



ARCHAEOLOGICAL REPORT

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**KIRK MERRINGTON,
PRIMARY SCHOOL**

CO. DURHAM

prepared for

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KIRK MERRINGTON PRIMARY SCHOOL, CO. DURHAM
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Summary

This document presents the results of archaeological investigations prior to and during the construction of a new school building on land to the rear of Kirk Merrington Primary School, Co. Durham (centred on NZ 2625 3108). Planning permission (CMA/7/82) was granted by Durham County Council for the construction of a new 120 place primary school to the north-east of the existing building. The archaeological works were undertaken as part of Condition 23 which required a field assessment to be carried out alongside a moderate desk-based assessment to put the results of the required fieldwork in context.

The archaeological investigations have provided important new information relating to the early history of the village and the post-excavation analysis has given an insight into life in the area during World War II. The earliest features recorded were possibly associated with the early history of the Village of Shelom, or even earlier activity in the area. These features comprised two undated postholes sealed beneath a medieval ploughsoil and highlighted the potential for the discovery of previously unrecorded early archaeological features within the area.

Three phases of ploughing, including two alignments of ridge and furrow were recorded within the area of the school playing field. The dating evidence recovered from these features was not extensive enough to date the separate phases of ploughing but suggested that the area was under the plough as early as the 12th century AD and probably during the 14th to 15th centuries.

The discovery of the remains of a World War II air-raid shelter beneath the school playground was not entirely unexpected as aerial photography suggested that four such structures existed in this area. The shelters were originally thought to be located within the area investigated by Trench 2; however, the trial-trenching proved that this was not the case.

The floor plan and construction method of the shelter recorded at Kirk Merrington was very similar to four air-raid shelters previously recorded at Easington Primary School (AE 2008). The Easington structures were, however, much better preserved surviving intact under soil mounded over them during their decommissioning. Given the similarities in the surviving remains, it is likely that the shelters at both schools were very similar in design.

1.0 INTRODUCTION

- 1.1 This document presents the results of archaeological investigations associated with a development on land at Kirk Merrington Primary School, Kirk Merrington, Co. Durham (centred on NZ 2625 3108) (Fig. 1). Planning permission (CMA/7/82) was granted by Durham County Council for the development which comprised the construction of a new 120 place primary school and a multi-use games area (MUGA) to the north-east of the existing school (Fig. 2).
- 1.2 A trial-trench evaluation, sample area excavation and watching brief were undertaken as part of Condition 23, which required an archaeological field assessment to be carried out alongside a moderate desk-based assessment in order to put the results of fieldwork in context.
- 1.3 The required work was carried out by Northern Archaeological Associates Ltd (NAA) on behalf of Durham County Council. The fieldwork was based on a specification provided by the Senior Archaeology Officer for Durham County Council (DCC 2012) and followed the strategy set out in a written scheme of investigation (WSI) written by NAA (2012) and agreed by the Senior Archaeology Officer for Durham County Council. The fieldwork was undertaken in accordance with relevant standards and guidance published by English Heritage (1991), the Institute for Archaeologists (2008a) and the South Yorkshire Archaeology Service (2011).

2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

- 2.1 The site was located to the rear of Kirk Merrington Primary School, at the southern edge of Kirk Merrington village, within the existing playground and sports field, centred on NZ 2625 3108 (Fig. 1). Upstanding ridge and furrow earthworks between 0.1m and 0.5m high were visible across the field running north-east to south-west (Plate 1). The existing ground surface along the north-western edge of the school sports field was approximately 183mOD. The field sloped gently downwards towards the south-east to 181mOD approximately 65m from the north-western edge. The ground then sloped more steeply to c.178.5mOD at the south-western field edge.
- 2.2 The solid geology of the site is Magnesian Limestone (IGS 1978). The soils in the study area are brashy, well drained calcareous fine loam of the Aberford Association (SSEW 1983 and Jarvis *et al.* 1984).

3.0 ARCHAEOLOGICAL AND HISTORIC BACKGROUND

- 3.1 As part of the archaeological works a moderate desk-based assessment was undertaken including consultation of the following resources:
- Durham County Historic Environment Record (HER)

- National Monuments Record (NMR)
- vertical and oblique aerial photographs and transcripts
- published and unpublished historical and archaeological studies
- cartographic sources including historic maps
- www.durhamrecordoffice.org.uk/Pages/home.aspx
- www.old-maps.co.uk
- Google Earth
- Archaeology Data Service
- www.bbc.co.uk

3.2 Heritage Assets recorded within 1km of the site are presented in Table 1, Figure 2 and are incorporated into the archaeological and historical background provided below. Within this report Heritage Assets and archaeological interventions are identified by a unique reference number (HA) specific to this work. Table 2 lists approximate date spans of the chronological periods mentioned in the text.

Table 1: Archaeological sites listed in the Durham County HER in the vicinity

Heritage Asset (HA)	HER ID	Easting	Northing	Description	Date
1	H1168	425900	530700	Findspot, 2 Roman spoons	Roman
2	H395	426743	531533	Cropmark, rectangular enclosure	Iron Age/Roman
3	H1331	425312	531177	Earthworks, Middlestone (Middle Merrington) shrunken medieval village	Medieval
4	H1335	426228	531464	Listed Building, St Johns Church	Medieval
5	H2125	425370	530700	Findspot, end scraper	Prehistoric
6	H2126	425450	530690	Findspot, waste flake	Prehistoric
7	H2127	425650	530670	Findspot, small flint scatter	Prehistoric
8	H2128	425450	530690	Findspot, flint flake	Prehistoric
9	H2129	425650	530670	Findspot, small flint scatter	Prehistoric
10	H2130	425770	530660	Findspot, core and 2 waste flakes	Prehistoric
11	H2131	426030	530730	Findspot, retouched flake	Prehistoric
12	H2132	426680	530940	Findspot, scraper	Prehistoric
13	H2133	427140	531130	Findspot, 2 waste flakes	Prehistoric
14	H2970	426029	531934	Lime kilns, North Close	Post-medieval
15	H7699/H7839	426410	531350	Geophysics and evaluation, Hallgarth	Medieval
16	H8086	426400	531900	Findspot, trumpet brooch and 2 coins	Roman, medieval and post-medieval
17	H34648	426238	531400	Listed building, Hallgarth farmhouse	Post-medieval
18	H34666	426210	531466	Listed remains, grave cover	Medieval
19	H34667	426213	531454	Listed remains, 2 grave covers	Medieval
20	H34817	426239	531457	Listed remains, brass tomb	Post-medieval
21	H34818	426249	531471	Listed remains, grave cover	Medieval
22	H34953	426217	531391	Listed remains, gate and wall	Medieval

Heritage Asset (HA)	HER ID	Easting	Northing	Description	Date
23	H34980	426200	531430	Listed remains, headstone	Post-medieval
24	H35012	426187	531115	Listed remains, outbuilding and wall	Post-medieval
25	H35624	426249	531466	Listed remains, grave cover	Post-medieval
26	H35921	426195	531107	Listed remains, house, outbuilding and wall	Post-medieval

Table 2: Approximate time periods referred to in report (after Manby et al. 2003)

Period	Date
Prehistoric	Palaeolithic
	c.450,000 to c.8500 BC
	Mesolithic
	c.8500 to c.4,400 BC
	Neolithic
	c.4,400 to c.2,300 BC
Historic	Bronze Age
	c.2,300 BC to c.700 BC
	Early Iron Age
	c.700 BC to c.400 BC
	Late Iron Age
	c.400 BC to AD70
	Roman
	AD 70 to 400
	Early medieval
	AD 400 to 1066
	Later medieval
	AD 1066 to 1535
	Post-medieval
	AD 1536 to 1900
	Modern
	AD 1900 to current

Prehistoric and Roman periods

- 3.3 Although the earliest documented evidence for a settlement at Kirk Merrington relates to the early medieval period (see below), evidence of human activity prior to this exists in the form of artefacts found in recently ploughed fields (findspots), aerial photographs of cropmarks and archaeological excavations in the wider area.
- 3.4 The earliest artefacts recovered from the fields around Kirk Merrington include worked flint tools, possibly of a Mesolithic date (HA 5-13). These artefacts represent hunting tools and the waste products from their manufacture that lay discarded in ancient hollows or dug features until they were brought to the surface by ploughing. Some of the other worked flints recovered may date to the Neolithic period or the Bronze Age, but as no other similarly dated evidence (such as burials, monuments or settlements) has been discovered in the vicinity of Kirk Merrington, very little is known about the area during early prehistory.
- 3.5 Aerial photographs, taken to the east of the village show linear dark features forming square enclosures (HA 2) that are smaller and on a different alignment to the present system of fields. A possible circular feature or 'ring-gully' was also identified inside one of the enclosures.
- 3.6 Such cropmark enclosures and ring-gullies are common in Durham and where they have been archaeologically investigated most have been proved to be settlements dated to the Iron Age or early Roman period. For instance a similar cropmark enclosure investigated in Coxhoe (Haselgrove and Allon 1982) was found to be the remains of an Iron Age roundhouse within a rectangular

ditched enclosure. A large rectangular cropmark enclosure excavated close to Thorpe Thewles (Heslop 1987) was found to be the remains of a settlement that was inhabited during the later Iron Age and early Roman period.

- 3.7 Similarly, activity during the Roman period in and around Kirk Merrington is demonstrated by the discovery of two late Roman silver spoons (HA 1) during potato picking to the south of the village and a trumpet brooch to the north of the church (HA 16). No known archaeological remains dating to this period have been recorded in or close to Kirk Merrington, but this is probably more a result of the limited number and scope of archaeological investigations carried out in the area. Much of the North-East region is thought to have been farmed during the late Iron Age and Roman period and rural settlements would have been spread across the area (Haselgrove 2002, 63; Willis 1999, 83, Ferrell 1997, 233; Still and Vyner 1986). The sites previously identified through cropmarks and excavation are therefore thought to represent only a portion of the settlements that would have existed.
- 3.8 Every year evidence is uncovered that reinforces this theory as many previously unknown Iron Age and Roman period settlements have been discovered through developer-funded excavations and geophysical surveys (for instance NAA 2002; NAA 2004; Taylor-Wilson 2006; Elliott 2007; Claydon 2012). Closer to Kirk Merrington, ditches and gullies of a 2nd and 3rd century AD date, probably the remains of a settlement were recorded during archaeological excavations close to Tudhoe Moor, Spennymoor (Rose 2008).

Medieval period

- 3.9 Evidence relating to Kirk Merrington during the medieval period exists in the form of architectural remains relating to St John's Church (site 4), a findspot, earthworks in nearby Middlestone and early documents.
- 3.10 The village of Kirk Merrington, or East Merrington (or just Merrington), as it was previously known is thought to have a medieval origin, possibly early medieval as 'Kirk' is Norse and Merrinton is derived from the Old English 'Maerintun' (Beckensall 1979). In '*Usurping of the See of Durham*', a Durham Monk, Simeon, wrote of a church in Merrington in 1144 and a later translation (Surtees 1816) details the siege of 1143-4 at the church of St John where William Cumin, a usurper Bishop, fortified and occupied the church before being attacked and captured by three Durham Barons Roger Conyers, Galfrid d'Escolland and Bertram Bulmer.
- 3.11 The physical evidence of medieval activity in Kirk Merrington includes: five grave covers in the grounds of St John's Church, thought to date to the late 12th or early 13th century (sites 18, 19, 21 and 25); a single medieval coin (site 16), discovered to the north of the church; and evidence of ridge and furrow ploughing (ASUD 2004; site 15).

- 3.12 Early records of the rentals associated with Merrington give an idea of the size and form of the village in 1430 (Greenwell 1860; Arthur 2009). They mention a manor house and state that Alan, the son of Roger of Merrington had '4 bovates of land with toft and croft and all their appurtenances in the village of East Merrington. Paying each year to us 1 silver marc and working the mill and grinding 13 vessels.' He also held '1 messuage and 20 acres of land which were once William of Merrington's and the Lord John Neville's, as appears through rental.'
- 3.13 Furthermore, 'The heirs of William of Heighington are holding freely on the North Row from the Prior 1 messuage and 3 bovates of arable land through military service and attendance at the free court of the Prior every fortnight.' Finally, 'The heirs of Syward the miller and Robert his brother and William the son of Thomas Cook and Agnes his wife and John Jackson of Elstob hold freely from the Prior on the South Row 1 messuage and 2½ bovates of arable land and 2 acres of meadow for military service and attendance of the free court of the Prior.'
- 3.14 A bovat was as much land as an ox can plow in a year and is estimated to be between 12 and 18 acres of land. A messuage or toft refers to a dwelling and the land it stood upon. Similarly a croft was the strip of land that usually extended from the toft.
- 3.15 These records suggest that the village was small with two rows of properties and a manor house, probably separated by a road and extending from the church grounds. This village of East Merrington was therefore most likely to have been located close to the present church on the summit of the ridge along the line of the modern B6287 road.
- 3.16 A second village named Shelom is also mentioned in the 1430 freehold rental documents (Greenwell 1860; Arthur 2009) as being '...next to Merrington'. Also the The Gillycorn Rental, a 15th century record of the estates of the priory c.1230 (Fraser 1955) states that 'In the vill of Shelom there are 8 tofts and crofts and 16 bovates of bondland...'. The document also lists that 'John Windlestone holds 1 messuage at the end of the West Row and 2 bovates of land and pays ½ thrave. John Windlestone holds 1 toft and 1 bovat exchanged for land in Aycliffe and no payment. Robert Denom holds 1 messuage and 2 bovates of land and pays ½ thrave.' A 'thrive' was two dozen and often referred to sheaves (bundles) of corn and 'bondland' refers to land held by bondsmen who owed services to the Lord as part of the land tenure (Arthur 2009).
- 3.17 Later mapping shows two rows of houses approximately 300m to the south of Merrington village on the east and west side of a road heading south-eastwards. The houses are marked as 'Shellam' and it is likely that this was the location of the village of Shelom mentioned in early documents.
- 3.18 A third nearby village, Mid Merrington (now Middlestone), located to the west of Merrington, is also mentioned in early documents (Greenwell 1860; Arthur 2009). Upstanding earthworks recorded in the village (HA 3) are thought to

represent remains of the medieval hamlet that was probably larger than the present settlement.

