Park Road, Barrow-in-Furness, Cumbria

Archaeological Watching Brief Report

January 2023

Client: Allenby Commercial

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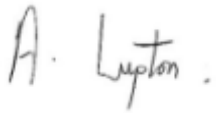
Signature:	

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Park Road, Barrow-in-Furness, Cumbria

Archaeological Watching Brief Report

Written by Steve Clarke

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Summary

Oxford Archaeology (OA) North was commissioned by Allenby Commercial to undertake an archaeological watching brief at the site of a proposed hybrid application for a builder's merchant and residential development on land situated on Park Road, Barrow-in-Furness (NGR: SD 19597 72255). The work was undertaken as a condition of Planning Permission (planning ref. B21/2022/0771).

A desk-based assessment (DBA) had been produced on behalf of Planning Prospects to accompany the planning application. OA North were subsequently approached and commissioned by Allenby Commercial to produce a written scheme of investigation (WSI) and undertake the archaeological works necessary to discharge the planning condition. The fieldwork was undertaken over five days, between 11th and 17th October 2022.

The haul road and the northern part of the site were completely stripped of topsoil and subsoil to the natural geology; no archaeological remains were observed cutting the natural geology in these areas. The watching brief across the southern half of the site was curtailed, in consultation with the Historic Environment Officer for Cumbria County Council, due to the extensive depth of compacted made ground; it is unlikely that any archaeological remains would survive beneath this deposit. The low potential for archaeological remains, as identified in the DBA, appeared to have been supported by the results of the archaeological fieldwork.

Acknowledgements

Oxford Archaeology (OA) North would like to thank Paul Swallow and Andy Hayton of Allenby Commercial for commissioning this project. Thanks are also due to Jeremy Parsons, Historic Environment Officer for Cumbria County Council, for monitoring the works on behalf of the local planning authority, Barrow Borough Council.

The project was managed for OA North by Paul Dunn. The fieldwork was undertaken by Steve Clarke, who also wrote the report, with illustrations being produced by Mark Tidmarsh.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) North was commissioned by Allenby Commercial to undertake an archaeological watching brief at the site of a proposed hybrid application for a builder's merchant and residential development on land situated on Park Road, Barrow-in-Furness (NGR: SD 19597 72255; Fig 1).

1.1.2 The work was undertaken as a condition of Planning Permission (planning ref. B21/2022/0771). Condition 21 states:

Site strip prior to development shall be undertaken under archaeological supervision and any sub surface remains shall be recorded in accordance with a scheme of archaeological works to be submitted to and approved in writing with the Local Planning Authority.

Reason: to give effect to the Archaeological Desk Based Assessment (Oxford Archaeology 2021)

1.1.3 A desk-based assessment (DBA; OA North 2021) had been produced on behalf of Planning Prospects to accompany the planning application. OA North were subsequently approached and commissioned by Allenby Commercial to produce a written scheme of investigation (WSI) and undertake the archaeological works necessary to discharge the planning condition. The fieldwork was undertaken over five days, between 11th and 17th October 2022. This document outlines how OA implemented the specified requirements.

1.2 Location, topography and geology

1.2.1 The site lies to the east of Park Road (A590) and south of Banks Lane, *c* 3km north-east of Barrow-in-Furness, immediately south of Barrow Golf Course; downslope and to the West of Rakesmoor. The site is 0.7km inland from the coast, on the middle ground between the coast and the high land to its east, at *c* 28m aOD. Inland, to the east, the land rises steeply, reaching a height of around 76m at Hawcoat.

1.2.2 The area of proposed development consists of untended grassland on its northern half and raised ground with scrubland to the south.

1.2.3 The geology of the area is mapped as predominantly of Triassic period St. Bees Sandstone, a sedimentary bedrock formed approximately 247 to 252 million years ago, in an environment dominated by rivers (BGS 2022). The superficial geology is Quaternary Devensian till (*ibid*), with a band of sandy and stony alluvium along the coast (Barnes 1968). Local soils are recorded as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils, supporting seasonally wet pastures and woodlands (Cranfield 2022).

1.3 Archaeological and historical background

1.3.1 The following section is taken from the desk-based assessment (OA North 2021) and comprises a summary of the local historical and archaeological background.

1.3.2 ***Prehistory and Roman periods***: to the west of the site, the mouth of the Duddon estuary and Walney Island are rich in evidence for prehistoric occupation, in particular scatters of flint tools, and polished stone axes derived from the central Lake District, many of which have been found associated with the coastal sand dunes which characterise the area.

1.3.3 The exact chronology of coastal development of the area is not well understood, however, it is believed, based on the relative ages of associated material culture, that the sand dunes formed in the later Neolithic/early Bronze Age, *c* 2000 BC, following a period of Post-glacial sea level change and the formation of successive shingle ridges, around the beginning of the Neolithic period *c* 4000 BC (Tooley 1990). Whilst little direct work on coastal chronology on the Furness peninsula has been undertaken, sequences including tidal inundations of what is now dry land have been identified by Craig Appley (2013) around Walney and southern coast of the Furness peninsula.

1.3.4 Whilst Bronze Age Iron Age and Roman occupation across Furness are poorly understood, settlement appears to have been focussed around the Skelmore Heads hillfort near Urswick (Powell 1963), including the enclosed settlement at Urswick Stone Walls (Dobson 1907). Bronze weapons (including two hoards) have been recorded on the Portable Antiquities Scheme (PAS), some from former coastal wetlands, from Urswick, Roosecote and Rampside (eg LANCUM-D5F3D4; LANCUM-50D591; LANCUM-4118A0; LANCUM-CDC350; LANCUM-428850). A Bronze age hoard consisting of a gold bracelet, three gold rings and a fragment of a cauldron has also been identified in the locality (LANCUM-C98FBF). Iron Age finds include a copper alloy cosmetic mortar from near Dalton (LANCUM-5BFFFC). and three socketed axes from near Ulverston LANCUM-3F84C4; LANCUM-3F83A0; LANCUM-3F7550).

1.3.5 No military Roman activity has been recorded in the Furness area, with supply lines seemingly associated with the known fort layout in the central and western Lakes, and the Roman wall to the north. However, the southern supply lines, focused on Windermere, suggest a supply route exiting into the waters of Morecambe Bay via the Leven estuary.

1.3.6 ***Early Medieval period***: following the withdrawal of the Romans *c* AD 410, little is known about the history of Furness in the Early Medieval period. The area, including the Irish Sea Basin and the Isle of Man, was under Northumbrian control from the seventh century (Edmonds 2013, 2015; Elsworth 2018). Northumbria seems to have been succeeded by the kingdom of Strathclyde in the early tenth century (Clarkson 2014), following which the Irish Sea coast came under the increasing influence of Viking invaders and settlers (*ibid*; Edmonds 2013; Elsworth 2018).

1.3.7 Both placename elements and finds seem to suggest the foci of Urswick, Pennington and Dalton, the latter being the dominant Furness township. Very numerous metalwork finds from this period from the Dalton area could represent the range of local metal detectorist rather than a real distribution. Finds from the area include an Early Medieval brooch (LANCUM-0AF673), a copper alloy strapend (LANCUM-0A8081), a cast silver strapend (from somewhere on Furness; LANCUM-FB496D), and a ninth/tenth-century hoard of silver (79 coins and 13 ingot fragments) from between Barrow and Dalton (LANCUM-80A304).

1.3.8 ***Later Medieval and post-medieval periods***: Furness Abbey, established in 1127 and 2.2km to the north-west of the present Park Road site, was sited close to Dalton, the former capital of Furness. Connections between the abbey and the site have historically been focused on Sowerby, Sowerby Lodge (CCHER 2713) to the west of Park Road and Sowerby Hall Farm, lying to the north of Bank Lane (CCHER 2712, 43266). The abbey held the lands of the western side of Furness (Dalton and Plain Furness), those to the east being the manor of Aldingham or Muchland (Barnes 1968).

1.3.9 The earliest reference to Sowerby is in the Domesday Book, which suggests some form of settlement existed there prior to 1086 (Ekwall 1922, 203). The name is of Norse origin, and means a farm by muddy or marshy ground (*ibid*). By the time of the Dissolution, Sowerby was one of a core of demesne arable farms clustered close to the abbey, the remainder being let to customary tenants (*ibid*). Although there a few clear references to the farm, there are frequent references to Sowerby Woods, the remnants of which are clearly shown on the first edition 6" OS map of 1873, defined by Park Road.

1.3.10 In 1509, a list of properties expected to provide troops in defence of the abbey and its lands lists 'Solergarth with Sowerby Lodge' (Barnes 1968, 36). In addition to the belief that a reference in 1292 to Soler was a mis-transcription of Sowerby (Beck 1844, 231n), the juxtaposition of Sowerby and Soler in 1509 has led to the assumption that they were one and the same, with Sowerby Hall 'anciently called Solergarth' (Richardson 1881, 42; CCHER 2711).

1.3.11 The destruction of Sellergarth in 1516 was probably carried out as part of an enclosure movement intended to provide more grazing for sheep (Rollinson 1963, 164); 'New Park' was seven miles 'compass about' and extended northwards from the abbey taking in Goldmire, Roanhead and Sellergarth (Sellergarth itself encompassing land at Manor, Breastmill Beck and Rakesmoor farms according to Barnes (1968, 40)). It was, however, an illegal act and may have resulted in the establishment of Hawcoat and Newbarns to house the displaced tenants (Rollinson 1963, 165).

1.3.12 There are several references to Sowerby during the sixteenth century: at the Dissolution, Sowerby Meadow is listed as held by Furness Abbey (Barnes 1968, 30). A subsequent survey of woods in 1567 includes those at Sowerby (*op cit*, 55), and the woods are also specifically named and highly valued in an Abbey rental (CAC (B) ZK205 n.d; Greenlane Archaeology 2007a). In 1607, the herbage of Sowerby Woods was granted to John Preston (Richardson 1881, 43), further demonstrating that they were considered important. There are several further references to their management during the sixteenth and seventeenth centuries as a source of coppiced wood for producing charcoal for use in the iron industry (Fell 1908, 118-121).

1.3.13 Into the mid/late nineteenth century, the peninsula's huge iron ore reserves dominated the development of Barrow. Although the ore had been exploited at a relatively small scale due to the lack of efficient overland links (most being moved using water transport, see Bowden 2000), it wasn't until the expansion of the railways that exponential growth occurred. This led to the enlargement of the docks and ultimately to the development of smelting furnaces in the town. A blast furnace complex was established on reclaimed ground to the north-west of the town in the

1850's (Kellett 1990). A steel works using the Bessemer Process was established adjacent to the iron works in 1864 and two years later the two operations were merged to form the Barrow Haematite Iron and Steel Company. The plant was the largest in the world at the time and production of steel rails was undertaken on a grand scale (Barnes 1968, 96).

1.3.14 As a result of the collapse of the iron and steel industry towards the end of the nineteenth century, Barrow reverted to an economy based entirely on shipbuilding (Trescatheric 2000). The Barrow Iron Shipbuilding Company had been established in 1886 and this was bought by Vickers of Sheffield after the death of James Ramsden in 1896 (*ibid*). In turn Vickers went on to produce armaments during the First World War, although the following decades were far from economically stable (*ibid*).

1.3.15 ***Previous archaeological investigations***: There have been several archaeological investigations within the 0.5km study area. These have been focused on Sowerby Lodge Farm and its surrounding landscape, the Kimberly Clark Barrow Mill to the west of Park Road, and Sowerby Hall Farm, immediately to the north of the present site, to the north of Bank Lane. Archaeological interest has specifically been focused on the area's prehistoric and medieval archaeological potential.

