



PIRELLI FACTORY, DALSTON ROAD, Carlisle

Cumbria

Desk-Based Assessment and Archaeological Evaluation Report



Oxford Archaeology North

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SUMMARY

Architects Plus (UK) Ltd commissioned Oxford Archaeology North (OA North), to undertake a documentary study and archaeological evaluation of the Pirelli Factory, Dalston Road, Carlisle, Cumbria (NGR NY 3878 5356), in advance of a proposed extension to the factory. Cumbria County Council Historic Environment Service issued a project brief, requesting a programme of archaeological investigation to inform the planning process. The desk-based study and evaluation were undertaken in August 2013 in accordance with the brief. There were two separate extensions proposed, one north-west/south-east long extension immediately adjacent to the existing factory building, and a smaller one north-east /south-west extending out perpendicular to the line of the existing build. The present evaluation only examined the smaller north-east/south-west extension.

The desk-based study identified a potentially significant archaeological resource in the environs of the proposed development area. A Roman fort had been located at a distance of c 300m to the south of the development and this was subject to archaeological investigations in 1996-9 which established that it appeared to have had a short-lived, and pre-Hadrianic, occupation. As such, it has been suggested that it may have been a part of the early Stanegate defensive system. An earlier archaeological evaluation undertaken on land adjacent to the proposed development entailed the excavations of 33 trenches; however, it did not identify any Roman archaeological remains or Roman artefacts. It did, though, identify a potentially significant medieval boundary ditch (Site 4) which extended through the western corner of the cricket field that was being examined as part of the present study. The site of Low Cummersdale farmhouse, which potentially had medieval origins, was located some 120m to the north of the development area, under the present Pirelli factory.

The evaluation was undertaken in August 2013, and comprised five trenches on varying alignments across a cricket pitch. No trenches were placed along the side of the factory as the area had been heavily disturbed during the construction of the existing factory buildings.

There were no archaeological features identified in three of the trenches (Trenches 1, 3 and 4). Trenches 2 and 5 five contained tree throws, the tree throw in Trench 2 contained a substantial amount of charcoal suggesting that the tree had been felled and burned. There was modern material within the topsoil and the trenching suggests that the area of the cricket pitch had also been truncated, but not on the scale of the area to the east where the long extension will be developed. On the basis of the evaluation trenching it is considered that the proposed smaller extension will not impact on any identified archaeological features or monuments.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Raymond Whittaker of Architects Plus (UK) Ltd and Allan Wilson from Pirelli Tyres Ltd for commissioning the project. Thanks are also due to the staff of the Cumbria Historic Environment Record (HER), Carlisle Archives Service and Cumbria County Council for help with obtaining HER, cartographic, documentary information and aerial photography. Thanks are also extended to JLT Plant hire for providing the excavator and driver.

The desk-based assessment was undertaken by Helen Quartermaine, and the evaluation fieldwork was by Paul Dunn with the assistance of Mike Birtles. Helen Quartermaine and Paul Dunn wrote the report, and the drawings were produced by Anne Stewardson. The project was managed by Jamie Quartermaine, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Architects Plus (UK) Ltd commissioned Oxford Archaeology North (OA North), to provide a documentary study and archaeological evaluation of the Pirelli Factory, Dalston Road, Carlisle, Cumbria, in advance of a proposed extension to the factory. Cumbria County Council Historic Environment Service issued a project brief (*Appendix 1*) requesting a programme of archaeological investigation to inform the planning process. The desk based study and evaluation were undertaken in August 2013 in accordance with the project brief.
- 1.1.2 The desk-based assessment comprised a search of both published and unpublished records held by the Historic Environment Record (HER) in Kendal, the available historic maps in Carlisle Archives Service, the aerial photographs held by Cumbria County Council, and the archives and library held at OA North. Online databases and sources such as the Cumbria Archives Services Catalogue (CASCAT), the Archaeology Data Service, www.old-maps.co.uk, and www.cummersdalehistory.co.uk, were also searched.
- 1.1.3 This report sets out the results of the desk-based assessment in the form of a short document, outlining the findings of the documentary study and the results of the archaeological evaluation trenching; this was followed by an assessment of the impact of the proposed development.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed development area is situated at NY 3878 5356 within the civil parish of Cummersdale (Fig 1). It comprises rough land and playing fields north of the east/west access road, Cummersdale Road, and to the south of the modern Pirelli factory, which was constructed *c* 1966-9, on the site of the old farm at Low Cummersdale. Some of the old farm buildings were removed to enable the construction of the plant, although the farmhouse was retained for a while after the construction of the factory; it has though now been demolished (A Wilson pers comm). The proposed new building of the development is on the site of what was originally farmland to the south of the old Low Cummersdale farmhouse and barns.
- 1.2.2 Cummersdale lies within the north Cumbrian Plain, or Solway Basin, an area of gently undulating landscape, with intensively managed enclosed fields, predominantly as improved pasture (Countryside Commission 1998, 20). Cummersdale is to the west of the River Caldew and is at the southern end of Cummersdale Holmes, a natural flood plain. High Cummersdale is to the west of this flood plain, which would have been an area rich in fertile soils and summer pasture for grazing.
- 1.2.3 The underlying solid geology of the Solway Basin area is mainly undifferentiated mudstones which are part of the Permian and Triassic Sherwood Sandstone group, known as the New Red Sandstones (Moseley 1978). The drift geology is dominated by a deep accumulation of glacial till, forming a gently undulating landscape of low ridges, intersected by a predominantly south-west to north-east drainage system (Hodgkinson *et al* 2000). The overlying soils are mostly of the Clifton and

Brickfield Associations, the former comprising seasonally waterlogged soils which developed over tills (Lawes Agricultural Trust 1983). The basal deposits of the evaluation trenches excavated by Oxford Archaeology North in 2002 consisted of natural clayey sand with small-medium sub-rounded stone inclusions (OA North 2002).

2. METHODOLOGY

2.1 INTRODUCTION

- 2.1.1 A project proposal was submitted by OA North in response to a brief (*Appendix 1*) from Cumbria County Council Historic Environment Service (CCCHES). The project brief (*Appendix 1*) was adhered to where possible. However, on initial examination of the site it became apparent that the proposed trenches on the site of the proposed south-western extension were an area that had been heavily truncated / terraced to enable the construction of the existing factory buildings. In consultation with the Historic Environment Officer for Cumbria County Council it was agreed that trenches for this area would instead be placed on the site of the north-western extension where there had been less confirmed disturbance. The work was consistent with the relevant IfA and English Heritage guidelines (Institute for Archaeologists 2008a; 2008b; 2010; English Heritage 2006).

2.2 DESK-BASED ASSESSMENT

- 2.2.1 The study area for the documentary study was defined as a radius of 750m from the centre point of the proposed development area. Within this study area are the southern half of Carlisle cemetery on Dalston Road, Pirelli's factory site, High Cummersdale Farm and Cummersdale village. Sites of archaeological significance included within this study area and in the HER are listed in the Gazetteer of this report.
- 2.2.2 **Historic Environment Record (HER):** the Cumbria HER was consulted to establish known sites of archaeological or historical interest. The HER is a database of all archaeological sites in each county, and is maintained by Cumbria County Council. It also holds an extensive grey literature library, historic mapping and aerial photographs.
- 2.2.3 **Online Sources:** several online databases and sources were used including the Cumbria Archives Services Catalogue (CASCAT), the Archaeology Data Service, www.old-maps.co.uk, and www.cummersdalehistory.co.uk.
- 2.2.4 **Oxford Archaeology North:** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise of Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.

2.3 EVALUATION TRENCHING

- 2.3.1 The topsoil was removed by machine (fitted with a toothless ditching bucket) under archaeological supervision to the surface of the first significant archaeological deposit. This deposit was cleaned by hand, using shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest were investigated and recorded

- 2.3.2 All trenches were excavated in a stratigraphical manner. The trenches were placed to cover the sample area in agreement with the client and were then surveyed by total station. No trenches were placed along the southern face of the factory due to the ground being heavily truncated by its construction and the area contained a large amount of rubble and made ground. This part of the site had also been previously stripped of topsoil with some levelling occurring as seen in a satellite image from 2003 (Plate 1).
- 2.3.3 **Recording:** all information identified in the course of the site works was recorded stratigraphically, using a system adapted from that used by the former Centre for Archaeology of English Heritage, with an accompanying pictorial record (plans, sections, and monochrome contacts/digital photographs). Primary records were available for inspection at all times.
- 2.3.4 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts were recorded using the same system, and will be handled and stored according to standard practice (following current Institute for Archaeologists guidelines).

2.4 FINDS AND PALAEOENVIRONMENTAL SAMPLING

- 2.4.1 **Finds Policy:** the recovery of finds and sampling programmes were carried out in accordance with best practice (following current Institute for Archaeologists guidelines), and subject to expert advice in order to minimise deterioration. There were no artefacts recovered from the work.
- 2.4.2 **Palaeoenvironmental Sampling:** a targeted programme of palaeoenvironmental sampling was implemented in accordance with the Oxford Archaeology *Environmental Guidelines and Manual* (OA 2005), and in line with the English Heritage guidance paper on Environmental Archaeology (2001). Given the absence of significant archaeological features the samples were not processed at this juncture, but have been retained.

2.5 ARCHIVE

- 2.5.1 A full professional archive has been compiled in accordance with the project brief/design (*Appendix 1/2*), and in accordance with current IfA and English Heritage guidelines (English Heritage 2006). The paper and digital archive will be deposited in the Cumbria County Record Office, Carlisle on completion of the project. The material archive is to be retained by the landowner and/or deposited with Tullie House Museum, Carlisle.

3. HISTORICAL BACKGROUND

3.1 INTRODUCTION

3.1.1 The following section presents a summary of the historical and archaeological background of the general area. This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological context.

Period	Date Range
Palaeolithic	c 500,000 – 10,000 BC
Mesolithic	10,000 – 4000 BC
Neolithic	4000 – 2400 BC
Bronze Age	2400 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c 1750
Industrial Period	c AD1750 – 1914
Modern	Post-1914

Table 1: Summary of British archaeological periods and date ranges

3.2 BACKGROUND

- 3.2.1 **Prehistory:** the fertile lands of the Caldew and Petteril Valleys, where Cummersdale is now located, are likely to have attracted settlement since the Neolithic period. Numerous crop or soil marks in aerial reconnaissance, or as earthworks in the landscape, indicate sites of possible prehistoric date suggesting that Neolithic settlers had moved away from the coastal plain into the edge of the Lake District hills and the Eden Valley (Hodgkinson *et al* 2000, 37, 110-3). At Cummersdale two stone axes were found on the surface; one a stone axe of the Borrowdale Volcanic series (possibly Group VI) and another perforated stone axe-hammer or adze (Site 8; Hogg 1953; Fig 2).
- 3.2.2 To the south of the study area were two enclosures at Dobcross Hall (NY 3398 5449); however, the nature of the remains and their dates may not be conclusive (Higham 1981). There is also evidence of Bronze Age activity in the surrounding area, as collared urns were found at the Garlands Hospital Site in 1861 (Perriam 1992, 3), and more recently a Bronze Age burnt mound was identified at the same site (LUAU 1996). Other archaeological remains, thought to be of this date, were found at Ratten Row, Blackwood Hall, Dalston and at Newbiggin Hall (Higham 1977).
- 3.2.3 During the Iron Age period there appeared to have been a major expansion in forest clearance and increase in agricultural activity in the area (Hodgkinson *et al* 2000).

