A595 PARTON TO LILLYHALL ROAD IMPROVEMENT SCHEME,
Cumbria

Archaeological Evaluation, Topographic Survey and Watching Brief

Oxford Archaeology North

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Hyder Consulting, on behalf of the Highways Agency

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SUMMARY

Following several stages of archaeological evaluation for the purposes of an Environmental Impact Assessment (EIA), in the form of a walkover, desk-based assessment and watching brief on geotechnical test pits of a re-route of the A595 Trunk Road around, and to the west of Distington (NX 989 212 to NY 009 241), it was considered that further information concerning the location, extent, survival and significance of the known archaeological remains along the scheme, as well as the potential for unknown archaeological remains to survive, was required. The Environmental Impact Assessment (EIA) had established that there was potential for below-ground archaeological remains to exist within the proposed route corridor. There was believed to be a high potential for Roman features and material to the north of Parton Fort, medieval features around known medieval buildings, such as Hayes Castle (SM344), and post-medieval features associated with water mills, Ulgill Farm, and former railways. In order to further inform the EIA, a trial archaeological evaluation was carried out over a small area at Ulgill, at the southern end of the scheme, close to the Moresby Roman fort. This included a trial geophysical survey, using magnetometry and resistivity, a metal-detecting survey, and targeted trenching (Hyder Consulting 2005). Although nothing of particular archaeological significance was revealed, the trial showed that the soils were seen to be responsive to magnetometry. Hence this was extended scheme-wide (ArchaeoPhysica 2006).

Consequently, the archaeological consultant at Hyder Consulting (UK) Ltd, acting on behalf of the Highways Agency, produced an archaeological design brief setting out the requirements for targeted archaeological evaluation trenching of the scheme, based on the results of the magnetometry survey, a topographic survey as mitigation of the development on a number of sites identified in the EIA, and a watching brief to mitigate all remaining groundworks. OA North produced a method statement in response to this brief and was subsequently commissioned to undertake this work, which was completed in 2007.

The original intention was to excavate 136 trenches during the course of the evaluation exercise, but on-site constraints led to the relocation of some of the trenches from their original positions and the abandonment of others. This was undertaken following discussion with the archaeological consultant of Hyder Consulting (UK) Ltd. This resulted in 110 trenches being excavated, evaluating a total of 6660m^2.

Thirty trenches did not contain any features or deposits of archaeological interest, whilst a further 58 trenches revealed only land drains and services. Modern dumping was evident at the far southern end of the route corridor within Trench 1. Evidence for coal and sand extraction occurred in two groups: the former in Trenches 3 and 4 at the southern end of the route corridor and the latter in Trenches 73-77, 80 and 152. The remains of former agricultural regimes were identified in the form of three groups of probable ridge-and-furrow cultivation, comprising Trenches 12 (***1029***, ***1030***, ***1035***) and 13 (***1025***, ***1027***), Trench 35 (***1527-1529***), and Trenches 110 (***2089-2092***) and 111. Three discrete pit features were observed and recorded in Trenches 34, 45 and 101. Plough scarring was identified in a single trench, Trench 67 (***1074***). A possible hollow way was investigated in Trench 153 (***1684***/***1685***).

These sites recorded using topographic survey included several field boundaries and trackways (Sites G**96-99** and **102**), quarries and extraction pits (Sites **65, 82,** G**91, 93**) and sites associated with Moresby Mill (Sites **75** and **76**). No earthworks could be identified at two of the previously identified sites, a Roman road (Site **59**) and an old waggonway (Site **86**).

A number of new sites were identified during the course of the watching brief. These comprised a mine adit in Field 3, two possible hollow ways in Field 10, ridge and furrow in Field 13 and a possible signal box in Field 26. Additional works, carried out as part of the watching brief phase, comprised the removal under archaeological supervision of the listed milestone at Lillyhall and the investigation of Bell Pit (Site G**91**).

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The fieldwork was undertaken by Marc Storey, Chris Healey, Kelly Clapperton, Christina Robinson, Caroline Bulcock, Andrew Frudd, Richard Colebrook, Kathryn Levey, Elizabeth Murray, Pascal Eloy, Steve Clarke, Andrea Kenyon, Kieron Power, Claire Riley and Alex Beben. Chris Howard-Davis examined the finds. The illustrations were created by Anne Stewardson and Marc Storey. This report was written by Paul Clark and Marc Storey and was edited by Emily Mercer. Alan Lupton managed the fieldwork and Emily Mercer managed the post-excavation work.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Following a decision by the Government to improve and extend the A595 trunk road (on the west side of Distington) between Parton and Lillyhall, Cumbria (NX 9855 20950 – NY 0160 2476; Fig 1), a Stage 3 archaeological assessment, as defined in the Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 Part 2 (1993, rev 2007), was undertaken in 2003 by Oxford Archaeology North (OA North) for the purpose of an Environmental Impact Assessment (EIA). This was carried out for Hyder Consulting (UK) Ltd on behalf of the Highways Agency. In order to identify the nature of the archaeological resource within the study area a desk-based assessment, a walkover survey of the proposed route, and a watching brief of geotechnical test pits and trial trenches along the route was initially undertaken. The details of this work are summarised in Volume 1 and provided in Volume 2 of the Environmental Statement (ES) (Highways Agency 2005).