- 3.19 During the medieval period the villages of Merrington, Mid Merrington and Shelom expanded in size. However, by the early 15th century Mid Merrington seemed to be in decline. Merrington village expanded southwards towards Shelom and in the 15th century the two settlements formed a syndicate of shared land and both started to be referred as East or Kirk Merrington (Lomas and Piper 1989; Arthur 2009, 48).

Post-medieval and modern periods

- 3.20 The enclosure map of 1666 and Richardson's map of 1768 (Fig. 3) show that Merrington and Shelom had become one village. The Durham HER lists several sites of interest dated to the post-medieval and modern periods within and in the vicinity of Kirk Merrington. These including several listed buildings and structural remains, a brass tomb in the churchyard and two derelict limekilns on the edge of North Close village.
- 3.21 Hallgarth farmhouse on Church Close (HA 17) is thought to have been built around AD 1700 but was altered in the 19th century. It is a listed building and is noted within the HER as being an inn during its long history. Other post-medieval and modern listed remains within Kirk Merrington include: an early 19th century wall and outbuilding of a 'Shellom house' (HA 24); a probable early 18th century 'Shellom house, outbuilding and wall' (HA 26); and late 18th century gate piers and wall (HA 22) to the south-west of Hallgarth farmhouse.
- 3.22 A chest tomb (HA 20) in the churchyard is also a protected monument (listed building). It bears a dedication to three children, John, Jane and Elizabeth Brass, murdered in 1683. The tomb was restored in 1789 by George Wood and a long inscription records the murder by their father's servant, Andrew Mills, his execution and hanging in chains. The word 'executed' has been scratched out from the inscription, supposedly by the culprit's family (Fordyce 1857).
- 3.23 Old mapping shows how the village of Kirk Merrington developed between Richardson's plan of 1768 and the present day. The village depicted on Richardson's plan (Fig. 3) seemed to have changed little from its 15th century documentary description, with maybe only a few properties being added (Arthur 2009, 16, 105). The 1857 Ordnance Survey (OS) plan (Fig. 4) shows little expansion other than the addition of a school to the north of the village on the main north to south road (now the B6288). Several quarries, also marked on this plan on either side of the road to the north of the school may relate to limestone quarrying and possibly the two limekilns at North Close (HA 14).
- 3.24 The 1920 and 1923-4 OS maps again show little change apart from expansion between the main settlement and what was once Shelom village. The building

of a new school at its present location was discussed in 1921-24 (DC Arch 1/124) and is shown on the 1939 OS map as are several new properties opposite (Fig. 5). It is not until the 1962 plan that the first of the housing estates that form much of the modern village are first depicted. This housing is shown to have expanded southwards to its present limit on the 1979-82 OS map.

- 3.25 Aerial photographs from 1945 and 1946 show four structures, thought to be air-raid shelters located behind the school beyond the original tarmacadam playground.

Previous archaeological works

- 3.26 A geophysical survey was undertaken in 2004 at Beckwith Close, to the north-east of the School (ASUD 2004). The geophysical survey revealed anomalies possibly representing ridge and furrow ploughing, former field boundaries, a track, the remains of a building and some soil-filled features such as ditches or gullies. The survey was followed up by a trial-trench evaluation, during which the presence of undated ridge and furrow ploughing was confirmed (Peter Carne, pers. comm.).

Kirk Merrington during the Second World War

- 3.27 During the political build up to the Second World War preparations were being made for the defence of Britain and its civilian population (Doyle 2011, 5). The Zeppelin bombing raids on London and the south-east during the First World War had demonstrated the potential of aerial attacks and the inadequacy of the 1914-1918 home defences (Lowry 1995, 66; Doyle 2011, 6). As a result of these concerns the Committee of Imperial Defence set up a subcommittee in 1924 to consider 'Air Raid Precautions' (ARP) to protect the country from aerial attack (*ibid.*, 6). The threat of the use of poison gas and aerial bombardment of civilians with high explosive bombs had become a reality in the conflicts in Spain and Abyssinian during 1936 (*ibid.*, 5).
- 3.28 On 1st January 1938 the *Air Raid Precautions Act 1937* came into effect obliging all local authorities to cooperate with government ARP plans (Lowry 1995, 66; Doyle 2011, 6). A programme of protection for the civilian population was established across the country. Every household received the booklet 'Air Raid Precautions' published in 1938 (HMSO 1938; CC/X 176), which was filled with useful advice on how to prepare for war and some 40 million gas masks were issued (Crocker 2004, 57; Doyle 2011, 9).
- 3.29 Open shelter trenches and communal surface shelters were constructed all over the country (Lowry 1995, 66-73; Doyle 2011, 8) and plans were made for the evacuation of children, expectant mothers and the frail from Britain's large cities; the latter started on 1st September 1939 (*ibid.*, 9). Durham was not exempt with children being evacuated from Sunderland, Gateshead and other coastal areas to the adjacent countryside (AE 2008, Culture_Durham 2005a).

- 3.30 Communal surface shelters were located in public places and were constructed of brick with a concrete capped roof, housing about 50 people (Lowry 1995, 69). They were situated along main roads so that they were close enough for people to run out of their houses during an air raid and find apparent safety in the street shelter. They were not designed to withstand a direct hit, but could protect the inhabitants from a nearby blast. There were some tragic incidents early on in the war where a nearby bomb would lift the roof off a shelter and drop it on the occupants below (Crocker 2004, 43; Risbey 2002).
- 3.31 These defects were later overcome by the construction of outer blast walls, improving the mortaring of the cement joints and by edging the roof so that it could shift a few inches without falling off the supporting walls (Risbey 2002). However, due to their poor reputation these surface shelters were not very popular and where an underground alternative existed (such as the London underground), these were favoured (Crocker 2004, 47; Doyle 2011, 8). The underground refuges were at first discouraged by the authorities, but as bombing of civilian areas increased in intensity deep shelters were regularised and some were purpose-built (Lowry 1995, 71-2; Doyle 2011, 8). In the North-East, the Victoria Tunnel which once served Spital Tongues Colliery (sometimes known as Leazes Main Colliery), was converted into an air-raid shelter with a seating capacity of 9,000 (Vickers 2003).
- 3.32 In 1938 the Board of Education issued a circular 'Air Raid Precautions in Schools' which advised on the provision of air-raid shelters in playgrounds and playing fields (Board of Education 1938). However, once war broke out on 3rd September 1939 the expected aerial assaults did not arrive; people became complacent and evacuees began to drift back to the cities. This period became known as the 'Phoney War' (Doyle 2011, 9), and despite the governments plea to parents not to recall their children, by 1940 many evacuees had returned home (Crocker 2004, 47).
- 3.33 On 17th October 1939 Hoy, Orkney was the first place to be bombed and in May 1940 the bombing of mainland Britain started, primarily in Kent and the North-East (Doyle 2011, 9). By the end of 1939 there was increasing pressure on the government to re-open schools that had been closed due to the war but although a programme of building air-raid shelters had started before the war, many places had still to construct adequate protection (AE 2008). Due to administrative and building delays the construction of many school shelters in Durham was behind schedule and during one of the earliest raids on the 29th January 1940, many of the county's school children could do no more than hide under their desks (Pears 1994).
- 3.34 Initially school shelters had consisted of little more than a reinforced room, such as a basement or corridor, in the existing school building. However, the inherent dangers of gathering children in one place with glass and debris potentially flying around soon became apparent (AE 2008). Plans to build more substantial air-raid shelters in playgrounds were developed in 1940 (for instance E/SE/G23; CC/X 25; DC/ARCH 1/455; and CP/Fe 89).

- 3.35 These shelters varied in design from pre-cast concrete 'raidsafe' surface shelters at Harton Primary School, South Shields (TWM Archaeology 2009), to the large underground shelter at St. Joseph's RC Primary School, Sunderland that extended over an area of 66.80m by 18.50m (TWM Archaeology 2011). Many schools, however, adopted a semi-sunken brick-built design with reinforced concrete roofs (Lowry 1995, 71, fig. 32a; Vickers 2003), including Easington (AE 2008) and Kirk Merrington schools.
- 3.36 The majority of the bombing in the North-East was concentrated upon the coastal shipbuilding and coal mining industries with places such as Teeside, Hartlepool, Billingham, Sunderland and Tyneside bearing the brunt (Norman 2010; Nolan 2003; Clark 2003; Culture_Durham 2005a; Culture_Durham 2005b). Some raids did venture further inland (Norman 2010), for instance Tudhoe Colliery was bombed (Culture_Durham 2005a), and although Durham city largely escaped unscathed, stray bombs did fall in surrounding areas such as Shincliffe (Clark 2003).
- 3.37 Occasional aircraft were spotted closer to Kirk Merrington, such as around Aycliffe (ayclifferoc 2005) close to a munitions factory where powder and detonators were added to the cases, caps and bullets manufactured at the Spennymoor Royal Ordnance Factory (Culture_Durham 2005a; 2005c). Other areas around Kirk Merrington including Bishop Auckland and Willington, were, however, largely untouched by the bombing raids (Neilson 2004; Culture_Durham 2005b).
- 3.38 Even though Kirk Merrington and the surrounding villages probably escaped the majority of the Luftwaffe's attacks, air-raid practices were a regular occurrence in many schools. At the sound of the air-raid siren children would proceed in an orderly fashion with cushion, coat and gas mask to the nearby shelters (Neilson 2004; Culture_Durham 2005b). The shelters were dark and often damp under foot and the children would sit on wooden plank benches lining the edges of the construction (Neilson 2004; AE 2008). Luckily for the children in the vicinity of Kirk Merrington, the majority of times this happened it was only pretend (Neilson 2004), an exciting diversion from the days lessons. But for the children of the coastal towns and cities the war was very different (Clark 2003; Nolan 2003) with the scars of six years of destruction still being visible in Sunderland after the war ended (Clark 2003).

4.0 AIMS AND OBJECTIVES

- 4.1 The main aim of the investigations were to record any surviving remains associated with the potential air-raid shelters and the ridge and furrow ploughing and to determine whether there were unrecorded sub-surface archaeological remains within the development area. This aim also included the confirmation of the location, extent, nature, date and importance of any archaeological remains within the development area and to undertake a suitable mitigation strategy.

- 4.2 Upon completion of the evaluation phase of works (trial trenching), a requirement for further mitigation was agreed through consultation between Durham County Council and the Archaeology Section of Durham County Council. The further work comprised a scheme of open area excavation within the MUGA area in advance of construction works, and recording of any archaeological remains exposed during the construction groundworks (watching brief).
- 4.3 The overall objectives of the archaeological investigations were:
- to establish the presence, nature, extent, preservation and significance of any archaeological remains within the site;
 - to determine which areas within the footprint of the proposed scheme require archaeological mitigation in the form of preservation *in situ*, open area investigation in advance of construction, or monitoring of soil stripping during construction works;
 - to undertake any further mitigation works required as a result of the evaluation;
 - to provide a detailed record of any archaeological remains exposed within the development area;
 - to recover and assess any associated structural, artefactual and environmental evidence;
 - to undertake desk-based assessment through research at the HER and Record Office; and
 - to prepare an illustrated report on the results of all phases of work to be deposited with the County Durham Historic Environment Record (HER) and the National Monuments Record (NMR).

5.0 RESEARCH OBJECTIVES

- 5.1 The following research aims stated within the North East Regional Research Framework for the Historic Environment (Petts and Gerrard 2006) were relevant to this scheme:
- with regard to medieval villages, there are very few excavated sites of this period and it is essential that any development within the historic cores of early villages have archaeological conditions as a matter of course (*ibid.*, 169);
 - as well as the need to record the extent of ridge and furrow cultivation specific detailed research questions are also important, such as do they

have a pre-Conquest origin and did the creation of ridge and furrow continue into the post-medieval period? (*ibid.*, 170); and

- full recording of all 20th century military and defence remains where they are affected by development work – this includes the recording of air-raid shelters (*ibid.*, 195).