Studies of aerial photographic evidence suggest the development of field systems and trackways and several of the undated enclosures identified on the Solway Plain may relate to Iron Age settlement (Bewley 1994). Immediately prior to the Roman invasions this area of the North seems to have been under the aegis of the Brigantes, with the *Carvetii* tribe, mentioned in mid-later Roman documentary sources, living in the area of Carlisle (Cunliffe 1991).

- 3.2.4 **Roman Period:** Carlisle is sited on a naturally well-defined promontory between the Eden and Caldew river and the topography feature was exploited by the establishment of a Roman fort in the early AD 70s under the governorship of Petilius Cerialis (Shotton 2004, 13). The town of Luguvalium grew up to the south of the fort, and the name was first attested on writing tablets dating from the AD 80s (McCarthy 1990); by the late Roman period Luguvalium had acquired the status of a *Civitas* capital, as *Civitas Carvetiorum*, which demonstrates the importance and significance of this urban centre (Charlesworth 1978). The garrisoning of both the fort and the town and their access by road would have necessitated significant traffic in goods and people through the region, and onto the Hadrian's Wall frontier, established in the second century. Indeed, many of the undated enclosures, field systems and trackways identified by aerial photography in the Solway Plain area may have in part supplied food and provision for the Romano infrastructure. One major Roman road (Road 7e, Margary 1973), lies to the east and a second (Road 75, *ibid*) passes to the south-west. Road 7e is a continuation of the main route north/south from Tebay to Carlisle which passes through Penrith and the fort at *Brocavum* (Brougham), entering Carlisle along the A6. Road 75, which for much of its route lies beneath the modern A595, was the main route between the forts in Carlisle and Papcastle to the south-west; Cummersdale lies between the two. To the west of Cummersdale and Dalston Road at NY 337926 553711 was evidence for a smaller road that linked these two main arteries and took the form of cobbling for a Roman road (North Pennines Archaeology Ltd 2012).
- 3.2.5 **Aerial Photographic Evidence and Roman evidence at Cummersdale:** to the south of Cummersdale Village were located two distinct archaeological sites revealed by aerial photography; the first seen as cropmarks in a field, to the south-east at NY 390530 and thought to be a fourth century farmstead or fortlet. The second site, seen as earthworks to the south of the village, comprised the double ditches of a large Roman fort or camp (Site 12) at NY 389530 (Higham and Jones 1975; Shotton 2004, 172; James 2013) (Fig 2). The double ditches appear seem to form part of the southern and eastern bounds of the fort and are *c* 300 metres to the south of the study area; most of the fort is now under the present day village.
- 3.2.6 Fieldwalking in the area of the cropmarks to the east (Site 12) produced a Roman glass bead and 37 sherds of medieval pottery (Bewley 1985, 260); excavations were later undertaken on this site.
- 3.2.7 Three sets of aerial photographs held by Cumbria County Council were examined. One set (TG CCC 06J 35 and 36; TG CCC 06K 1 and 2) was taken by Tim Gates in the vicinity of NY 395 536 in 2006 and showing the extent of a north/south linear cropmark (Site 5). Although these were oblique photographs they did not show the land immediately adjacent to the Pirelli buildings and to the west of the River Caldew. The second set of photographs (MUCS 74,00; MUCS 76, 7 NY 3953/B) clearly showed the lines of the farmstead or fortlet (Site 12) to the east of Cummersdale fort and to the south of the modern housing roads in Cummersdale.

The third set of photographs (CCC 85 171 and 172 1.5.7 and 8 NY 3853) were vertical aerial photographs taken in 1964/1966 and showing the fields and land around Low Cummersdale prior to the building of the Pirelli factory and associated property. It clearly shows the farm buildings of Low Cummersdale and the layout of its field and field boundaries. High Cummersdale farm and fields can also be observed including the curved field boundaries overlain by the rectilinear lines of the eighteenth and nineteenth century enclosed fields, as well as other cropmark sites (Sites 1, 5, and 12). There appear to be no significant underlying archaeological earthworks, parchmarks or cropmarks discernible in the proposed development area.



Plate 1: Vertical air photograph (1964/66) of Low Cummersdale prior to the construction of the Pirelli factory

3.2.8 **Cummersdale Roman Fort:** excavations of the Roman fort at Cummersdale (Site 12) in 1996-9 ascertained that the double-ditches were 5.5m apart and revealed two phases of settlement (Fig 2). The later phase comprised traces of an earthen rampart, a corner tower and the *intervallum*. Also found were two post-built internal buildings on either side of an internal road from the south gate (Esmonde Cleary 1997). The road was observed to have extended 20m northwards, but as seen in 1998 modern ploughing had greatly disturbed archaeology further to the north (Burnham *et al* 1998, 382). In 1997 works at 8, Gilbert Road revealed a short stretch of the eastern defences: suggesting that the whole area of the fort may have been up to 4 hectares (Esmond Cleary 1997, 415). In 1998 excavations found that there were two lengths of ditches, to the west of Cummersdale village, and to the north of the fort, but these were slight suggesting that they may have bounded an

annexe. The line of the western defences was not located (Burnham *et al* 1998, 382). It was considered that the fort had been occupied only for a short period of time with a corresponding lack of datable finds, but perhaps built late in the first century AD or in the years prior to the building of Hadrian's Wall (Burnham *et al* 1999, 334).

- 3.2.9 The finding of this Roman fort or camp at Cummersdale, on high ground and overlooking the River Caldew, raises the question of why such a large camp was constructed so close to the Carlisle fort. The discovery of two sherds of early second century AD Samian suggests that the Cummersdale fort (Burnham *et al* 1999, 334) may have been built in the periods prior to the construction of Hadrian's wall (and possibly in the Flavian period). It may have been a temporary fortified camp whilst the earlier Carlisle fort was under construction or indeed as an extra garrison while Hadrian's Wall was being built. A further suggestion is that the Cummersdale camp may have formed part of the early Stanegate defensive system, which seems to have bypassed the growing military and urban complex in Carlisle (Shotter 2004, 112).
- 3.2.10 **Other Roman Features:** in 1997 it was reported that to the east of the fort (Site 12), in Caldew Road, excavations examining features and ditches identified by aerial photographs, revealed a sub-rectangular farmstead within a bank and ditch that overlay a radiating ditch (Esmonde Cleary 1997, 415); the two sites were not associated chronologically.
- 3.2.11 A linear parch-mark was observed east of High Cummersdale Farm at NY 3953 5362, on the north-eastern edge of the village *c* 600m in length and unrelated to the later field systems mapped in the Ordnance Survey (Site 5; Webster and Newman 2007).
- 3.2.12 High Cummersdale Farm, the medieval antecedent of Cummersdale, perhaps respected the ditches of the Roman fort and was probably located outside the boundaries of the Roman fort. On the southern edge of this farm, at NY 393 532 in a garden in Caldewbank, was reported a number of Roman and late Medieval pottery sherds (Site 10; Richardson 1990). Further field walking to the north-east of Cummersdale village found large numbers of twelfth to fourteenth century pottery but no Roman pottery (Site 9; Caruana 1989).
- 3.2.13 **Early Medieval and Medieval:** although the Romans gradually rescinded their administration and military protection in the decades before AD 410, the walled city of Carlisle was a significant enough administrative and religious centre to be able to maintain its leadership, albeit with 'native' British autonomy. There has been some evidence for the continued occupation of some central parts of Carlisle including Blackfriars Street (McCarthy 1990), around the cathedral, and in Stanwix.
- 3.2.14 By the seventh century onwards the area came under the sway of the expanding kingdom of Northumbria (Kirkby 1962). The Danes are recorded as having overrun the region in AD 876 under Halfdan (Earle and Plummer 1892).
- 3.2.15 By the eleventh century, most of present-day Cumbria was an area of dispute between the kingdoms of Northumbria and Strathclyde (Kirkby 1962). Malcolm III of Scotland had invaded Cumbria in 1070 and William Rufus was only able to journey as far north as Carlisle north in 1092 to build a castle and colony, thus to fortify the land against the Scots (Rowley 1983, 50).
- 3.2.16 **Place Name Evidence and Medieval Cummersdale:** some of the placenames in the area, such as Dalston (derived from either *daeles* meaning valley or the personal

name *Deall* and *tun* meaning homestead or village), include Old English elements which broadly date from the sixth to the twelfth century. Although many of these are thought to be later, they indicate the possibility of the survival of names relating to earlier settlements (Mills 1991). The name Cummersdale is taken from the Old English *cumbre* and the Norse *dalr*, meaning valley of the Cumbrian Britons (*op cit*, 100). This name, and what it might represent about that settlement, gives a significance to the area, perhaps as a focal point of Cumbria, despite its proximity to Carlisle.