1.1.2 As an addendum to the Cultural Heritage and Archaeology technical chapter of the ES, in accordance with a Stage 3 assessment, a trial evaluation was carried out by OA North in June-July 2005 to inform decisions on the scheme-wide archaeological approach to be proposed by Hyder Consulting (UK) Ltd (Hyder Consulting 2005). This was undertaken over an area at the southern end of the scheme, targeting an area of archaeological potential situated between the Moresby Roman Fort (SM 277) to the west and the possible adjoining Roman road from the east. The archaeological evaluation comprised a geophysical survey, using magnetometry and electrical resistance survey, a metal detecting survey, and targeted trenching. The results showed the targeted geophysical anomalies corresponded with archaeological features, although not particularly significant, revealed within the trial trenches.

1.1.3 Further information concerning the location, extent, survival and significance of the known archaeological remains along the scheme as a whole, as well as the potential for unknown archaeological remains to survive, was required in advance of construction. Consequently a detailed magnetometer survey was undertaken in 2006 along the proposed route (ArchaeoPhysica 2006). Following this, the archaeological consultant for Hyder Consulting (UK) Ltd produced an archaeological design brief (*Appendix 1*) detailing the requirements for an archaeological evaluation of the scheme and the recommended mitigation measures provided in the technical chapter of the ES. OA North produced a method statement (*Appendix 2*) in response to this brief and was subsequently commissioned to undertake this work, which was completed in 2007.

1.1.4 The following report details the results of the programme of trial trenching undertaken to target geophysical anomalies, together with the topographic survey to preserve by record a number of sites identified in the ES, and a watching brief to mitigate all remaining groundworks.

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 The proposed bypass runs for a distance of just over 3 miles, from just south of Ulgill and after the construction of a new junction will continue northwards, west of the present A595 and east of Lowca Beck, along the side of the relatively gentle valley side. It will cross the Distington Beck and pass a small wood, just south-west of Hill Crest and the remains of Hayes Castle (SM344). The route will then cross the line of the dismantled railway, formerly the L & NW Furness Joint Railway (Gilgarran Branch), east of Benthow Farm and follow the western side of the dismantled railway around Distington before rejoining the A595 at Woodlands, on the junction of the A597 and the A595. The improvements will then be completed where the A595 main road joins the A595 Trunk road to Workington (Fig 1).

1.2.2 The topography of the proposed route corridor is a largely undulating improved or semi-improved pastoral landscape, apart from the northern end that is dominated by the settlement of Distington and the Lillyhall Industrial Estate. The route corridor lies between 50m and 110m OD (Countryside Commission 1998, 27). The rich deposits of coal and iron ore have, however, shaped the character of the area. This is evidenced in the open-cast coal mining still undertaken, and the many small industrial communities scattered throughout the rural landscape (*ibid*). Consequently, any urbanisation is spread thinly over a relatively wide area. The industrial history of the area has left many relict features across the landscape, and large expanses of land are left effectively wasteland, comprising scrub or rough grassland. Some areas have been recently landscaped, however, such as the former quarry and limekilns at Barfs Quarry (*ibid*).

1.2.3 The proposed route lies within the West Cumbria Coastal Plain. The solid geology principally comprises Westphalian coal measures, with the occasional patches of Namurian millstone grit and Triassic sandstone (Moseley 1978). The drift geology is essentially glacial in origin, comprising boulder clay, and sands and gravels (Countryside Commission 1998, 27). This is mostly overlain by Cambric stagnogley soils, with some areas of typical brown earths, or disturbed by urbanisation and coal mining (Soil Survey 1983; Countryside Commission 1998, 25).

2. BACKGROUND

2.1 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

2.1.1 ***Introduction:*** the historical and archaeological background is drawn from Volume 2 of the Environmental Statement (HA 2005), which was principally compiled through secondary sources and was intended to set the results of the archaeological assessment into a wider context. The background is generalised in places, but specific references are made to the immediate study area where relevant.