1.3.16 Closest to the site, the triangular field to the west of Park Road was subject to archaeological trial trenching (OA North 2003). This identified no significant archaeology apart from several north-west/south-east-aligned drainage ditches containing nineteenth-century 60mm ceramic drainpipes, and evidence of former watercourses (*ibid*). The latter had been ploughed out within the field under investigation but remained visible on the surface to the west (as illustrated on the historic OS mapping and a site plan (OA North 2003). The natural was described as brownish-orange, moderately compact sandy clay with varying amounts and patches of sub-rounded and sub-angular pebbles (*ibid*), suggesting the former presence of watercourses.

1.3.17 A little further afield, Headland Archaeology (2000) undertook a series of nine evaluation trenches to the west of Barrow Mill (in the area formerly Sowerby Woods, north of Bank Lane); no archaeological deposits or finds were recorded, silty clay natural deposits or modern rubble being encountered.

2 WATCHING BRIEF AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives were as follows:

i. to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site, and consequently to successfully discharge the planning conditions;
ii. to compile a professional archival record of any archaeological remains within the proposed development area;
iii. to determine or confirm the general nature of any remains present; and
iv. to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.

2.2 Methodology

2.2.1 The full methodology was outlined in the WSI (*Appendix A*) which was adhered to in full and was fully compliant with prevailing guidelines and established industry best practice (CIfA 2020a; 2020b; 2022; Historic England 2015). A programme of field observation accurately recorded the character of deposits within the excavations.

2.2.2 The area monitored was set out and all service checks were undertaken by the client prior to the commencement of the excavation. The topsoil stripping was undertaken by a 360° 30-tonne tracked mechanical excavator, fitted with a toothless ditching bucket, and D6 bulldozer to the client's required depth. The majority of the stripping work across the main area was carried out by the bulldozer, with the mechanical excavator stripping the haul road.

2.2.3 All information identified during the course of the fieldwork was recorded stratigraphically, using a system adapted from that used by the former English Heritage Centre for Archaeology with an accompanying pictorial record (digital photographs). Primary records were available for inspection at all times.

2.2.4 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes a photographic record and watching brief record sheets.

2.2.5 Full professional archive was compiled in accordance with the WSI (*Appendix A*), and in accordance with current professional guidelines (CIfA 2020b; Historic England 2015). The archive will be deposited with the Dock Museum, Barrow-in-Furness, in due course. An online access to index of archaeological investigations (OASIS) form will also be uploaded, along with a copy of this report.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the watching brief are presented below and include a stratigraphic description. The full details of all dimensions and depths of deposits can be found in *Appendix B*. Ground conditions throughout the watching brief were very wet due to inclement weather and the site remained wet throughout, with runoff collecting to the west of the site. Although the conditions were difficult, archaeological features, if they had been present, would have been identifiable against the underlying natural geology.

3.2 Results

3.2.1 The first area to be stripped was for the haul road (Plate 1), which covered an area approximately 82m by 5m, aligned approximately north/south, leading from the compound area on a disused carpark in the north-eastern part of the development area to the north-east corner of the area stripped for the builder's merchant (Fig 2). The removal of the topsoil (***100***) and subsoil (***101***) varied between 0.3 and 0.5m in depth, revealing no archaeology features or finds.

Plate 1: Stripping of haul road in progress, looking south

3.2.2 The main strip area was approximately 225m by 80m, of which approximately 35% (the north end; Fig 2) was stripped to natural geology and no archaeological remains or finds were encountered (***102***; Plate 2). The remaining area had been raised approximately 1.2m to level the ground. This made ground deposit, ***103***, comprised

mainly rubble mixed with solidified waste slag, which proved difficult to remove with the plant available on site and in discussion with the Historic Environment Officer it was agreed to curtail the watching brief (Plate 3).

Plate 2: Northern end of main strip area stripped, looking north

Plate 3: Clearing of made ground, southern end of the site, looking south

4 DISCUSSION

4.1 Watching Brief results and interpretation

4.1.1 The haul road and the northern part of the site were completely stripped of topsoil and subsoil to the natural geology; no archaeological remains were observed cutting the natural geology in these areas. The watching brief across the southern half of the site was curtailed, in consultation with the Historic Environment Officer, due to the extensive depth of compacted made ground; it is unlikely that any archaeological remains would survive beneath this deposit. The low potential for archaeological remains, as identified in the DBA (OA North 2021), appeared to have been supported by the results of the archaeological fieldwork.

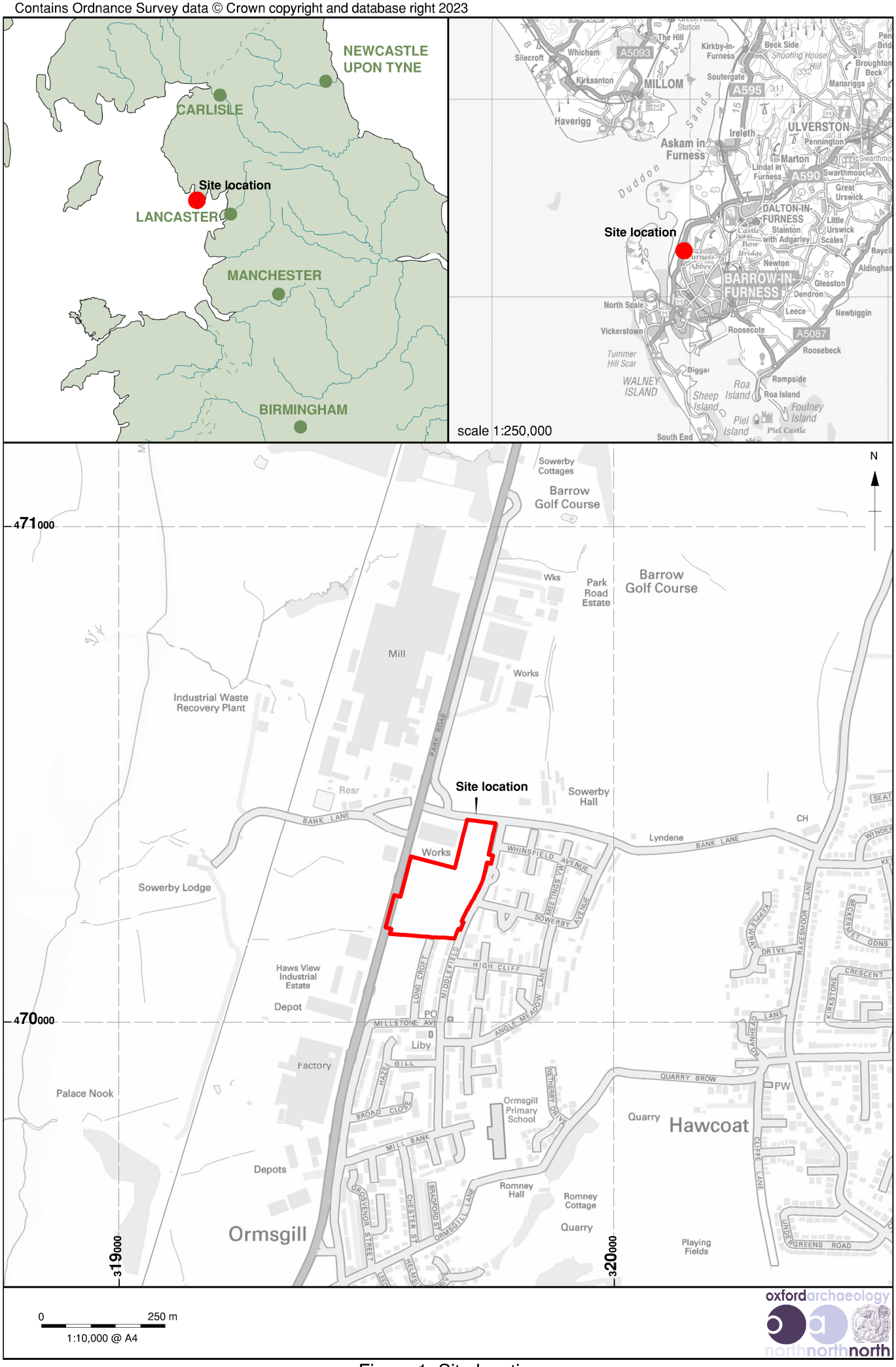

Figure 1: Site location

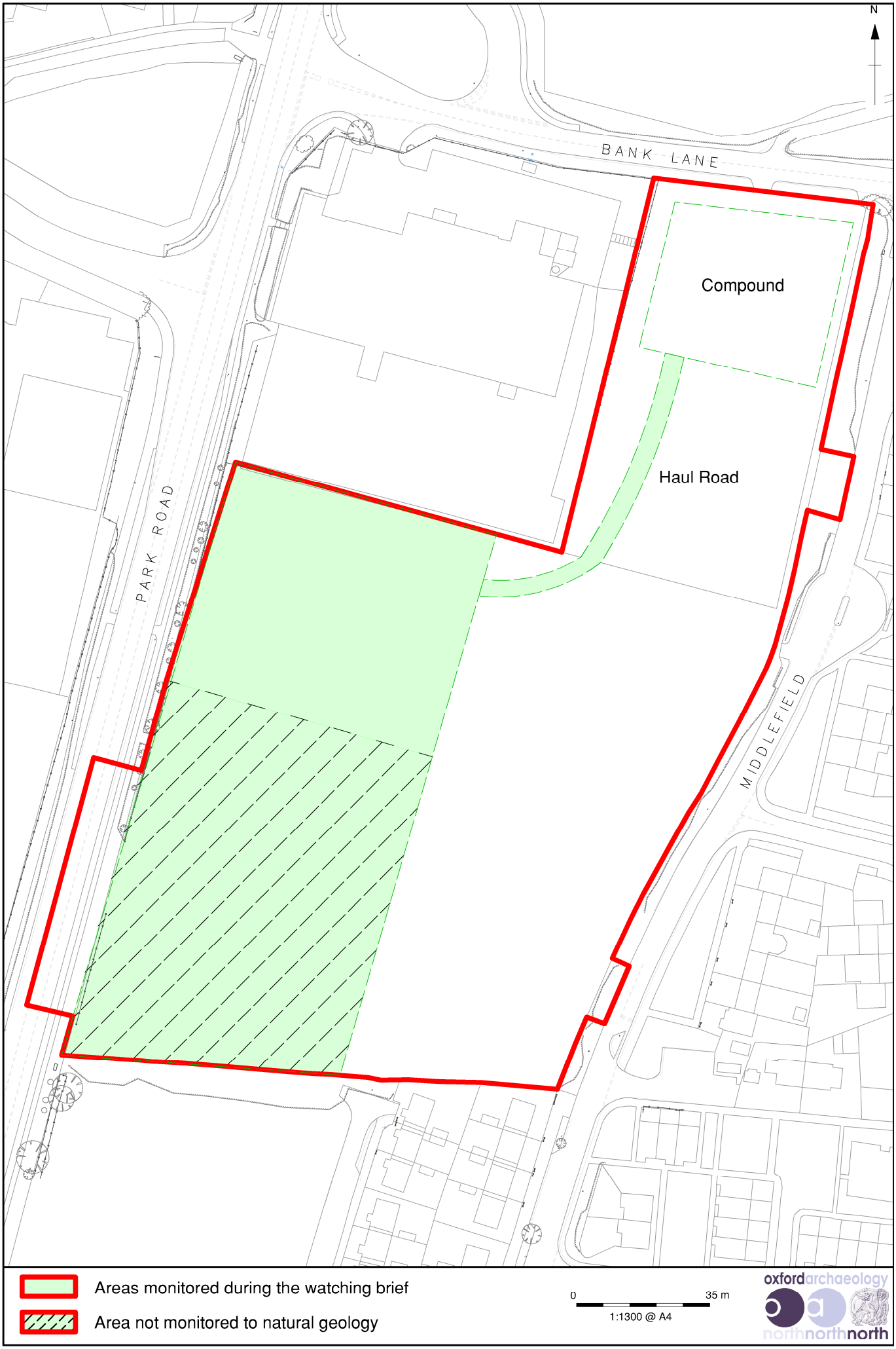

Figure 2: Plan of areas monitored during the watching brief

APPENDIX A WRITTEN SCHEME OF INVESTIGATION

Park Road, Barrow-in-Furness, Cumbria

Written Scheme of Investigation
Archaeological Watching Brief

October 2022

Client: Allenby Commercial

Issue No: V. 1
OA Reference No:
NGR: SD 48716 60927

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Park Road, Barrow-in-Furness, Cumbria

Written Scheme of Investigation for an Archaeological Watching Brief

Centred on SD 48716 60927

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1 INTRODUCTION

1.1 Project details

1.1.1 Oxford Archaeology (OA) North has been commissioned by Allenby Commercial to undertake an archaeological watching brief of the site of a proposed hybrid application for a builders merchant and residential development on land of Park Road, Barrow-in-Furness, Cumbria (NGR: SD 48716 60927; Fig 1).