6.0 METHODOLOGY

Trial-trenching

Location of trial trenches (Fig. 6)

6.1 Three trial trenches were excavated to the rear of the existing school (Plate 1) as defined within the specification provided by the Senior Archaeology Officer for Durham County Council (DCC 2012). The trenches were located to sample the following areas of the site:

- Trench 1: Sampling ridge and furrow within the area of the new school block;
- Trench 2: Sampling possible air-raid shelters based on the co-ordinates supplied within the brief by the Durham County Council Archaeology Section; and
- Trench 3: Sampling the MUGA area.

6.2 The trenches each measured approximately 20m by 1.5m and due to the presence of eco-grid within the existing parking area, Trench 3 was moved to the south-east. This amendment was agreed with Durham County Council Archaeology Section before the excavation commenced.

6.3 The trenches were surveyed using GPS and the information was transferred to AutoCAD software, tied into Ordnance Survey mapping and reproduced for incorporation within the report. All levels were tied in to Ordnance Datum. Excavation, recording, finds retrieval and sampling strategies followed those set out within the WSI produced by NAA (2012) and agreed by the Senior Archaeology Officer for Durham County Council.

Area excavation

6.4 During the trial-trenching two post-medieval features were encountered within Trench 2 and possible archaeological features, sealed beneath a buried soil containing medieval pottery were identified within Trench 3. The visibly extant

ridge and furrow earthworks were recorded in Trench 1, which contained no other archaeological remains.

- 6.5 Due to the importance of the medieval or earlier remains in Trench 3 and the absence of any trace of air-raid shelters within Trench 2 it was agreed through consultation between Durham County Council and the Archaeology Section of Durham County Council that further excavation was required within the MUGA area (Area A) only. However, it was also agreed that if archaeological remains were exposed during groundworks in the other areas, archaeological recording should be undertaken.
- 6.6 The entire MUGA area was excavated by a mechanical excavator fitted with a toothless ditching bucket under archaeological supervision (Plate 2). Topsoil and subsoil layers were removed down to a level at which archaeological features were identified or down to natural deposits. Where archaeological remains were exposed, the surface was cleaned by hand and all identified features were planned and photographed excavated and recorded. Excavation, recording, finds retrieval and sampling strategies followed those set out within the WSI (NAA 2012).
- 6.7 Artefacts were collected as bulk samples, potentially significant artefacts were three-dimensionally recorded prior to removal. Finds were appropriately recorded and processed using the NAA system and submitted for post-excavation assessment. All finds were appropriately packaged and stored under optimum conditions. Finds recovery and storage strategies were in accordance with published guidelines (English Heritage 1995; Watkinson and Neal 1998).
- 6.8 Forty-litre bulk palaeoenvironmental samples were taken from appropriate deposits and submitted for assessment of their environmental potential (Appendix B).

Watching brief (archaeological monitoring of groundworks)

- 6.9 During landscaping associated with the construction works, natural geology was exposed to the north-east of the MUGA area. The exposed surface was inspected by a suitably experienced archaeologist but no significant archaeological remains existed within this area.
- 6.10 This landscaping also exposed a sub-surface brick-built structure beneath the tarmac playground (Plate 3). The area around the structure (Area B) was cleared by a mechanical excavator and the structure was archaeologically inspected, cleaned and recorded. The location and depth of the structure was surveyed using a Leica TC500 total station Theodolite. The structure was then planned and photographed before the rubble infill was mechanically removed. The infill was examined for artefactual evidence prior to, during and after removal. The internal features of the structure were incorporated into the plan and the collated information was transferred to AutoCAD 2000iLT software and reproduced for incorporation within this report.

7.0 MONITORING

- 7.1 During the course of the archaeological evaluation, access was made available at all reasonable times to representatives of the Durham County Council Archaeology Section and English Heritage in order that they might inspect the archaeological works being undertaken on site. Access to the site was on the basis of prior notification and was subject to any necessary health and safety requirements.
- 7.2 The Durham County Council Archaeology Section was given a minimum of two days notice of the start of works. They were kept informed of progress and were notified of the discovery of any unexpected or important archaeological remains.

8.0 RESULTS

Introduction

- 8.1 The archaeological investigation was undertaken in three phases: evaluation by trial-trenching; open area excavation of the MUGA area (Area A); and archaeological recording of remains exposed during the construction works (watching brief). The results of all three phases of work have been combined within this report to present a more cohesive narrative.
- 8.2 The archaeological remains have been placed within three broad chronological phases of activity based on their stratigraphic relationships, and artefactual evidence. The first phase comprises two postholes that were sealed beneath the Phase II buried soil. Phase II represents medieval and later ploughing, including three different alignments of ploughing and the resultant buried soil. The final phase of activity comprises two pits cut into the buried soil and a Second World War air-raid shelter.

Phase I (early features)

- 8.3 Although the potential archaeological features previously recorded within Trench 3 proved to be natural in origin, two features, probably postholes, were exposed and recorded within Area A (Fig. 7).
- 8.4 A small truncated oval posthole (28) was recorded approximately in the centre of Area A. It measured 0.27m by 0.17m by up to 0.09m deep and had a steep south-eastern edge but a shallower north-western edge. A single sub-angular stone set into the base of the feature was probably a packing stone and above this a circular area of burnt material (30; RF1) probably represented *in-situ* burning of a post. The fill of the feature (29) contained fragments of burnt oak (*Quercus* sp.), hazel (*Corylus avellana*) and elder (*Sambucus nigra*). The washing of the block-lifted burnt material (30) yielded three small pieces of

charcoal comprising oak and ash (*Fraxinus* sp.), and three well-preserved charred grains of barley.

- 8.5 Approximately 7.5m to the north a larger feature (26), measuring 0.8m by 0.7m by up to 0.3m deep was recorded. This feature was irregular sub-circular in plan with more gently sloping sides more suggestive of a pit than a posthole. The fill (27), however, contained three large stones and a few smaller ones that seemed to form a ring of packing material around the deepest part of the feature (Plate 4). One very small piece of charcoal and seven charred cereal grains were recovered from an environmental sample taken from fill 27. The charred grain included: single grains of oat (*Avena* sp.), possible bread wheat (*Triticum* cf. *aestivum*), wheat (*Triticum* sp.), and possible barley (cf. *Hordeum* sp.); two grains of barley (*Hordeum* sp.); and a single indeterminate grain.
- 8.6 Both of these features were sealed by the Phase II buried soil (2) which may be of a late medieval (14th to 15th century) date (see below). This suggests that the postholes date to before the 15th century and given the truncation of feature 28 may in fact be considerably earlier. Unfortunately, due to the small amount of charred material recovered from the features and the possible presence of intrusive material, radiocarbon dating was not considered appropriate.

Phase II (medieval and later ploughing)

- 8.7 Area A contained the remnants of three phases of ploughing. The stratigraphically earliest of these was aligned north-west to south-east, approximately perpendicular to the extant earthworks in the playing field. The fill (5) of one of these early furrows (4) produced six fragments of cinder and a single sherd of pottery (probably of a 14th to 15th century date – Gail Hama, pers. comm.). Two north-west to south-east aligned furrows were recorded in the southern half of the area, spaced approximately 9m apart.
- 8.8 These features were cut by a north-east to south-west aligned furrow that corresponded with the earthworks visible in the playing field and recorded within Trench 1 (Fig. 8). This later phase of ploughing curved slightly to the west towards its northern end and a second remnant showed that these furrows were spaced approximately 6.75m apart within Area. A
- 8.9 Trench 1 (Fig. 8) contained the remains of three north-east to south-west aligned furrows and their corresponding ridges. The furrows were approximately 7.5m apart and were filled with a mid-/dark red brown buried soil (2). This soil formed the base of the earthworks visible in the playing field and was up to approximately 0.3m thick. The buried soil was recorded within all the investigated areas and a sherd of pottery (probably 12th century in date – Gail Hama, pers. comm.) and two fragments of ceramic building material (CBM) were recovered from within it.
- 8.10 A third alignment of ploughing was visible as narrow plough marks running north to south in the eastern corner of Area A. These features failed to produce

any artefacts and had no visible relationship with the other phases of ploughing but were probably also earlier than the north-east to south-west aligned furrows.

Phase III (modern)

- 8.11 The buried soil (2) was sealed by up to 0.3m of darker grey brown topsoil (1) which formed the visible ridge and furrow earthworks.
- 8.12 Two features, possibly pits (20 and 22 – Plate 5), cut into the top of the buried soil (2) were recorded within Trench 2 (Fig. 9). Both features contained modern pottery or brick fragments and may have been cut through the topsoil and therefore were probably associated with activity relating to the school.
- 8.13 The truncated remains of a subterranean brick-built structure (Fig. 10) were discovered beneath the school playground (Area B) during the construction groundworks (Plate 3). This structure was probably the remains of one of the Second World War air-raid shelters visible on aerial photography. During the recoding of this structure the remaining development area beneath the playground was mechanically cleared and although brick, concrete and other demolition deposits were apparent, no further intact structures were encountered.
- 8.14 The structure (31) measured 9m long and was mainly 2.9m wide with an approximately 5.25m long 'entrance' at its north-eastern end (Plates 6 and 7). The walls of the structure survived up to some 0.5m high and were mostly 0.35m wide, however the stairway walls were 0.25m wide, the internal wall was 0.11m thick and the wall between the entrance and main room was the thickest at 0.45m.
- 8.15 The walls were of 'Old English Bond' with alternative rows of headers and stretchers. The structure had a main room and an entrance area, but a single thickness brick wall (Stretcher Bond) at the south-western end separated off a small space at the south-western end of the main room. This space had an internal area of 2.15m by 0.6m and a gap in the wall measuring 0.65m wide led into the main area. The internal dimensions of the main room were 6.35m by 2.15m and the entrance was approximately 0.65m by 3.45m in size. The wall between the entrance and main room also had a 0.65m access gap in it.
- 8.16 The lower step of a stairway survived at the north-western end of the entrance (Plate 7), which was presumably the means of access into the shelter. The step was stone and had three grooves cut into it for purchase. The floor of the shelter (32) was concrete, reinforced with steel, and had a narrow drain along the north-western edge of the structure (Plate 8). The drain fed into a ceramic pipe (33) at the north-eastern end of the structure which presumably fed into the schools drainage system.

- 8.17 No fixtures, fittings or artefacts relating to the use of the air-raid shelter were discovered within the truncated structure.

9.0 DISCUSSION

Early features

- 9.1 The two postholes recorded beneath buried soil 2, although undated, are important as they demonstrate the potential for the discovery of previously unrecorded early archaeological features within the area. Furthermore, their depth and the overlying soil would probably make these features undetectable through routine geophysical survey.
- 9.2 As carbonised grain and charcoal were recovered from within the postholes this also highlights the potential for the survival of palaeoenvironmental evidence within similar features within the vicinity.

Medieval and later ploughing

- 9.3 Three phases of ploughing, including two alignments of ridge and furrow were recorded within the area of the school playing field. The dating evidence recovered was not extensive enough to date the separate phases of ploughing but suggested that the area was under the plough as early as the 12th century AD and probably during the 14th to 15th centuries. This implies that these archaeological remains relate to the activities of the inhabitants of Shelom village before and after it became part of East Merrington.

