dissemination, including short articles in *Archaeology County Durham*.

3. EXECUTION OF THE SCHEME OF INVESTIGATION – FIELDWORK

[The archaeological works will be carried out according to archaeological best practice as set out in the following publications: Yorkshire, the Humber and the North-East: A Regional Statement of Good Practice for Archaeology in the Development Process (WYAAS 2009) and Standard and Guidance for Archaeological Excavation (CIfA 2014)]

3.1 Excavation – general

3.1.1 The archaeological trenches will be excavated in the locations specified in the preceding section (*see* 2.4), determined by the requirements of the project's research agenda (*see* 1.4). Excavation, recording and sampling procedures will be undertaken using the strategies indicated below.

3.1.2 The setting out of the trenches will be undertaken by the Archaeological Practice in consultation with the landowner, farm tenant, HE, DCCAS and the geophysical contractor, Phase SI.

3.1.3 Unstratified modern overburden may be removed by hand or mechanically (depending on site sensitivities, soil depth and landowner/farm tenant permission), the latter using an appropriate machine with a toothless ditching blade under strict archaeological supervision. The removal of modern overburden above the first significant archaeological horizon will be executed in successive level spits. All mechanical excavation will be supervised by archaeologically competent staff. Manual excavation will be undertaken by volunteers under close supervision of trained archaeological staff.

3.1.4 Turf and spoil will be kept close-by and rapidly backfilled into the trenches at the conclusion of this work. The site is private property without public access, but signs will be displayed in the case of any deep excavations on the site. It is not, however, envisaged that any excavations will attain a hazardous depth.

3.1.5 On removal of turf and unstratified topsoil, all excavation of archaeological horizons and trench faces will be carried out by hand and every effort will be made to leave all nationally important remains *in situ*.

3.1.6 Sufficient of the archaeological features and deposits identified will be excavated by hand through a sampling procedure to enable their date, nature, extent and condition to be described. Pits and postholes will normally be sampled by half-sectioning although some features may require complete excavation. Linear features will be sectioned as appropriate. No archaeological deposits will be entirely removed unless this is unavoidable.

3.2 Recording

3.2.1 Archaeological stratigraphy revealed by excavation will be recorded by the following means:

3.2.2 Written descriptions. Each archaeological context will be recorded on a pro-forma sheet. Minimum recorded details will consist of the following: a unique identifier; an objective description which includes measurements of extent and details of colour and composition; an interpretative estimate of function, clearly identified as such; at least one absolute height value; the identifiers of related contexts and a description of the relationship with such contexts (for preference, executed as a mini Harris matrix); references to other recording media in which representations of the context are held (plans, sections, photographs).

3.2.3 Measured illustrations. Detail plans and sectional profiles of archaeological features will be at appropriate scales (sections: 1:10; plans: 1:20 or 1:50). Archaeological contexts will be referenced by their unique identifiers. All illustrations will be properly identified, scaled and referenced to the site survey control.

3.2.4 Photographs. Digital photographs will be taken for purposes of record. Any features of archaeological note will also be recorded on colour film stock. A system will be used for identifying the archaeological features photographed.

3.2.5 An appropriate control network for the survey of any archaeological remains revealed in excavation will be established.

3.2.6 The survey control network will be related to the OS grid.

3.2.7 The survey control network and the position of recorded structures, features and finds will be located on a map of an appropriate scale (1:2500 or 1:500)

3.2.8 At least one absolute height value related to OD will be recorded for each archaeological context.

3.2.9 All processing, storage and conservation of finds will be carried out in compliance with the relevant IFA and UKIC (United Kingdom Institute of Conservation) guidelines.

3.2.10 Portable remains will be removed by hand; all artifacts encountered will be recovered.

3.3 Environmental Sampling and Scientific Dating

3.3.1 The investigations will be undertaken in a manner consistent with Management of Research Project in the Historic Environment (MoRPHE) (Historic England [HE] 2015): *https://historicengland.org.uk/images-books/publications/morphe-project-managers-guide/* and with Environmental Archaeology Guidelines (English Heritage 2011): https://historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/.

3.3.2 Don O'Meara, Historic England Regional Advisor for Archaeological Science (0191 2691250 or 07824 529245), will be consulted on the proposed environmental sampling strategy before the excavation begins.

3.3.3 Archaeological deposits/fills will be examined by taking soil samples for the recovery of plant remains, small mammal bones, and artefactual material (such as archaeometallurgical hammerscale). The following sampling guidelines will be adopted for the site:

- Post-holes: 20-30 litres
- Pit fills: up to 30 litres from each definable phase of infilling (primary, secondary, tertiary)
- Ditch fills: ditches are expected in trenches 2 and 5. Their sampling is discussed below. Other ditches or linear features will be sampled with a 20 litre sample per 30cm depth of feature.
- Layers: occupation layers will be sampled in a grid pattern to be discussed in association with the Historic England Science Advisor.

Trench specific sample strategies:

Trench 2, Anomaly M2, potential waterlogged ditch:

In the event fine grained, or silty deposits are identified these will be sampled with;

1. bulk samples for plant macro-remains,
2. a series of 4-litre samples for insect remains,
3. a series of 10ml samples for pollen, and intestinal parasites.

The intensity of sampling will be decided in conjunction with the Historic England Science Advisor once the lowest deposit has been reached, and a full section exposed.

Trench 3

The mound will be examined archaeologically, and the Historic England Science Advisor will be contacted for advice once the nature of the deposit has been characterised. If it appears to be upcast, coarse, or redeposited material, lacking datable cultural artefacts this will not be sampled. Contexts buried by the mound will be sampled if they are identified, in the volumes agreed above.

Trench 4:

Pits or occupation layers will be sampled as recommended above. If occupation layers are identified the size of the sampling grid will be determined in conjunction with the Historic England Science Advisor.

Trench 5:
In the event fine grained, or silty deposits are identified these will be sampled with;

- bulk samples for plant macro-remains,
- a series of 4 litre samples for insect remains,
- a series of 10ml samples for pollen, and intestinal parasites.

The intensity of sampling will be decided in conjunction with the Historic England Science Advisor once the lowest deposit has been reached, and a full section exposed.

3.3.4 After the fieldwork is completed an Updated Project Design will be produced in which the samples to be processed will be agree between the contractor, the county archaeologist, the Historic England Inspector, and the Historic England Science Advisor.

If processed bulk samples will be processed to extract macroplant remains, and the coarse residues will be sorted for the remains of artefacts, industrial residues (slag, and micro-hammerscale), bones, mineralised remains. The decision on the processing the insect, pollen, and intestinal parasite samples will only be undertaken if this is likely to add further information to the human activity at the site.

3.3.5 Animal bones will be collected, as assessed in line with Historic England guidelines (HE 2019: *https://historicengland.org.uk/images-books/publications/animal-bones-and-archaeology/).*
After an assessment document has been produced any further analysis will be agreed between the contractor, the county archaeologist, the Historic England Inspector, and the Historic England Science Advisor.

3.3.6 Waterlogged organic materials will be dealt with following the recommendations provided in Historic England guidance (HE 2018): *Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysis and Conservation* (https://historicengland.org.uk/imagesbooks/publications/waterlogged-organic-artefacts/heag260-waterlogged-organic-artefacts/). Karen Barker, an experienced antiquities conservator (Church Side, The Edge, Woodland, Bishop Auckland, County Durham, DL13 5RF; Tel: 01388 718245; Mob: 07824 765376; email: karen.barker@talk21.com), has been informed that this project is taking place and will supervise conservation of organic and other artefacts from the site.

In the event of metal-working evidence being identified the methods set out in the Historic England *Archaeometallurgy: Guidelines for Best Practice* document 2015 will be adhered to. Sub-sampling will take place of both micro-residues, and slag remains, and any in-situ furnace remains assessed for their archaeomagnetic potential.

3.3.7 Deposits will be assessed for a range of potential absolute dating methods. This will include radiocarbon dating, archaeomagnetic dating, Optically StimulatedLuminescence (OSL), and dendrochronological dating (should suitable timbers be recovered). . The archaeobotanical report will note all samples that contain material suitable for radiocarbon dating. At the assessment stage no scientific dating will take place if other relative techniques can be employed - i.e. dating via the association with artefacts - unless remains without datable artefacts or suspected early medieval or prehistoric remains are encountered.

3.3.8 Information on the nature and history of the site, aims and objectives of the project, summary of archaeological results, context types and stratigraphic relationships, phase and dating information, sampling and processing methods, sample locations, preservation conditions, residuality/contamination, etc. will be provided with each sample submitted for analysis.

3.4 Human Remains and Treasure

3.4.1 Human remains will be treated with care, dignity and respect, in full compliance with the relevant legislation (essentially the Burial Act 1857 and HE 2007: *Guidance for Best Practice for the treatment of Human Remains Excavated from Christian Burial Grounds in England* – https://www.archaeologyuk.org/apabe/pdf/APABE_ToHREfCBG_FINAL_WEB.pdf) and local environmental health concerns. If found, human remains will be left in-situ, covered and protected, and the police, coroner and County Archaeologist informed. If it is agreed that removal of the remains is essential, the Archaeological Practice Ltd, will apply for a licence from the Home Office. Analysis of the osteological material will take place according to published guidelines, including Annex S4 of HE (2007): Minimum standards for post-excavation procedures.