1.1.2 The work is being undertaken as a condition of Planning Permission (planning ref: B21/2022/0771). Condition 21 states:

21. Site strip prior to development shall be undertaken under archaeological supervision and any sub surface remains shall be recorded in accordance with a scheme of archaeological works to be submitted to and approved in writing with the Local Planning Authority

Reason: to five effect to the Archaeological Desk Based Assessment (Oxford Archaeology 2021)

1.1.3 A desk-based assessment (DBA; OA North 2021) had been produced on behalf of Planning Prospects to accompany the planning application. OA North were subsequently approached by Allenby Commercial to produce this written scheme of investigation and undertake the archaeological works necessary to discharge Condition 21. This document outlines how OA will implement those requirements.

1.1.4 All work will be undertaken in accordance with the Chartered Institute for Archaeologists (CIfA) *Code of Conduct* (CIfA 2021) and relevant *Standards and Guidance* (CIfA 2020a and 2020b), and local and national planning policies (Historic England 2015).

1.2 Oxford Archaeology North

1.2.1 OA North, based in Lancaster, is the northern office of Oxford Archaeology (CIfA registered organisation no 17), the leading archaeological and heritage practice in the country, employing in excess of 250 professionals across three regional offices. OA North is itself the largest archaeological contractor in north-west England. As a registered educational charity, OA is dedicated to maintaining and promoting the highest professional, academic, commercial and ethical standards and to the provision of access to archaeology for all. It has both an established reputation and a philosophical imperative in the pursuit of efficient and cost-effective fieldwork, post-excavation excellence, and high-quality publication and outreach. We pride ourselves on our delivery of accessible outreach, including open days, lectures, information panels, leaflets, *etc*.

1.2.2 With over 40 years of experience in commercial archaeology, OA has undertaken tens of thousands of archaeological investigations of all types, scales and periods, from desk-based assessments to major open-area excavations. OA has particular experience of working closely with principal contractors, consultant, and curators to undertake high-quality archaeological works within the tight timetables and high-pressure environments of major projects.

1.3 Location, topography and geology

1.3.1 The site is situated *c* 3km north-east of Barrow town centre, off Park Road (the A590), immediately south of Barrow Golf Course and downslope and to the west of Rakesmoor. It lies 0.7km inland from the coast, south of the Kimberley Clark Barrow Mill, on the middle ground between the coast and the high land to its east, at land *c* 28m aOD. Inland to the east, the land rises steeply, reaching a height of around 76m at Hawcoat.

1.3.2 Park Road is characterised by a mixture of heavily industrialised factories and industrial units interspersed with grassland, some reclaimed from former ironworks. The site is on the north-western limits of the town before the land drops towards land dominated by coastal sand dunes at Roanhead/Sandscale Haws, to the north-east of which, the Goldmire Valley leads towards the town of Dalton.

1.3.3 The solid geology consists predominantly of Triassic Period St Bees Sandstone, a sedimentary bedrock formed approximately 247 to 252 million years ago, in an environment dominated by rivers (BGS 2022). The superficial geology is Quaternary Devensian till (*ibid*), with a band of sandy and stony alluvium along the coast (Barnes 1968). The geology is reflected in the late nineteenth century industries close to the site: there were brickworks next to the clay pits at Ormsgill, and sandstone quarries at Hawcoat. Local soils are recorded as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils, supporting seasonally wet pastures and woodlands (Cranfield 2022).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND AND POTENTIAL

2.1 Archaeological and historical background

2.1.1 The following section is taken from the desk-based assessment (OA North 2021) and comprises a summary of the local historical and archaeological background.

2.1.2 ***Prehistory and Roman periods***: to the west of the Site Area, the mouth of the Duddon estuary and Walney Island are rich in evidence for prehistoric occupation, in particular scatters of flint tools, and polished stone axes derived from the central Lake District, many of which have been found associated with the coastal sand dunes which characterise the area.

2.1.3 The exact chronology of coastal development of the area is not well understood, however it is believed, based on the relative ages of associated material culture, that the sand dunes formed in the later Neolithic/early Bronze Age, *c* 2000 BC, following a period of Postglacial sea level change and the formation of successive shingle ridges, around the beginning of the Neolithic period *c* 4000 BC (Tooley 1990). Whilst little direct work on coastal chronology on the Furness peninsula has been undertaken, sequences including tidal inundations of what is now dry land identified on the Lancashire Fylde (Tooley 1978) and the Eskmeals estuary (Bonsall *et al* 1989) on the west Cumbrian coast have been identified by Craig Appley (2013) around Walney and southern coast of the Furness peninsula. Mesolithic occupation appears in many cases to be submerged beneath deposits representing later incursions (*eg* at Stank; Evans 2008 ch9; 2018). Occupation during the Early Neolithic tends to cluster around former coastlines on or above the 8m contour (also known as the 25ft beach; Cherry and Cherry 2002; Evans 2008). Later Neolithic and Bronze Age coastal occupation such as the sites identified on North Walney (eg Cross 1938, 1939, 1949, 1950) and Roanhead (Evans 2008, 135-6), tends to be associated with sand dunes which formed upon the shingle ridges.

2.1.4 Further inland, occupation clustered up and down river valleys particularly at confluences, and along the edges of former wetlands (Evans 2008; Evans *et al* 2021). On the northern part of the Furness peninsula, large concentrations of lithic finds at Breastmill Beck, Manor Park, with smaller scatters on the higher ground at Rakesmoor and Barrow sixth form (Evans 2008 ch9). A ploughed field close to the Site Area at Sandscale Farm (at 10m AOD), on the north-western edge of Sowerby Wood, also produced a small flint scatter (*ibid*).

2.1.5 Polished stone axes made from Group VI volcanic tuff from the central Lake District (Bradley and Edmonds 1993) have a significant distribution in Furness (Evans 2018) including several within the 0.5km search area surrounding the site (CCHER 2710, 17931, 40240) and further afield at Roanhead and Sandscale (Evans 2008 ch9). Their dense distribution has led to Furness' oft-quoted association with interpretations of the nationally significant stone axe trade (Manby 1965; Bradley and Edmonds 1993). The coastline and estuaries of Furness (including the natural harbour at Barrow) would have been conducive to occupation as well as to trade along and across the Irish seaboard. It is widely accepted that Mesolithic and Neolithic communities were fully versed in maritime travel (eg Garrow and Sturt 2011; Sturt *et*

al 2013; Garrow *et al* 2017). Based on large collections of prehistoric artefacts, including those made on non-local lithic raw materials, the existence of prehistoric coastal 'havens' (including Walney Island) have been suggested, where coastal communities traded with seaborne travellers (Bradley *et al* 2016). According to the date range of finds including middens, pottery and later stone axes from Walney North End these sites, and networks of contact, continued into the Bronze Age and later periods (eg Cross 1938, 1939, 1949, 1950).

2.1.6 Whilst Bronze Age Iron Age and Roman occupation across Furness are poorly understood, settlement appears to have been focussed around the Skelmore Heads hillfort near Urswick (Powell 1963) including the enclosed settlement at Urswick Stone Walls (Dobson 1907). Bronze weapons (including two hoards) have been recorded on the Portable Antiquities Scheme (PAS), some from former coastal wetlands, from Urswick, Roosecote and Rampside (eg LANCUM-D5F3D4; LANCUM-50D591; LANCUM-4118A0; LANCUM-CDC350; LANCUM-428850). A Bronze age hoard consisting of a gold bracelet, three gold rings and a fragment of a cauldron has also been identified in the locality (LANCUM-C98FBF). Iron Age finds include a copper alloy cosmetic mortar from near Dalton (LANCUM-5BFFFC). and three socketed axes from near Ulverston LANCUM-3F84C4; LANCUM-3F83A0; LANCUM-3F7550).

2.1.7 No military Roman activity has been recorded in the Furness area, with supply lines seemingly associated with the known fort layout in the central and western Lakes, and the Roman wall to the north. However, the southern supply lines, focussed on Windermere, suggest a supply route exiting into the waters of Morecambe Bay via the Leven estuary. High status Romano-British finds from Furness include a silver bracelet, several enamelled cast copper brooches from the Dalton area (PAS-A7DC11; LANCUM-595855; LANCUM-0A90E5; LANCUM-563412; LANCUM-0B0516). Numerous Roman coins have also been found in the Dalton area (LANCUM-0AEE87, LANCUM-0AE8D6; LANCUM-0AE2E4; LANCUM-0ADC23; LANCUM-0AD807; LANCUM-0AD3A5; LANCUM-0ACEE7; LANCUM-0ACA35; LANCUM-0AC5B6; LANCUM-0AC023; LANCUM-0AB612; LANCUM-0A6338; LANCUM-0A5C32; LANCUM-0A55E7; LANCUM-0A4EE1; LANCUM-0A4144; LANCUM-5640D8). A hoard of Roman silver coins has also been identified somewhere on Furness (LANCUM-E1AA41). The occasional stray Roman coin or coins have also been found in Sowerby Woods (Barnes 1968, 12).

2.1.8 ***Early Medieval period***: Following the withdrawal of the Romans *c* AD 410, little is known about the history of Furness in the Early Medieval period. The area, including the Irish Sea Basin and the Isle of Man, was under Northumbrian control from the seventh century (Edmonds 2013, 2015; Elsworth 2018). Northumbria seems to have been succeeded by the kingdom of Strathclyde in the early tenth century (Clarkson 2014), following which the Irish Sea coast came under the increasing influence of Viking invaders and settlers (*ibid*; Edmonds 2013; Elsworth 2018). The direct overlordship of west and south Cumbria during these periods has been the subject of some debate; literary sources and place-name elements suggesting that Brettonic-speaking (celtic) communities survived, and that there may have been a mixture of British, Anglian and Viking populations, possibly speaking different languages (Edmonds 2013, 2015; Elsworth 2018), until the area came under direct Norman control in the eleventh century.