Air-raid shelter

- 9.4 The discovery of the remains of a Second World War air-raid shelter beneath the school playground was not entirely unexpected as aerial photography suggested that four such structures existed in this area (DCC 2012). The shelters were originally thought to be located within the area investigated by Trench 2; however, the trial-trenching proved that this was not the case. This inaccuracy was probably a combination of the rectification of an oblique photograph into a plan (a process which often produces imprecise positions for the features identified) and the fact that the tarmacadam playground was extended after the aerial photograph was taken.
- 9.5 In 1938 the Board of Education issued a circular 'Air Raid Precautions in Schools' which advised on the provision of air-raid shelters in playgrounds and playing fields, away from the main body of the school (Board of Education 1938). Many of these shelters were demolished after the war, but some still survive (Lowry 1995, 71). Several examples have been recorded during

- archaeological excavations in the region (AE 2008; TWM Archaeology 2009; 2011)
- 9.6 Four intact air-raid shelters were investigated at Easington School (AE 2008), two of which were dismantled and recorded in detail (Fig. 11). The floor plan and construction method of the structure recorded at Kirk Merrington was very similar to the shelters at Easington. The Easington shelters were, however, much better preserved surviving intact under soil mounded over them during their decommissioning a short time after the war (AE 2008, 14; Plate 9).
- 9.7 Given the similarities of the structures, it is likely that the shelters at both schools were very similar in design and a picture of how the Kirk Merrington shelter would have looked can be achieved from the structures recorded at Easington.
- 9.8 The Easington shelters were built of red brick, sourced from the local colliery brick works. Each structure measured 10.72m by 2.83m externally and 10m by 2.11m internally. The majority of the walls were 0.36m thick and laid in English Bond; the through bricks adding to the strength of the structure. The roof was constructed of shuttered concrete, 0.15cm thick, with steel 'I' profile girders, running across the width of the shelters. The structures were entered via a short flight of steps and doorway at one end set at a right angle from the main body of the structure to deflect blast damage away from the interior.
- 9.9 The shelters were sealed by heavy steel doors with a circular inspection panel in the centre. The southern two shelters were dug into a small rise which meant that there were only five steps leading down into the interior. The two northern shelters were dug from a more level surface and consequently were deeper, requiring eight steps down to the entrance. At the opposite end to the entrance of each shelter, above a small area partitioned by an internal wall, were escape hatches which could be used to exit the shelter should the main entrance be blocked by debris (Plate 10). A drain set into the concrete floor ran along one side of the main room of the shelters.
- 9.10 The total distance from the top of the concrete roof to the floor of the shelters at Easington was 2.16m, including 1.70m below ground level. All four shelters were initially partially covered in soil providing additional protection from blast damage (AE 2008).
- 9.11 From the evidence recorded at Easington School, it is likely that the Kirk Merrington shelter had an escape hatch at its south-western end above the partitioned area. Furthermore, it was probably approximately 2.16m high (from floor to the top of the ceiling) and capped with concrete. The shelter may have had soil mounded over it to give better protection, and indeed a 1946 aerial photograph (Google Earth) appears to show a long earthen mound approximately where the shelter was discovered.
- 9.12 Comparing the height of the top of the concrete floor of the Kirk Merrington shelter (181.18mOD) with the probable height of the structure (2.16m), the

surface of the concrete roof would have been at approximately 183.34mOD. The level of the tarmac playground (before the construction works) was 182.38mOD and hence the structure would have stood some 0.96m proud of the pre-development ground surface (not including any soil mounded over it). It is therefore highly likely that the structure was partially demolished and levelled before or as part of the extension of the playground in the 1970s (Helen Williams, pers. comm.).

- 9.13 The other shelters apparent on aerial photography (DCC 2012) were probably also demolished and levelled but based on the monitoring, probably did not survive as intact as the recorded structure.

10.0 SITE ARCHIVE

- 10.1 The site archive contains all of the data collected during the investigative work detailed above, including records, drawings and finds. It has been quantified, ordered, indexed and is internally consistent. Archiving work was carried out in accordance with national guidelines (Brown 2007 and IfA 2008b) and in accordance with the specification set out by English Heritage (1991). In addition to the site records, drawings and artefacts, the archive contains:

- a summary report synthesising the context record;
- a summary of the artefactual record; and
- copies of all relevant reports.

- 10.2 The integrity of the primary field record was preserved. Security copies were maintained where appropriate. The archiving of any digital data arising from the project was undertaken in a manner consistent with professional standards and guidance (ADS 2011). An online OASIS form was initiated upon completion of the fieldwork and reporting stages of the project. This will be validated by Senior Archaeology Officer for Durham County Council once the report has become a public document by submission or incorporation into the Durham County HER.

- 10.3 A copy of the site report and the full site archive will be deposited with the Bowes Museum, Barnard Castle, County Durham HER and the NMR. Deposition will be subject to the agreement of the landowners and shall be in accordance with written guidelines on archive standards and procedures (Society of Museum Archaeologists 1995).

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APPENDIX A

CONTEXT AND FINDS TABLE

Context	Phase	Interpretative description	Relationships	Trench	Finds and sample information
1		Topsoil	Seals entire site, above 2	1	One sherd of 19th or early 20th century pottery
2	II	Buried soil	Below 1, cut by 20 and 22, fills E-W furrows, seals everything else	1	One sherd of medieval pottery, two fragments of CBM
3		Natural geology		1	
4	II	Cut of N-S furrow	Cut into 3, filled by 5	3	
5	II	Fill of furrow 4	Sealed by 2	3	One sherd of medieval pottery, 6 fragments of cinder
6		Cut of natural gully	Filled by 7, truncated by 4	3	
7		Fill of natural gully 6	Cut by 4	3	
8	II	Cut of E-W furrow	Cut into 3, filled by 2	1	
9		VOID	VOID	VOID	VOID
10	II	Cut of E-W furrow	Cut into 3, filled by 2	1	
11		VOID	VOID	VOID	VOID
12		Cut of natural feature	Cut into 3, filled by 13	3	
13		Fill of natural feature 12	Sealed by 2	3	
14		Cut of natural feature	Cut into 3, filled by 15	3	
15		Fill of natural feature 14	Same as 3	3	
16		Cut of natural feature	Cut into 3, filled by 17	3	
17		Fill of natural feature 16	Same as 3	3	
18		Cut of natural feature	Cut into 3, filled by 19	3	
19		Fill of natural feature 18	Sealed by 2	3	
20	III	Cut of pit	Cut into 2, filled by 21	2	
21	III	Fill of pit 20	Sealed by 1	2	Three sherds of 19th or early 20th century pottery
22	III	Cut of pit/trench	Cut into 2, filled by 23	2	
23	III	Fill of pit/trench 22	Sealed by 1	2	Three fragments of CBM
24		Cut of natural feature	Cut into 3, filled by 25	3	
25		Fill of natural feature 24	Sealed by 2	3	
26	I	Cut of large posthole	Cut into 3, filled by 27	Area A	
27	I	Fill of posthole 26	Sealed by 2	Area A	
28	I	Cut of possible posthole	Cut into 2, filled by 29 and 30	Area A	
29	I	Fill of possible posthole 28	Below 30	Area A	
30	I	Burnt earth/fragile pottery in possible posthole 28	Above 30, sealed by 2	Area A	
31	III	Brick structure	Cut into 3, same as 32. Filled by 33	Area B	Two bricks retained
32	III	Concrete floor of 31	Same as 31, overlain by 33	Area B	
33	III	Rubble infill of 31	Fills 31/32	Area B	One drain piece retained

key: AREA=MUGA area excavation; WB=watching brief during construction; CBM=ceramic building material

APPENDIX B

ASSESSMENT OF PALAEOBOTANICAL REMAINS

Lynne Lowrie

INTRODUCTION

Two bulk environmental samples and soil recovered during the washing of a block-lifted fragment of burnt material were recovered during an archaeological excavation at Kirk Merrington primary School, County Durham. This report presents the results of the processing and assessment of the palaeobotanical remains recovered from these samples in accordance with published guidelines (EH 1991; EH2011; IfA 2008).

METHODOLOGY

The colour, lithology, weight and volume of the two bulk samples were recorded using standard NAA pro forma. The samples were processed using 500 micron retention and flotation meshes, following the Siraf method (Williams 1973). The material collected in the retention mesh was termed a residue and that collected within the floatation mesh was abbreviated as a flot.

The residues were re-floated to enable the maximum recovery of charred plant remains. Once dried, these were sieved to 4mm and any artefacts or ecofacts were removed from the larger fraction; the smaller fraction was not examined but was retained. The sediment (29AB) supporting the burnt material (RF1), when washed, yielded charred plant material which was retained for identification.

The dried flots and plant material from 29AB were sieved to 2mm and sorted with the aid of a stereo microscope (up to x50 magnification); any non-palaeobotanical material present was noted on the pro forma recording sheet and retained for specialist assessment.

Charcoal was fractured along the transverse section to aid identification. Plant macrofossil and charcoal identification to species was attempted using current literature (Cappers *et al.* 2006; Hather 2000; Jacomet 2006; Schoch *et al.* 2004), nomenclature for plant taxa followed Stace (2010).

RESULTS

27AA (fill of posthole 26)

One very small piece of charcoal from a ring porous species was recovered from this deposit; the fragment was too small for a closer identification. The flot also yielded seven, moderately preserved, charred grains including: single grains of oat (*Avena* sp.), possible bread wheat (*Triticum* cf. *aestivum*), wheat (*Triticum* sp.), and possible barley (cf. *Hordeum* sp.); two grains

of barley (*Hordeum* sp.); and a single indeterminate grain. The flot from this deposit also contained 22 earthworm capsules.

29AA (fill of posthole 28)

The majority of the flot from deposit 29 consisted of comminuted charcoal, however, only the material recovered from the >2mm fraction was selected for assessment as smaller fragments are notoriously difficult to identify. Fragments of oak (*Quercus* sp.), hazel (*Corylus avellana*) and elder (*Sambucus nigra*) were identified. One other species was noted although this remained an indeterminate ring porous deciduous species as the fragments were too small for a closer identification.

29AB (residue from washing RF 1 – context 30)

The washing of the block-lifted burnt material (30) recovered from posthole 28 yielded three small pieces of charcoal comprising oak, ash (*Fraxinus* sp.) and one indeterminate species. Three well-preserved charred grains of barley were also present, two of which were identified potentially as naked barley.

DISCUSSION

The quantities of grain and charcoal recovered were too small for any meaningful reconstruction of the palaeoeconomy or fuel and woodland management practices that may have occurred in the vicinity.

The moderately high proportion of earthworm capsules present in the sample recovered from within posthole 26 suggested that the deposit has suffered substantial bioturbation. This and the small amount of charred material recovered mean that there is a high chance of intrusive material being present. For this reason the charred grain and charcoal recovered is not considered suitable for radiocarbon dating. This limitation may also be applied to the charred material recovered from posthole 28. The plant remains, charcoal and the fine residues can be discarded as no further work is warranted on these samples.

The assessment has, however, demonstrated the potential for the preservation of charred material within archaeological deposits in this area. Hence, a suitable sampling strategy should be implemented during any future work in the vicinity to ensure the collection of palaeobotanical material.

ARCHIVE

All the flots, charcoal and palaeobotanical remains, along with the paper archive associated with the environmental samples are currently held with NAA.