No scientific analysis will be undertaken without consultation with the client, the county archaeologist and the Historic England Science Advisor.

3.4.2 If anything is found which could be Treasure, under the Treasure Act 1996, it is a legal requirement to report it to the local coroner within 14 days of discovery. The Archaeological Practice Ltd. will comply with the procedures set out in The Treasure Act 1996. Any treasure will be reported to the coroner and to The Portable Antiquities Scheme Finds Liaison Officer, Benjamin Westwood (03000 267011 or benjamin.westwood@durham.gov.uk), for guidance on the Treasure Act procedures. Treasure is defined as the following:

- Any metallic object, other than a coin, provided that at least 10% by weight of metal is precious metal and that is at least 300 years old when found
- Any group of two or more metallic objects of any composition of prehistoric date that come from the same find
- All coins from the same find provided that they are at least 300 years old when found, but if the coins contain less than 10% gold or silver there must be at least ten
- Any object, whatever it is made of, that is found in the same place as, or had previously been together with, another object that is Treasure
- Any object that would previously have been treasure trove, but does not fall within the specific categories given above. Only objects that are less than 300 years old, that are made substantially of gold or silver, that have been deliberately hidden with the intention of recovery and whose owners or heirs are unknown will come into this category

4. SCHEME OF INVESTIGATION - POST-EXCAVATION ANALYSIS, REPORTING & ARCHIVING

4.1 Analysis and Reporting of Recovered Data

4.1.1 Following the completion of the Field Investigation and before any of the archaeological post-excavation work is commenced, an archive (the Site Archive) containing all the data gathered during fieldwork will be prepared. This material will be quantified, ordered, indexed and rendered internally consistent. It will be prepared according to the guidelines given in Historic England's MoRPHE: https://historicengland.org.uk/images-books/publications/morphe-project-managers-

guide/ and D.H. Brown *Archaeological Archives: A guide to best practice* (2011) http://www.archaeologyuk.org/archives/aaf_archaeological_archives_2011.pdf

4.1.2 Following completion of the Field Investigation and Site Archive, a report will be prepared collating and synthesizing the structural, artefactual and environmental data relating to each agreed component part of the excavation and recording process.

4.2 Production of Final Report

4.2.1 Copies of the report will be provided within two months of the completion of fieldwork to Bright Water, Historic England, the Durham County HER and HLF.

4.2.2 Three copies of the report will be provided. Each will be bound, with each page and heading numbered. Any further copies required will be produced electronically. The report will include as a minimum the following:

SMC reference no, S42 licence no and Oasis no.
A summary statement of methodologies used.
A location plan of the site and any archaeological discoveries of note.
A summary statement of results.
Conclusions
A table summarizing the deposits, features, classes and numbers of artefacts encountered and spot dating of significant finds.

4.2.3 Following completion of the analysis and publication phase of the work, an archive (the Research Archive) containing all the data derived from the work done during the analysis phase will be prepared. The archive will be prepared to the standard specified by Historic England (MoRPHE 2011) and in accordance with the United Kingdom Institute of Conservation guidelines.

4.2.4 Arrangements will be made to deposit the Site Archive (including Finds) and the Research Archive with the designated museum, Sevenhills Repository, Spennymoor , within 6 months of the end of the fieldwork. Additionally, a copy shall be offered to the National Monuments Record (NMR).

4.3 Dissemination and Publication of Results of Archaeological Works

4.3.1 An entry for inclusion in the Durham County HER will be prepared and submitted.

4.3.2 Summary reports of the project will be prepared, if necessary, for inclusion in the appropriate Notices, Annual Reviews, Reports, etc.

4.3.3 In particular a summary of the results of the investigation will be prepared for *Archaeology County Durham* and submitted to DCCAS, by December of the year in which the work is completed.

4.3.4 A short report on the work will be submitted to a local academic journal if appropriate.

4.3.5 OASIS: The Archaeological Contractor will complete the online form for the Online Access to Index of Archaeological Investigations Project (OASIS), following consultation with HE and DCCAS. The Contractor agrees to the procedure whereby the information on the form will be placed in the public domain on the OASIS website, following submission of the final report (see 3.6) into the Durham County HER.

5 PERSONNEL

Archaeological Practice Delivery Team	***Specialists – Post-excavation***
Project Management Richard Carlton (RC): Alan Rushworth (AR Marc Johnstone (MJ)	*Environmental analysis & Scientific Dating:* Archaeological Services Durham University – Palaeo-Environmental Laboratory
Historic Building Specialist Peter Ryder (PR)	*Finds analysis:* LAJ: Lindsay Allason-Jones (Small Finds) JV: Jenny Vaughan (Medieval Pottery) RY: Rob Young (Prehistoric worked stone and pottery)
Site Assistants Terry Frain (TF) & Adam Leigh (AL)	*Artefactual Conservation* Karen Barker – Antiquities Conservator
Geophysical Survey Phase SI	

6. REFERENCES

COOKSON, G, 2003, *The Townscape of Darlington*. Victoria County History & Boydell & Brewer; Woodbridge.

FORDYCE, W, 1857, *The History and Antiquities of the County Palatine of Durham*. 2 vols, Newcastle upon Tyne, London & Edinburgh.

HUTCHINSON, W. 1785, 1787, 1794, *The History and Antiquities of the County Palatine of Durham*. 3 vols, Newcastle/Durham.

LONGSTAFFE, W H D, 1854, *The History and Antiquities of the Parish of Darlington in the Bishoprick.*

MACKENZIE, E, and ROSS, M, 1834, *An Historical, Topographical and Descriptive View of the County Palatine of Durham*. 2 vols, Newcastle upon Tyne.

PAGE, W, 1905, *A History of the County of Durham*. Vol. I, The Victoria History of the Counties of England, London

PETTS, D with GERRARD, C, 2006, *Shared Visions: The North-East regional Research Framework for the Historic Environment*. Durham County Council.

PEVSNER, N S, and WILLIAMSON, E, 1983, 1985*, The Buildings of England: County Durham*. Second Edition (repr. 2002); Yale University Press, London.

PHASE SITE INVESTIGATIONS, 2020, *Archdeacon Newton Shrunken Medieval Village, Darlington, County Durham: Archaeological Geophysical Survey*. Unpublished report Project No ARC/2573/1079, August 2020.

ROBERTS, B K, 1972, Village plans in County Durham: a preliminary statement, *Medieval Archaeology* **16**, 33-56.

ROBERTS, B K, 1977, *The Green Villages of County Durham*. Durham County Library Local History Publication **12**; Durham.

RYDER, P F, 1991, A medieval building at Archdeacon Newton, Darlington, *Durham Archaeological Journal* **7**, 129-133.

SUNDERLAND, N, 1967, *A History of Darlington*. Darlington Historical Society.

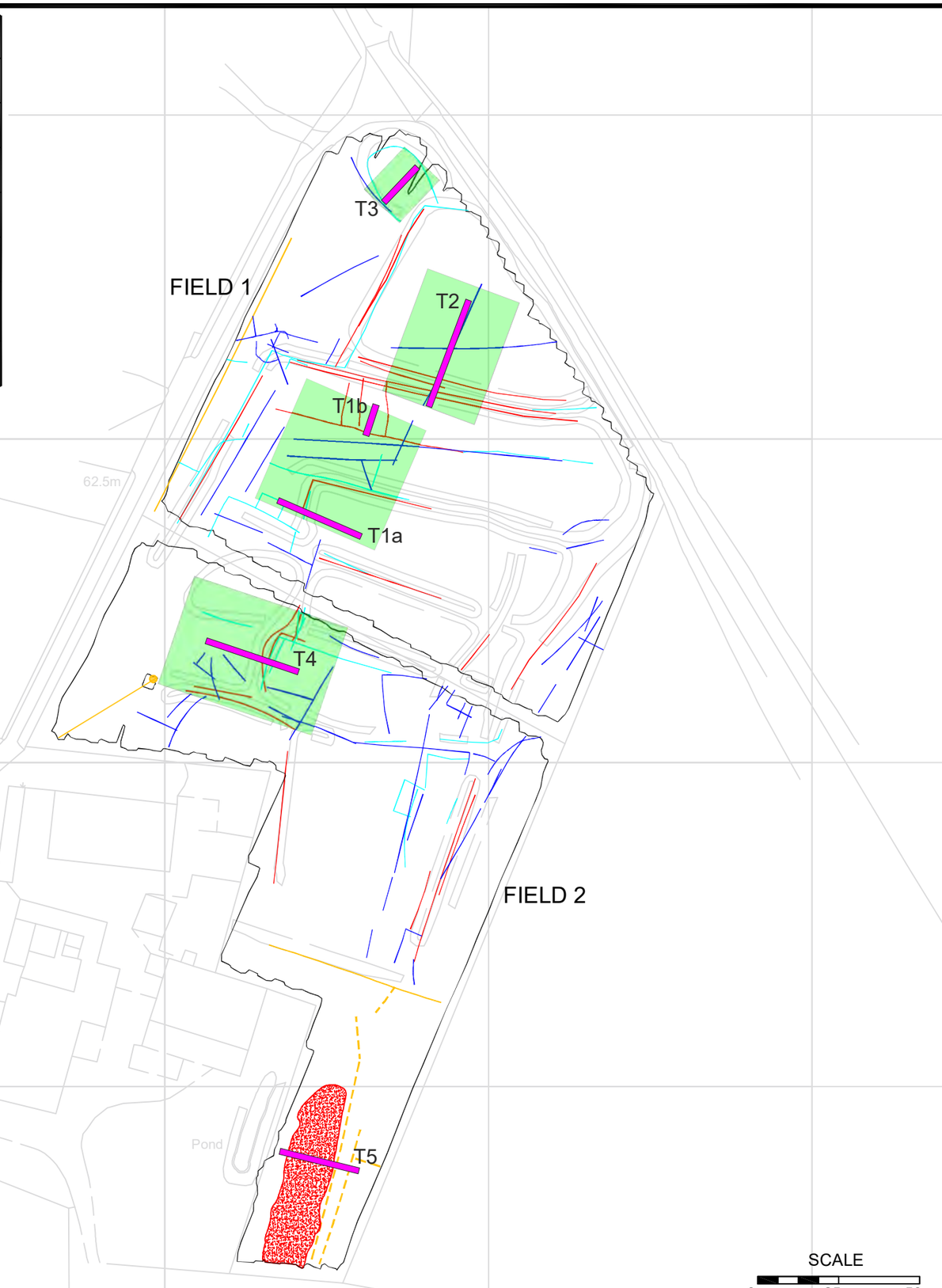
SURTEES, R 1816, 1820, 1823, 1840 *History and Antiquities of the County Palatine of Durham*. 4 vols, London.