2.1.9 Both placename elements and finds seem to suggest the foci of Urswick, Pennington and Dalton, the latter being the dominant Furness township. Very numerous metalwork finds from this period from the Dalton area could represent the range of local metal detectorist rather than a real distribution. Finds from the area include an Early Medieval brooch (LANCUM-0AF673) a copper alloy strapend (LANCUM-0A8081), a cast silver strapend (from somewhere on Furness; LANCUM-FB496D), and a ninth/tenth-century hoard of silver (79 coins and 13 ingot fragments) from between Barrow and Dalton (LANCUM-80A304).

2.1.10 ***Later Medieval and post-medieval periods***: Furness Abbey, established in 1127 and 2.2km to the north-west of the present Park Road site, was sited close to Dalton, the former capital of Furness. Connections between the abbey and the Site Area have historically been focused on Sowerby, Sowerby Lodge (CCHER 2713) to the west of Park Road and Sowerby Hall Farm, lying to the north of Bank Lane (CCHER 2712, 43266). The abbey held the lands of the western side of Furness (Dalton and Plain Furness), those to the east being the manor of Aldingham or Muchland (Barnes 1968).

2.1.11 The monks undertook to bring waste land under the plough, bringing considerable plots of ground near the abbey into cultivation and made into granges. The history of Sowerby is entangled with that of Soler, a grange of Furness Abbey listed in 1194 (Barnes 1968, 30; CCCHER 2711). Soler is mentioned as a grange in 1247, 1292 and in 1336 when it is described as a demesne holding of the Abbey (Barnes 1968, 26). By the early sixteenth century when it was destroyed by the abbey to make way for a park, Sellergarth was a significant community with 52 tenements (Rollinson 1963, 163; CCCHER 2711). Its land appears to have taken in the high ground to the west of the abbey, then extended downhill towards the coast.

2.1.12 The earliest reference to Sowerby is in the Domesday Book, which suggests some form of settlement existed there prior to 1086 (Ekwall 1922, 203). The name is of Norse origin, and means a farm by muddy or marshy ground (*ibid*). By the time of the Dissolution, Sowerby was one of a core of demesne arable farms clustered close to the abbey, the remainder being let to customary tenants (*ibid*). Although there a few clear references to the farm, there are frequent references to Sowerby Woods, the remnants of which are clearly shown on the first edition 6" OS map of 1873, defined by Park Road. in 1336 Furness Abbey was given free warren within them, allowing the keeping and hunting of game (Richardson 1881, 43), and in 1338 this right was extended with the granting of a licence to empark Sowerby Woods (Barnes 1968, 35).

2.1.13 In 1509, a list of properties expected to provide troops in defence of the abbey and its lands lists 'Solergarth with Sowerby Lodge' (Barnes 1968, 36). In addition to the belief that a reference in 1292 to Soler was a mis-transcription of Sowerby (Beck 1844, 231n), the juxtaposition of Sowerby and Soler in 1509 has led to the assumption that they were one and the same, with Sowerby Hall 'anciently called Solergarth' (Richardson 1881, 42; CCHER 2711).

2.1.14 The destruction of Sellergarth in 1516 was probably carried out as part of an enclosure movement intended to provide more grazing for sheep (Rollinson 1963, 164); 'New Park' was seven miles 'compass about' and extended northwards from the abbey taking in Goldmire, Roanhead and Sellergarth (Sellergarth itself encompassing land at

Manor, Breastmill Beck and Rakesmoor farms according to Barnes (1968, 40)). It was, however, an illegal act and may have resulted in the establishment of Hawcoat and Newbarns to house the displaced tenants (Rollinson 1963, 165).

2.1.15 As to the exact location of the former village of Soler/Sellergarth (whose lands were apparently expansive), Richardson (1881) and Gaythorpe *c* 1904 (MSS Z227/2) agreed that it was west of Hawcoat, near Sowerby Hall Farm (CCHER 2711, 2712). Gaythorpe recorded that ploughing in the early twentieth century on the site of the present-day golf course had revealed stone foundations (according to Rollinson 1963) or tombstones (according to Barnes 1968; Greenlane Archaeology 2007a and b). These remains were interpreted by Rollinson as a house or cottage shown on a (now lost) 1775 map, but probably not a large settlement.

2.1.16 It has also been suggested that Sellergarth/Solergarth's position was close to the western gateway of Furness Abbey, in proximity to a field named 'Sellar Butts' (Rollinson 1963, 165). Following the Dissolution of the Abbey and the sale of some of its lands to the Earl of Salisbury in 1607, documentary sources suggest that Solergarth was situated near the Abbey (Greenlane Archaeology 2007b). At this date a piece of pasture named Solergarth was said to be 'at the west gate of the abbey' and within the walls, while another account of about the same date states that it was 'placed on the east side [of the abbey] within the walls' (Farrer and Brownbill 1914, 312n). This, perhaps, provides conclusive evidence that Solergarth and Sowerby are not one and the same place (Greenlane Archaeology 2007b).

2.1.17 Following the 1509 reference to Sowerby Lodge, in 1553 the farm features in a complaint heard by the Chancellor of the Duchy of Lancaster regarding land lost to the sea in 'tempestuous rages, surges, and higher springs of the sea' (Rollinson and Phillips 1971, 3). Previously Furness Abbey had been responsible for the maintenance of sea defences for its properties (Barnes 1968, 56), but following the Dissolution the former tenants initially had to fend for themselves. By 1577 they were instead expected to contribute labour to the upkeep of dykes on Walney, and the occupiers of Sowerby Lodge are listed amongst those required to do so (Greenlane Archaeology 2007a).

2.1.18 Sowerby Lodge's listed building description suggests it is eighteenth century, it has a round chimney (usually denoting a seventeenth-century or earlier date) and earlier sources recall a datestone of 1676 (CCHER 2713). Attached farm buildings, including an eighteenth-century barn with re-used cruck blades (and structural evidence suggesting earlier buildings) form an open courtyard farmstead (Greenlane Archaeology 2007a). All the existing structures were built by 1851, and a shift from arable to cattle farming is evident in modifications made to the buildings in the late nineteenth century (*ibid*).

2.1.19 There are several references to Sowerby during the sixteenth century: at the Dissolution, Sowerby Meadow is listed as held by Furness Abbey (Barnes 1968, 30). A subsequent survey of woods in 1567 includes those at Sowerby (*op cit*, 55), and the woods are also specifically named and highly valued in an Abbey rental (CAC (B) ZK205 n.d; Greenlane Archaeology 2007a). In 1607, the herbage of Sowerby Woods was granted to John Preston (Richardson 1881, 43), further demonstrating that they were considered important. There are several further references to their management

during the sixteenth and seventeenth centuries as a source of coppiced wood for producing charcoal for use in the iron industry (Fell 1908, 118-121).

2.1.20 Despite mentions of Sowerby Woods and Sowerby Lodge (probably part of North Park) in Medieval and post-Dissolution documents, there are no apparent references to Sowerby Hall Farm. Its Grade II* listed (NHLE 1283032) cruck-framed threshing barn with later cow accommodation is the oldest element of the farm (Greenlane Archaeology 2007b), tree ring analysis of the timbers producing a felling date of between 1610-20 AD (CCHER 43266). The present farmhouse, Grade II listed (NHLE 1197874) was built *c* 1890, having originally been some 300m distant from the barn, backing onto the south-eastern boundary of Sowerby Woods.

2.1.21 Into the mid/late nineteenth century, the peninsular's huge iron ore reserves dominated the development of Barrow. Although the ore had been exploited at a relatively small scale due to the lack of efficient overland links (most being moved using water transport, see Bowden 2000), it wasn't until the expansion of the railways that exponential growth occurred. This led to the enlargement of the docks and ultimately to the development of smelting furnaces in the town. A blast furnace complex was established on reclaimed ground to the north-west of the town in the 1850's (Kellett 1990). A steel works using the Bessemer Process was established adjacent to the iron works in 1864 and two years later the two operations were merged to form the Barrow Haematite Iron and Steel Company. The plant was the largest in the world at the time and production of steel rails was undertaken on a grand scale (Barnes 1968, 96).

2.1.22 As a result of the collapse of the iron and steel industry towards the end of the nineteenth century, Barrow reverted to an economy based entirely on shipbuilding (Trescatheric 2000). The Barrow Iron Shipbuilding Company had been established in 1886 and this was bought by Vickers of Sheffield after the death of James Ramsden in 1896 (*ibid*). In turn Vickers went on to produce armaments during the First World War, although the following decades were far from economically stable (*ibid*).

2.1.23 ***Previous archaeological investigations***: There have been several archaeological investigations within the 0.5km study area. These have been focussed on Sowerby Lodge Farm and its surrounding landscape, the Kimberly Clark Barrow Mill to the west of Park Road, and Sowerby Hall Farm, immediately to the north of the present Site Area, to the north of Bank Lane. Archaeological interest has specifically been focussed on the area's prehistoric and medieval archaeological potential.

2.1.24 Closest to the Site, the triangular field to the west of Park Road was subject to archaeological trial trenching (OA North 2003). This identified no significant archaeology apart from several north-west/south-east-aligned drainage ditches containing nineteenth-century 60mm ceramic drainpipes, and evidence of former watercourses (*ibid*). The latter had been ploughed out within the field under investigation but remained visible on the surface to the west (as illustrated on the historic OS mapping and a site plan (OA North 2003). The natural was described as brownish-orange, moderately compact sandy clay with varying amounts and patches of sub rounded and sub angular pebbles (*ibid*), suggesting the former presence of watercourses.

2.1.25 A little further afield, Headland Archaeology (2000) undertook a series of nine evaluation trenches to the west of Barrow Mill (in the area formerly Sowerby Woods, north of Bank Lane); no archaeological deposits or finds were recorded, silty clay natural deposits or modern rubble being encountered.

3 PROJECT AIMS

3.1 General

3.1.1 The general aims and objectives of the archaeological watching brief can be summarised as follows:

i. to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site; and
ii. to compile a professional archival record of any archaeological remains within the site.

3.2 Specific aims and objectives

3.2.1 The specific aims and objectives of the archaeological watching brief are:

i. to determine or confirm the general nature of any remains present; and
ii. to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.

4 PROJECT SPECIFIC EXCAVATION AND RECORDING METHODOLOGY

4.1 Scope of works

4.1.1 The archaeological watching brief will involve the monitoring and recording of any archaeological remains encountered during the groundworks associated with the proposed development. The groundworks, involving topsoil stripping, will be undertaken by a mechanical excavator fitted with a toothless ditching bucket, under direct supervision by a suitably qualified and experienced archaeologist at all times. Any spoil arisings will be checked, and any finds will be retained.

4.1.2 The attending archaeologist will be afforded the opportunity to investigate, clean and record any archaeological features identified. Where archaeological features are identified they may be subject to sample excavation to develop an understanding of their nature and recover appropriate samples and finds. If potentially significant archaeological remains are identified, the archaeologist will inform the client and the Historic Environment Officer.

4.2 Programme

4.2.1 It is anticipated that the fieldwork will commence 11th October 2022 and run for approximately two weeks, by a Project Archaeologist, under the management of Paul Dunn, Senior Project Manager.

4.2.2 All fieldwork undertaken by OA North is overseen by the Operations Manager, Alan Lupton MCIfA.

4.3 Site specific methodology

4.3.1 A summary of OA's general approach to excavation and recording can be found in *Appendix A*. Standard methodologies for Geomatics and Survey, Environmental evidence, Artefactual evidence and Burials can also be found below (*Appendices B*, *C*, *D* and *E* respectively).