2.1.2 ***Prehistoric Period:*** Cumbria has few confirmed archaeological sites dating to the immediate post-glacial prehistoric period. Indeed, until recently habitation this far north at that time was considered highly unlikely (Rollinson 1996, 14). Sites have, however, been identified in the south of the county (Young 2002), demonstrating that the area was perhaps not as uninhabitable as previously thought. Evidence for hunter-gatherer sites of the Mesolithic period is, by contrast, well represented, with numerous sites known along the coast from St Bees to Walney Island. These tend to be late Mesolithic, and consist of flint and tuff scatters dating as late as the fourth millennium BC (Cherry and Cherry 2002). Evidence for sites further inland is less well known, although large quantities of similar material having been found on the limestone uplands of eastern Cumbria (*ibid*).

2.1.3 There appears to be a degree of continuity between the end of the Mesolithic and the start of the Neolithic; flint artefacts typically belonging to the early Neolithic are essentially indistinguishable from the late Mesolithic (*ibid*). The Neolithic is, however, a time of significant social changes with the introduction of ceramics, large funerary and ritual monuments, more intensive agricultural practices and the large-scale production of polished stone axes (Hodgson and Brennand 2006). These are found throughout Cumbria, and were traded across Britain and into Europe (Rollinson 1967).

2.1.4 Later prehistoric sites are recorded across Cumbria, although they are only just beginning to be understood. Extensive settlement remains have been examined through intensive aerial survey across the Solway plain to the north (Bewley 1994), and in the Lake District large field systems and agriculturally improved areas have been identified in the uplands (Quartermaine and Leech forthcoming). In the vicinity of the study area a few later prehistoric finds have been positively identified; these are mostly find spots with poor provenance leaving little detailed activity of this period.

2.1.5 In the wider area, a limited number of flint artefacts have been found (Hartley and Hardman 2002; Anon 1925), but too few to give a great deal of information. The Bronze Age and Iron Age are represented by stray finds of bronze axes, stone axes and cup-and-ring marked stones (Spence 1935, 178; Hartley and Hardman 2002).

2.1.6 ***Roman Period:*** During the Roman period the area was principally a military zone, with a string of forts and milefortlets established along the coast, one of

which is likely to have been at Moresby (Shotter 1997). A further fort was also established probably during the second century AD (*ibid*) at Moresby, less than a half a kilometre from the western end of the development route. It was visited by early antiquarians, such as Camden and Stukeley, and examined briefly in the nineteenth century when it was observed that the site had been seriously damaged (Birley 1948). Parts of the fort walls are known, and finds have included coins (*ibid*). A number of inscriptions have also been located in the area mentioning the cohort of *Lingones*, and one dedicated to Hadrian thought to date to AD 128. In 1822 a church was built on the site replacing an earlier medieval church when numerous pieces of Roman stone building material were discovered. To the north burials were discovered below Moresby Hall, which may be part of the graveyard associated with the fort (*ibid*). These discoveries demonstrate the potential of this site, although a trial excavation did not produce a great deal of information (Swinbank 1951) and a watching brief to the south was similarly unremarkable (Bennett *et al* 1987). A recent geophysical survey (Geoscan 2002) however, showed a high level of detail, enabling the location of many of the internal structures to be clearly seen.

2.1.7 The fort at Moresby was probably linked by a road to the fort at Papcastle, and it is possible that it was also connected to Ravenglass to the south (Margary 1973; Bellhouse 1956). A large hoard of third and fourth century coins recently found in Distington suggested that their owner may have migrated to Britain from the Mediterranean (Caruana and Shotter 2002). Their position next to the road to Papcastle shows the importance of such routes, and the vibrancy of Roman society in the area right up until its final years (*ibid*).

2.1.8 ***Medieval Period:*** there is little physical evidence for habitation or activity in the centuries following the Roman occupation in this part of the country. Historians are forced to rely on myths and legends, fragments of records and place-name evidence (Rollinson 1996, 33) and, as a result, the record is far from clear. Cumbria probably formed part of the British kingdom of Rheged, recorded in Welsh poetry and other accounts (*ibid*), for which reliable evidence is scarce. In turn, Rheged was eclipsed by the more powerful kingdom of Strathclyde in the north at a time when the early Christian church was beginning to have a major impact on northern Britain (*op cit*, 34).

2.1.9 By the seventh century the power of the kingdom of Strathclyde was beginning to wane as the Northumbrian Anglian kingdom became the dominant force in the area (*ibid*). In time they too were ousted by the new power of the Vikings. The Danes initially arrived in the eastern part of Britain, and the Norwegians landed later in the west via Ireland, principally during the later ninth and tenth centuries. All of these groups had a great impact on the social landscape of Cumbria, but few left any particularly evident physical traces. The Anglo-Scandinavians in particular had a great affect on the language and place-names with Cleator and Winscales having such origins, and the name Workington is considered to be Old English, meaning 'settlement of Weorc's people', Weorc being perhaps a local leader of some distinction (Armstrong *et al* 1977, 455). Interestingly, Moresby is a combination of the French personal name Maurice and the older Danish '-by'

meaning home (*ibid*). Names of Anglian origin, such as Hensingham and Distington, demonstrate how mixed the influences were at this time (*ibid*).