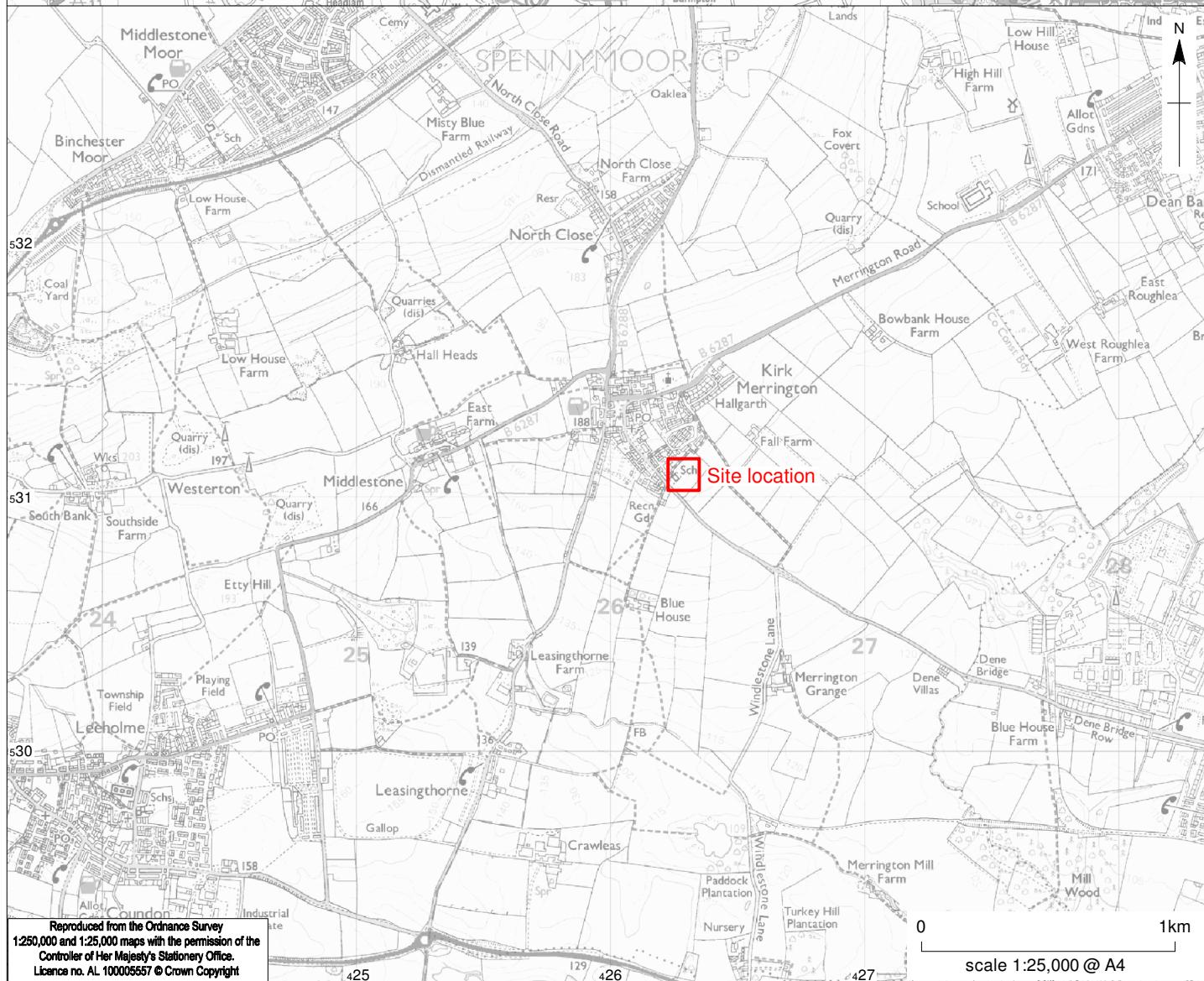
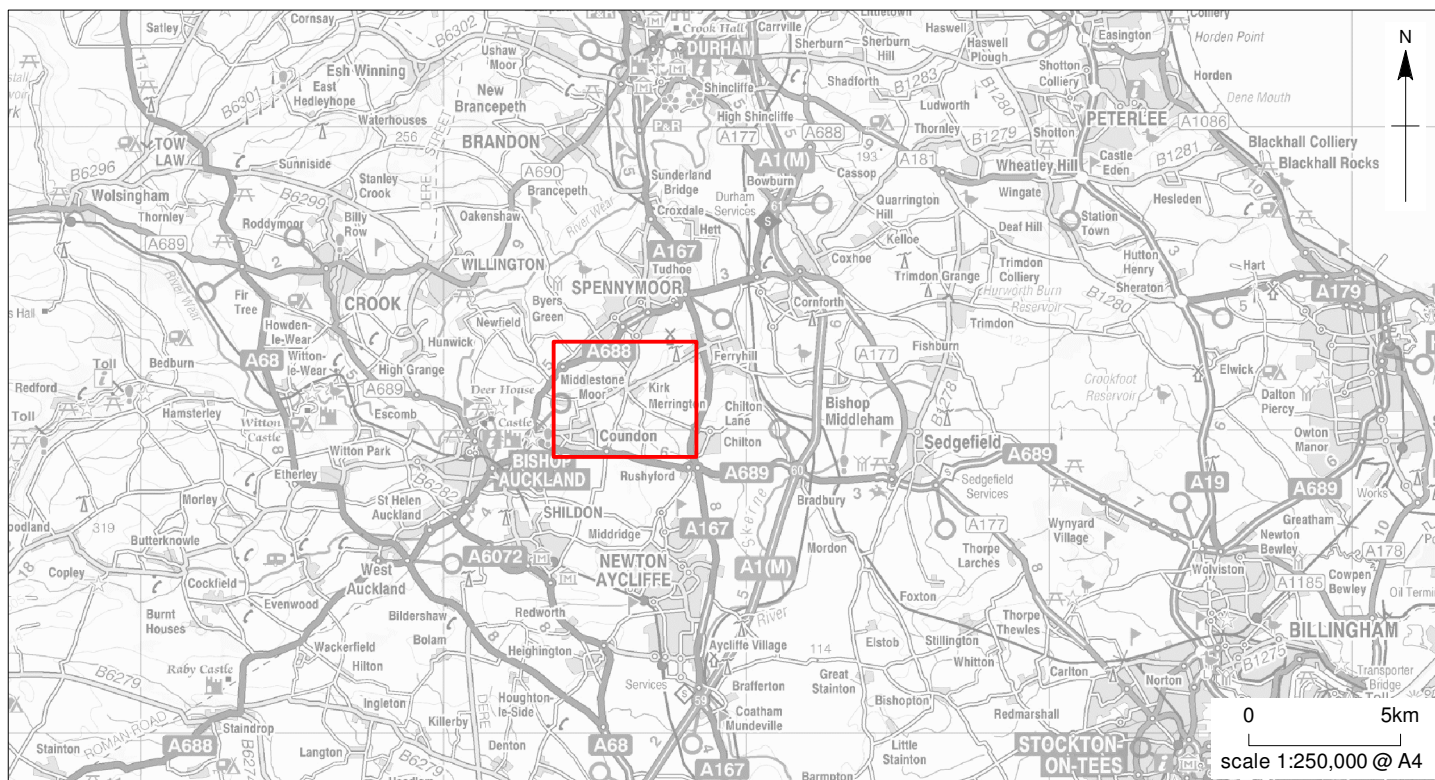
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Table A1: Summary of the palaeoenvironmental results

C	SC	Wt proc (kg)	Vol proc (l)	R?	Wt 1st Flot (g)	Wt 2nd Flot (g)	CPR Binomial names (qty in brackets)	CPR Common names	AMS?	Charcoal id	Comments	EWC
27	AA	44	34	Yes	2.9	10.1	<i>Avena</i> sp. (1), <i>Triticum</i> sp. (1), <i>Triticum</i> cf. <i>aestivum</i> (1), <i>Hordeum</i> sp (2), cf. <i>Hordeum</i> sp. (1) indet. (1)	Oat Wheat Possibly bread wheat Barley Possibly barley indet.	No	indet. (diffuse porous)	The first flot consisted of coal (50%), rootlets (40%), comminuted charcoal (2%) and sand (8%). The second flot consisted of coal (50%), grit (20%), comminuted charcoal (20%) and sand (10%)	22
29	AA	5	4	Yes	1	4.4	indet. (1)	indet.	-	<i>Quercus</i> , cf. <i>Quercus</i> , <i>Corylus</i> , cf. <i>Corylus</i> , cf. <i>Sambucus</i> <i>nigra</i> , indet.	Comminuted charcoal (95%) and rootlets (5%) made up the first flot. The second flot consisted of comminuted charcoal (95%) and coal (5%).	2

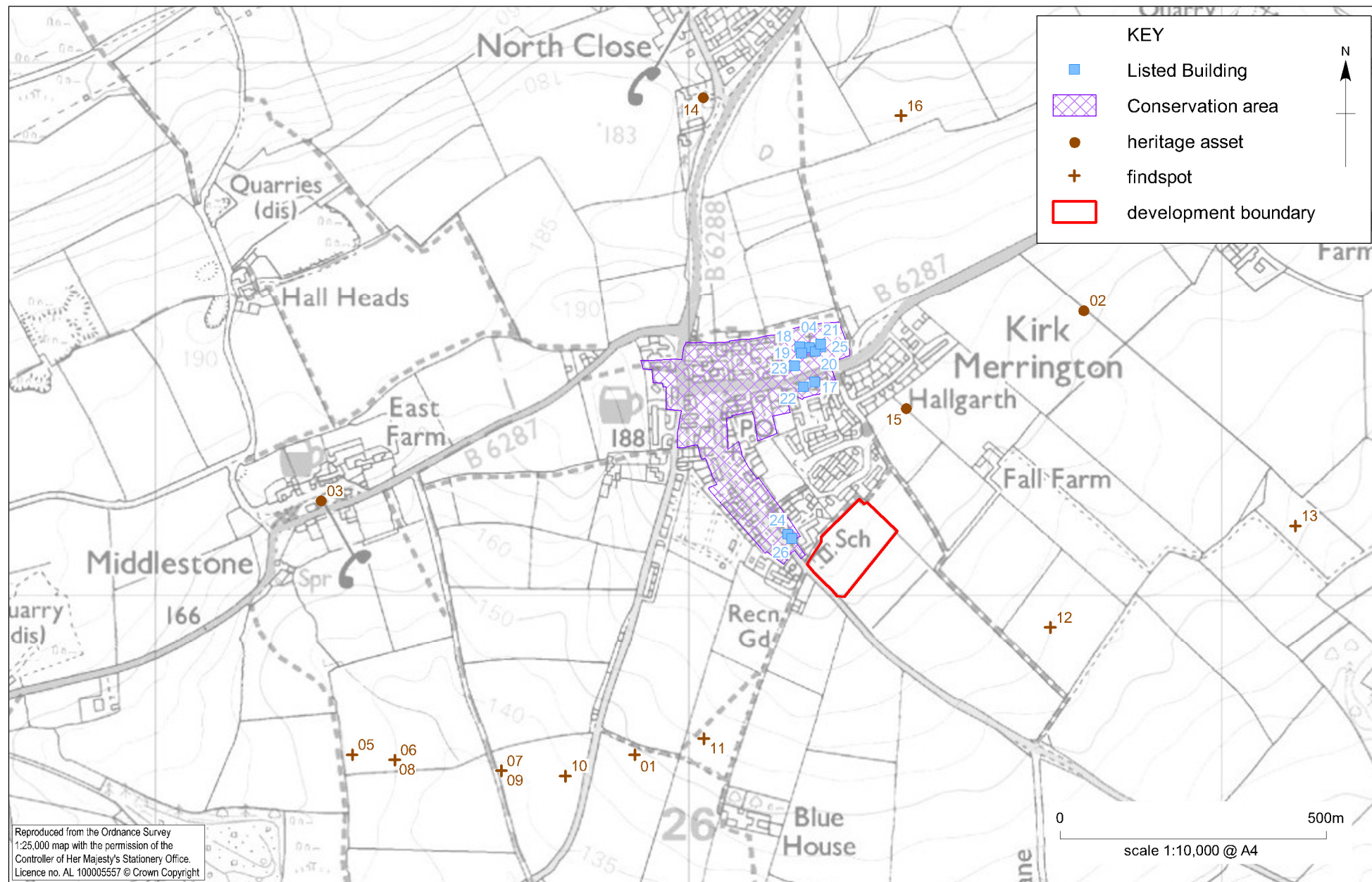
Key: C=context, SC=sample code, Proc.=processed, R?=fine fraction residues remaining?, CPR=charred plant remains, AMS?=material suitable for AMS dating, EWC=quantity of earthworm capsules, indet.=indeterminate

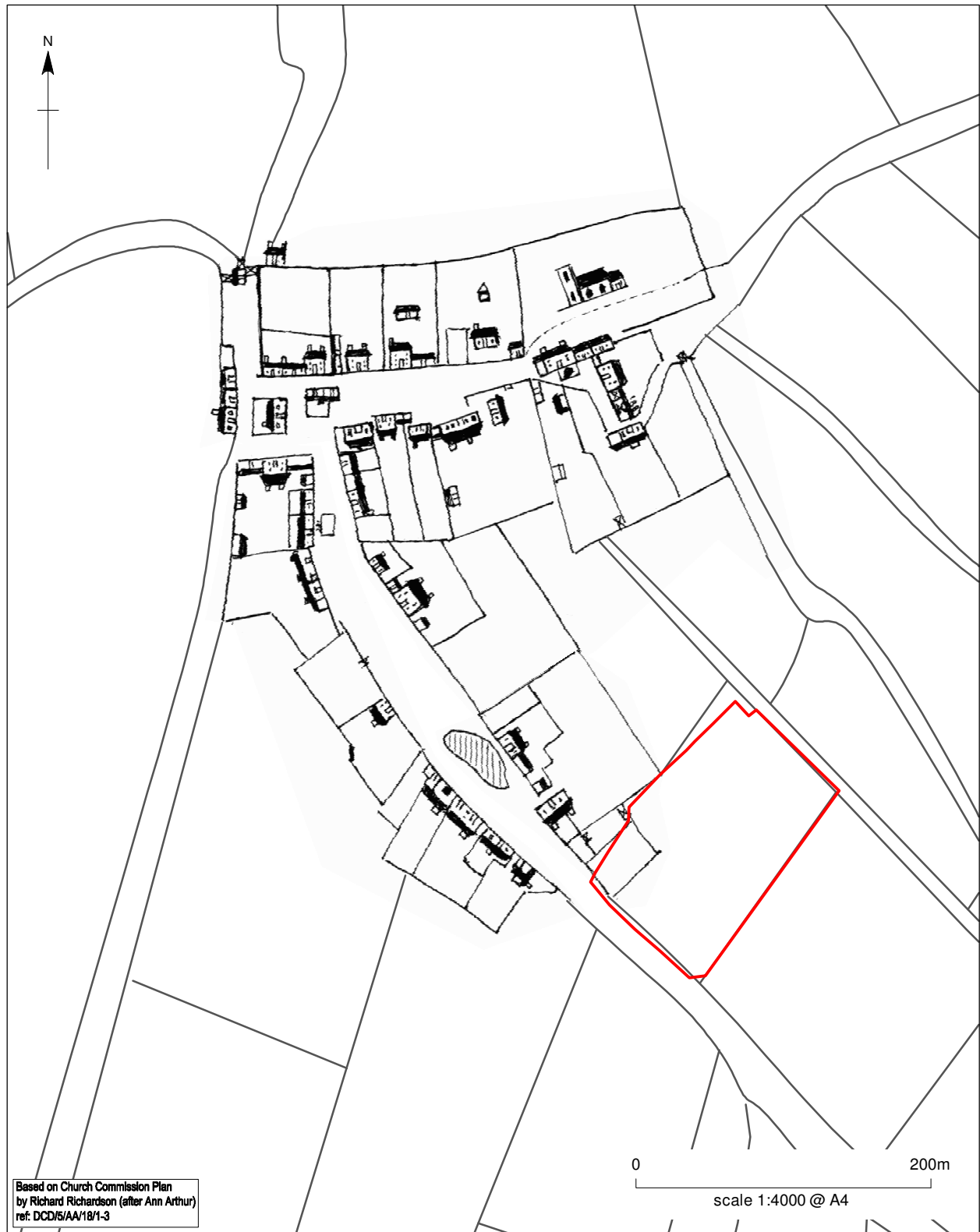


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Kirk Merrington Primary School: site location