WOOLER, E, and BOYDE, A C, 1913, *Historic Darlington*.

APPENDIX 1:

Archaeological Trench Locations shown on Geophysical Survey Interpretative Base.

ANOMALY TYPE	INTERPRETATION
STRONG DISCRETE RESPONSE	MANHOLE COVER. MAY BE RELATED TO A WELL
STRONG LINEAR RESPONSE	PROBABLE MODERN FEATURE SUCH AS DRAIN OR PIPE
LINEAR RESPONSE	POSSIBLE MODERN FEATURE SUCH AS DRAIN OR PIPE BUT COULD BE CAUSED BY OTHER LINEAR FEATURE
LINEAR / CURVI-LINEAR RESPONSE OR TREND	POSSIBLE FEATURE BUT UNCERTAIN TYPE. COULD BE MODERN OR NATURAL BUT SOME COULD BE ARCHAEOLOGICAL
LINEAR / CURVI-LINEAR RESPONSE OR TREND	POSSIBLE / PROBABLE FEATURE. SUGGESTIVE OF ANTHROPOGENIC BUT TYPE AND DATE NOT CERTAIN
LINEAR / CURVI-LINEAR RESPONSE	PROBABLE FEATURE. SUGGESTIVE OF ARCHAEOLOGICAL FEATURE BUT SOME RESPONSES COULD BE CAUSED BY MORE MODERN FEATURES
AREA OF STRONG RESPONSES	FILL MATERIAL. PROBABLE INFILLING MOAT / POND



TRENCH/AREA DIMENSIONS:

T1a - 30m x 2m
T1b - 10m x 2m
T2 - 35 x 2m
T3 - 15m x 2m
T4 - 30m x 2m
T5 - 25m x 2m

Area 1 - 40m x 40m
Area 2 - 40m x 30m
Area 3 - 20 x 15m
Area 4 - 50m x 35m

CONTINGENCY:

Trench expansion within the boxed areas (green transparancies) is requested up to 100% (double) the area of Trenches 1a, 2 & 4, and up to 250% of the areas of Trenches 1b & 3.

SCALE
0m 25m 50m

N

Title

SUMMARY INTERPRETATION OF GEOPHYSICAL SURVEY DATA WITH PROPOSED SITES OF ARCHAEOLOGICAL RESEARCH TRENCHES SHOWN WITHIN SITES OF INVESTIGATION

Base

The Archaeological Practice Ltd.

Tel: (0191) 273 0777
www.archaeologicalpractice.co.uk

Scale [A3 Sheet]
1:2000

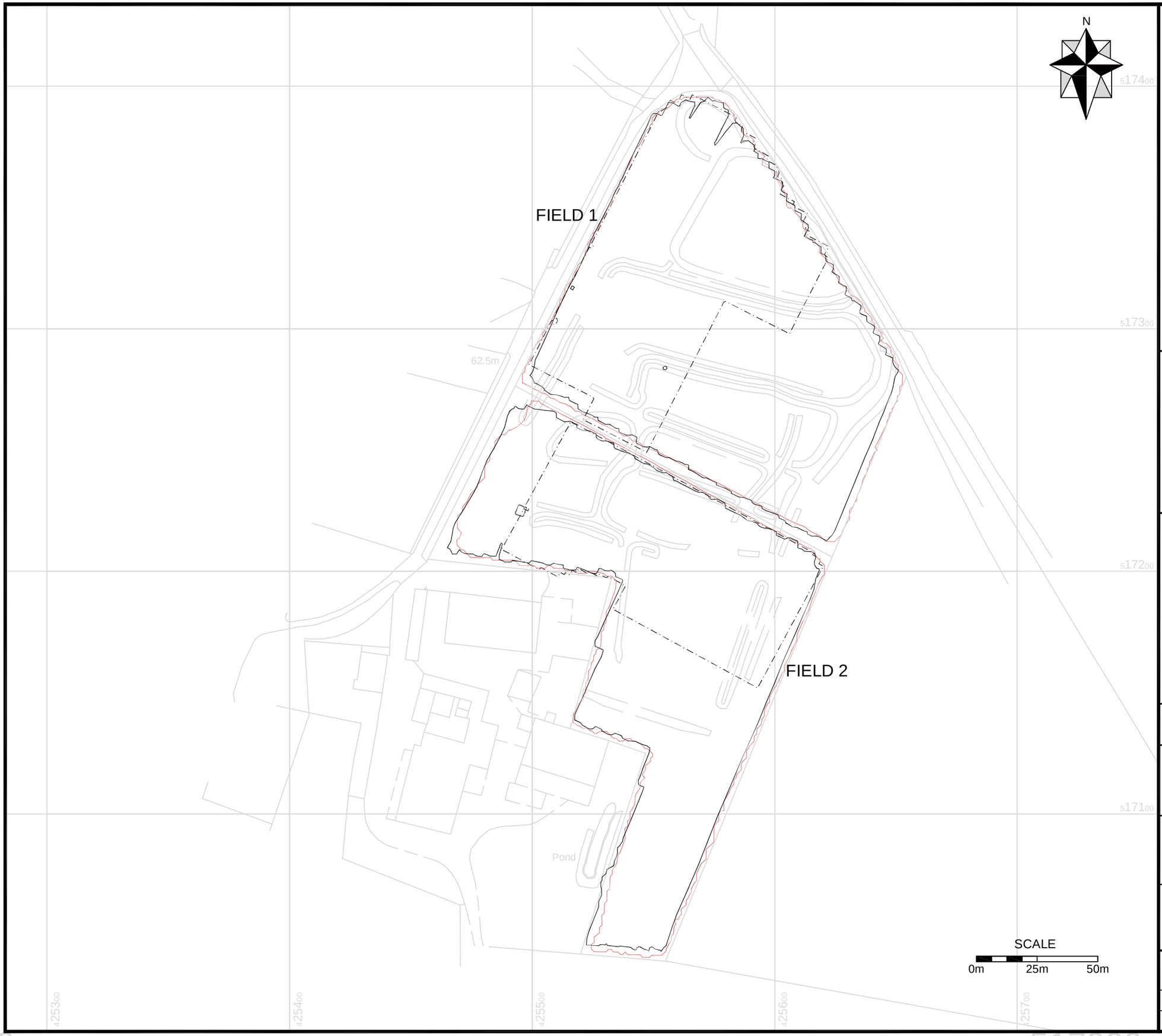
PHASE SITE INVESTIGATIONS

Site
ARCHDEACON NEWTON
DESERTED MEDIEVAL VILLAGE
COUNTY DURHAM

Base
SUMMARY INTERPRETATION OF GEOPHYSICAL SURVEY DATA

APPENDIX 2:

Geophysical Survey Plans, provided by Phase Site Investigations in August 2020.