2.1.10 The majority of settlements within or in the vicinity of the study area have recorded medieval origins, although some may be more ancient. Maurice at Moresby is thought to be its first Norman lord (*ibid*). Cleator, to the south of the study area, is mentioned in the St Bees Chartulary in the twelfth century, and Distington and Harrington have medieval origins (Nicolson and Burn 1777, 50 and Hutchinson 1794, 91-98). There are also examples of surviving tenth/eleventh century cross fragments recovered from around the demolished medieval church in Distington (*ibid*).

2.1.11 Following the Norman Conquest, the north of England was a relatively unstable place, badly affected by cross-border conflict and constant rebellions against the new rulership (Rollinson 1996, 43-4). This ended in 1092 when William II captured Carlisle and drove out the Scots, bringing relative peace and creating a new fortified border defended by loyal barons (*op cit*, 44-5). This would have had little effect on the study area, which was almost entirely made up of small, rural settlements. However, the next 200 years saw several further rebellions and feuds, as well as raids from Scotland. This culminated in the numerous and serious attacks led by Robert the Bruce in the first half of the fourteenth century, which, combined with outbreaks of the plague, devastated vast areas (*op cit*, 50). A network of fortresses and defended sites were built, including Hayes Castle (SM344) near Distington directly within the study area, but it was not enough to keep the Scots at bay.

2.1.12 It was not until the fifteenth century that some form of peace returned and truces were signed (*op cit*, 55). The border remained an issue of some contention but the following century was characterised mainly by growth and stability. This was severely upset by the Dissolution of the Monasteries, which seriously damaged many aspects of the social and economic fabric of North England (*op cit*, 57). Some agricultural development took place during this time, but it was through industry during the post-medieval period that the then Cumberland began to make its wealth (*op cit*, 60).

2.1.13 ***Post-medieval Period:*** although coal mining prior to 1700 was mostly small-scale (Wood 1988, 20), the beginnings of the industrial revolution were starting to have an effect by the end of the seventeenth century. Local landowners were quick to try to exploit the mineral wealth of the area. Plans were put in place to enlarge the harbour at Parton in 1680 and 1695 in an attempt to increase its capacity for trading coal with Ireland (Jefferson 1862, 69-70; Rollinson 1996, 71). The eighteenth century saw a huge shift in emphasis in the area towards industrialisation, in particular the exploitation of iron and coal reserves (Wood 1988). Most of the major coal pits were opened up during the eighteenth century, and many were worked out very quickly (Jefferson 1862, 59). The Lowther family, who had already been instrumental in encouraging the coal industry, continued to have a major input, as did a number of technological developments (Rollinson 1996, 77). Nevertheless, even during the eighteenth century Cumbria's position on the border was a cause of some concern, seeing at close quarters the advancing forces of the 1715 and 1745 Jacobite rebellions. In the event, neither rebellion had much

direct impact on the landscape around Whitehaven as it was away from the main route to the south (*op cit*, 82-3).

2.1.14 During the nineteenth century industry continued to be the dominating social and economic factor of the area, with the majority of towns and villages increasing rapidly in size (*op cit*, 69-71). Mining came to dominate and vast areas were turned over to the extraction of coal (Wood 1988), but it was iron mining and smelting that pushed the industrial economy of the area ahead and led to even greater changes. Crowgarth in Cleator was described as being 'the most singular mine of iron ore supposed to be in Great Britain' (Hutchinson 1794, 29), and major mining operations were carried out in the later nineteenth century (Caine 1916). Moresby and Distington parishes also abounded in coal, and, in some cases, old works were reopened to meet the demand (Jefferson 1862, 58 and 76).

2.1.15 The massive expansion in mining led to new transport routes being created, in particular the turnpikes and the railways. The Whitehaven Turnpike Trust was the first in Cumbria established in 1739, and it set about renewing and constructing roads from Whitehaven to Workington, Egremont, St Bees and partly to Carlisle (Hindle 1998, 149; Donald's Map 1771). On the railways the majority of the main lines had been established by the mid-nineteenth century, principally for the export of coal and iron. However, in 1874 local ironmasters proposed their own rail lines in an attempt to avoid the freight charges imposed on the main lines (Gradon 1952, 11-2). This was begun in 1877 and opened in 1879, with lines running between Cleator Moor and Workington and then on to Maryport (*ibid*). Mining, particularly for coal, has remained a dominating force in the local economy into the twentieth century, although it has declined somewhat from its earlier glory (Wood 1988), leaving a legacy of abandoned mines and machinery across the area.

2.2 SCHEME SPECIFIC ARCHAEOLOGICAL BACKGROUND

2.2.1 The following section summarises the results of the archaeological evaluation work carried out to assess the impact of the Parton to Lillyhall scheme on cultural heritage.