4.3.2 Site specific methodologies will be as follows:

i. the Project Archaeologist will maintain a watching brief during any below ground works, assumed to involve topsoil stripping;
ii. the Project Archaeologist will be afforded the opportunity to clean, investigate, record, and sample all archaeological remains to an appropriate degree. The hand excavation and recording methodology which will be implemented can be found in *Appendix A*;
iii. if potentially significant remains are identified, the Project Archaeologist will stop excavation works in that area. They will then inform the client and will consult with the Historic Environment Officer, work will only continue with their approval;
iv. a photographic and textual record will be made of the stratigraphy and archaeological features encountered;
v. spoil arisings from the excavations will be scanned for finds and palaeoenvironmental evidence, which will be collected if deemed significant; and

vi. at all times, the Project Archaeologist will work under the health and safety direction of the site contractor.

5 PROJECT SPECIFIC REPORTING AND ARCHIVE METHODOLOGY

5.1 Programme

5.1.1 The final report will be completed within 4 to 6 weeks of the completion of the fieldwork. A copy of the report in Adobe Acrobat (.pdf) format will be provided to the client. Once approved a copy will then be provided to the Historic Environment Officer for comment prior to final issue. Paper copies can also be provided on request.

5.2 Content

5.2.1 The content of this report will be as defined in *Appendix F*.

5.3 Specialist input

5.3.1 OA has a large pool of internal specialists, as well as a network of external specialists with whom OA have well established working relationships. A general list of these specialists is presented in *Appendix G*; in the event that additional input should be required, an updated list of specialists can be supplied.

5.4 Archive

5.4.1 The site archive will be deposited with the Dock Museum, Barrow-in-Furness following completion of the project. An Online Access to Index of Archaeological Investigations (OASIS) record will be established at the beginning of the project and finalised upon completion, with a digital copy of the final report being uploaded.

5.4.2 A summary of OA's general approach to documentary archiving can be found in *Appendix H*.

6 HEALTH AND SAFETY

6.1 Roles and responsibilities

6.1.1 The Senior Project Manager, Paul Dunn, has responsibility for ensuring that safe systems of work are adhered to on site. Elements of this responsibility will be delegated to the Project Archaeologist who implements these on a day to day basis. Paul Dunn and the Project Archaeologist are supported by OA North's Health and Safety Advisor, Fraser Brown.

6.1.2 The Director with responsibility for Health and Safety at OA is Dan Poore Tech IOSH (Chief Business Officer).

6.2 Method statement and risk assessment

6.2.1 A summary of OA's general approach to health and safety can be found in *Appendix I*. A risk assessment has also been undertaken and approved and will be kept on site, along with OA's standard Health and Safety file, which will contain all relevant health and safety documentation.

6.2.2 The Health and Safety file will be available to view at any time.

6.3 Monitoring of works

6.3.1 At least one weeks notice of the commencement of the archaeological watching brief will be given to Jeremy Parsons, Historic Environment Officer for Cumbria County Council.

6.3.2 The Historic Environment Officer will have free access to the site (subject to Health and Safety considerations) and all records to ensure the works are being carried out in accordance with this WSI and all other relevant standards.

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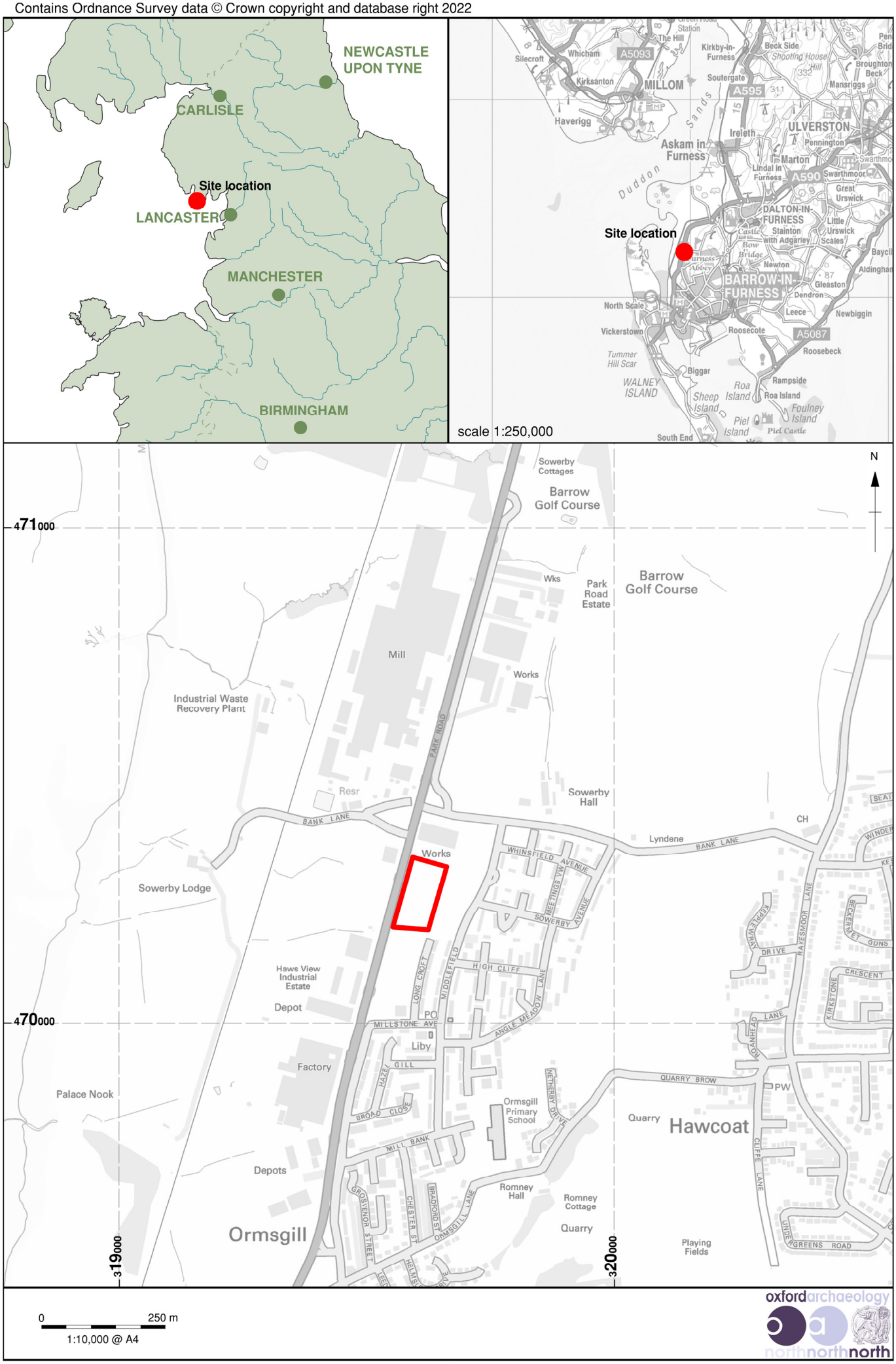

Figure 1: Site location

Figure 2: Plan of area to be stripped

OA STANDARD FIELDWORK METHODOLOGY APPENDICES

The following methods and terms will apply, where appropriate, to all OA fieldwork unless varied by the accompanying detailed Written Scheme of Investigation.
Copies of all OA internal standards and guidelines referred to below are available on request.

APPENDIX A GENERAL EXCAVATION AND RECORDING METHODOLOGY

A.1 Standard methodology – summary

Mechanical excavation

A.1.1 An appropriate mechanical excavator will be used for machine excavation. This will normally be a JCB or 360° tracked excavator with a 1.5 m to 2 m wide toothless ditching bucket. For work with restricted access or working room a mini excavator may be used.

A.1.2 All mechanical excavation will be undertaken under direct archaeological supervision.

A.1.3 All undifferentiated topsoil or overburden of recent origin will be removed down to the first significant archaeological horizon, in successive, level spits.

A.1.4 Following mechanical excavation, all areas that require examination or recording will be cleaned using appropriate hand tools.

A.1.5 Spoil heaps will be monitored in order to recover artefacts to assist in the analysis of the spatial distribution of artefacts. Modern artefacts will be noted but not retained.

A.1.6 After recording, evaluation trenches and test pits will usually be backfilled with excavated material in reverse order of excavation, and compacted as far as is practicable with the mechanical excavator. Area excavations will not normally be backfilled.

Hand excavation

A.1.7 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.

A.1.8 Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.

A.1.9 In the case of evaluations, it is not necessarily the intention that all trial trenches will be fully excavated to natural stratigraphy, but the depth of archaeological deposits across the site will be assessed. The stratigraphy of a representative sample of the evaluation trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation in situ.

Recording

A.1.10 Written descriptions will be recorded on proforma sheets comprising factual data and interpretative elements.

A.1.11 Where stratified deposits are encountered a Harris matrix will be compiled during the course of the excavation.

A.1.12 Plans will normally be drawn at 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Detailed plans will be at an appropriate scale. Burials will be drawn at scale 1:10 or recorded using geo-referenced digital photography.

A.1.13 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

A.1.14 A register of plans will be kept.

A.1.15 Long sections of showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.

A.1.16 A register of sections will be kept.

A.1.17 Generally, all sections will be tied in to Ordnance Datum.

A.1.18 A full photographic record, illustrating in both detail and general context the principal features and finds discovered will be maintained. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work.

A.1.19 Photographs will be recorded on OA Photographic Record Sheets.

A.2 Relevant industry standards and guidelines

A.2.1 The Chartered Institute for Archaeologists (CIfA) Standard and Guidance notes relevant to fieldwork are:

- Standard and guidance for archaeological field evaluation, 2014 (updated 2020)
- Standard and guidance for archaeological excavation, 2014 (updated 2020)
- Standard and guidance for an archaeological watching brief, 2014 (update 2020)

A.2.2 These will be adhered to at all times.

A.3 Relevant OA manual and other supporting documentation

A.3.1 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming).

A.3.2 Further guidance is provided to all excavators in the form of the OA 'Fieldwork Crib Sheets - a companion guide to the Fieldwork Manual'. These have been issued ahead of formal publication of the revised Fieldwork Manual.

APPENDIX B GEOMATICS AND SURVEY

B.1 Standard methodology - summary

B.1.1 The aim of OA methodology is to provide comprehensive survey cover of all investigation areas. Additionally, it is designed to provide coverage for any areas, beyond the original scope of the project, which arise as a result of further work. It provides digital plans of all required elements of the project and locates them within an overall grid.

B.1.2 It also maintains all necessary survey data and ensures that the relevant information is copied into the primary record, in order to ensure the integrity of the project archive. Furthermore, it ensures that all core data is securely stored and backed up. It establishes accurate project reference systems utilising a series of control stations and permanent base lines.

B.1.3 The survey will be conducted using a combination of GPS/GNSS (Global Positioning System/Global Navigation Satellite System), hand-measured elements, Total Station Theodolite (TST) survey utilising Reflectorless Electronic Distance Measurement (REDM), or photogrammetry where appropriate.

B.1.4 Before the main work commences, a network of control stations will be laid out encompassing the area as necessary. Control stations will be tied in to known points or existing features using rigorous metric observation. The control network will be set in using a TST to complete a traverse or using techniques as appropriate to ensure sufficient accuracy. A GNSS, or other appropriate method, will be used to orientate the control network to National Grid or other recognised coordinate system.

B.1.5 Control stations will be checked by closed traverse and/or GNSS, as appropriate. The accuracy of these control stations will be accessed on a regular basis and re-established accordingly. Control stations will be recorded on Survey Control Station sheets.