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

KEY

- EXTENTS OF MAGNETIC SURVEY
- EXTENTS OF EM SURVEY
- EXTENTS OF EARTH RESISTANCE SURVEY

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_02	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site
ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title
EXTENTS OF GEOPHYSICAL SURVEY AREAS

Job No
ARC_2573_1079

Surveyed	CA, JW, PW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020

NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_03	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

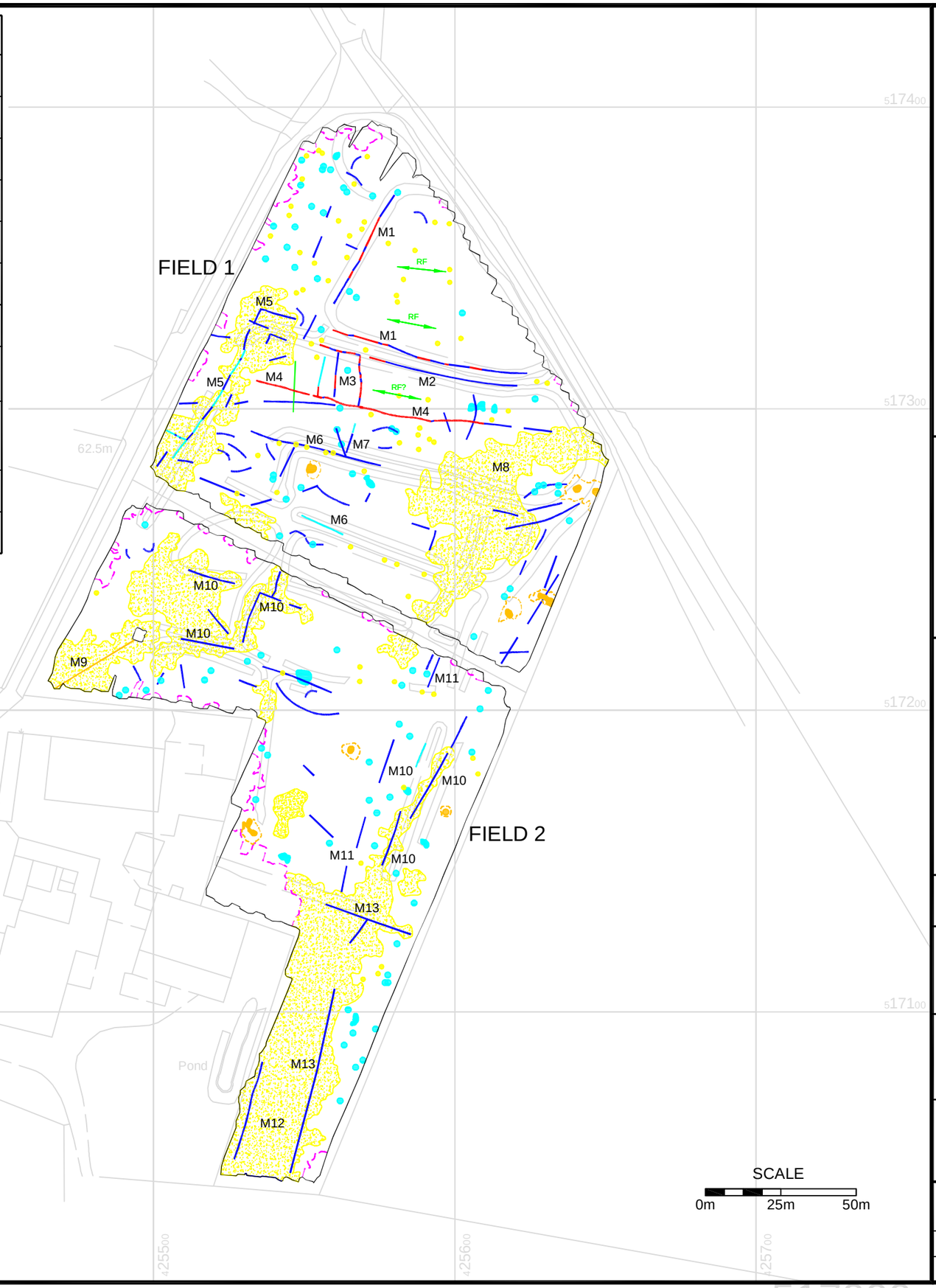
Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title GREYSCALE PLOTS OF MAGNETIC GRADIENT DATA

Job No ARC_2573_1079

Surveyed	CA, PW	Drawn	MW, CA, JW
Chk.	NF	Date	01/06/2020

ANOMALY TYPE	INTERPRETATION
ISOLATED DIPOLAR RESPONSE (IRON SPIKE)	ISOLATED SURFACE / NEAR-SURFACE FERROUS MATERIAL / OBJECT
ISOLATED BIPOLAR RESPONSE (SHOWING POSITIVE COMPONENT AND EXTENT OF ANOMALY)	SURFACE / NEAR-SURFACE FERROUS OR FIRED MATERIAL
AREA OF STRONG DIPOLAR / BIPOLAR RESPONSES (MAGNETIC DISTURBANCE)	SURFACE / NEAR-SURFACE FERROUS OR FIRED MATERIAL
BIPOLAR LINEAR	RELATIVELY MODERN LINEAR FEATURE, SUCH AS A PIPE OR DRAIN
LIMIT OF VERY STRONG RESPONSE	INTERFERENCE CAUSED BY MODERN MAGNETIC FEATURE (FEATURE MAY BE LOCATED BEYOND THE SURVEY AREA)
LINEAR NEGATIVE RESPONSE	POSSIBLE RELATIVELY MODERN DRAINAGE OR AGRICULTURAL FEATURE
RF APPROXIMATE ORIENTATION OF BROADLY PARALLEL POSITIVE LINEARS	AGRICULTURAL FEATURES. PROBABLE RIDGE AND FURROW
LINEAR / CURVI-LINEAR TREND (WEAK OR DIFFUSE RESPONSE)	SOME TRENDS WILL BE RELATED TO REMNANTS OF ARCHAEOLOGICAL FEATURES BUT OTHERS ARE OF UNCERTAIN ORIGIN
ISOLATED POSITIVE RESPONSE	POSSIBLE DEEPER BURIED FERROUS / FIRED MATERIAL OR GEOLOGICAL / PEDOLOGICAL VARIATION BUT COULD ALSO BE INFILLED ISOLATED FEATURE OR AREA OF BURNING
LINEAR / CURVI-LINEAR POSITIVE RESPONSE	PROBABLE INFILLED ARCHAEOLOGICAL FEATURE BUT COULD ALSO BE FIELD DRAIN OR AGRICULTURAL IN ORIGIN
LINEAR / CURVI-LINEAR POSITIVE RESPONSE	PROBABLE ARCHAEOLOGICAL FEATURE



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_04	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site
ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title
INTERPRETATION OF MAGNETIC GRADIENT DATA

Job No
ARC_2573_1079

Surveyed	CA, PW	Drawn	MW, CA, JW
Chk.	NF	Date	01/06/2020

NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_05	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD
NEWCASTLE UPON TYNE

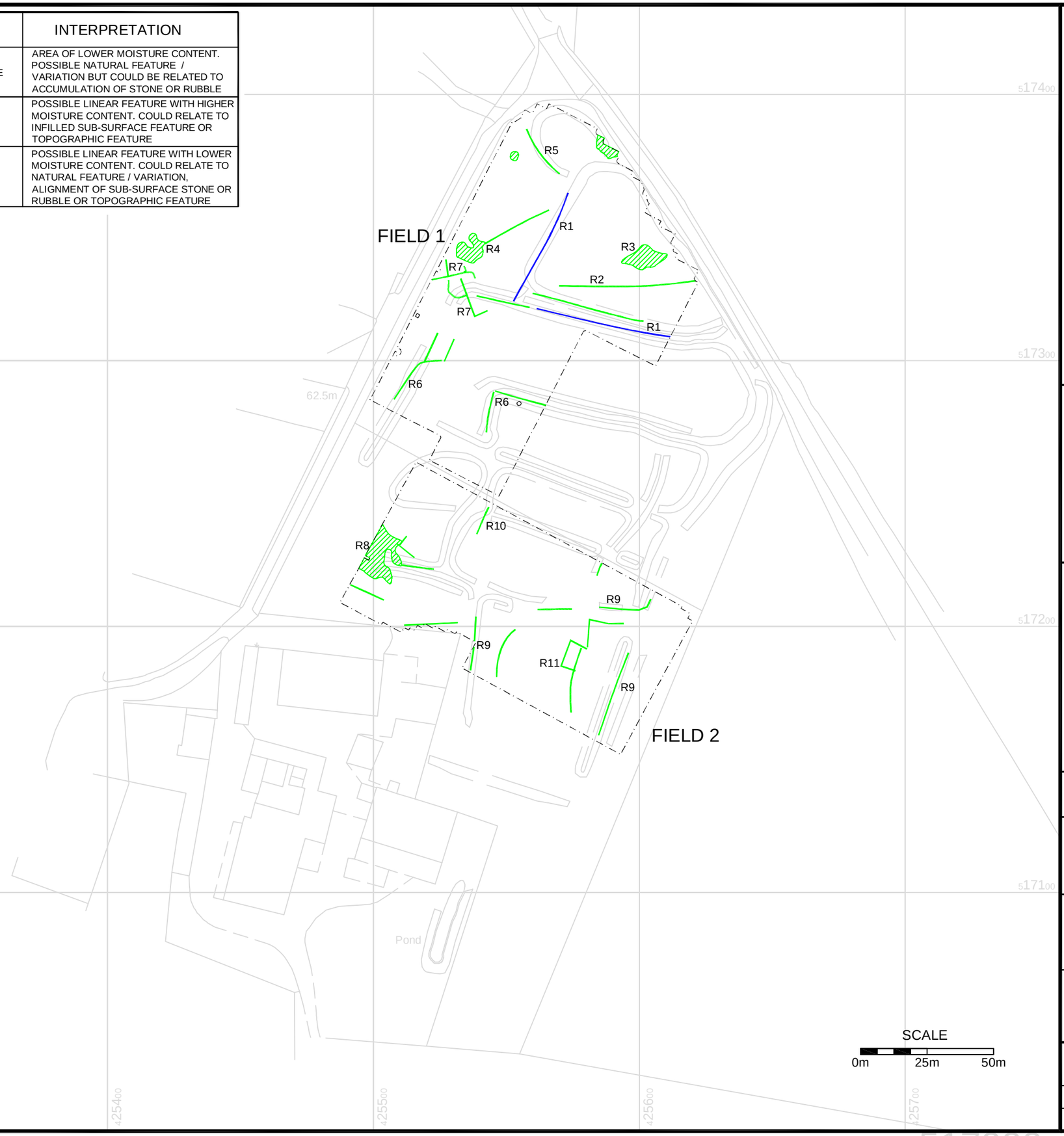
Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title GREYSCALE PLOTS OF EARTH RESISTANCE DATA