- 3.2.17 By the time of the reign of Henry II Cummersdale and the study area lay within the bounds of Inglewood Forest, the largest royal forest in England (Parker 1905, 35-61). The forest was the property of the Crown but was often held by manorial lords providing a variety of resources and hunting activities (Winchester 1987, 22). By AD 1300 the area of the forest was much reduced. Administratively, Cummersdale was then in the parish of St Mary's, centred on Carlisle cathedral, comprising the Holy Trinity ecclesiastical district and containing the townships of Cummersdale and Caldew. The lord of the manor was the Bishop of Carlisle and the lands under the jurisdiction of the Chapter and Dean of the cathedral. (Whellan 1860, 144-5).
- 3.2.18 The River Caldew formed the eastern boundary of the township of Cummersdale (Summerson 1993, 118). There is an early record of a corn mill at Cummersdale and Low Cummersdale, in 1268 stating that rights to the mill as being held by the Bishop of Carlisle; the Bishops still owned the mill in 1282 and 1318 (www.cummersdalehistory.co.uk). Cummersdale mills (a fulling mill and a corn mill) were later mentioned in two documents; the first was dated to 1612 when it was in the gift of Thomas Blennerhasset of Carlisle (CAS/DHC/2/7/14, 1612) and the second was dated to 1657 when it belonged to the son of Sir Francis Howard of Corby Castle (CAS/DHC/2/38 and 39, 1657). A corn mill was certainly in use in 1644 during the Civil War when Isaac Tullies recorded that the starving garrison of Carlisle Castle sent to Cummersdale Mill for corn (www.cummersdale.history.co.uk). The mills on the banks of the River Caldew were probably the focus of the development of the village of Cummersdale Mills.
- 3.2.19 The documentary evidence also indicates that there were properties and lands at High Cummersdale (DWBS 4/4/1/7-8, 1627; DCU 4/200, 1683). High Cummersdale occupies the top of a hill with the land sloping gently on three sides but has a steep slope down to the River Caldew. To the east of High Cummersdale, and as far as the river, is a flood plain, providing possibly good fertile land and summer grazing, and also a well protected location for a farmstead. Fieldwalking evidence found 37 medieval pottery sherds (Bewley 1985, 260). Of interest is the mention of a 'ruinous kiln and waste'. in High Cummersdale in 1683 (Davey 1967, 118).
- 3.2.20 **Low Cummersdale:** it is interesting to note the mention of Little Cummersdale in 1268 (*Section 3.2.16*). If this is the Low Cummersdale farmstead and was on the site of the Low Cummersdale Farm marked on the Ordnance Survey maps (*Section 3.3*), it may well have been associated with a large medieval boundary ditch that was found during the excavations undertaken prior to the western extension of the Pirelli factory in 2002 (Site 4; OA North 2002) (Fig 2); the Pirelli factory was constructed on the site of the Low Cummersdale farmstead. The medieval boundary ditch was a north/south linear feature extending for some 150m across the site and would have been located to the west of the old farmstead buildings. Within the ditch fill there

were recovered only four pottery sherds, all of which dated to the medieval period and one of the sherds was probably of late twelfth to mid thirteenth century date.

- 3.2.21 There is no further evidence relating to the farm at Low Cummersdale until the seventeenth to eighteenth centuries when documents reveal that Low Cummersdale was successively in the occupation of Edward, Lancelot and George Blamire (CAS Ca 3/5/2/100, 1596-1764). There are also a series of eighteenth century conveyances (CAS DX 1704/6-8) and nineteenth century wills by members of the Sowerby and Brown families of Low Cummersdale (PROB/1776/W48, PROB/1881/A216 and PROB/1879/A195).
- 3.2.22 The OA North excavations (2002) found that during the post-medieval period the land to the west of the old farmstead buildings was moorland or pasture, and was included in the enclosure awards of 1770 (CAS QRE 1/90 1770), and it seemed that the land had been improved and drained (OA North 2002, 30) using a large number of ceramic drains that were aligned north-west/south-east following the slope of the field.
- 3.2.23 The proposed development area is to the south of the long rectangular east/west building of the Pirelli factory and is likely to be located on what used to be moorland or grazing land, that was drained in the post-medieval period. This would have been *c* 120m to the south of the farm buildings at Low Cummersdale. The medieval boundary ditch (Site 4), to the west of the Pirelli factory, probably continued southwards (rather than turning 90° degrees to go east/west across the fields to the south of the farm buildings).



Plate 2: Air photograph showing a large area to the south-west of the factory that had been stripped of topsoil (Google Earth 2003)

- 3.2.24 **Modern Period:** the Pirelli Tyre Factory was constructed in 1966-9. The Carlisle Archive Services Catalogue lists a large photographic archive relating to this period recording turf-cutting, Low Cummersdale (DB 112/NEGS/1967 17-5-54 Box 2 of 4) farm land and farm buildings (DB 112/NEGS/1968 48a and 48b) aerial views of Cummersdale and Denton (DB 112/NEGS/1968 48c).
- 3.2.25 Satellite photographs of 2003 (Google Earth) (Plate 2) show that the proposed development area was cleared of topsoil and it is likely that the upper stratigraphy of soils was much disturbed; later photographs of 2013 (www.google earth) showed that part of the area to the west of the development area had been drained and indicates that there is potential for recent damage to any historical remains.

3.3 MAP REGRESSION ANALYSIS

- 3.3.1 **The tithe map and schedule of 1841 (Fig 3):** the tithe map showed that Thomas Sowerby owned most of the fields close to Low Cummersdale and owned the farm buildings at Low Cummersdale, although Low Cummersdale farm was tenanted by Matthew Brown (CAS DRC/8/57 Tithe map, 1841; Plate 3). The farm buildings were laid around a square yard with the main farmhouse on the southern side; to the south and west of this was a small rectangular building.



Plate 3: Low Cummersdale Farm before the construction of the Pirelli factory

- 3.3.2 **The 1st edition Ordnance Survey maps of 1861-2, 1:2,500:** the 1861 Ordnance Survey map showed Low Cummersdale as a series farm buildings laid out around a quadrangle with further buildings forming another smaller square on south-eastern edge. The fields were square and of medium size and were accessed from the Dalston road, which lay to the west. The smaller scale Ordnance Survey 1st edition map at 1: 10,560 of 1868 (Fig 4) shows the farm within the context of the cemetery to the north, which was opened in 1855 (Whellan 1860, 146), with High Cummersdale to the south and east. The River Caldew is to the east and to east of this again was the new Maryport and Carlisle Railway that was built in 1843. To the west of the farm was Dalston Road, which was a straight road, perhaps reflecting a Roman origin. The arrangement of fields and drainage works belong to reclamation works in the 1770s. It is interesting to note that within this very rectilinear field

pattern, dictated by the enclosures, there is a curved road and tracks to the west of High Cummersdale. The curved road was associated with two fields seen on this map, which may have been survivals of medieval fields. High Cummersdale was probably originally a large farm establishment that later developed to include cottages for farmworkers.

- 3.3.3 **Ordnance Survey 2nd edition 1:2,500 scale OS map of 1890:** the 1890 map shows that the farm at Low Cummersdale, along with its associated fields system was largely unchanged.
- 3.3.4 **Ordnance Survey 2nd edition 1:10,560 scale map of 1901 (Fig 5):** the 1901 Ordnance Survey map showed that the area around the Low Cummersdale farm was developing. The cemetery had extended to the west, High Cummersdale had a school and a pub called the Spinner's Arms. On the Dalston road was a new building or farm and barn (not previously recorded in the OS or tithe map) known as the Cummersdale Grange Farm; the name may seem to refer to a medieval monastic presence in the area, but no documentary records have been found which indicate the presence of an early Grange Farm in Cummersdale.
- 3.3.5 **Ordnance Survey 1:10,560 map of 1926 (Fig 6):** the 1926 Ordnance Survey map showed that the farm at Low Cummersdale had added two long narrow buildings to the south of the farm orientated east/west, but otherwise the study area had not changed from the 1901 mapping.
- 3.3.6 **Ordnance Survey 1:10,560 map of 1938-46 (Fig 7):** by the time of the 1938-46 map the locality was still largely undeveloped, but there had been further enlargement of the cemetery with an extension to the south taking over most of one of the fields that had previously been attached to the farm at Low Cummersdale. It was also apparent that High Cummersdale had been enlarged as a village with new terraces of housing to the west and south of the village centre.
- 3.3.7 **Ordnance Survey 1:10,000 map of 1974-5:** the housing expansion in the High Cummersdale village continued throughout the sixties and seventies as evidenced by the 1974-5 map. The farm at High Cummersdale was now designated as High Cummersdale Farm, and there was a further extension to the west side of the southern edge of the cemetery. This map showed the Tyre Factory as one large square building on the site of Low Cummersdale and a second long rectangular building to the south.

4. ARCHAEOLOGICAL EVALUATION TRENCHING RESULTS

4.1 INTRODUCTION

4.1.1 In total, five trenches were excavated on the 12th and 13th August 2013 (Figs 8 and 9). The trenches were intended to explore the impact of the construction of two extensions to the existing north-west/south-east orientated factory building (Figs 8 and 9); one was parallel (north-west/south-east) and adjacent to the factory building and the other, smaller extension, extended out perpendicular to the factory building (north-east/south-west). All five trenches were located on the area of the cricket pitch on the site of the proposed smaller extension. No trenches were excavated along the side of the existing factory as the area had either been severely truncated by the construction of the current factory or had been substantially built up as part of the forward apron of a football field terrace. The arrangement of all five trenches on the site of the smaller extension was agreed with the Historic Environment Officer for Cumbria County Council. All the trenches were excavated down to natural sub-soils and were 10m x 2m in size.

4.2 RESULTS

4.2.1 Of the five trenches excavated, three (Trenches 1, 3 and 4) contained no archaeological remains. The other two trenches (Trench 2 and 5) contained discrete features which were interpreted as tree throws. Only one trench (Trench 1) contained what appeared to be a rubble make-up layer, the other four had topsoil directly overlying a yellowish-orange sandy clay gravel or red clay natural.



Plate 4: South-west-facing view of Trench 1

4.2.2 **Trench 1:** The trench was aligned north east/south west, measured 10m by 2m and was excavated to a maximum depth of 0.60m (Fig 9; Plate 4). The yellowish-orange sandy clay natural gravels, **103**, was sealed by a layer of made ground, comprising brick rubble, **102**, which was only identified at the north east end of the trench and

was 0.30m deep. This was in turn sealed by the topsoil, **101**, which was 0.14m to 0.20m deep. There were no significant archaeological features observed, only a field drain running through the trench.



Plate 5: South-west-facing view of Trench 2

4.2.3 **Trench 2:** The trench was aligned north-east/south-west, and measured 10m by 2m and was excavated to a maximum depth of 0.57m (Figs 9 and 10; Plate 5). A curvilinear feature which appeared to be a tree throw or rooting, **204**, was observed cutting the yellowish-orange sand gravel, with patches of red clay and grey silt, natural, **202**. The tree throw, **204**, which measured 1.00m long by 1.00m wide and survived to a depth of 0.28m, was situated at the north-eastern end of the trench (Plate 6). It was filled by, **203**, a light-grey sandy silt deposit with patches of dark-grey to black humic material (Fig 9). This was sealed by the topsoil, **201**, which was 0.28m deep across the trench.



Plate 6: South-east-facing section of tree throw 204



Plate 7: South-east-facing view of Trench 3

- 4.2.4 **Trench 3:** the trench was aligned north-west/south-east, and measured 10m by 2m and was excavated to a maximum depth of 0.60m (Fig 9; Plate 7). The yellowish-orange sandy clay gravel, with patches of grey sand, natural, **302**, was sealed by the topsoil, **301**, which was 0.30m deep across the trench. There were no significant archaeological features observed, although three field drains were observed extending across the trench.



Plate 8: North-west-facing view of Trench 4

- 4.2.5 **Trench 4:** the trench was aligned north west/south east, and measured 10m by 2m and was excavated to a maximum depth of 0.40m (Fig 9; Plate 8). The yellowish-orange sandy clay natural, **402**, was sealed by the topsoil, **401**, which was 0.30m deep across the trench. There were no significant archaeological features observed, although there were three field drains running across the trench.