2.2.2 The ES (HA 2005), combining desk-based assessment, walkover and watching brief on geotechnical test pits, noted a high potential for Roman features and material to the north of Moresby Fort, medieval features around known medieval buildings such as Hayes Castle (SM 344), and post-medieval features associated with the water mills, Ulgill Farm, and the railway systems.

2.2.3 The programme of archaeological evaluation undertaken by OA North at the southern end of the proposed scheme (Hyder Consulting 2005) included a metal detecting survey, a geophysical survey and trial trenching, which targeted an area identified from the ES as being of high archaeological potential. The evaluation area was positioned close to Moresby Roman Fort (SM 277) (on the west side), and the possible route of the Roman road (on the east side). The results of the fieldwork showed the targeted geophysical anomalies corresponded very closely with archaeological features revealed within the trial trenches. Most of the features related to the post-medieval

agricultural landscape, consisting mainly of field drainage and field boundaries. It was anticipated that finds of Roman date would be recovered during the trial trenching, given the proximity of Moresby Roman fort, and the route of the Roman road lying close to the A595. However, only two finds of Roman date were retrieved, consisting of pottery fragments. As domestic vessels, they do, perhaps, lend some credence to the suggestion of a nearby settlement.

2.2.4 The geophysical survey of the remaining available areas of the route was carried out in July/August 2006 (ArchaeoPhysica 2006). A thin scatter of probable archaeological features was noted along the route in the geophysical data, with most relating to previous land divisions, field systems and drainage. In two areas a greater density of features (in the data and from field observation) were located, indicating potential medieval or post-medieval industrial remains, in one case coal mining (G**91**) and in the other, perhaps, milling (G**96-99**).

3. METHODOLOGY

3.1 METHOD STATEMENT

3.1.1 A method statement (*Appendix 2*) was produced by OA North for a programme of evaluation trenching, topographic survey and watching brief, to the relevant IFA standards. All work undertaken during the fieldwork adhered to the method statement, although it was originally envisaged that the project would require a MAP 2 (English Heritage 1991) assessment; consideration of the results and subsequent consultation between Hyder Consulting (UK) Ltd and Cumbria County Council (CCC) led to the decision that a MAP 2 assessment was not necessary, and a grey literature client report would suffice. This report represents the final presentation of the results of this programme of work.

3.2 EVALUATION TRENCHING

3.2.1 The uppermost surface of the evaluation trenches was removed by a mechanical excavator (fitted with a 1.85m wide toothless ditching bucket) under archaeological supervision, to the surface of the first significant archaeological deposit, or the established natural geology, whichever was encountered first. Thereafter, the trenches were cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions. If widespread archaeological deposits were discovered further excavation proceeded manually, with an appropriate use of the machine.

3.2.2 The evaluation was undertaken to sufficient depth in order to establish the character of the archaeological remains. In some cases, it was necessary to mechanically investigate a small area within an area of the trench, usually at one end, in order to ensure the natural sequence of deposits was understood.

3.2.3 All investigation of intact archaeological features was exclusively manual. Selected pits and postholes were normally half-sectioned, linear features were subject to no more than a 10% sample, and extensive layers were sampled by partial rather than complete removal. Maximum information retrieval was achieved through the examination of sections of cut features.

3.2.4 All information identified in the course of the site works was recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Digital photographs were taken for illustrative purposes.

3.2.5 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 (1:20 for plans and 1:10 for sections), and drawing points tied to the OS National Grid. The levels and

resultant Ordnance Datum (OD) of all the main features have been recorded on the drawings.

3.2.6 All artefacts and ecofacts were recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

3.3 TOPOGRAPHIC SURVEY

3.3.1 All topographic survey was undertaken with a Leica Differential Global Positioning System (DGPS), with three-dimensional accuracy to ± 0.05m. Where DGPS reception was poor, for example under dense tree cover, measured hand-drawn plans were made to augment the digital survey. All digital data was downloaded via Leica GeoOffice v4 and then processed in AutoCAD Map 2004.

3.4 WATCHING BRIEF

3.4.1 A programme of field observation accurately recorded the location, extent, and character of any surviving archaeological features and/or deposits discovered during the ground disturbance for areas where formal evaluation trenching was not considered necessary, but there was still a requirement for archaeological monitoring. The watching brief comprised archaeological observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified. To enable recording the scheme was divided by field number, issued from south to north along the scheme (Figs 2a-c).

3.4.2 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, were cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections were studied and drawn. Any such features were sample excavated (i.e. selected pits and postholes were only half-sectioned, linear features were subject to no more than a 10% sample, and extensive layers were, where possible, sampled by partial rather than complete removal).