Job No ARC_2573_1079

Surveyed	CA, PW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020

ANOMALY TYPE	INTERPRETATION
AREA OF HIGHER RESISTANCE	AREA OF LOWER MOISTURE CONTENT. POSSIBLE NATURAL FEATURE / VARIATION BUT COULD BE RELATED TO ACCUMULATION OF STONE OR RUBBLE
LOWER RESISTANCE TREND	POSSIBLE LINEAR FEATURE WITH HIGHER MOISTURE CONTENT. COULD RELATE TO INFILLED SUB-SURFACE FEATURE OR TOPOGRAPHIC FEATURE
HIGHER RESISTANCE TREND	POSSIBLE LINEAR FEATURE WITH LOWER MOISTURE CONTENT. COULD RELATE TO NATURAL FEATURE / VARIATION, ALIGNMENT OF SUB-SURFACE STONE OR RUBBLE OR TOPOGRAPHIC FEATURE



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_06	FINAL

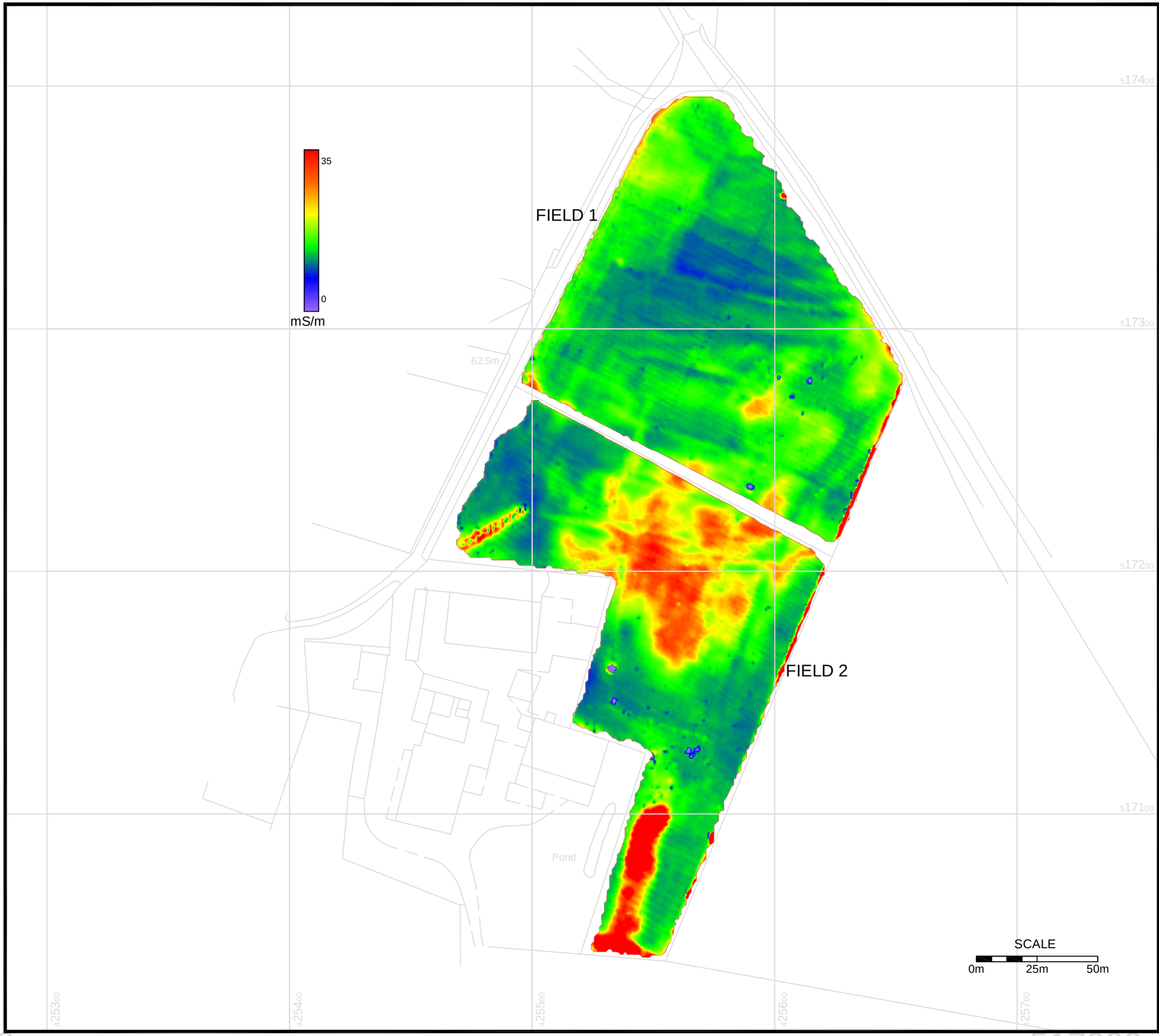
Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title
INTERPRETATION OF EARTH RESISTANCE DATA

Job No
ARC_2573_1079

Surveyed	CA, PW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_07	FINAL

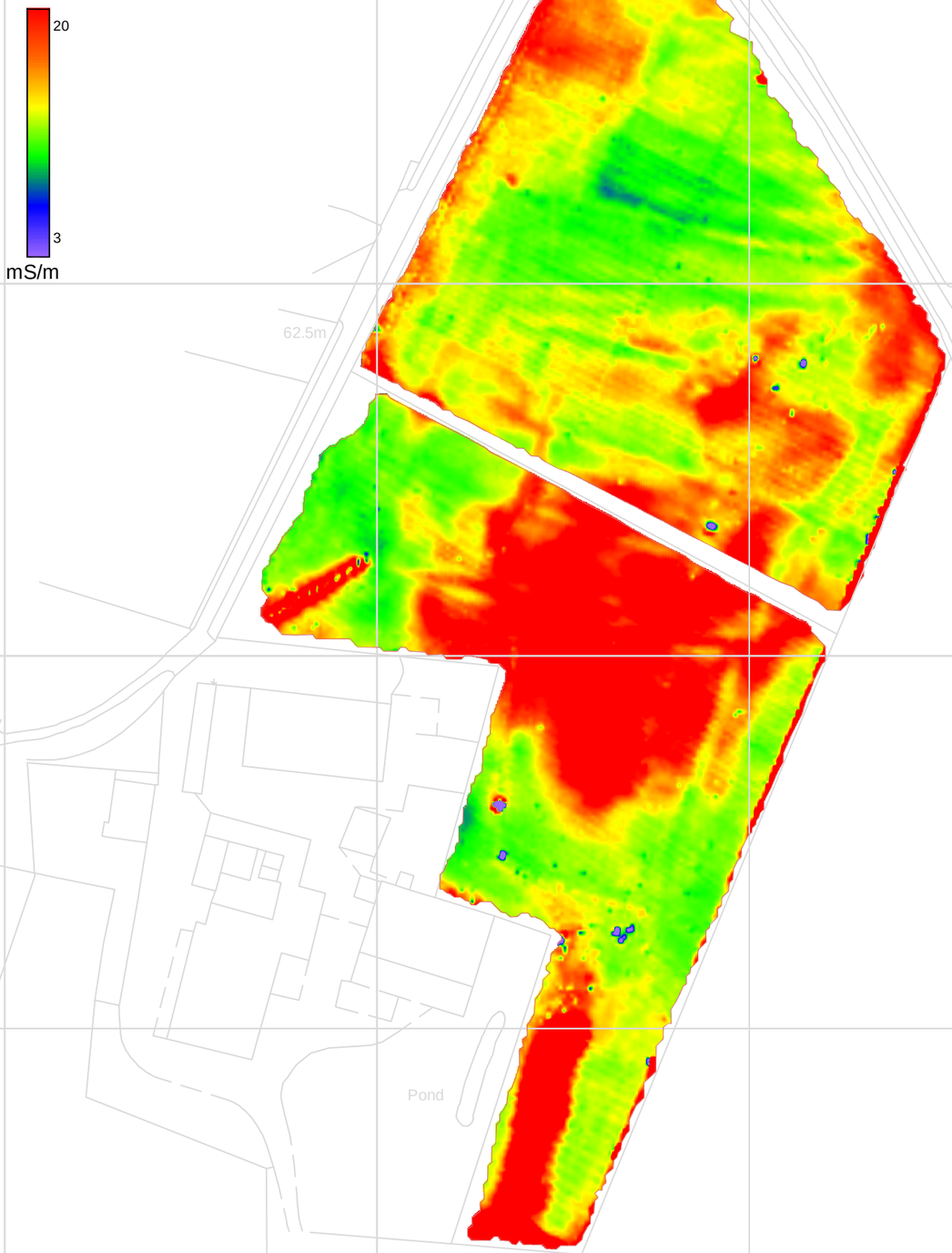
Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title ELECTROMAGNETIC CONDUCTIVITY DATA FROM COIL PAIR 2 (MIDDLE PAIR) (RANGE: 0 - 35 mS/m)