Figure 1

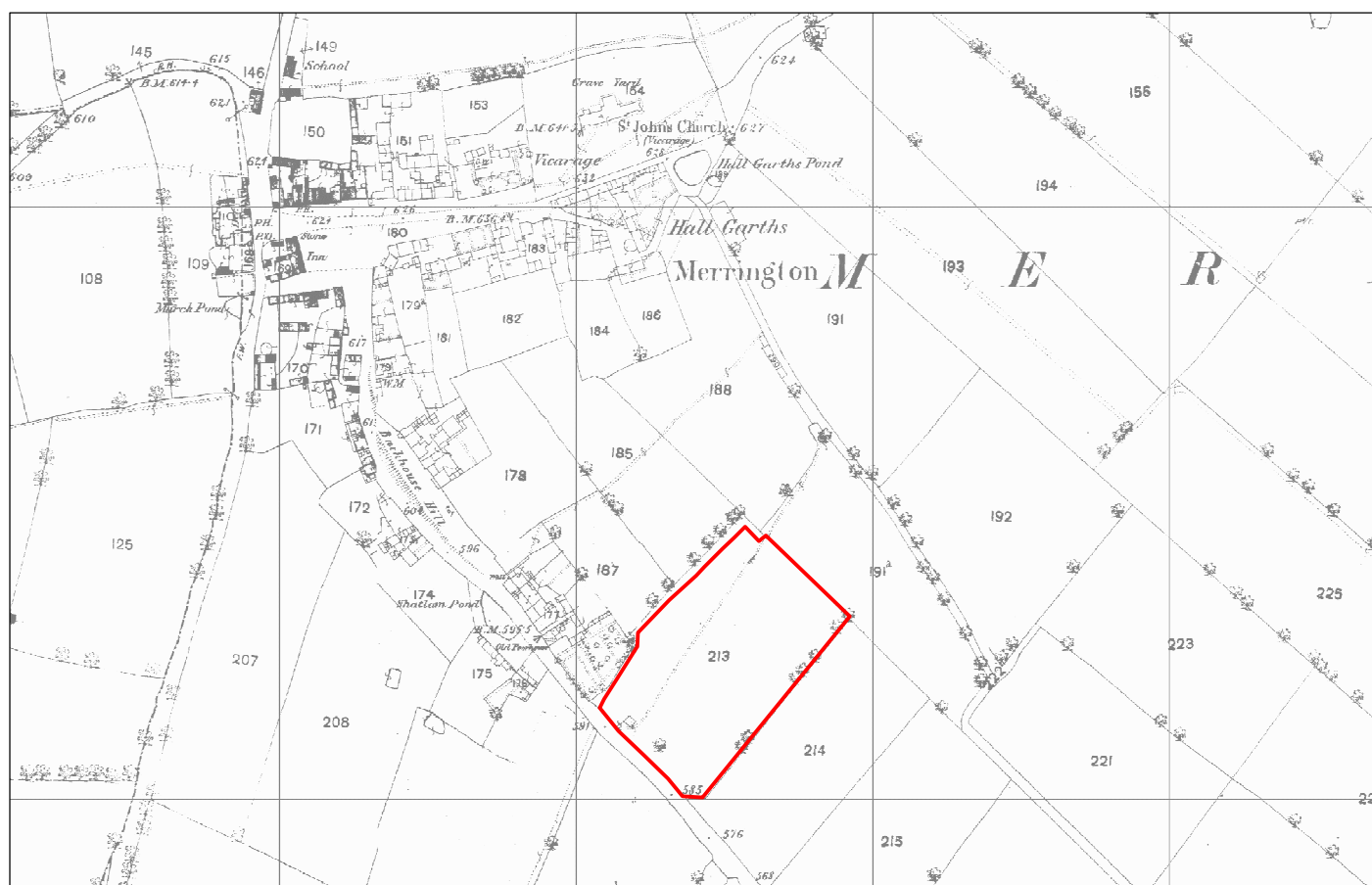




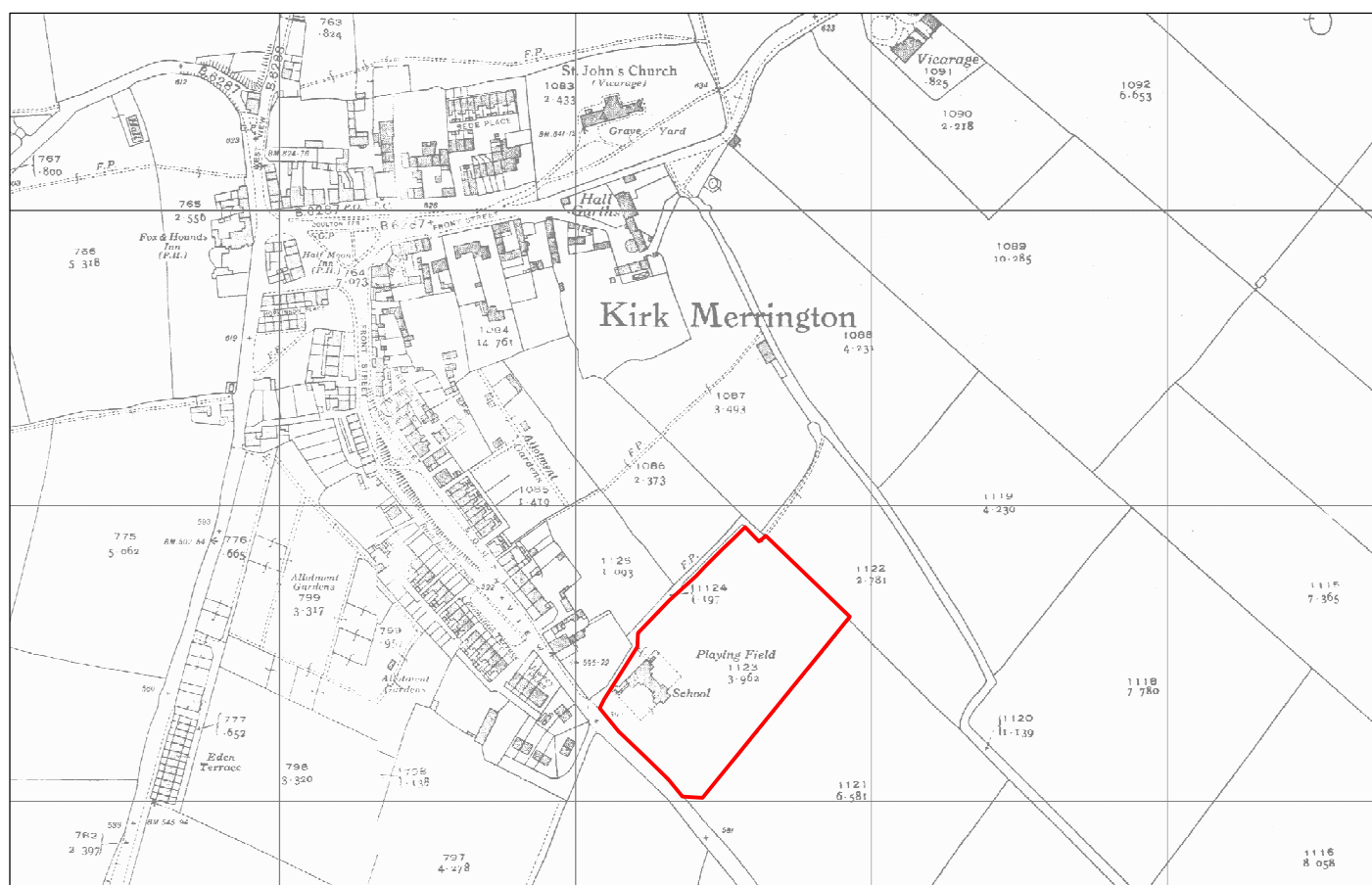
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*Kirk Merrington Primary School: Richardsons plan of
1768 showing approximate site location*

Figure 3

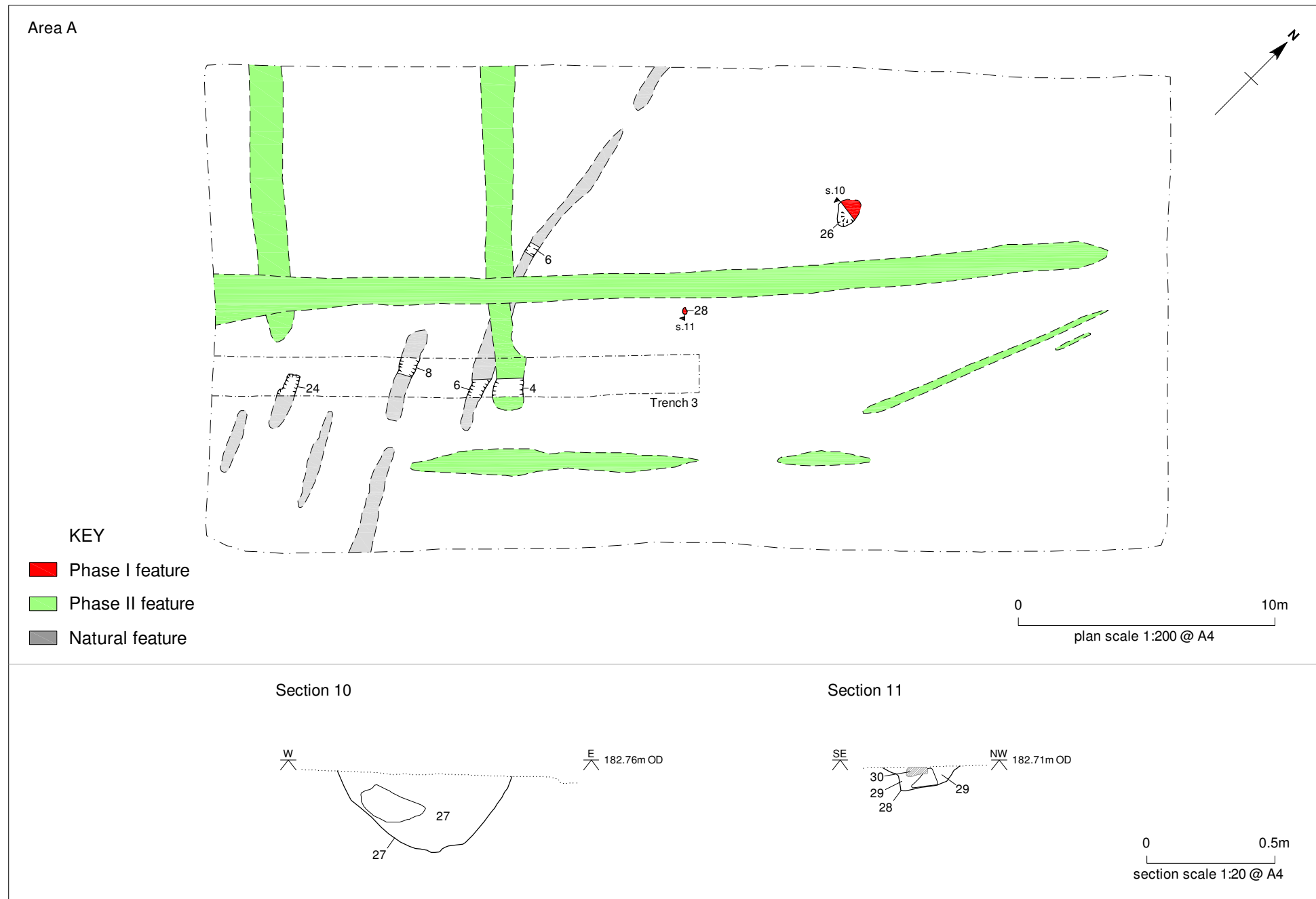


*Kirk Merrington Primary School: site location overlain on First Edition
Ordnance Survey map, 1857*