3.4.3 Recording comprised a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan, section, or as grid co-ordinates). Features were planned accurately at appropriate scales and annotated on to the large-scale digital plan. A photographic record was undertaken simultaneously.

3.5 ARCHIVE

3.5.1 The results of the scheme form the basis of a full archive to professional standards, in accordance with current English Heritage (1991) guidelines and the *Guidelines for the Preparation of Excavation Archives for Long Term*

Storage (UKIC 1990). The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. The paper archive will be deposited with the appropriate Cumbria Record Office (Whitehaven) and the material archive (artefacts and ecofacts) will be deposited with a museum.

4. EVALUATION RESULTS

4.1 INTRODUCTION

4.1.1 It was originally intended to excavate 136 trenches during the course of this phase of the evaluation exercise, totalling 7530m^2. These had been positioned to target anomalies seen in the magnetometer survey (ArchaeoPhysica 2006), together with sites of archaeological potential recommended for further investigation in the ES (HA 2005). Constraints on site, such as services, watercourses, field boundaries and other practical concerns, however, led to some of the trenches being moved, or amalgamated with other trenches where possible. The area of the land fill site at Barfs Quarry (fields 26-28 on Fig 2c) was entirely omitted from the evaluation programme. This resulted in 110 trenches (Figs 2a-c) being excavated, a total of 6660m^2. Trenches 19-23, 42, 44, 47-50, 53-57 and 131-149 were thus unexcavated.

4.1.2 Thirty trenches contained no features or deposits of archaeological interest, whilst a further 58 trenches revealed only land drains and services. Modern dumping was evident at the far southern end of the route corridor within Trench 1. Evidence for coal and sand extraction occurred in two areas; in Trenches 3 and 4 at the southern end of the route corridor, and the area around Trenches 73-77, 80 and 152 in the vicinity of Site **82** (Benthow Sand Pit,OA 2005), on the brow of the hill to the south-west of Distington. The remains of former agricultural regimes were identified in the form of three groups of probable ridge-and-furrow cultivation, in Trenches 12 and 13, Trench 35 and Trenches 110 and 111. Three discrete pit features were observed and recorded in Trenches 34, 45 and 101. Plough scarring was identified in a single trench, Trench 67. A possible hollow way was investigated in Trench 153.

4.1.3 The following results section represents a summary of the results from the evaluation trenching; detailed trench and context descriptions have been added as Appendices (*3* and *4*, respectively), whilst the finds are discussed in *Section 7*, below.

4.2 RESULTS

4.2.1 ***Trenches 1, 6, 8, 9, 15-17, 24-25, 27-29, 38, 43, 46, 51, 59, 63, 78, 81, 84, 85, 87, 88, 95-97, 115, 126-128:*** these trenches contained no features or deposits of archaeological interest.

4.2.2 ***Trenches 2, 5, 7, 10, 11, 14, 18, 26, 30, 33, 36, 37, 39, 40, 41, 52, 58, 60-62, 64-66, 68-72, 79, 82, 83, 86, 89-94, 98-100, 102-106, 108, 109, 112, 114, 116, 117, 124, 125, 129, 130, 150 and 151:*** these trenches contained modern ceramic and rubble land drains, drainage gullies and ditches, and water pipes. No features of archaeological interest were observed.

4.2.3 ***Trenches 3 and 4:*** these adjacent trenches each contained large areas which appeared to comprise relatively recent backfill deposits occupying very large cuts, ***1039*** and ***1560***, into the natural geology. The fills of these cuts, ***1040*** and

1561, were removed by machine to a depth of 1.4m. It was not possible to fully excavate these features due to the limited reach of the machines and the unstable nature of the trench sides during excavation. It seems most probable given their location near to the former quarries (Sites **65-66** (HA 2005)) that these represent mid-nineteenth century extraction works. A single modern field drain was also recorded in Trench 3.

4.2.4 ***Trenches 12 and 13:*** a series of wide, regular, shallow linear features were recorded traversing these two trenches on north/south alignments: ***1030*** and ***1035*** within Trench 12 and ***1025*** and ***1027*** within Trench 13 (Fig 3). The retrieval of medieval pottery from furrows ***1025***, ***1035*** and ***1036*** (see *7.2.2*, below) indicated that these features most likely represented the remains of medieval ridge-and-furrow cultivation. Trench 12 also contained five modern field drains and Trench 13 two field drains. No other archaeological features or deposits were encountered.

4.2.5 ***Trench 34:*** a sub-circular pit (***1539***), measuring approximately 0.7m across, was excavated by half-section. The feature had been heavily truncated on its northern and southern sides by modern field drains (of which seven traversed this trench). The pit feature (Plate 2) had been excavated to the surface of a large glacial boulder erratic, and upon full excavation the upper fill deposit (***1541***) was seen to contain large pieces of charcoal and a clay pipe bowl. It seems likely that this pit represents an attempt to remove a now-missing part of this glacial erratic for use as building material. No other archaeological features or deposits were encountered.