Job No ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_08	FINAL

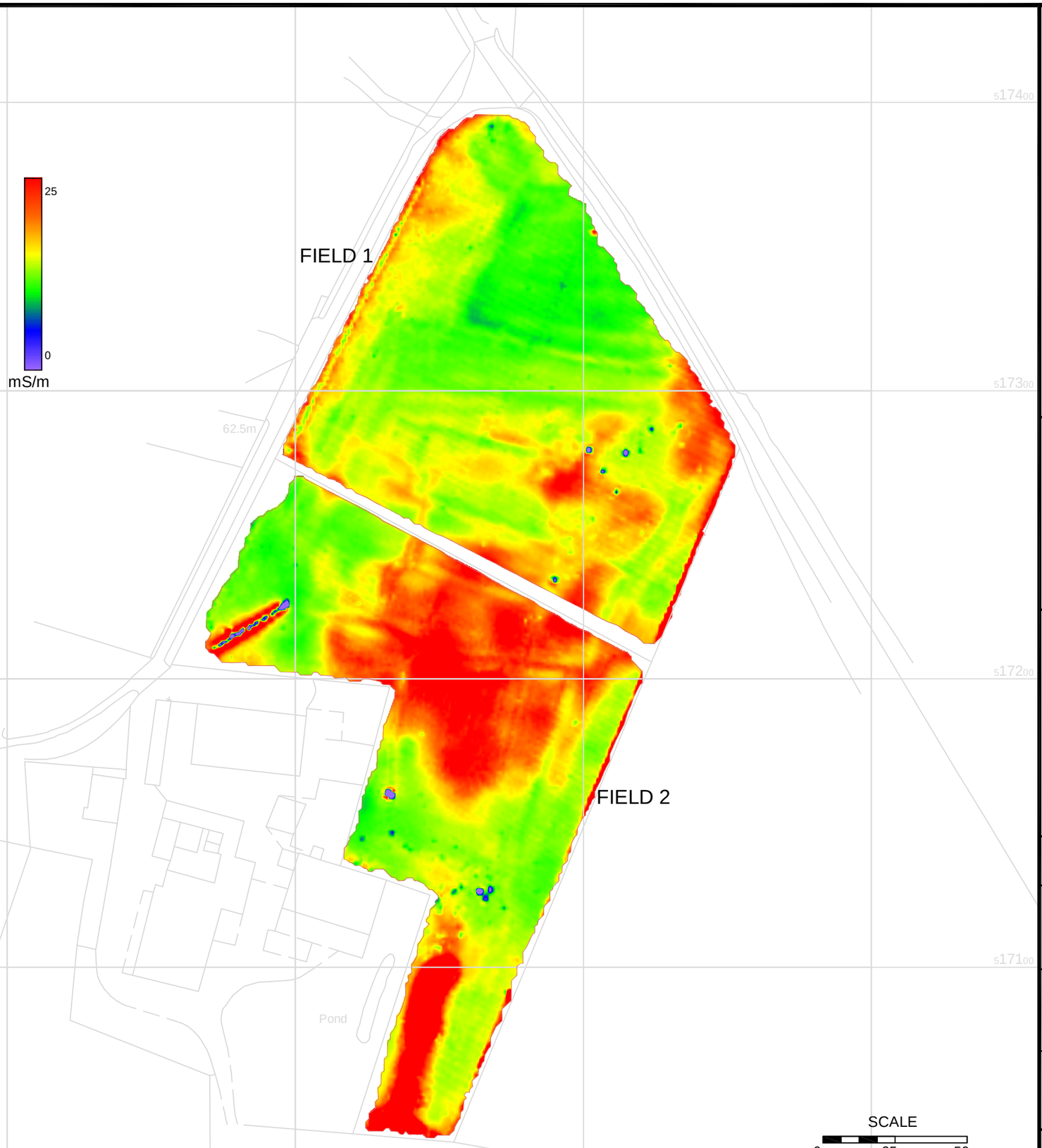
Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title ELECTROMAGNETIC CONDUCTIVITY DATA FROM COIL PAIR 2 (MIDDLE PAIR) (RANGE: 3 - 20 mS/m)

Job No ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_09	FINAL

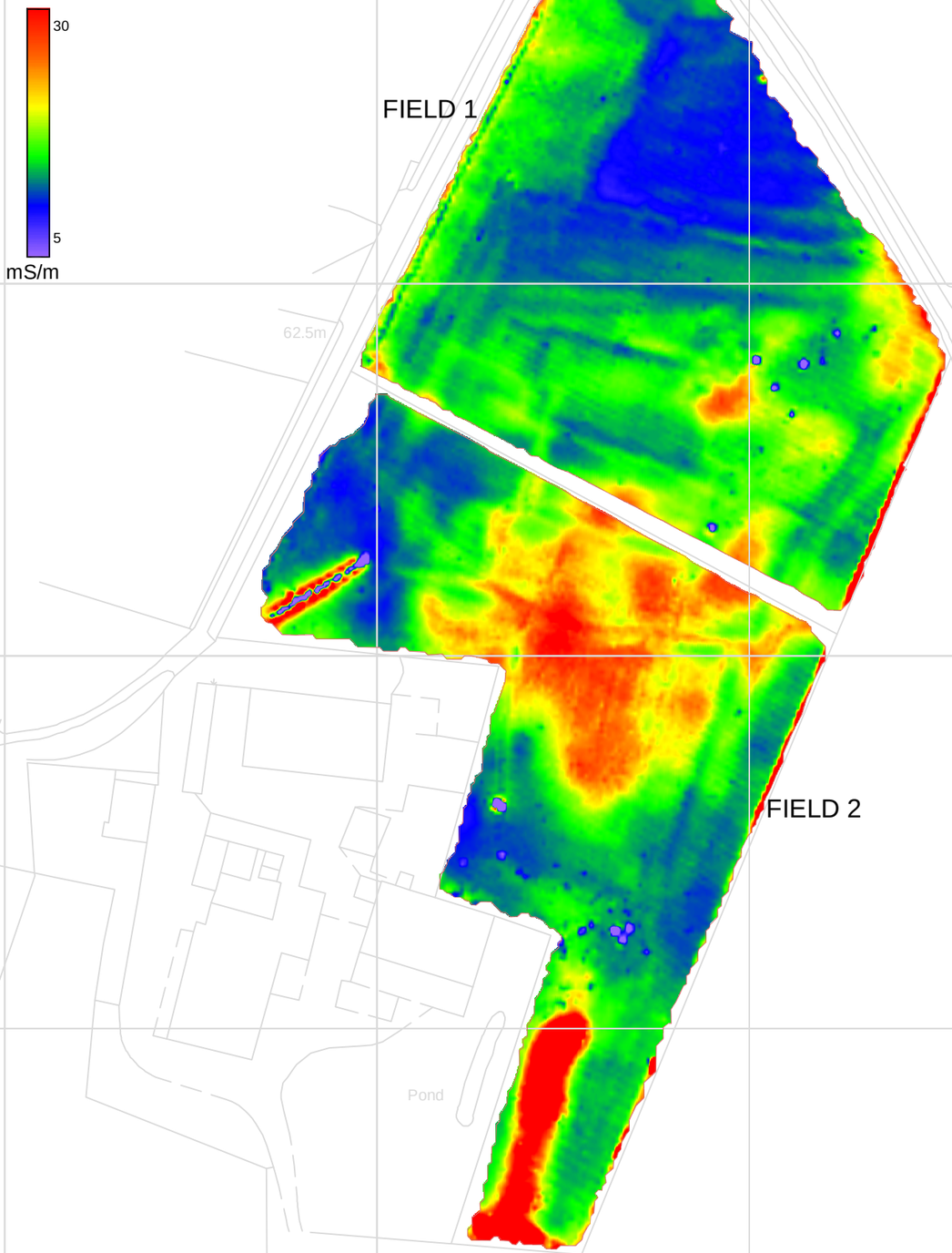
Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title ELECTROMAGNETIC CONDUCTIVITY DATA FROM COIL PAIR 3 (OUTER PAIR) (RANGE: 0 - 25 mS/m)