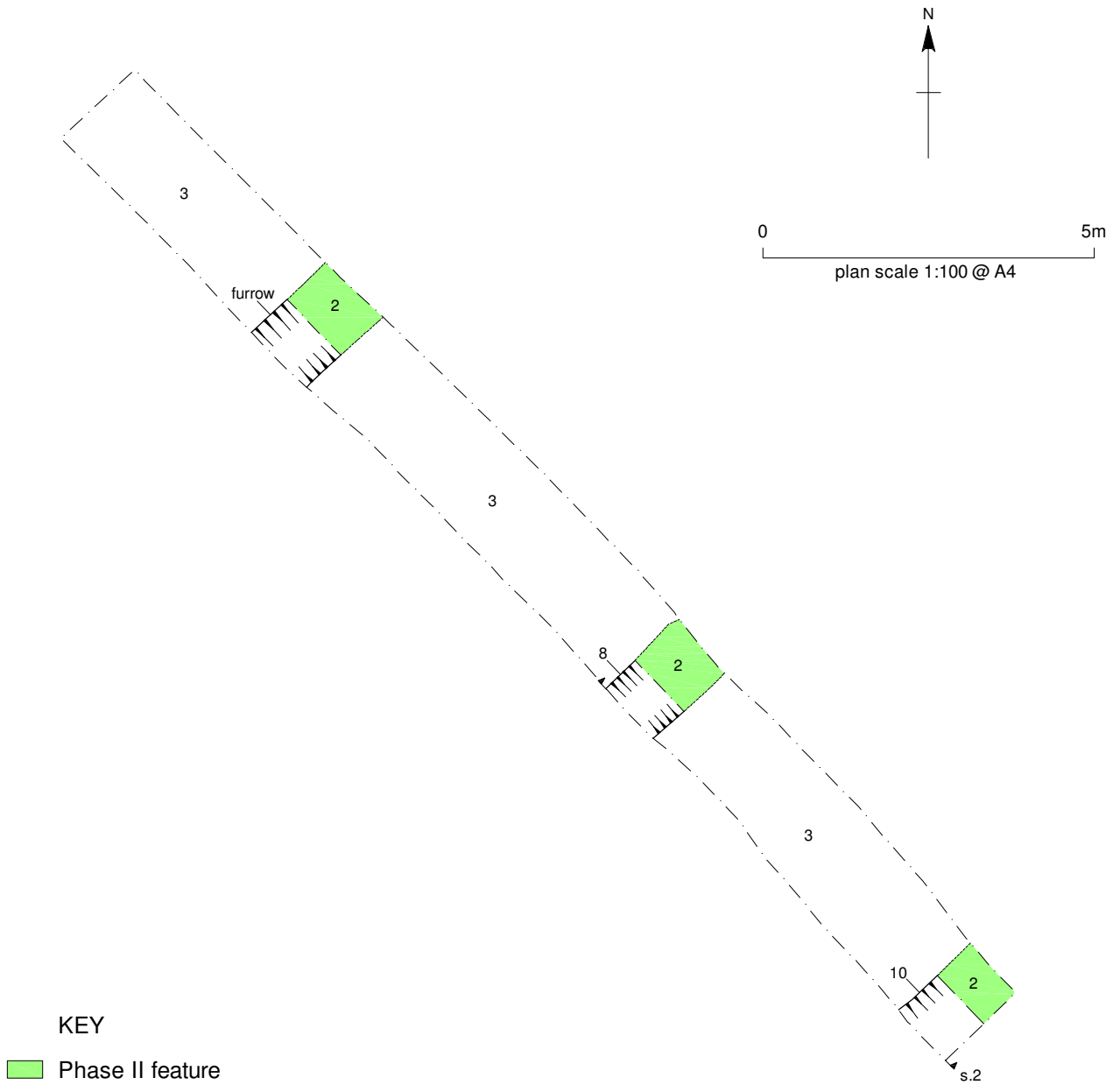


*Kirk Merrington Primary School: site location overlain on
Ordnance Survey map, 1939*

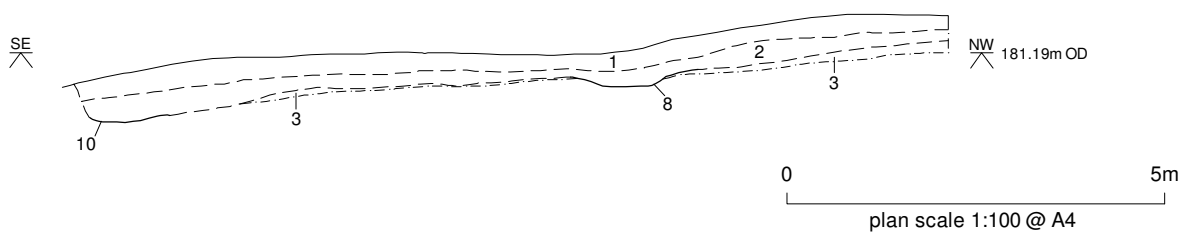




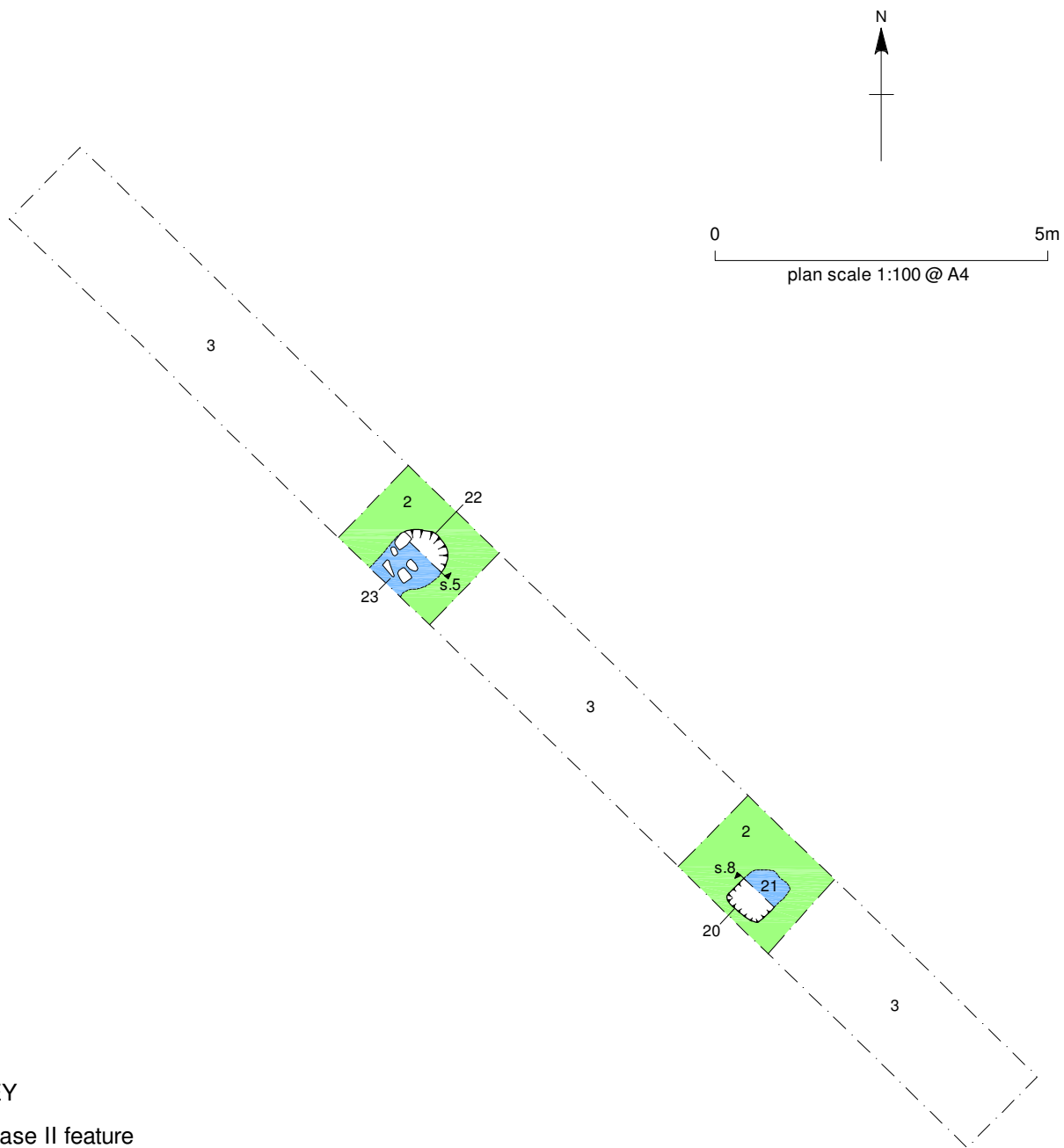
Trench 1



Section 2



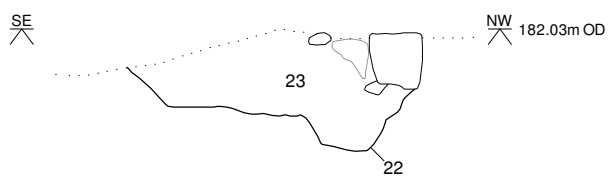
Trench 2



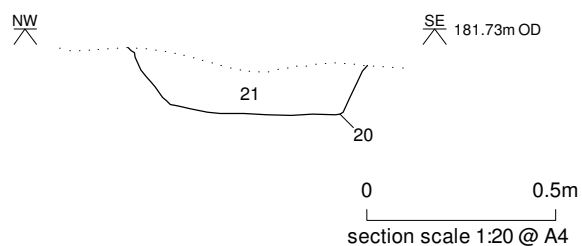
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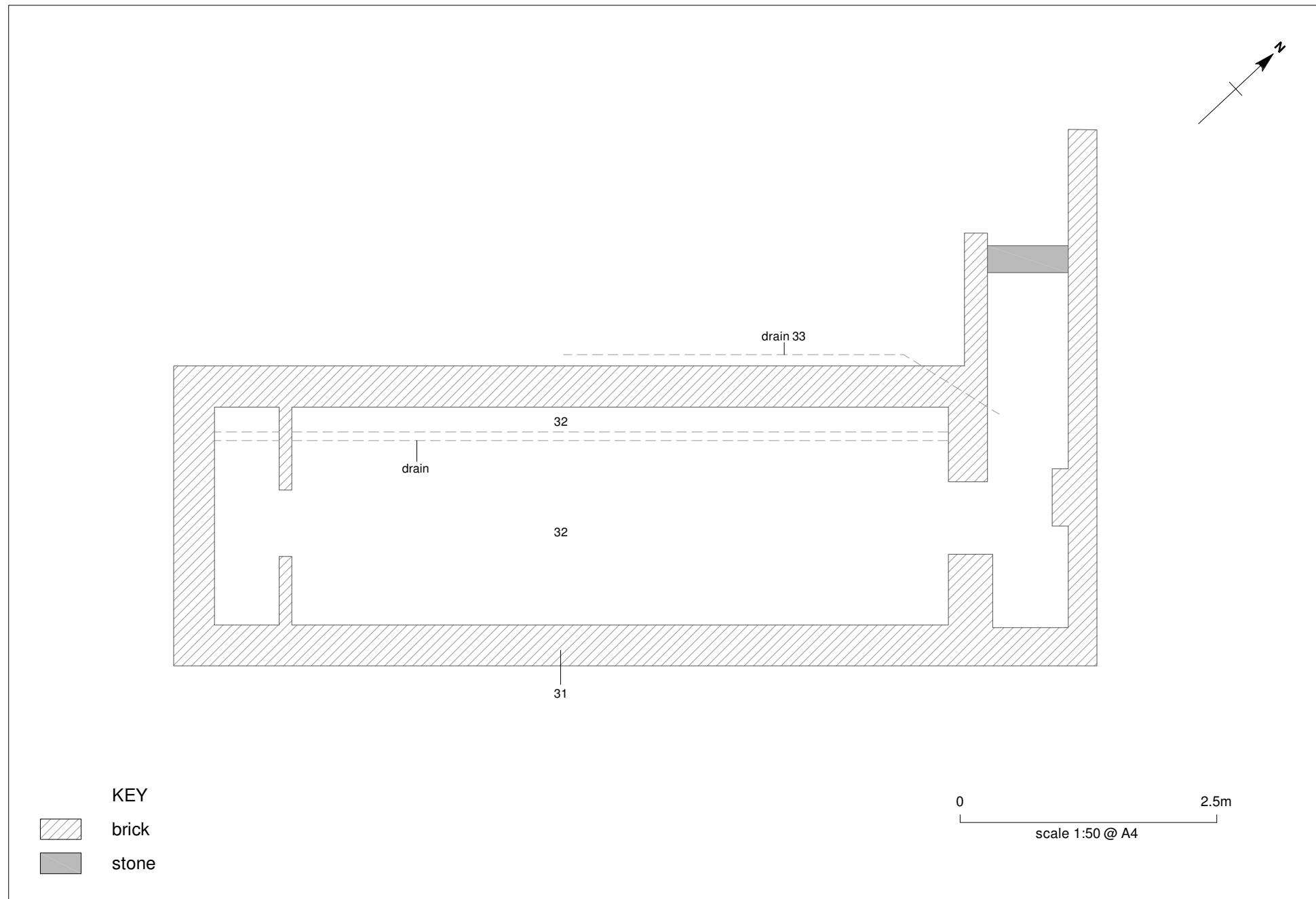
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- Phase III feature