4.2.6 ***Trench 35:*** this trench was traversed by seven modern field drains. Three wide parallel linear features (***1527***, ***1528*** and ***1529***, Plate 3) were also recorded, following east/west alignments between 4m and 4.6m apart. Pottery dating to the twelfth to thirteenth century was recovered from furrow ***1527***, suggesting that these features represent ridge-and-furrow cultivation from the medieval period. No other archaeological features or deposits were encountered.

4.2.7 ***Trench 45:*** a small sub-circular pit, ***1511*** (Plate 4)***,*** measuring 0.85m across, was observed extending into the trench from the northern section. This feature was recorded by half-section and no finds were recovered from the single fill, ***1510***. No other archaeological features or deposits were encountered.

4.2.8 ***Trench 67:*** a group of what appeared to be ten plough scars (***1074***) was observed traversing this trench, on an approximately north/south alignment. A single modern field drain also traversed the trench on a similar alignment. No other archaeological features or deposits were encountered.

4.2.9 ***Trenches 73-77 and 80:*** six trenches were seen to be covered in modern landfill deposits and, on excavation of machine-dug sondages, they were found to be over 1.2m thick. It seems probable that, given the location of the trenches in the proximity of the sand pit at Benthow (*Appendix 1*), this represents the deposition of modern waste in former sand pits. Trench 77 had been excavated to a depth of over 2m, and was backfilled with sandy-silt rather than modern landfill. This probably represents deliberate landscaping. No other archaeological features or deposits were encountered.

4.2.10 ***Trench 101:*** this trench contained only one feature of archaeological interest. A sub-oval pit or posthole, ***1107***, projecting from the section at the north-west end, which measured 0.77m in diameter and 0.8m in depth. It contained a mid-grey clay fill, ***1108***, with occasional flecks of charcoal, and medium to large rounded stone inclusions, possibly used as post-packing. No datable finds were recovered. No other features of archaeological significance were observed.

4.2.11 ***Trench 107, 110, and 111:*** alongside numerous cut drains, these three trenches exhibited remnants of medieval/post-medieval ridge and furrow.

4.2.12 ***Trenches 113:*** the excavation of Trench 113 uncovered remnants of ridge and furrow at the north of the trench. Within the main body of the evaluation trench was a well-defined cut, in which the soils changed distinctly from a rubbley-sandy matrix to a fine-grained red sandy-silt, thought to pertain to the natural geology.

4.2.13 ***Trench 152:*** this trench was covered in modern landfill deposits which, on excavation of machine-dug sondages, was found to be over 1.2m thick. It seems probable that, given the location of the trench in the proximity of the Benthow sand pit (*ibid*), this represents the deposition of modern waste in former sandpits.

4.2.14 ***Trench 153:*** this trench was positioned over a possible hollow way (***1684***). The feature was excavated using a machine and was found to comprise the remains of a probable stream cut into hard geology. No other archaeological features or deposits were encountered.

5. TOPOGRAPHIC SURVEY

5.1 INTRODUCTION

5.1.1 The archaeological design prepared by Hyder Consulting (UK) Ltd, (*ibid*) requested a topographic survey of seventeen sites. No features were observed at two of the sites (Sites **59** and **86**), and due to logistical on-site reasons only thirteen of the remainder could be recorded. The recorded sites produced a range of earthworks, which are discussed in detail below. The site numbers relate to those provided in the ES (HA 2005), with some additional recorded sites obtained from the results of the geophysical survey of the scheme (ArchaeoPhysica 2006) and, hence, prefixed with the letter 'G'.

5.2 RESULTS

5.2.1 ***Site G96-99, Earthworks at Lowca Beck:*** at the north of the field a series of three shallow linear ditches (**1**) was surveyed (Fig 4). Measuring between 2m and 2.5m wide, it is surmised that these features represent former stream or drainage channels associated with Lowca Beck (Plate 5). All were aligned downslope towards the beck, and during heavy rain were observed swollen with rain water and runoff.

5.2.2 While those features at the north of Sites G**96-99** could represent former channels, it is more likely that those at the south of the field represent removed field boundaries. Parallel ditches (**2**) may have lined a levelled trackway (**4**), aligned south-west/north-east, and formed a T-shaped junction with a 4.2m wide bank (**3**) of levelled ground, approximately 0.3m in height, aligned north-west/south-east. This bank (**3**) is aligned directly towards an old and dilapidated gate in the southern field boundary. Features at the west of the probably trackway (**4**) were heavily truncated by ongoing utility work, but likely represent a continuation of the same field boundary system.

5.2.3 ***Site 59, Parton Roman Road/Turnpike:*** no earthworks attributable to the Roman Road/Turnpike were observed.