Job No ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_10	FINAL

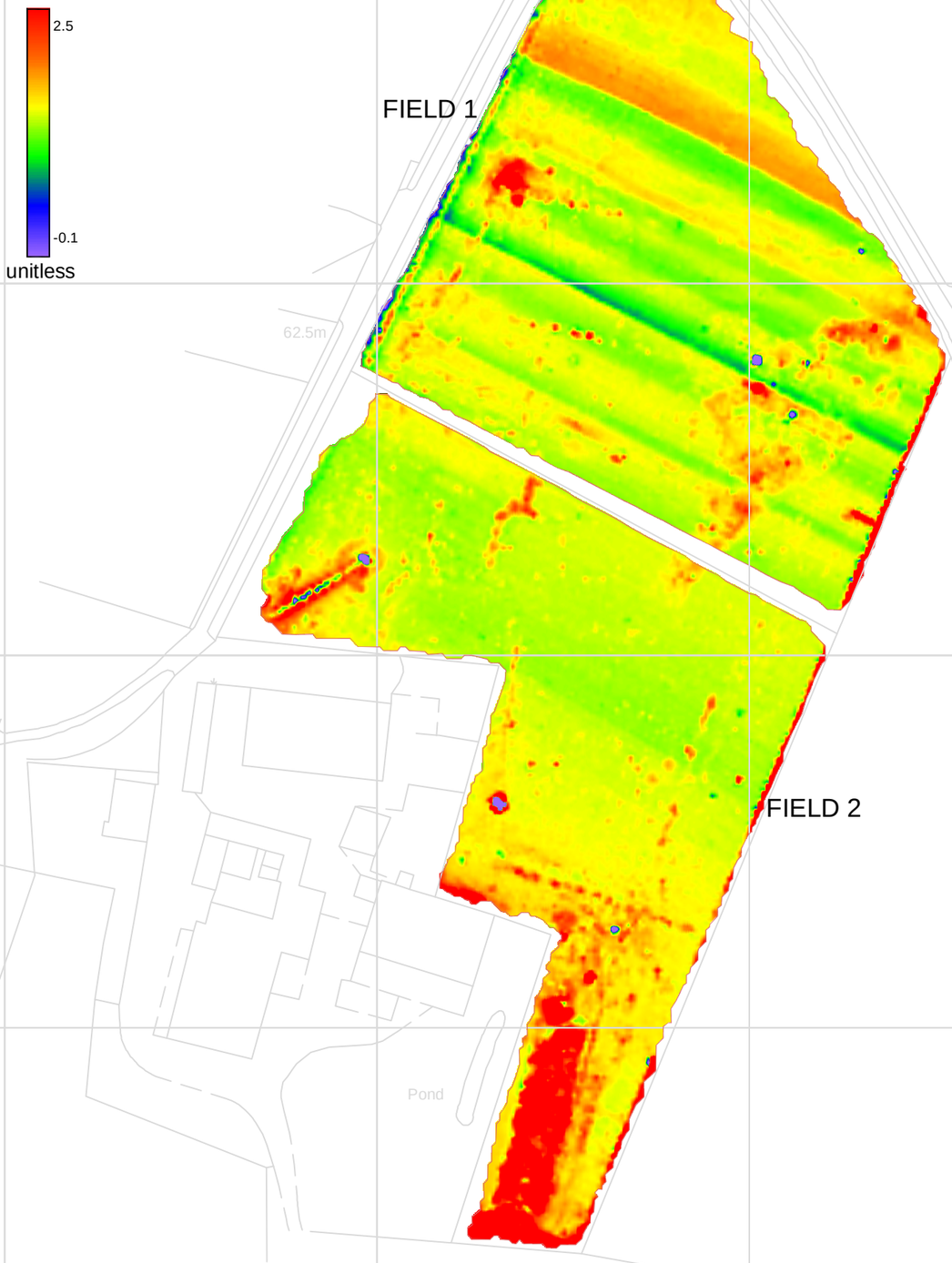
Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title ELECTROMAGNETIC CONDUCTIVITY DATA FROM COIL PAIR 3 (OUTER PAIR) (RANGE: 5 - 30 mS/m)

Job No ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_11	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD
NEWCASTLE UPON TYNE

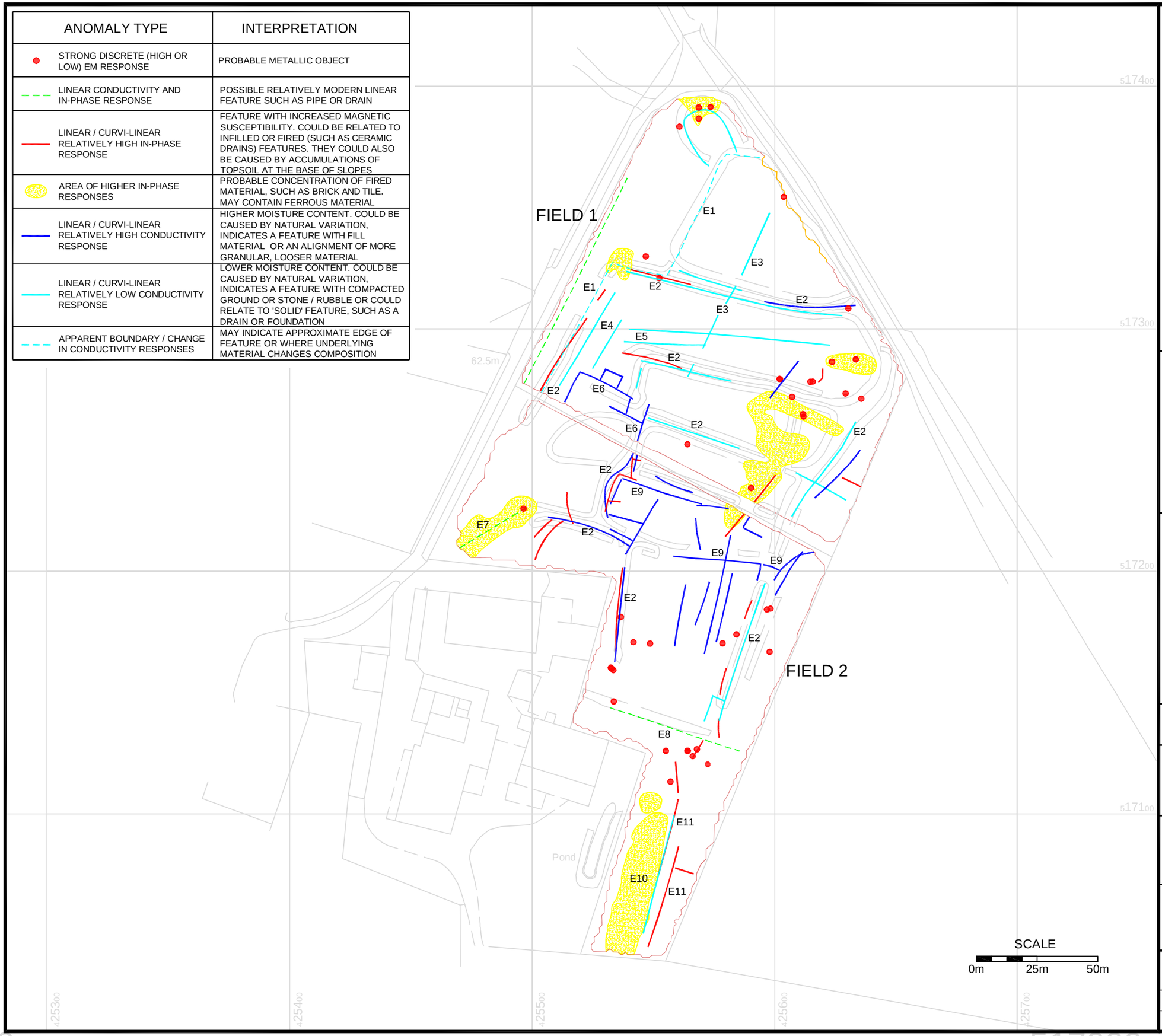
Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title ELECTROMAGNETIC IN-PHASE DATA FROM COIL PAIR 3 (OUTER PAIR) (RANGE: -0.1 - 2.5)