B.1.6 Each control station will be marked with a PGM (Permanent Ground Marker). Witness diagrams will include the full 3-D co-ordinates generated, a sketch diagram and measurements to at least three fixed details, written description of the mark and a photograph of the control point in its environs.

B.1.7 Prior to entry into the field all equipment will be checked, and all pre-survey information will be uploaded onto survey equipment as appropriate. Prior to conducting the survey, the site will be reconnoitred for locations for a viable control network and check the line of sight and any possible hindrance to survey. Daily record sheets will be kept recording daily tasks and conditions as appropriate.

B.1.8 All spatial data will be periodically downloaded uploaded and backed up to our central servers via ftp. It will be cleaned, validated and inspected.

B.1.9 All survey data will be documented on daily survey record sheets as necessary. Information entered on these sheets includes key set up information (Instrument height etc.) as well as daily variables and errors/comments. All survey data will be digitally recorded in a raw format and translated during the download process this

shall allow for any errors to be cross referenced with the daily survey record and corrected accordingly.

B.1.10 A summary of survey work will be produced as needed to access development and highlight problems. Technical support for the survey equipment and download software shall be available at all times. In those instances, where sites are remotely operated, all digital data will be backed up regularly via ftp to Oxford on a regular basis.

B.1.11 A site plan will initially be created by a rapid survey of relevant archaeological features by mapping their extent using a combination of TST and GNSS. This will form the basis for deciding excavation strategy and will be updated as the excavation clarifies the extent of, and relationships between, archaeological features.

B.1.12 Areas of complex stratigraphy will be hand drawn or recorded by photogrammetry as appropriate. Where hand drawn, at least two Drawing Points (DPs) will be set in as a baseline and measurements taken off this by tape and offset. The hand drawn plans will be referenced to the digitally captured pre-site plan by measuring in the DPs with a TST or GNSS. These hand drawn elements will then be scanned in, geo-referenced using the DPs as reference points and digitised following OA's digitising protocols. For further details on hand planning procedure please refer to the fieldwork guidelines.

B.1.13 Photogrammetry may also be used to record standing structures or burials. This will be carried out in line with Standard OA procedures for photogrammetry.

B.1.14 Survey data recorded in the field will be downloaded using appropriate downloading software, and saved as an AutoCAD Map DWG file, or an ESRI Shapefile. These files will be regularly updated and backed up with originals being stored on an OA server in Oxford.

B.1.15 All drawings will be composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and OA Geomatics protocols. Once created, additional GIS/CAD work will normally be carried out at the local OA central office or at on-site remote locations when appropriate. Support for all GIS/CAD work will be available from OA’s Oxford Office during normal office hours. The aim of the GIS/CAD work is to produce workable draft plans, which can be produced as stand-alone products, or can be readily converted to GIS format. Any hand-drawn plans will be scanned and digitised on site in the first instance. Subsequent plans will be added to the main drawing as it develops.

B.1.16 All plan scans will be numbered according to their plan site number. Digital plans will be given a standard new plan number taken out from the site plan index.

B.1.17 Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all data recorded will be made available for archiving purposes.

B.2 Relevant industry standards and guidelines

B.2.1 Historic England, 2017 Understanding the Archaeology of Landscapes A Guide to Good Recording Practice

B.2.2 Historic England, 2015 Metric Survey Specifications for Cultural Heritage (3rd edn)

B.2.3 Historic England, 2016 Understanding Historic Buildings: A Guide to Good Recording Practice

B.2.4 Historic England, 2017 Photogrammetric Applications for Cultural Heritage: Guidance for Good Practice

B.3 Relevant OA manual and other supporting documentation

B.3.1 OA South Metric Survey, Data Capture and Download Procedures

B.3.2 OA South Digitising Protocols

B.3.3 OA South GIS Protocols

B.3.4 These will be superseded by the OA South Geomatics Manual (in progress).

APPENDIX C ENVIRONMENTAL EVIDENCE

C.1 Standard methodology – summary

C.1.1 Different environmental and geoarchaeological sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Where possible an environmental specialist(s) will visit the site to advise on sampling strategies. Sampling methods will follow guidelines produced by Historic England and Oxford Archaeology. A register of samples will be kept. Specialists will be consulted where non-standard sampling is required (e.g. TL, OSL or archaeomagnetic dating) and if appropriate will be invited to visit the site and take the samples.

C.1.2 Geoarchaeological sampling methods are site specific, and methodologies will be designed in consultation with the geoarchaeological manager on a site by site basis.

C.1.3 Bulk soil samples, where possible of 40 litres or 100% of a deposit if less is available, will be taken from potentially datable features and layers for flotation for charred plant remains and for the recovery of small bones and artefacts. Larger soil samples (up to 100L) may be taken for the complete recovery of animal bones, marine shell and small artefacts from appropriate contexts. Smaller bulk samples (general biological samples) of 10-20 litres will be taken from any waterlogged deposits present for the recovery of macroscopic plant remains and insects. Series of incremental 2L samples may be taken through buried soils and deep feature fills for the recovery of snails and/or waterlogged plant remains, depending on the nature of the stratigraphy and of the soils and sediments. Columns will be taken from buried soils, peats and waterlogged feature fills for pollen and/or phytoliths, diatoms, ostracods and foraminifera if appropriate. Soil samples will be taken for soil investigations (particle size, organic matter, bulk chemistry, soil micromorphology etc.) and possibly for metallurgical analysis in consultation with the appropriate specialists.

C.1.4 Bulk samples from dry deposits will be processed by standard water flotation using a modified Siraf-style machine and meshes of 0.25mm (flot) and 0.5 or 1mm depending on sediment type and like modes of preservation (residue). Heavy residues will be wet sieved, air dried and sorted. Samples taken exclusively for the recovery of bones, marine shell or artefacts will be wet sieved to 2mm. Waterlogged samples (1L sub-sample) and snail samples (2L) will be processed by hand flotation with flots and residues collected to 0.25mm (waterlogged plants) and 0.5mm (snails) respectively; these flots and residues will be sorted by the specialist. Samples specifically taken for insects, pollen, other microflora and microfauna, metallurgy and soil analysis will be submitted as whole earth to the appropriate specialists or processed following their instructions.

C.2 Relevant industry standards and guidelines

C.2.1 Historic England, 2010 Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.

C.2.2 Historic England, 2018 Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysis and Conservation.

C.2.3 Historic England, 2011 Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post excavation, (2nd ed)

C.2.4 Historic England, 2004 Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (revision due 2020).

C.2.5 University of Bradford, 2019 Archaeomagnetism: Magnetic Moments in the Past https://www.brad.ac.uk/archaeomagnetism/

C.2.6 Historic England, 2008 Luminescence Dating. Guidelines on Using Luminescence Dating in Archaeology (revision due 2020).

C.2.7 Historic England, 2008 Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (currently being revised).

C.2.8 Historic England, 2015 Archaeometallurgy. Guidelines for Best Practice.

C.2.9 Historic England, 2015 Geoarchaeology. Using Earth Sciences to Understand the Archaeological Record.

C.2.10 Historic England, 2017 Organic Residue Analysis and Archaeology.

C.2.11 Baker, P and Worley, F, 2019 Animal Bones and Archaeology: Recovery to archive. Historic England

C.3 Relevant OA manual and other supporting documentation

C.3.1 Oxford Archaeology 2017. Environmental Sampling Guidelines, 4th ed.

APPENDIX D ARTEFACTUAL EVIDENCE

D.1 Standard methodology - summary

D.1.1 Before a site begins arrangements concerning the finds will be discussed with the Finds Team Leader. Information will be provided by the project manager about the nature of the site, the expected size and make-up of the finds assemblage and any site specific finds retrieval strategies. On-site requirements will be discussed and a conservator appointed who can be called on to make site visits if required. Special requirements regarding particular categories of material will be raised at this early stage for instance the likelihood of recovering assemblages of waterlogged material, large timbers, quantities of structural stone or ceramic building material. Specialists may be required to visit sites to discuss retrieval strategies.

D.1.2 The project manager will supply the Finds Team Leader with contact details of the landowner of the site so that consent to deposit any finds resulting from the investigation can be sought.

D.1.3 The on-site retrieval, lifting and short term packaging of bulk and small finds will follow the detailed guidelines set out in the OA Finds Manual (sections 2 and 3), First Aid for Finds and the UKIC conservation guidelines No.2.

D.1.4 All finds recovered from site will be transported to an OA regional office for processing; local sites will return finds at the end of each day, away based sites at the end of each week. Special arrangements can be discussed for certain sites with the Team Leader before the start of a project. Larger long running sites may in some instances set up on-site processing units to deal with the material from a particular site.

D.1.5 All finds qualifying as Treasure will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act (1996), and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

D.1.6 Each box of finds will be accompanied by a finds context checklist itemising the finds within each box. The number of bags of finds from each context and individual small find from each context will be recorded. A member of the processing team will check the list when it arrives in the department. There are separate forms for finds recovered from fieldwalking.

D.1.7 The processing programme is reviewed on a weekly basis and priorities are worked out after discussions with the Fieldwork Team Leader and the Post-excavation Team Leader. Project managers will keep the Finds Team Leader informed of any pressing deadlines that they are aware of. All finds from evaluations are dealt with as a matter of priority.

D.1.8 All bulk finds are washed (where appropriate), marked, bagged and boxed by the processing team according to the guidelines set out in section 4 and 5 of the OA Finds Manual, First-aid for finds and the UKIC guidelines No.2. They must also take into account the requirements of the receiving museum. Primary data recording count and weight of fragments by material from each context is recorded on the site database.

D.1.9 Unstable and sensitive objects are recorded onto the database and then packaged and stored in controlled environments according to their individual requirements. The advice of a conservator will be sought for sensitive objects in need of urgent conservation. All metalwork will be x-rayed prior to assessment (and to meet the requirements of most receiving museums).

D.1.10 Finds recovered from the environmental sample processing will be incorporated into the main assemblage and added to the database.

D.1.11 On completion of the processing and data entry a finds file for each archaeological investigation will be produced, a summary of which is available for the project manager. The assemblage is allocated an OA number for storage purposes. Bulk finds are stored on a roller racking system, metals in a secure controlled storage and organic finds are refrigerated where possible.

D.1.12 The movement of finds in and out of the storage areas is strictly monitored and recorded. Carbon copy transit forms exist to record this information. Finds will not be removed from storage without the prior knowledge of the Finds Team Leader.

D.1.13 Finds information summarised in the finds compendium is used to assess the finds requirements for the post excavation stages of the project. The Team Leader holds a list of all specialists used by OA (see below) both internal and external.

D.1.14 On completion of the post excavation stage of the project the team prepares the finds assemblage for deposition with the receiving museum. Discussions will be held with the museum, the excavator and the Finds Team Leader to finalise any selection, retention or discard policy. Most museums issue strict guidelines for the preparation of archives for deposition with their individual labelling, packaging and recording requirements.

D.2 Relevant industry standards and guidelines

D.2.1 CIfA, 2014 (updated 2020) Standard and guidance for the collection, documentation, conservation and research of archaeological materials

D.2.2 Society of Museum Archaeologists, 1993 Selection, retention and dispersal of Archaeological Collections. Download available via http://www.socmusarch.org.uk/publica.htm)

D.2.3 UKIC, 1983 Packaging and Storage of Freshly-Excavated Artefacts from Archaeological Sites. Conservation Guidelines No.2. Archaeology Section, United Kingdom Institute for Conservation.

D.2.4 UKIC, 1988 Excavated Artefacts and Conservation: UK sites Revised Edition. Conservation Guidelines No.1. Archaeology Section, United Kingdom Institute for Conservation.