Plate 9: North-west-facing view of Trench 5

- 4.2.6 **Trench 5:** the trench was aligned north west/south east, and measured 10m by 2m and was excavated to a maximum depth of 0.45m (Figs 9 and 10; Plate 10). A discrete feature which appeared to be a tree throw or rooting, **504**, was observed cutting the yellowish- orange, sandy clay gravel, **502**. The tree throw measured 0.45m long by 3.10m wide and survived to a depth of 0.34m (Fig 9). The feature was filled by a light grey sandy silt, **503**, similar to the fill of **204** in trench 2. This was sealed by topsoil **501**, which was 0.25m deep across the trench.



Plate 10: North-east facing section of tree throw 504

5. CONCLUSION

5.1 DISCUSSION

- 5.1.1 **Archaeological Potential:** the desk-based study identified a potentially significant archaeological resource in the environs of the proposed development area. A Roman fort (Site **12**) had been located at a distance of *c* 300m to the south of the development and this was subject to archaeological investigations in 1996-9 (Esmonde Cleary 1997) which established that it appeared to have had a short-lived, and pre-Hadrianic, occupation. As such, it has been suggested that it may have been a part of the early Stanegate defensive system, which seemingly bypassed the growing military and urban complex in Carlisle (Shotton 2004, 112). An earlier archaeological evaluation was undertaken adjacent to the proposed development (OA North 2002; *Section 4*), and which entailed the excavations of 33 trenches. It did not identify any Roman archaeological remains or Roman artefacts, but did identify a potentially significant medieval boundary ditch (Site **4**) which extended through the western corner of the cricket field that was being examined as part of the present study. The site of Low Cummersdale farmhouse, which potentially had medieval origins, was located some 120m to the north of the development area, under the present Pirelli factory.
- 5.1.2 **Identified Resource:** despite the considerable archaeological potential in the wider landscape the archaeological features identified by the present trenching were of lesser archaeological significance. The two features observed in Trenches 2 and 5 both appeared to be tree throws due to the colour of their fills, which had the characteristics of leached natural deposits. One of the features, **204**, contained some fragments of charcoal, possibly suggesting that the tree had been felled and burnt; this could suggest that the area had been cleared of trees at some time. The only other features observed were modern ceramic field drains.
- 5.1.3 There was no artefactual evidence recovered from the trenching. The topsoil in the trenches contained a few pieces of modern debris comprising plastic and electrical wire, but no material earlier than the last 20 years. This could suggest that the area had been in part levelled for its use as a cricket pitch.

5.2 IMPACT ASSESSMENT

- 5.2.1 The proposed development would entail a long extension, immediately adjacent and parallel to the existing factory building and also a smaller extension that was perpendicular to the line of the existing factory. The former would be in an area that had very evidently been severely disturbed as part of the ground works for the existing factory. The factory buildings had been terraced into the natural slope and the ground, up to 15m away from the existing build, had been truncated. Above the terrace edge for the factory, a football field had been terraced into the slope resulting in the build up of modern made-ground at its forward terrace apron, and there were fragments of concrete observed protruding from the ground. This area had been observed to have been stripped of topsoil on the Google Earth aerial photographic image from 2003 (Plate 2). Given the very extensive previous disturbance to the ground in this area it is considered that the proposed long extension will not impact upon any surviving archaeological resource.

5.2.2 The area of the smaller extension had also been truncated adjacent to the factory, but the ground above the factory terrace, was not as obviously made ground as that to the east of the dividing trackway. This area was shown as grassland on the Google Earth aerial photographic image of 2003, and was not part of the land that had been shown as stripped. The archaeological trenching in this area identified modern detritus in the top soil, and no significant archaeological features. It is considered, therefore, that the smaller proposed extension will not impact on any identified archaeological features or monuments.

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APPENDIX 1: PROJECT BRIEF

BRIEF FOR AN ARCHAEOLOGICAL EVALUATION

AT THE PIRELLI FACTORY, DALSTON ROAD, CARLISLE, CUMBRIA

Issued by the

County Historic Environment Service

Environment Unit



Date of Brief: 17 May 2013

This Design Brief is only valid for 1 year after the above date. After this period the County Historic Environment Service should be contacted. Any specification resulting from this Brief will only be considered for the same period.

SITE DESCRIPTION AND SPECIFICATION

Site: Pirelli Factory, Dalston Road, Carlisle

Grid Reference: NY 3878 5356

Scope of Evaluation: 100 square metres of trial trenching

Detailed proposals and tenders are invited from appropriately resourced, qualified and experienced archaeological contractors to undertake the archaeological project outlined by this Brief and to produce a report on that work. The work should be under the direct management of either an Associate or Member of the Institute for Archaeologists, or equivalent. Any response to this Brief should follow IFA Standard and Guidance for Archaeological Field Evaluation, 2008 and be in line with recommendations outlined in English Heritage (1991). The specification must include:

A description of the excavation sampling strategy and recording system to be used

A description of the finds and environmental sampling strategies to be used

A description of the post excavation and reporting work that will be undertaken

Details of key project staff, including the names of the project manager, site supervisor, finds and environmental specialists and any other specialist sub-contractors to be employed

Details of on site staffing, expressed in terms of person days

A projected timetable for all site work and post excavation work

The proposed locations of the trial trenches

Any significant variations to the specification must be agreed by CCCHES in advance. No fieldwork may commence until the specification has been approved by CCCHES.

PLANNING BACKGROUND

Cumbria County Council's Historic Environment Service (CCCHES) has been consulted by Architects Plus regarding a forthcoming planning application for the erection of two extensions to the existing Pirelli warehouse, Dalston Road, Carlisle.

The scheme affects an area of archaeological potential and so the County Historic Environment Service has advised that the applicant provides information on the significance of any archaeological remains surviving on the site and how that significance would be impacted upon by the proposed development. In order to provide this information an archaeological evaluation of the area of the proposed western extension is necessary. This Design Brief sets out the requirements for the adequate archaeological evaluation of the site. The area of the proposed eastern extension seems to have been previously disturbed as part of the construction of the warehouse and so is not required to be evaluated.

This advice is in accordance with guidance given in the National Planning Policy Framework and also the Carlisle Local Plan.

ARCHAEOLOGICAL BACKGROUND

300 metres to the south of the site aerial photographic evidence has revealed a large rectangular enclosure that subsequent archaeological investigation identified to be the remains of a Roman fort. The fort is believed to have formed part of the Stanegate defensive system, predating Hadrian's Wall.

Systematic fieldwalking in the fields in the vicinity of the site has uncovered a considerable amount of medieval pottery and also prehistoric flint implements including an arrowhead and an axehead.

SCOPE OF THE PROJECT

Objectives

The evaluation should aim to determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened within the proposed western extension of the development. The area of the proposed eastern extension seems to have been previously disturbed as part of the construction of the warehouse and so is not required to be evaluated.

Work Required

A **rapid** desk-based assessment of the existing resource, to be undertaken before any work commences on site. This should include an assessment of sources held at the County Historic Environment Record in Kendal to set the evaluation results in their archaeological context.

A visual inspection of the site. This should include a walkover of the site noting any surface features of potential archaeological interest, areas of potentially significant disturbance, and hazards and constraints to undertaking further archaeological work on site (including the siting of live services, Tree Preservation Orders and public footpaths).

The excavation of a series of linear trial trenches to adequately sample the threatened available area, and the investigation and recording of deposits and features of archaeological interest identified within those trenches. All features must be investigated and recorded unless otherwise agreed with the County Historic Environment Service. Initial topsoil removal can be undertaken by machine, but subsequent cleaning and investigation must be by hand. A minimum sample of 400 square metres of the trial trenching should be investigated.

The evaluation should provide a predictive model of surviving archaeological remains detailing zones of relative importance against known development proposals. An impact assessment should also be provided, wherever possible.

The following analyses should form part of the evaluation, as appropriate. If any of these areas of analysis are not considered viable or appropriate, their exclusion should be justified in the subsequent report.

A suitably qualified specialist should assess the environmental potential of the site through the examination of suitable deposits, including: (1) soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features, and; (2) the retrieval of plant macrofossils, insect, molluscs and pollen from waterlogged deposits.

Advice is to be sought from a suitably qualified specialist in faunal remains on the potential of sites for producing bones of fish and small mammals. If there is potential, a sieving programme should be undertaken. Faunal remains, collected by hand and sieved, are to be assessed and analysed, if appropriate.

The advice from a suitably qualified soil scientist should be sought on whether a soil micromorphological study or any other analytical techniques will enhance understanding site formation processes of the site, including the amount of truncation to buried deposits and the preservation of deposits within negative features. If so, analysis should be undertaken.

REPORTING AND PUBLICATION

The archaeological work should result in a report, this should include as a minimum:

A site location plan, related to the national grid

A front cover/frontispiece which includes the planning application number and the national grid reference of the site

The dates on which the fieldwork was undertaken

A concise, non-technical summary of the results

An explanation of any agreed variations to the brief, including justification for any analyses not undertaken (see 4.2.5)

A description of the methodology employed, work undertaken and the results obtained

Plans and sections at an appropriate scale, showing the location and position of deposits and finds located, and absolute heights above Ordnance Datum.

A list of, and dates for, any finds recovered and a description and interpretation of the deposits identified

A description of any environmental or other specialist work undertaken and the results obtained

One paper copy and one digital copy of the report should be deposited with the County Historic Environment Record within two months of completion of fieldwork. This will be on the understanding that the report will be made available as a public document through the County Historic Environment Record.

The results of the evaluation will need to be made available for inclusion in a summary report to a suitable regional or national archaeological publication if further archaeological fieldwork is expected.

Recommendations concerning any subsequent mitigation strategies and/or further archaeological work following the results of the field evaluation should **not** be included in the report. Such recommendations are welcomed by the County Historic Environment Service, and may be outlined in a separate communication.

Cumbria HER is taking part in the Online Access to Index of Archaeological Investigations (OASIS) project. The online OASIS form at <http://www.oasis.ac.uk/> must therefore also be completed as part of the project. Information on projects undertaken in Cumbria will be made available through the above website, unless otherwise agreed.

THE ARCHIVE

An archive must be prepared in accordance with the recommendations in Brown (2007). Arrangements must be made for its long term storage and deposition with an appropriate repository. A copy shall also be offered to the National Monuments Record.

The landowner should be encouraged to transfer the ownership of finds to a local or relevant specialist museum. In this case Tullie House Museum is the most likely repository. The museum's requirements for the transfer and storage of finds should be discussed before the project commences.

The County Historic Environment Service must be notified of the arrangements made.