Job No
ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020

ANOMALY TYPE	INTERPRETATION
STRONG DISCRETE (HIGH OR LOW) EM RESPONSE	PROBABLE METALLIC OBJECT
LINEAR CONDUCTIVITY AND IN-PHASE RESPONSE	POSSIBLE RELATIVELY MODERN LINEAR FEATURE SUCH AS PIPE OR DRAIN
LINEAR / CURVI-LINEAR RELATIVELY HIGH IN-PHASE RESPONSE	FEATURE WITH INCREASED MAGNETIC SUSCEPTIBILITY. COULD BE RELATED TO INFILLED OR FIRED (SUCH AS CERAMIC DRAINS) FEATURES. THEY COULD ALSO BE CAUSED BY ACCUMULATIONS OF TOPSOIL AT THE BASE OF SLOPES
AREA OF HIGHER IN-PHASE RESPONSES	PROBABLE CONCENTRATION OF FIRED MATERIAL, SUCH AS BRICK AND TILE. MAY CONTAIN FERROUS MATERIAL
LINEAR / CURVI-LINEAR RELATIVELY HIGH CONDUCTIVITY RESPONSE	HIGHER MOISTURE CONTENT. COULD BE CAUSED BY NATURAL VARIATION, INDICATES A FEATURE WITH FILL MATERIAL OR AN ALIGNMENT OF MORE GRANULAR, LOOSER MATERIAL
LINEAR / CURVI-LINEAR RELATIVELY LOW CONDUCTIVITY RESPONSE	LOWER MOISTURE CONTENT. COULD BE CAUSED BY NATURAL VARIATION, INDICATES A FEATURE WITH COMPACTED GROUND OR STONE / RUBBLE OR COULD RELATE TO 'SOLID' FEATURE, SUCH AS A DRAIN OR FOUNDATION
APPARENT BOUNDARY / CHANGE IN CONDUCTIVITY RESPONSES	MAY INDICATE APPROXIMATE EDGE OF FEATURE OR WHERE UNDERLYING MATERIAL CHANGES COMPOSITION



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_12	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD
NEWCASTLE UPON TYNE

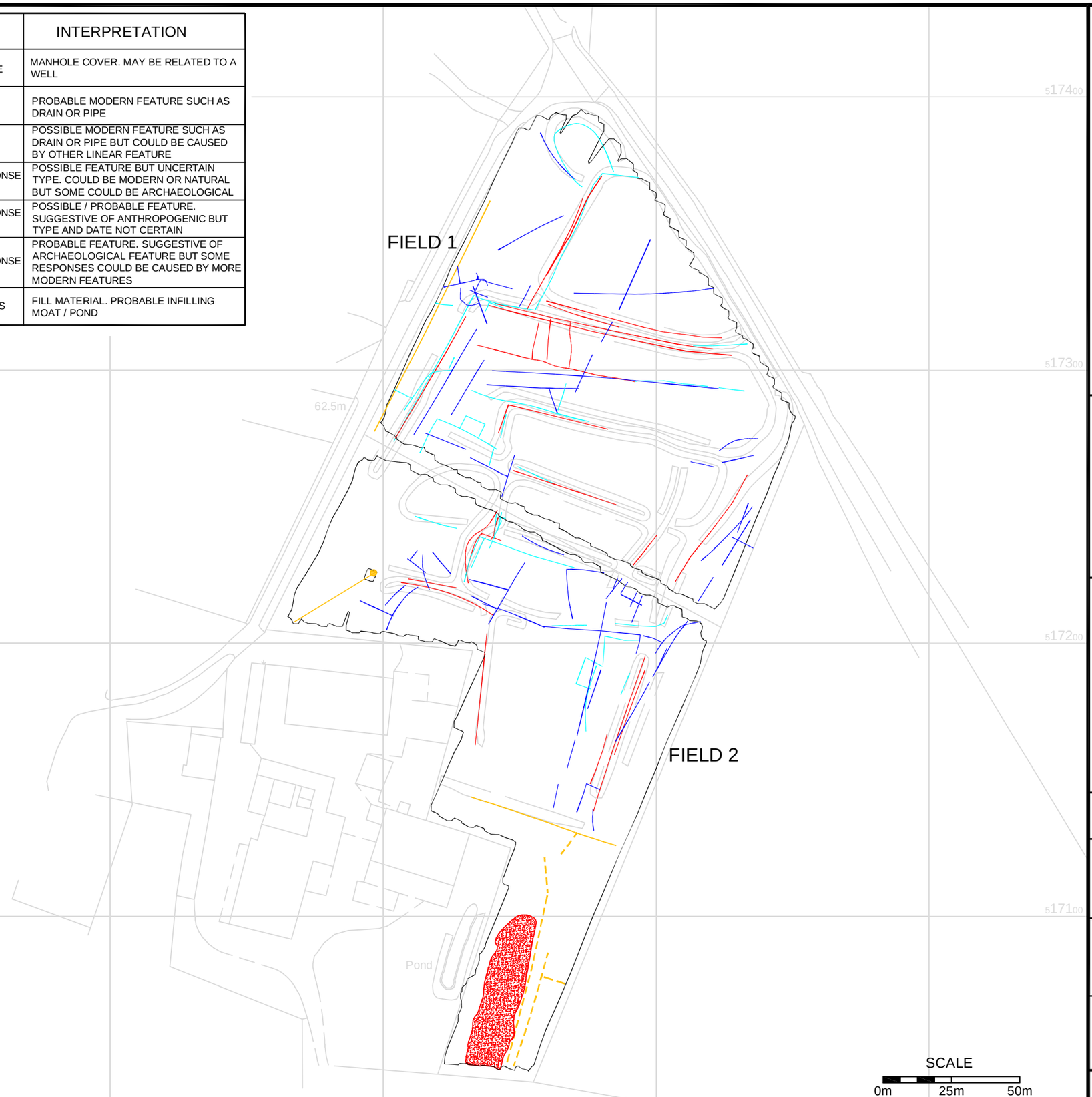
Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title
INTERPRETATION OF EM DATA

Job No
ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020

ANOMALY TYPE	INTERPRETATION
STRONG DISCRETE RESPONSE	MANHOLE COVER. MAY BE RELATED TO A WELL
STRONG LINEAR RESPONSE	PROBABLE MODERN FEATURE SUCH AS DRAIN OR PIPE
LINEAR RESPONSE	POSSIBLE MODERN FEATURE SUCH AS DRAIN OR PIPE BUT COULD BE CAUSED BY OTHER LINEAR FEATURE
LINEAR / CURVI-LINEAR RESPONSE OR TREND	POSSIBLE FEATURE BUT UNCERTAIN TYPE. COULD BE MODERN OR NATURAL BUT SOME COULD BE ARCHAEOLOGICAL
LINEAR / CURVI-LINEAR RESPONSE OR TREND	POSSIBLE / PROBABLE FEATURE. SUGGESTIVE OF ANTHROPOGENIC BUT TYPE AND DATE NOT CERTAIN
LINEAR / CURVI-LINEAR RESPONSE	PROBABLE FEATURE. SUGGESTIVE OF ARCHAEOLOGICAL FEATURE BUT SOME RESPONSES COULD BE CAUSED BY MORE MODERN FEATURES
AREA OF STRONG RESPONSES	FILL MATERIAL. PROBABLE INFILLING MOAT / POND



NOTES

1. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE ACCOMPANYING REPORT (ARC_2573_1079_RPT.PDF) WHICH PROVIDES DETAILS OF THE TECHNIQUES EMPLOYED, THEIR INHERENT LIMITATIONS AND ANY SITE SPECIFIC ISSUES.
2. THIS DRAWING IS BASED UPON DRAWING 'OS_MasterMap_614651_812978_OS_Mastermap.dwg' PROVIDED BY THE CLIENT. THE ORDNANCE SURVEY CO-ORDINATES OBTAINED FOR THIS SURVEY WERE MEASURED USING THE UKOSTN02 PROJECTION. THIS PROJECTION SHOULD BE TAKEN INTO ACCOUNT IF THE SURVEY GRID IS RELOCATED.
3. PHASE SITE INVESTIGATIONS CANNOT ACCEPT RESPONSIBILITY FOR THE RELIABILITY OR ACCURACY OF ANY INFORMATION PROVIDED BY A THIRD PARTY.
4. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS ISSUED IN CONFIDENCE AND IS THE COPYRIGHT OF PHASE SITE INVESTIGATIONS LIMITED. DISCLOSURE OF THIS INFORMATION TO THIRD PARTIES AND UNAUTHORISED COPYING OR REPLICATION OF THIS DATA WITHOUT APPROVAL IS FORBIDDEN.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING

N

PHASE SITE INVESTIGATIONS

Phase Site Investigations Ltd, 703A Whinfield Drive, Aycliffe Business Park, Newton Aycliffe, County Durham, DL5 6AU

T: +44 [0] 01325 311 751
E: enquiries@PhaseSI.com
W: www.PhaseSI.com

Scale [A3 Sheet]	Drawing	Status
1:1500	ARC_2573_1079_13	FINAL

Client
THE ARCHAEOLOGICAL PRACTICE LTD NEWCASTLE UPON TYNE

Site ARCHDEACON NEWTON SHRUNKEN MEDIEVAL VILLAGE, DARLINGTON COUNTY DURHAM

Title
SUMMARY, SIMPLIFIED INTERPRETATION OF THE GEOPHYSICAL DATA

Job No
ARC_2573_1079

Surveyed	JW	Drawn	MW, CA, JW
Chk.	NF	Date	08/06/2020

The Archaeological Practice Ltd.

Westmorland House, Elswick East Terrace,
Newcastle upon Tyne, NE4 7LJ
Tel: 0191 273 0777; Fax: 0191 273 1777
Email: info@archaeologicalpractice.co.uk
Web: www.archaeologicalpractice.co.uk