D.2.5 Watkinson, D E & Neal, V, 1998 First Aid for Finds (3rd edition). RESCUE & UKIC

D.3 Relevant OA manual and other supporting documentation

D.3.1 Allen, L, and Cropper, C (internal publication only) Oxford Archaeology Finds Manual.

APPENDIX E HUMAN REMAINS

E.1 Standard methodology - summary

E.1.1 Human remains will not be excavated without a relevant licence/faculty and, where applicable (for example, a post medieval cemetery), a risk assessment from the local environmental officer.

E.1.2 All human remains will be treated with due care and regard to the sensitivities involved, and will be screened from the public throughout the course of the works.

E.1.3 Excavation will be undertaken in accordance with CIfA (Roberts and McKinley 1993), Historic England (2018), the Advisory Panel on the Archaeology of Burials in England (APABE, 2015, 2017) and British Association of Biological Anthropology and Osteoarchaeology Code of Practice (2019) and Code of Ethics (2019). For crypts and post-medieval burials, the recommendations set out by the CIfA (Cox 2001) and by the Association of Diocesan and Cathedral Archaeologists and APABE (2010) are also relevant.

E.1.4 In accordance with recommendations set out in the Historic England and Church of England (2005) and updated by the Advisory Panel on the Archaeology of Burials in England (2017), skeletons will not be excavated beyond the limits of the trench, unless they are deemed osteologically or archaeologically important.

E.1.5 Where any soft tissue survives and/or materials (for example, inner coffins, mattresses and other paddings) soaked in body liquor, no excavation or handling of the remains will take place until an appropriate risk assessment has been undertaken. Relevant protocols (i.e. Cox 2001) for their excavation, recording and removal will be adhered to.

E.1.6 OA does not excavate or remove modern burials (those less than 100 years old) and does not remove or open sealed lead coffins. Appropriate PPE (e.g. chemical suit, latex gloves) will be worn by all staff when working with lead coffins.

E.1.7 Graves and their contents will be hand excavated in plan. Each component (for example, skeleton, grave cut, coffin (or remains of), grave fill) will be assigned a unique context number from a running sequence. A group number will also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate).

E.1.8 Soil samples will be normally taken during the excavation of inhumations, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, right foot and left foot. Infants (circa. less than 5 years) will normally be recovered as bulk samples. Soil samples will also be taken from graves that appear to contain no human bone.

E.1.9 Burials (including the skeleton, cremation, coffin fittings, coffin, urn, grave goods / other) will be recorded by photographic and written record using specialised pro forma context sheets, although these records may only include schematic representations of the location and position of the skeletons, depending on the nature and circumstances of the burial.

E.1.10 Where digital imaging is used it will be done in accordance with the British Association of Biological Anthropology and Osteoarchaeology Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (2019).

E.1.11 Where necessary, hand drawn plans (usually at 1:10, sometimes 1:5) will be made, especially of contexts where required details cannot be adequately seen using photography (for example, urned cremations; undisturbed hob nails).

E.1.12 Levels will be taken. For inhumations this will be on the skull, pelvis and feet as a minimum.

E.1.13 Human remains that are exhumed will be bagged and labelled according to skeletal region and carefully packed into suitable containers (for example, acid free cardboard boxes) and transported to a suitable storage location. Any associated coffins and coffin fittings will be contained with the human remains wherever possible.

E.1.14 Unurned cremations will not usually be half sectioned, but excavated in spits and/or quadrants (i.e. large deposits or spreads), or recovered as a bulk sample.

E.1.15 Wherever possible, urned cremations will be carefully bandaged, recovered whole and will be excavated in spits in the laboratory, as per the recommendations of McKinley (2004, 2017).

E.1.16 Unless deemed osteologically or archaeologically important disarticuled bone / charnel will be collected and reserved for re-burial if immediate re-internment as close to its original position is not practicable. In some instances, a rapid scan of this material may be undertaken by a qualified osteologist, if deemed relevant.

E.1.17 If undisturbed, pyre sites will normally be excavated in quadrants, at the very least in 0.5 m blocks of 0.5 m spits.

E.1.18 Pyre debris dumps will be half sectioned or quadranted and will be subject to 100% sampling.

E.1.19 Wooden and lead coffins and any associated fittings, including fixing nails will be recorded on a pro forma coffin recording sheet. All surviving coffin fittings will be recorded by reference to Reeve and Adams (1993) and the unpublished master catalogue that is being compiled by OA. Where individual types cannot be paralleled, they will be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible departum plate inscriptions will be recorded and further documentary research will be made.

E.1.20 Funerary structures, such as brick shaft graves and/or vaults will be recorded by photogrammetry or hand-drawn at a scale of 1:10 or 1:20, as appropriate. Location, dimensions and method of construction will be noted, and the structure added to the overall trench plan.

E.1.21 Memorials, including headstones, revealed within the areas of development will be recorded irrespective of whether they are believed to be in situ.

E.1.22 Where required, memorials will be accorded an individual context number and will also be included as part of the grave group, if the association with a burial is clear.

E.1.23 Memorials will be recorded on pro-forma context sheets, based on and following the guidelines set out by Mytum (2002), and will include details of:

- Shape
- Dimensions
- Type of stone used
- Condition, completeness and fragmentation of stones, no longer in original positions
- Iconography (an illustration may best describe these features)
- Inscription (verbatum record of inscription; font of the lettering)
- Stylistic type

E.2 Relevant industry standards and guidelines

E.2.1 Advisory Panel on the Archaeology of Burials in England, 2013 Science and the Dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis. English Heritage Publishing.

E.2.2 Advisory Panel on the Archaeology of Burials in England, 2017 Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England

E.2.3 Advisory Panel on the Archaeology of Burials in England, 2015 Large Burial Grounds. Guidance on sampling in archaeological fieldwork projects

E.2.4 Association of Diocesan and Cathedral Archaeologists and APABE, 2010 Archaeology and Burial Vaults. A guidance note for churches. Guidance Note 2

E.2.5 British Association of Biological Anthropology and Osteoarchaeology. 2019a Code of Practice (http://www.babao.org.uk/index/ethics-and-standards)

E.2.6 British Association of Biological Anthropology and Osteoarchaeology. 2019b Code of Ethics (http://www.babao.org.uk/index/ethics-and-standards)

E.2.7 British Association of Biological Anthropology and Osteoarchaeology, 2019c Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (http://www.babao.org.uk/index/ethics-and-standards)

E.2.8 Cox, M, 2001 Crypt archaeology. An approach. CIfA Paper No. 3

E.2.9 English Heritage, 2002 Human Bones from Archaeological Sites. Guidelines for producing assessment documents and analytical reports

E.2.10 Historic England, 2018 The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon, Historic England

E.2.11 McKinley, J, and Roberts, C, 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, CIfA Technical Paper No. 13

E.2.12 McKinley, J, 2004 Compiling a skeletal inventory: cremated human bone. In Brickley, M, and McKinley, J (eds) Guidelines to the Standards for Recording Human Remains, CIfA Technical Paper No. 7. 9-13

E.2.13 McKinley, J, 2017 Compiling a skeletal inventory: cremated human bone. In Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 14-19

E.2.14 Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 2017

E.2.15 Mytum, H, 2000 Recording and Analysing Graveyards. CBA Handbook No. 15

E.2.16 Reeve, J, and Adams, M, 1993 The Spitalfields Project. Volume I – The Archaeology Across the Styx. CBA Research Report No. 85

E.2.17 The Human Tissue Act 2004

E.3 Relevant OA manual and other supporting documentation

E.3.1 Loe, L, 2008 The Treatment of Human Remains in the Care of Oxford Archaeology. Oxford Archaeology internal policy document

E.3.2 Oxford Archaeology 2018 *Fieldwork Manual Human Remains* unpublished

APPENDIX F REPORTING

F.1 Standard methodology - summary

F.1.1 For Watching Briefs and Evaluations, the style and format of the report will be determined by OA, but will include as a minimum the following:

- A location plan of trenches and/or other fieldwork in relation to the proposed development.
- Plans and sections of features located at an appropriate scale.
- A section drawing showing depth of deposits including present ground level with Ordnance Datum, vertical and horizontal scale.
- A summary statement of the results.
- A table summarising the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation.
- A reconsideration of the methodology used, and a confidence rating for the results.
- An interpretation of the archaeological findings both within the site and within their wider landscape/townscape setting.

F.1.2 For Excavations, a Post-Excavation Assessment and Project Design will generally be prepared, as prescribed by Historic England Management of Research Projects in the Historic Environment (MoRPHE) 2015, Section 2.3. This will include a Project Description containing:

- A summary description and background of the project.
- A summary of the quantities and assessment of potential for analysis of the information recovered for each category of site, finds, dating and environmental data. Detailed assessment reports will be contained within appendices.
- An explicit statement of the scope of the project design and how the project relates to any other projects or work preceding, concurrent with or following on from it.
- A statement of the research aims of the fieldwork and an illustrated summary of results to date indicating to what extent the aims were fulfilled.
- A list of the project aims as revised in the light of the results of fieldwork and the current post-excavation assessment process.

F.1.3 A section on Resources and Programming will also be produced, containing:

- A list of the personnel involved indicating their qualifications for the tasks undertaken, along with an explanation of how the project team will communicate, both internally and externally.
- A list of the methods which will be used to achieve the revised research aims.

- A list of all the tasks involved in using the stated methods to achieve the aims and produce a report and research archive in the stated format, indicating the personnel and time in days involved in each task. Allowance should be made for general project-related tasks such as monitoring, management and project meetings, editorial and revision time.
- A cascade or Gantt chart indicating tasks in the sequence and relationships required to complete the project. Due allowance will be made for leave and public holidays. Time will also be allowed for the report to be read by a named academic referee as agreed with the County Archaeological Officer, and by the County Archaeological Officer.
- A report synopsis indicating publisher and report format, broken down into chapters, section headings and subheadings, with approximate word lengths and numbers and titles of illustrations per chapter. The structure of the report synopsis should explicitly reflect the research aims of the project.

F.1.4 The Project Design will be submitted to the County Archaeological Officer or equivalent for agreement.

F.1.5 Under certain circumstances (e.g. with very small mitigations), and as agreed with the County Archaeological Officer or equivalent, a formal Assessment and Project Design may not be required and either the project will continue straight to full analysis, or a simple Project Proposal (MoRPHE 2015 Section 2.1) will be produced prior to full analysis. This proposal may include:

- A summary of the background to the project
- Research aims and objectives
- Methods statement outlining how the aims and objectives will be achieved
- An outline of the stages, products and tasks
- Proposed project team
- Estimated overall timetable and budget if appropriate.

F.1.6 Once the post-excavation Project Design or Project Proposal has been accepted, the County Archaeological Officer or their appointed deputy will monitor the progress of the post-excavation project at agreed points. Any significant variation in the project design will be agreed with the County Archaeological Officer.

F.1.7 The results of the project will be published in an appropriate archaeological journal or monograph. The appropriate level of publication will be dependent on the significance of the fieldwork results and will be agreed with the County Archaeological Officer. An OASIS (Online Access to the Index of Archaeological Investigations) form will be completed for each project as per Historic England guidelines.

F.2 Relevant industry standards and guidelines

F.2.1 Oxford Archaeology (OA) adheres to the national standards in post-excavation procedure as outlined in Historic England's Management of Research Projects in the Historic Environment (MoRPHE; HE 2015). Furthermore, all post-excavation projects

take into account the appropriate regional research frameworks as well as national research agendas such as the Framework for Historic Environment Activities & Programmes in Historic England (SHAPE; EH 2008).