PROJECT MONITORING

One weeks notice must be given to the County Historic Environment Service prior to the commencement of fieldwork.

Fieldwork will be monitored by the Historic Environment Officer on behalf of Architects Plus.

FURTHER REQUIREMENTS

It is the archaeological contractor's responsibility to establish safe working practices in terms of current health and safety legislation, to ensure site access and to obtain notification of hazards (eg. services, contaminated ground, etc.). **The County Historic Environment Service bears no responsibility for the inclusion or exclusion of such information within this Brief or subsequent specification.**

All aspects of the evaluation shall be conducted in accordance with the Institute for Archaeologists' *Code of Conduct* (2009).

Human remains must be left *in situ*, covered and protected when discovered. No further investigation should normally be permitted beyond that necessary to establish the date and character of the burial, and the County Historic Environment Service and the local Coroner must be informed immediately. If removal is essential, it can only take place under appropriate Department for Constitutional Affairs and environmental health regulations.

The involvement of the County Historic Environment Service should be acknowledged in any report or publication generated by this project.

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FURTHER INFORMATION

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APPENDIX 2: GAZETTEER OF SITES

Site Number 1
HER Number 19826
Site name Dalston Road Cemetery Carlisle
NGR NY 339098 544208
Site Type Cemetery
Statutory Designation Registered Historic Parks and Garden
Period Victorian
Source Egerton Lea 2002; English Heritage, 2004 *Parks and Gardens Register Review*
Description Cemetery, offices, chapels and lodges designed by JWH and JM Hay of Liverpool and laid out in 1855.

Site Number 2
HER Number 13879
Site name Murrell Hill
NGR NY 339000 554000
Site Type Carved Stone
Period Roman
Source Cumberland Paquet, 19 Nov 1878
Description A carved stone c 4 foot high and 3 foot wide with a representation of the Roman god Mithras (comprising two lions each surmounting a human head), a winged figure, a mother and child and a bird.

Site Number 3
HER Number 42341
Site name Carlisle City
NGR NY 339200 554000
Site Type Nail Find
Period Post-medieval
Source Portable Antiquities Scheme Database, LANCUM-96D1F5
Description Hand made iron nail with square section.

Site Number 4
HER Number 19868 (Archaeological Event 1/02/414)
Site name Cummersdale
NGR NY 338680 553750
Site Type Boundary Ditch
Period Medieval
Source OA North 2002
Description An evaluation comprising 33 trenches was undertaken in 2002, by Oxford Archaeology North in advance of the development of the Pirelli factory. It recorded a north/south medieval boundary ditch that was 150m long. Also identified were post-medieval linear features associated with field drainage.

Site Number 5
HER Number 41114
Site name High Cummersdale Farm
NGR NY 339546 553623
Site Type Linear Cropmark
Period Unknown

Source Gates 2006; Webster and Newman 2007, 1-14
Description North/south linear parchmark *c* 600m in length

Site Number 6
HER Number 42094
Site name Cummersdale Print Works
NGR NY 339370 553200
Site Type Bleachfield and Printing Works
Period Post-medieval
Source OS 1st edition OS 1:10,560 map of 1867; North Pennines Archaeology Ltd 2010
Description Cummersdale Print Works (cotton) and Print Fields.

Site Number 7
HER Number 19178
Site name The Crescent, Cummersdale
NGR NY 339000 553000
Site Type Hag or Witch Stone Find
Period Unknown
Source Richardson 1990
Description The find spot of a triangular shaped pebble of grey-white sandstone

Site Number 8
HER Number 449
NMR Number NATINV 10783
Site name High Cummersdale
NGR NY 339000 553200
Site Type Axe and Axe-hammer/Adze Find
Period Prehistoric
Source Hogg 1953
Description Unpolished stone axe of Borrowdale Volcanic series *c* 10 inches long and a perforated stone axe-hammer or adze. Both were surface finds.

Site Number 9
HER Number 13506
Site name High Cummersdale
NGR NY 339200 553350
Site Type Fieldwalking site
Period Prehistoric and medieval
Source Caruana 1989 52-3
Description During fieldwalking was found a broken leaf-shaped arrow head of unpatinated red-brown flint Greens Type 3A or 4A and probably imported. Also found were 137 sherds of medieval pottery 80% of which dated to mid-12th to mid-13th century.

Site Number 10
HER Number 17968
Site name Caldewbank, Cummersdale
NGR NY 339230 553170
Site Type Ceramic Finds
Period Roman and Medieval
Source Richardson 1990, 39
Description A number of late Roman and medieval pottery sherds found in a garden at Caldewbank.

Site Number	11
HER Number	19160 and 19510
Site name	Cummersdale
NGR	NY 339000 553000
Site Type	Coin Find
Period	Roman
Source	Shotter 1992, 278
Description	A republican silver <i>denarius</i> of C Marius Capito dated c 81 BC was found in a garden.

Site Number	12
HER Number	3401
Site name	Cummersdale
NGR	NY 339050 553000
Site Type	Roman Fort
Period	Roman
Source	AP, OS 69/033 192-3 2 4 69; Jones 1995; Esmonde Cleary 1996; 1997; Burnham <i>et al</i> 1998; 1999; Bewley 1985, 250-62
Description	A flat topped hill south of the village has evidence of southern and eastern double ditches. Fieldwalking in the area of crop-marks to the east recovered a possible Roman bead and 37 sherds of medieval pottery of which one may be dated to the thirteenth century. Later excavations within the area of the double ditches found an intervallum, an interior road to the north and two post-set buildings, considered to form part of a fort up to 10 acres in size and perhaps part of the Stanegate system. This site should be considered alongside the major prehistoric site at Brownelson, also in the Caldew Valley.

ILLUSTRATIONS

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Plate 7: South-east-facing view of Trench 3