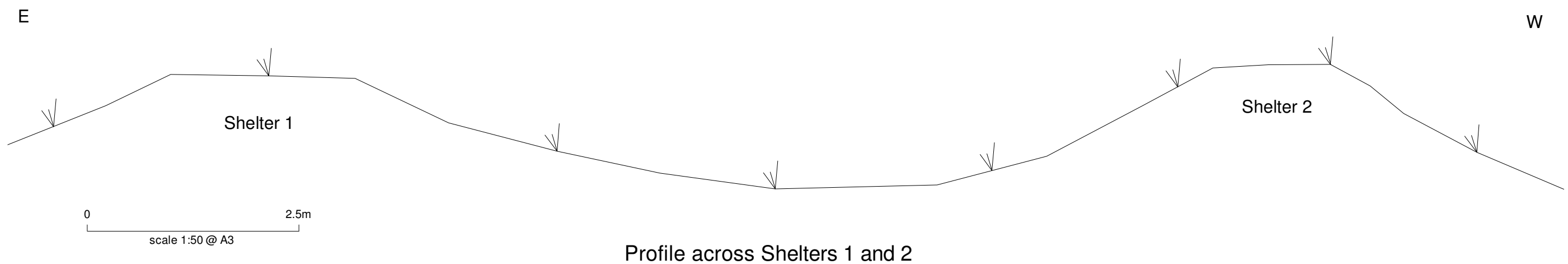
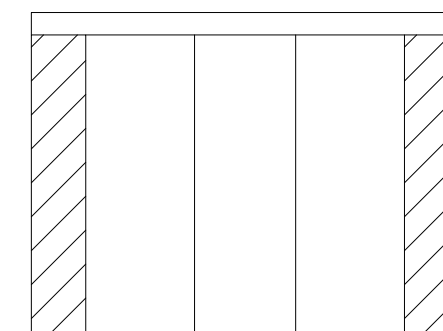
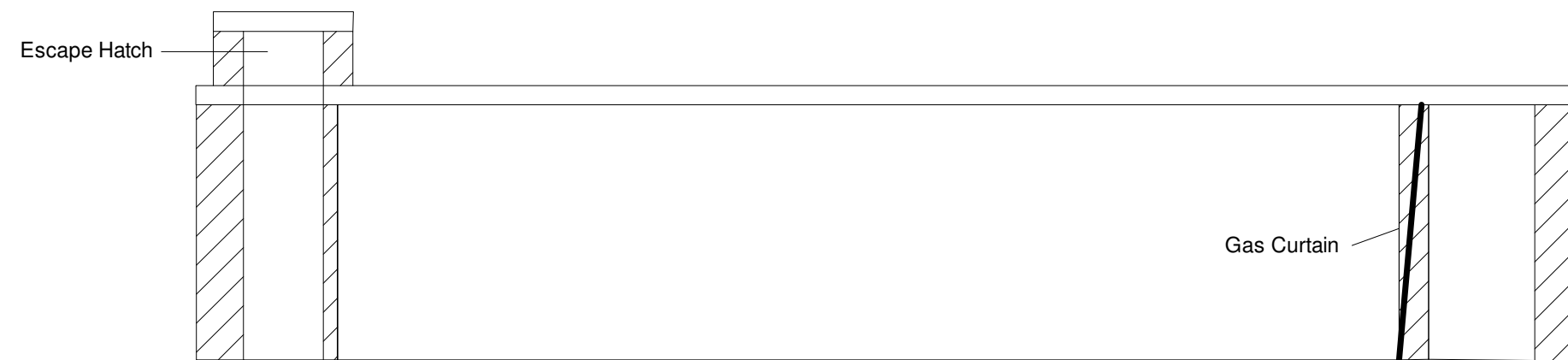
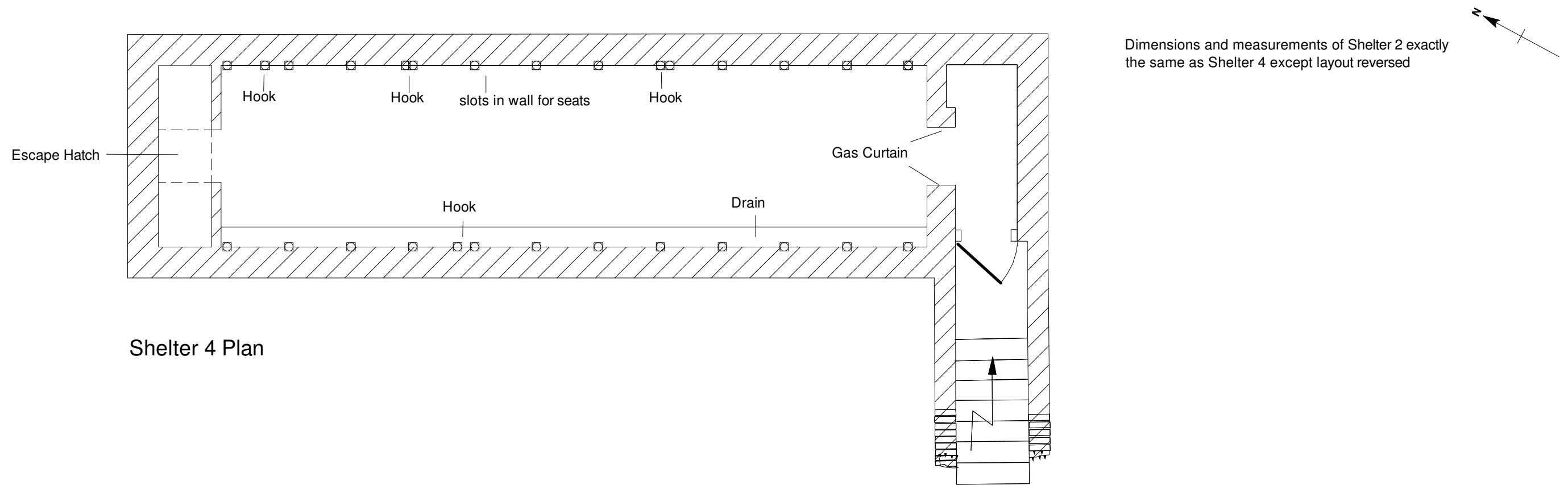
Section 5



Section 8









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*Kirk Merrington Primary School: Trench 1 showing
ridge and furrow earthworks*

Plate 1



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Kirk Merrington Primary School: machine stripping in MUGA

Plate 2



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Kirk Merrington Primary School: air-raid shelter showing school in background

Plate 3



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Kirk Merrington Primary School: posthole 26

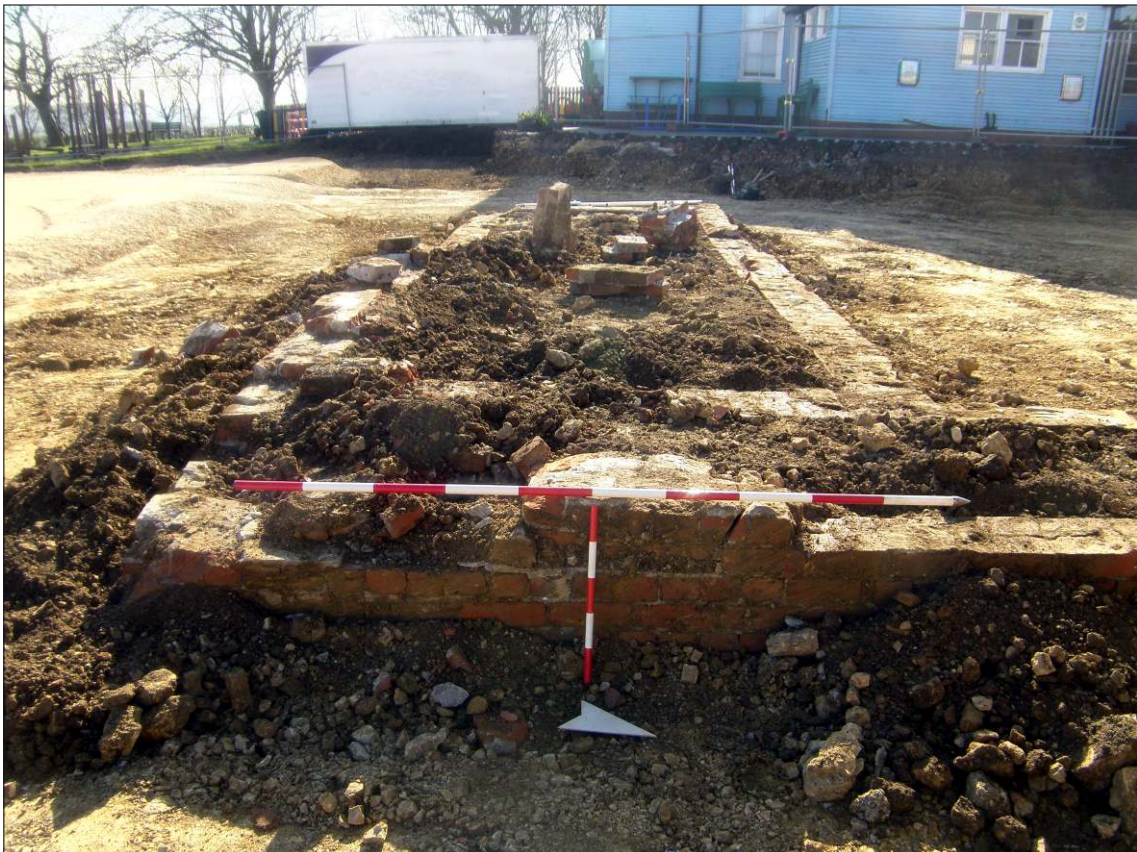
Plate 4



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Kirk Merrington Primary School: Trench 2, pit 22

Plate 5



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*Kirk Merrington Primary School: air-raid shelter showing
north-eastern end*

Plate 6



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Kirk Merrington Primary School: air-raid shelter showing entrance, surviving lower step and blast wall

Plate 7



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Kirk Merrington Primary School: air-raid shelter showing concrete floor, scar of interior wall and drain

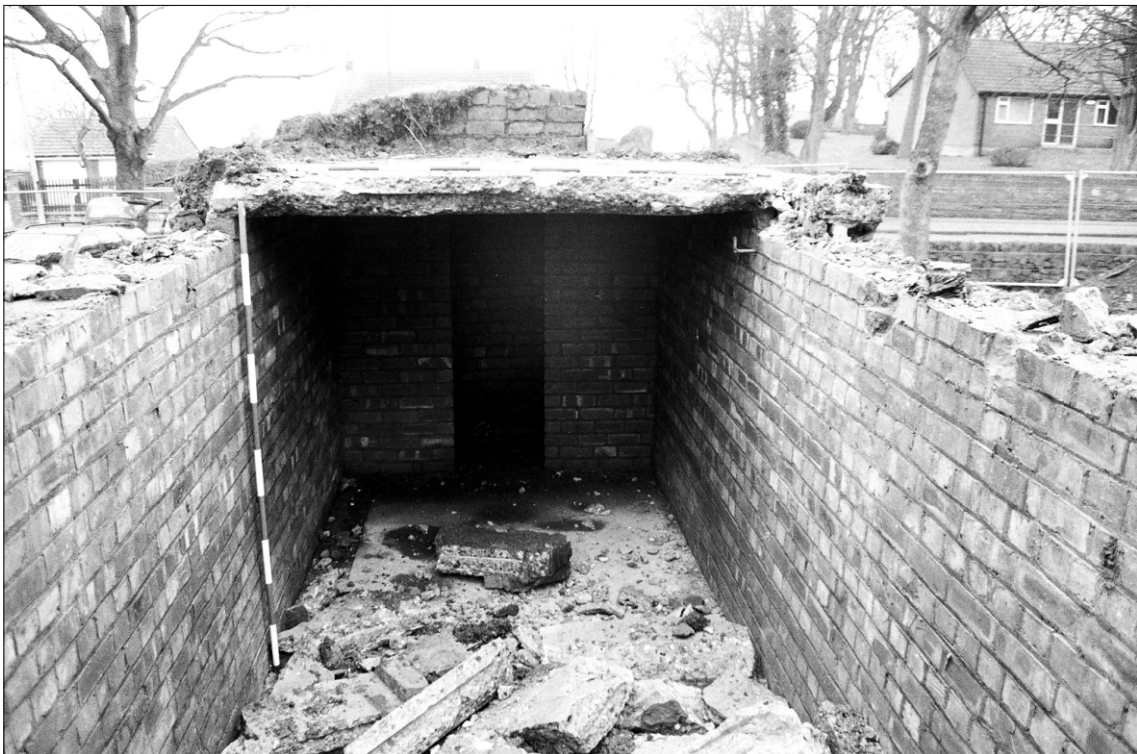
Plate 8



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*Kirk Merrington Primary School: air-raid shelter 2 recorded at
Easington school (after AE 2008)*

Plate 9



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*Kirk Merrington Primary School: air-raid shelter 4 recorded at
Easington school, showing cross section, internal partition
wall, drain and escape hatch chimney (after AE 2008)*

Plate 10