APPENDIX G LIST OF SPECIALISTS REGULARLY USED BY OA

G.1.1 Below are two tables, one containing 'in-house' OA specialists, and the other containing a list of external specialists who are regularly used by OA.

Internal archaeological specialists used by OA

Specialist	Specialism	Qualifications
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Dr Alex Davies	Prehistoric Pottery	BA (Hons), MA, PhD, ACIfA
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
Kate Brady	Roman Pottery	BA, ACIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Leigh Allen	Metalwork and worked bone	BA (Hons), PGDip
Anni Byard	Metalwork, coins and glass	MSx, MCIfA
Dr Ruth Shaffrey	Worked stone artefacts	BA, PhD, MCIfA
Dr Rebecca Nicholson	Fish and Bird Bone	BA (Hons), MA, D.Phil, MCIfA, FSA Scot
Dr Mairead Rutherford	Pollen	BSc, MSc
Ian Smith	Animal Bone	BA (Hons), MSc, PCIfA
Dr Martyn Allen	Animal Bone	BA (Hons), MA, PhD
Adrienne Powell	Animal Bone	BA (Hons), MA
Dr Denise Druce	Charred plant remains, charcoal and pollen	BA (Hons), PhD, MCIfA
Sharon Cook	Charred plant remains	BSc, MSc, ACIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	BA PhD, MCIfA, BABAO
Helen Webb	Human Bone	BSc, MSc, MCIfA, BABAO
Mark Gibson	Human Bone	BA, MSc, ACIfA, BABAO
Dr Lauren McIntyre	Human Bone	BSc, MSc, PhD, MCIfA, BABAO
Zoe Ui Choileain	Human Bone	Pg Dip, MA, Msc, BABAO
Natasha Dodwell	Human Bone	BA, MSc, BABAO

External archaeological specialists regularly used by OA

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)
Quita Mould	Leather	BA, MA
Penelope Walton Rogers, The Anglo Saxon Laboratory	Identification of Medieval Textiles	FSA, Dip.Acc
Dana Goodburn-Brown	Conservation	BSc (Hons), BA, MSc
Steve Allen, York Archaeological Trust	Conservation	BA, MA, MAAIS
Dr Richard Macphail	Soils, especially Micromorphology	BA (Hons), MSc, PhD
Dana Challinor	Charcoal	MA, MSc
Dr Nigel Cameron	Diatoms	BSc, MSc, PhD
Dr David Smith	Insects	BA (Hons), MA, PhD
Professor Adrian Parker	Phytoliths and pollen	BSc (Hons), D.Phil
Dr David Starley	Metalworking Slag	BSc (Hons), PhD
Wendy Carruthers	Charred and waterlogged plant remains	BA (Hons)
Dr John Whittaker	Ostracods and Foraminifera	BA (Hons), PhD
Dr John Crowther	Soil Chemistry	MA, PhD
Dr Martin Bates	Geoarchaeology	BSc, PhD
Dr Dan Miles	Dendrochronology	D.Phil, FSA
Dr Jean-Luc Schwenninger	Optically Stimulated Luminescence Dating	PhD
Dr David Higgins	Clay Pipe	BA, PhD, MCIfA
Dr Hugo Anderson-Wymark	Flint	BSc, PhD, FSA Scot, MCIfA
Dr Damian Goodburn-Brown	Ancient Woodwork	BA, PhD
Dr David Dungworth	Archaeometallurgy and Glassworking	BA (Hons), PhD

APPENDIX H DOCUMENTARY ARCHIVING

Standard methodology – summary

H.1.1 The documentary archive constitutes all the written, drawn, photographic and digital records relating to the set-up, fieldwork and post-excavation phases of the project. This documentary archive, together with the artefactual and environmental ecofact archive collectively forms the record of the site. The report is part of the documentary archive, and the archive must provide the evidence that supports the conclusions of the report, but the archive may also include data which exceeds the limitations of research parameters set down for the report and which could be of significant value to future researchers.

H.1.2 At the outset of the project OA Archive manager will contact the relevant local receiving museum or archive repository to notify them of the imminent start of a new fieldwork project in their collecting area. Relevant local archiving guidelines will be observed and site codes, which integrate with the receiving repository, will be agreed for labelling of archives and finds.

H.1.3 Where there is currently no receiving museum for the project archive, although responsibility for the archive ultimately lies with the client, OA will hold the archive on their behalf for a period of up to 3 years after completion of the report, after which time (in the event that a suitable depository has not been secured) provision for further storage of the archive will be made in agreement with Oxford Archaeology, the client and the relevant planning archaeologist.

H.1.4 During the course of the project the Archive team will assist the Project Manager in the management of the archive including the cataloguing and development technique suitable for photographic archive requirements.

H.1.5 The hard copy site archive will be security copied by scanning to PdFA and a copy of this will be housed on the OA Archive Server. A full digital copy of the archive, including scanned hard copy and born digital data, will be deposited with and made publicly available on-line through the ADS. A further copy will be maintained on the OA server and if requested a copy on disk will also be sent to the receiving museum with the hard copy. This will act as a safeguard against the accidental loss and the long-term degeneration of paper records and photographs.

H.1.6 Born digital data will only be printed to hard copy for the receiving museum where practical. Archive elements that need maintaining in digital form will be sent to ADS in accordance with Arches Standard and ADS guidelines. A copy will be sent to the receiving museum by CD and back-up copies will be stored on the OA digital network. In most cases a digital copy of the report will be included in the OASIS project library hosted by ADS.

H.1.7 Prior to deposition the Archive team will contact the museum regarding the size and content of the archive and discuss any retention and dispersal policies which may be applicable in line with local and SMA Guidelines ' Selection, Retention & Dispersal of Archaeological Collections' 1993.

H.1.8 The site archive will then be deposited with the relevant receiving museum or repository at the earliest opportunity unless further archaeological work on the site is expected. The documentary archive will include correspondence detailing landowner consent to deposit the artefacts and any copyright licences in accordance with the receiving museum guidelines. Deposition charges will be required from the client as part of the project costs, but the level of the fee is set by the receiving body and may be subject to change during the lifespan of the project. Changes to archiving charges beyond OA's control will be passed across to the client.

H.1.9 Oxford Archaeology will retain full copyright of any commissioned reports, tender documents, or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it will provide the receiving repository or museum for the archive with a full licence for use to the client in all matters directly relating to the project as described in the Written Scheme of Investigation, and in line with the relevant receiving body guidelines.

H.1.10 OA will advise the receiving repository or museum for the archive of 3rd party materials supplied in the course of projects which are not OA's copyright.

H.1.11 OA undertakes to respect all requirements for confidentiality about the client's proposals provided that these are clearly stated. It is expected that such conditions shall not unreasonably impede the satisfactory performance of the services required. Archaeological findings and conclusions can be kept confidential for a limited period but will be made publicly available in line with the above procedure either after a specified time period agreed with the client at the outset of the project, or where no such period is agreed, after a reasonable period of time. It is expected that clients respect OA's general ethical obligations not to suppress significant archaeological data for an unreasonable period.

H.2 Relevant industry standards and guidelines

H.2.1 At the end of the project the site archive will be ordered, catalogued, labelled and conserved and stored according to the following national guidelines:

H.2.2 EAC, 2014 A Standard and Guide to Best Practice for Archaeological Archiving in Europe (EAC Guidelines 1)

H.2.3 CIfA, 2014 (Updated 2020) Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives

H.2.4 Brown, D, 2011 Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation. AAF

H.2.5 UKIC, 1990 Guidelines for the preparation of excavation archives for long-term storage

H.2.6 SMA, 2020 Standards and Guidance in the Care of Archaeological Collections

H.2.7 Local museum guidelines such as Museum of London Guidelines: (http://www.museumoflondonarchaeology.org.uk/English/ArchiveResearch/DeposResource) will be adopted where appropriate to the archive collecting area.

H.2.8 The site archive will be prepared to at least the minimum acceptable standard defined in Management of Archaeological Projects 2, Historic England 1991.

H.3 Relevant OA manual and other supporting documentation

H.3.1 The OA Archives Policy.

APPENDIX I HEALTH AND SAFETY

I.1 Standard Methodology - summary

I.1.1 All work will be undertaken in accordance with the current OA Health and Safety Policy, the OA Site Safety Procedures Manual, a site-specific Risk Assessment and, if required, Safety Plan or Method Statement. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant H and S documentation will be available on site at all times. The Health and Safety documentation will be read in conjunction with the project WSI.

I.1.2 Where a project falls under the Construction (Design and Management) Regulations (2015), all work will be carried out in accordance with the Principal Contractor's Construction Phase Plan (CPP).

I.2 Relevant industry standards and guidelines

I.2.1 All work will be carried out according to the requirements of all relevant legislation and guidance, including, but not exclusively:

I.2.2 The Health and Safety at Work Act (1974).

I.2.3 Management of Health and Safety at Work Regulations (1999).

I.2.4 Manual Handling Operations Regulations 1992 (as amended).

I.2.5 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (2013).

I.2.6 The Construction (Design and Management) Regulations (2015).

I.2.7 Relevant OA manual and other supporting documentation

I.2.8 The OA Health and Safety Policy.

I.2.9 The OA Site Safety Procedures Manual.

I.2.10 The OA Risk Assessment templates.

I.2.11 The OA Method Statement template.

I.2.12 The OA Construction Phase Plan template.

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APPENDIX B DESCRIPTIONS AND CONTEXT INVENTORY

Watching brief						
General description					**Orientation**	E-W
Stripped area devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of clayish silt.					**Length (m)**	80m
					Width (m)	65m
					Avg depth (m)	0.40
Context No	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
100	Layer	-	0.20	Topsoil	-	-
101	Layer	-	0.20	Subsoil	-	-
102	Layer	-	-	Natural	-	-
103	Layer	-	-	Made ground in the southern part of the development	-	-

APPENDIX C BIBLIOGRAPHY

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APPENDIX D SITE SUMMARY DETAILS

Site name:	Park Road, Barrow-in-Furness, Cumbria
Site code:	PRB22
Grid Reference	SD 19597 72255
Type:	Watching Brief
Date and duration:	11th and 17th of October, 2022
Area of Site	18,410m^2
Location of archive:	The archive is currently held at OA North, Mill 3, Moor Lane Mills Lancaster, LA1 1QD, and will be deposited with the Dock Museum, Barrow-in-Furness in due course.
Summary of Results:	Oxford Archaeology (OA) North was commissioned by Allenby Commercial to undertake an archaeological watching brief at the site of a proposed hybrid application for a builder's merchant and residential development on land situated on Park Road, Barrow-in-Furness (NGR: SD 19597 72255). The work was undertaken as a condition of Planning Permission (planning ref. B21/2022/0771). A desk-based assessment (DBA) had been produced on behalf of Planning Prospects to accompany the planning application. OA North were subsequently approached by Allenby Commercial to produce a written scheme of investigation (WSI) and undertake the archaeological works necessary to discharge the planning condition. The fieldwork was undertaken over five days, between 11th and 17th October 2022. The haul road and the northern part of the site were completely stripped of topsoil and subsoil to the natural geology, no archaeological remains were observed cutting the natural geology in these areas. The watching brief across the southern half of the site was curtailed, in consultation with the Historic Environment Officer, due to the extensive depth of compacted made ground, it is unlikely that any archaeological remains would survive beneath this deposit. The low potential for archaeological remains, as identified in the DBA, appeared to have been supported by the results of the archaeological fieldwork.

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