Plate 8: North-west-facing view of Trench 4

Plate 9: North-west-facing view of Trench 5

Plate 10: North-east facing section of tree throw **504**

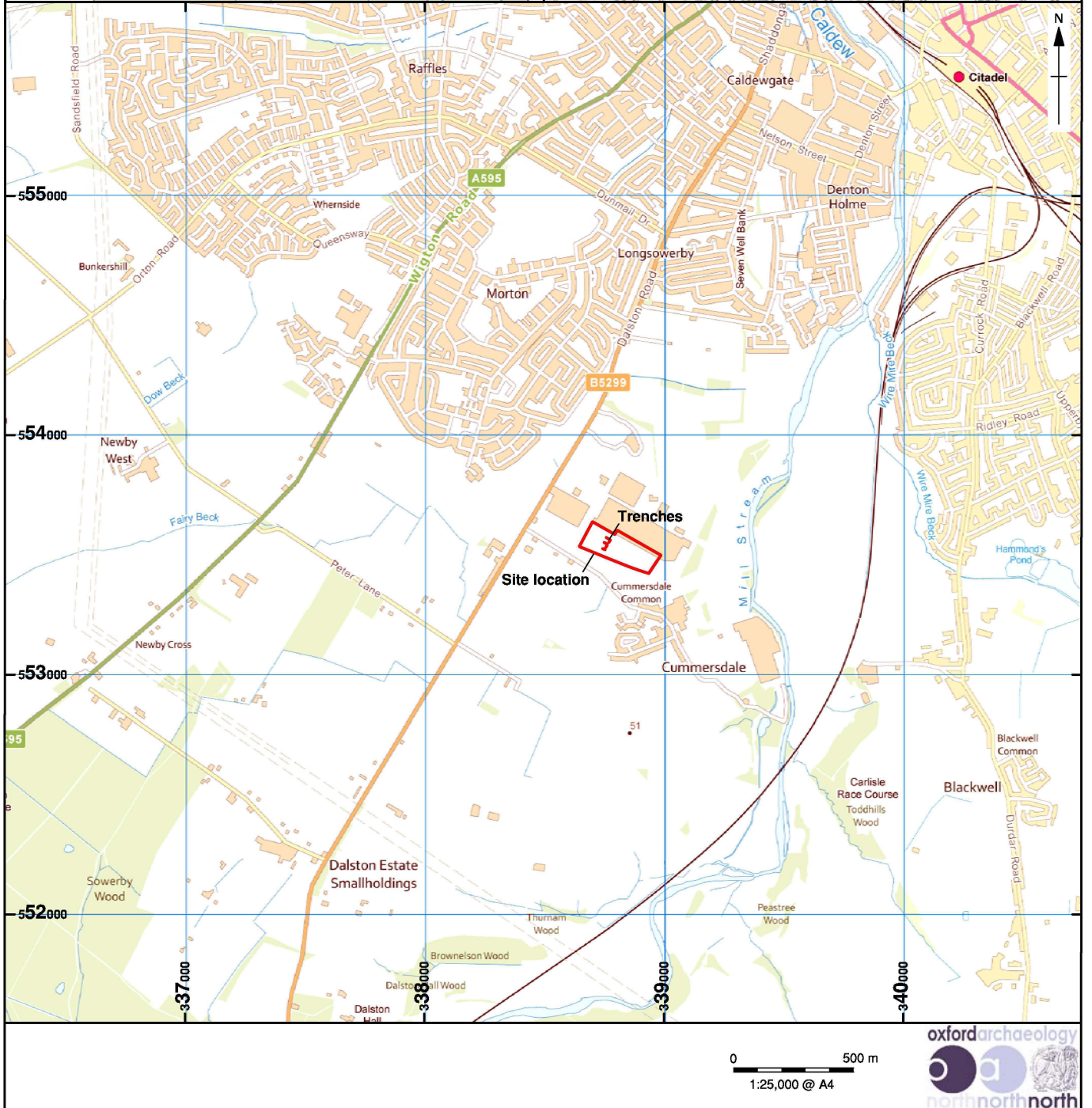
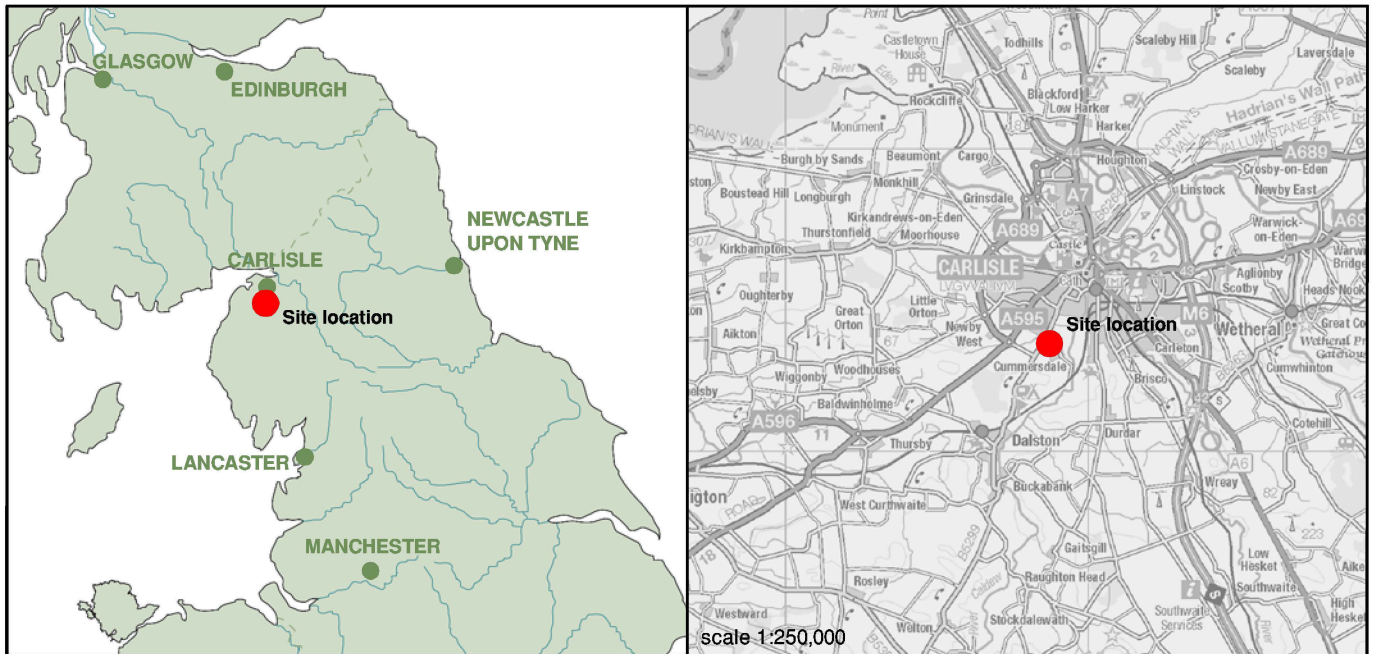
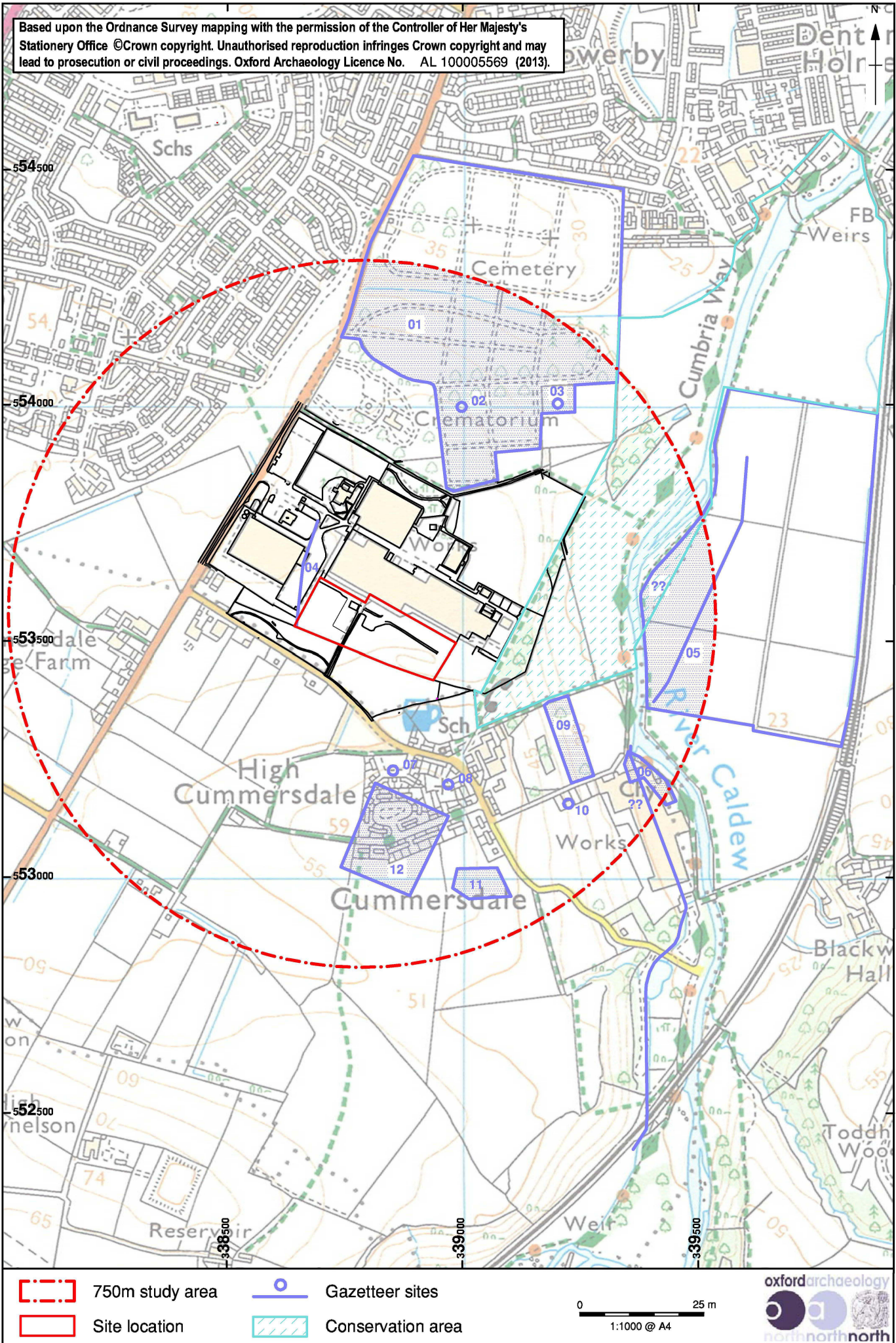


Figure 1: Site location

JQ*L10647*AMS*280813

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JQ*L10647*AMS*290813

- 750m study area
- Site location
- Gazetteer sites
- Conservation area

0 25 m
1:1000 @ A4



Figure 2: Plan of gazetteer sites



Figure 3: Extract of the Cummersdale Tithe map, 1841

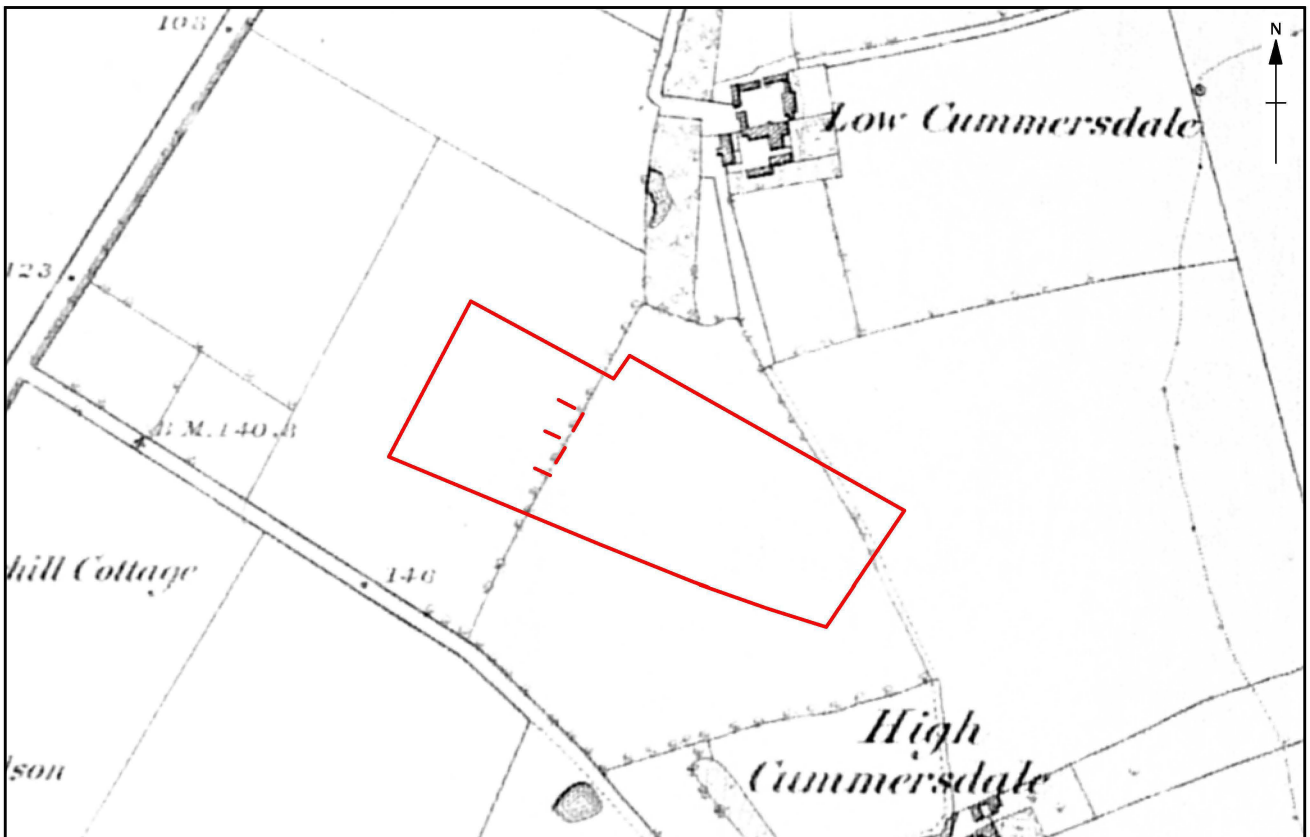


Figure 4: Extract of the First Edition Ordnance Survey 6" to 1 mile map, 1868

 Site location

0 100 m
1:5000 @ A4



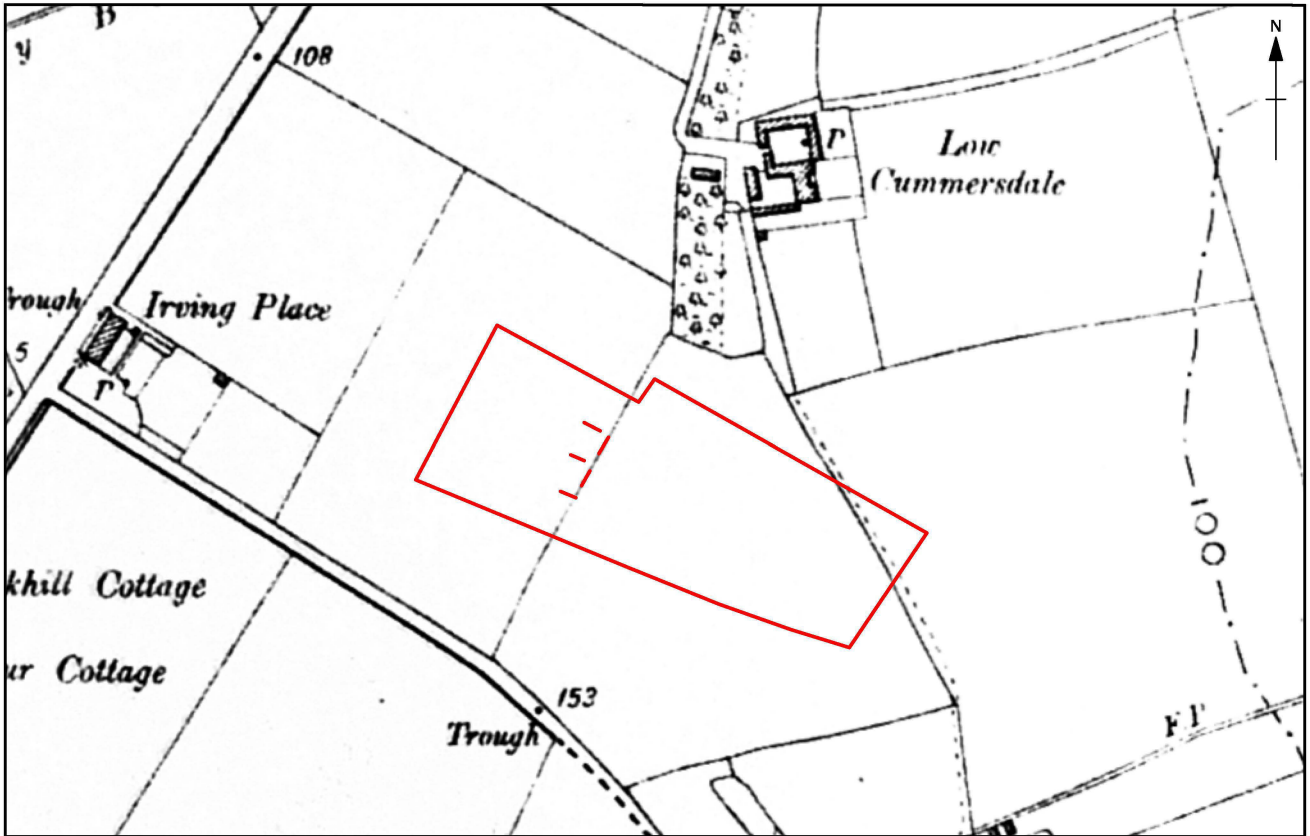


Figure 5: Extract of the Ordnance Survey 6" to 1 mile map, 1901

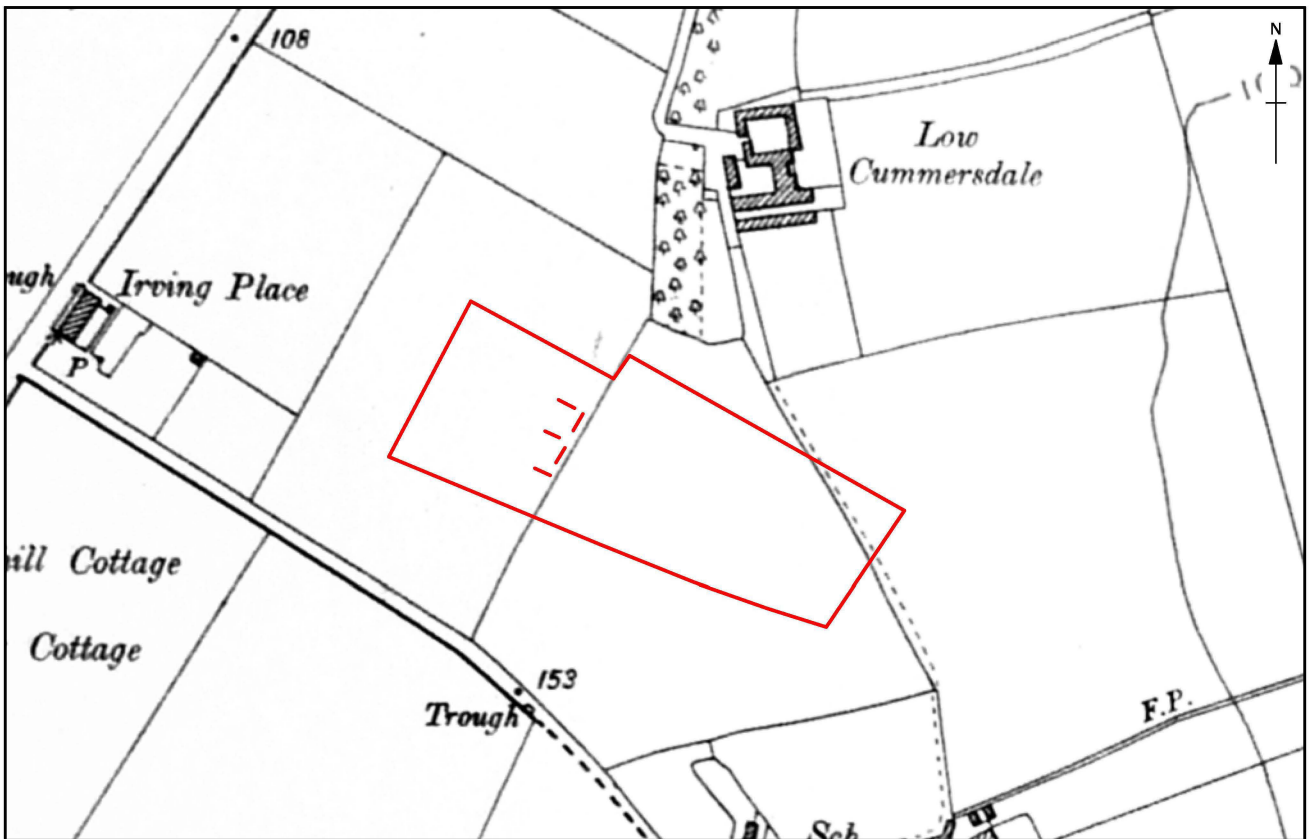


Figure 6: Extract of the Ordnance Survey 6" to 1 mile map, 1926

 Site location

0 100 m
1:5000 @ A4

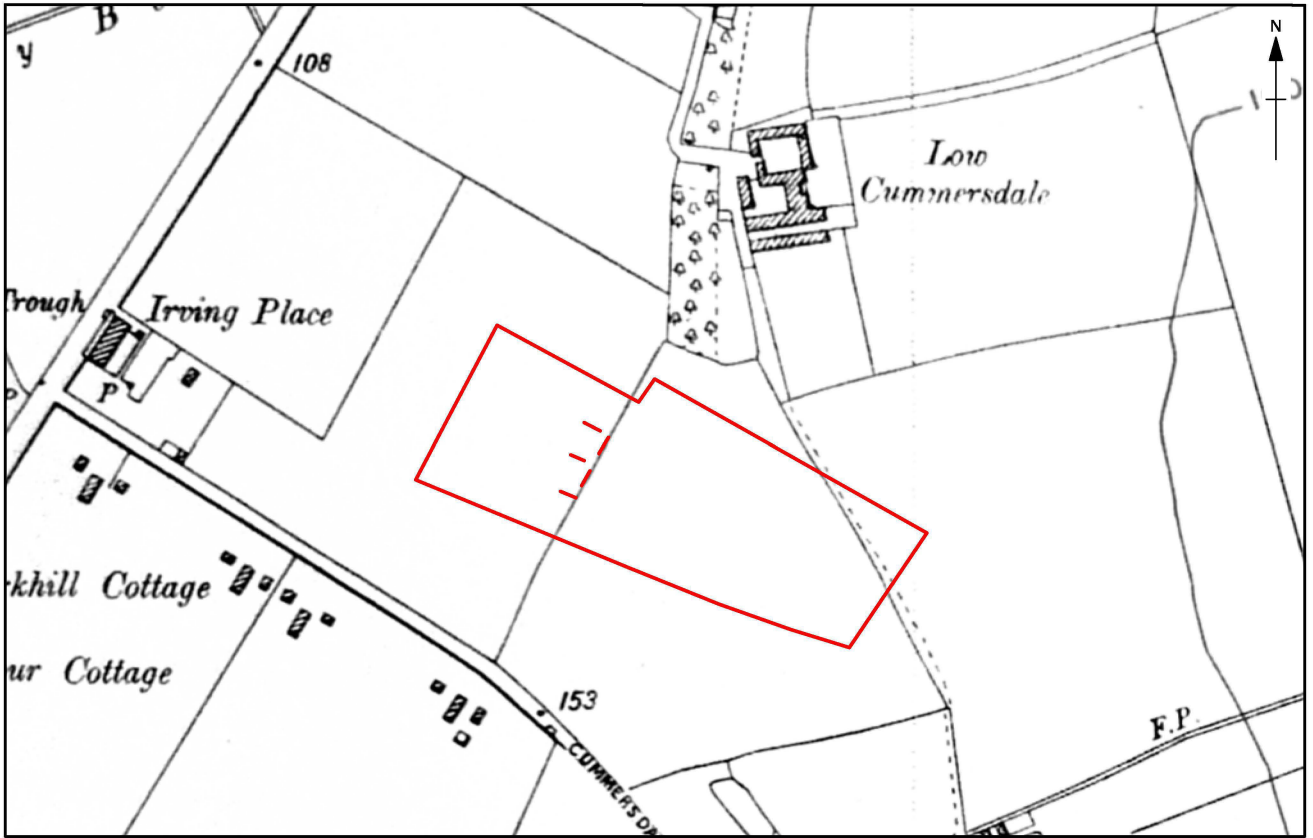


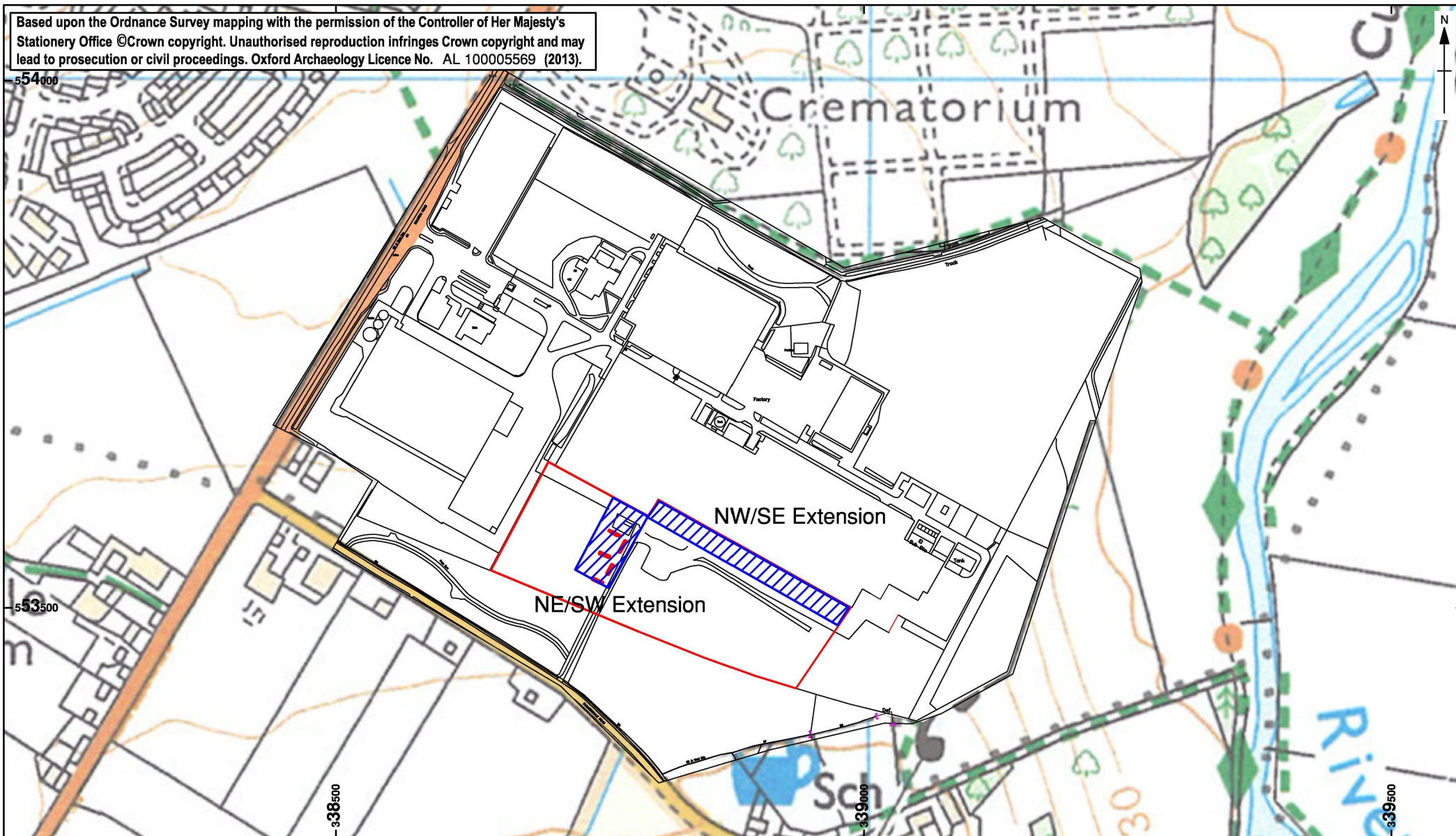
Figure 7: Extract of the Ordnance Survey 6" to 1 mile map, 1938-1946

 Site location

0 100 m
1:5000 @ A4

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- Site boundary
- Proposed extension areas
- Trenches

0 100 m
1:5000 @ A4



Figure 8: Trench Locations in relation to the proposed development areas

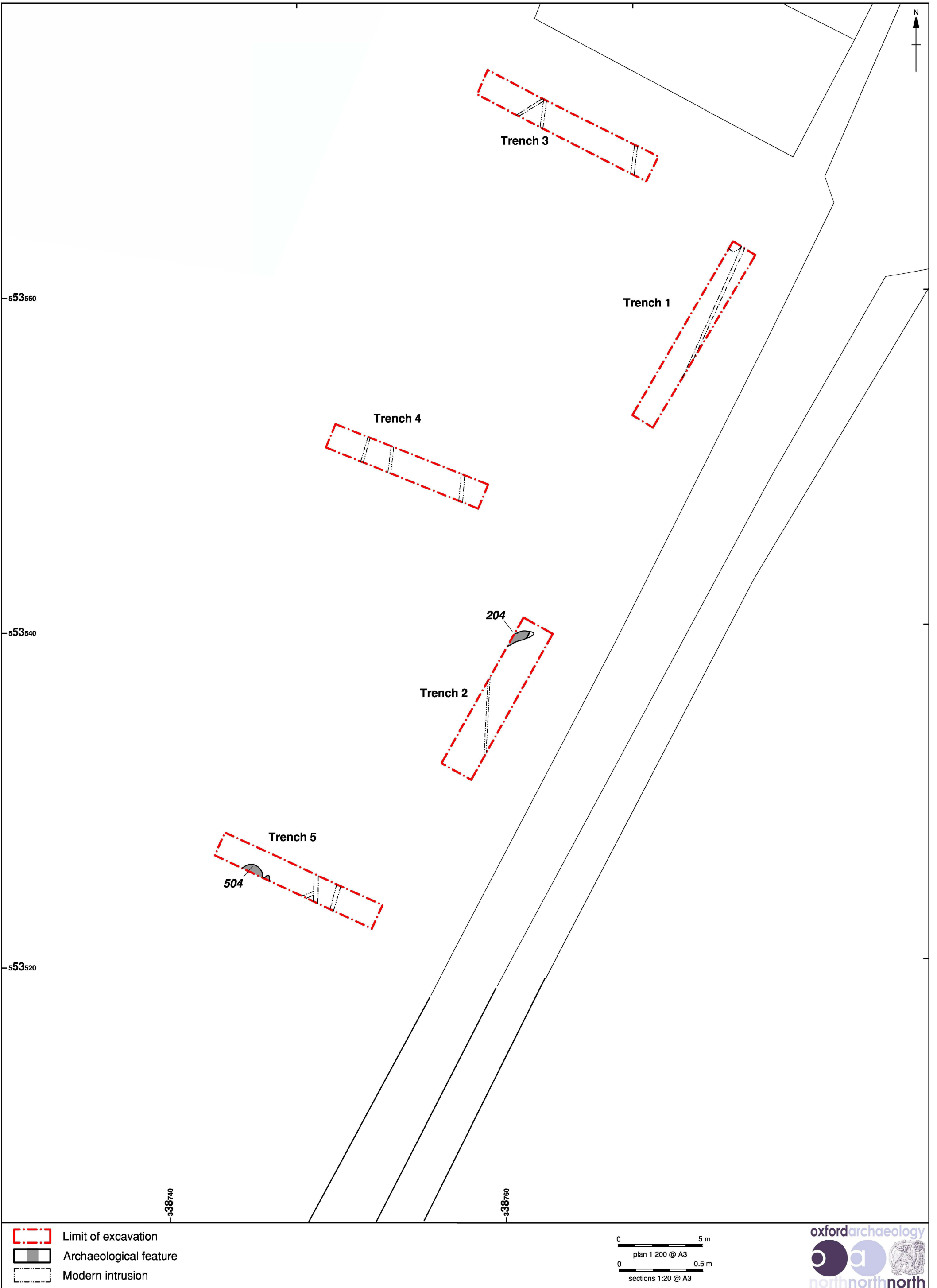


Figure 9: Trench locations showing archaeological features

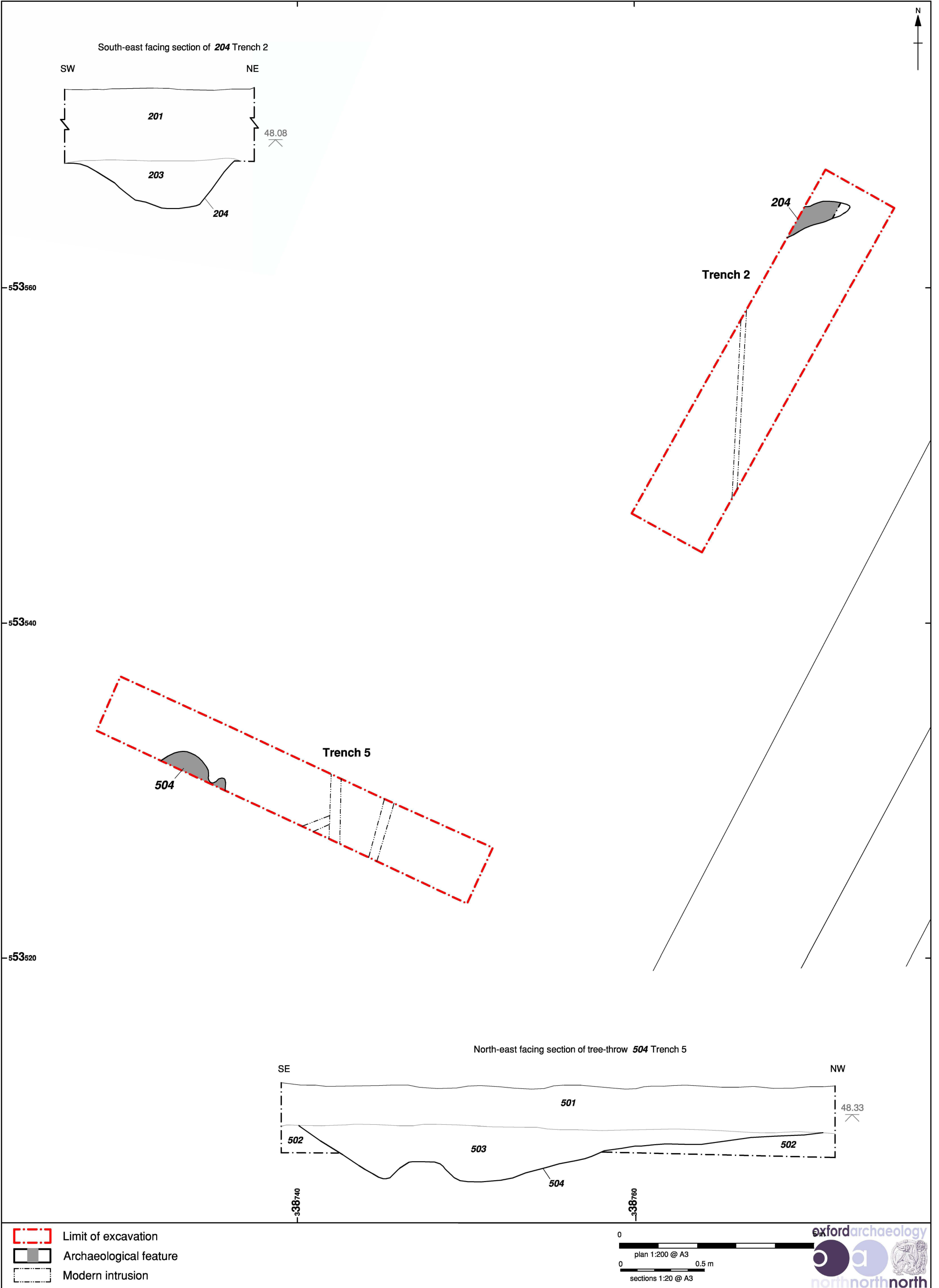


Figure 10: Plan of Trenches 2 and 5 and selected sections