5.2.4 ***Site 65, Howgate Pit/Quarry:*** to the immediate east of Low Beck an artificially levelled area was identified (Fig 6), measuring approximately 2500m^2, which probably truncated any remains of the Parton Roman Road (Site **59**). The local farmer attested that the quarry pit in the field was filled with rubble from the demolition of the building on the site of what is now the Travelodge Inn on the A595, remains relating to which were also observed in evaluation Trench 1 (*4.2.3,* above).

5.2.5 ***Site 75, Moresby Mill Weir:*** a component of the water management system for Moresby Mill, a multi-phased weir (Plate 6; Fig 5) was surveyed as part of this topographic survey. The weir seems to have been originally constructed with cut stone rectangular blocks, of varying size, and timber batters. The dimensions of the weir seem to have been roughly 9.7m long by 2.2m wide. However, the shifting bank at the east covers the full extent, and the structure

has been truncated at the western extent, masking the true full size of the weir. A series of timber posts would have supported the launder joining with the existing millrace. At some point, the weir was repaired with concrete along the northern edge and metal (tin or lead) plates, held in place with wooden posts, replaced the timber batters on the southern extent.

5.2.6 ***Site 76, Moresby Mill Millrace:*** though greatly denuded within the limit of the easement for the scheme, the millrace was observed to run for 71m, parallel to the course of Lowca Beck (Fig 4). The feature was cut into the sloping banks of the field north of the beck. The millrace (Plate 7) begins shortly after the confluence of Distington Beck and Adjam Beck (thus forming Lowca Beck), and likely capitalised on the increase surge of water at this point. For 40m the millrace existed as a single eroded stepped bank, 2.8m wide, with a slope of 0.8m depth. Hereafter, the millrace continues as a discernible ditch, 3.5m wide and 0.3m deep. A large revetment wall was built to maintain the northern bank 10m long, 1.8m tall (above current surface) and 0.8m thick. This wall, like the weir, has been repaired with varying constructions and materials. Two sluice gates, now apparently buried beneath the current surface, would have maintained the volume of water within the millrace.

5.2.7 ***Site 82, Benthow Sand Pit:*** due to their location on the brow of the relatively low-lying hill, the semi-circular-shaped banks of sand are likely natural dunes. The pits, each on the landside face of the banks, have all been in-filled recently, with modern demolition materials (see evaluation Trenches 73-77 and 80, *4.2.10*, above). No discernible earthworks remain. To the east of the sand pits, a linear earthwork (Fig 7) was surveyed, representing a removed field boundary. This boundary was likely in existence for some period of time, as confirmed by the varying heights on the ground surface either side of the earthwork. The surveyed bank was aligned north-west/south-east, from a distinct kink in the western field boundary and on a similar alignment with an existing filled boundary in the field east of the dismantled railway. The spread bank was recorded as approximately 70m in length, 20m in width, and 0.4m in height. It is probable that the loose sandy geology in this area accounts for the amount of spread/slumping by the bank.

5.2.8 ***Site 86, Waggonway:*** no earthworks were visible. Any remains of the waggonway were probably destroyed by later quarry works.

5.2.9 ***Site G91, Mine Shaft and Associated Features:*** a deep, slightly egg-shaped depression, identified as a mine shaft in the archaeological design (*ibid*) was recorded. The feature (Fig 8; Plate 8) was measured as 4.7m north-west/south-east x 5.8m north-east/south-west, with a surveyed depth of 1.2m. As there were safety issues regarding standing water of unknown depth, the full extent of the feature was not surveyed. The angle of incline of the edge of the feature makes it unlikely to be a mine shaft as previously identified. It is more likely to be an extraction pit, created during the extraction of coal from a surface seam.

5.2.10 A sunken linear hollow (Plate 9), identified as a secondary component earthwork, was also observed. This feature is located 12.5m east of the pit and was surveyed for a length of 74m. At its southern limit, the hollow (first

assumed as a hollow way) was 7.5m wide and 1.75m deep. At the northern extent its dimensions were 10.5m wide and 1.35m deep. The location of the hollow, practically adjacent to the steam, and its slope and directionality, suggest that the hollow was a constructed channel for the diversion of water away from the working extraction pit and Lowca Beck Quarry downslope.

5.2.11 No evidence of a platform suitable for a horse engine, as suggested in the archaeological design (*ibid*), was observed.

5.2.12 ***Site 93, Lowca Beck Quarry:*** this site was located 20m north of Site **G91** and comprised a post-medieval quarry (Fig 8) on Lowca Beck. Dense gorse and treecover made much of the site inaccessible, though a 20m length of revetted slope (Plate 10) was observed with an average depth of 3.2m. A large water-filled hollow, approximately 25m in diamter, was located between the features and Lowca Beck, and probably represents the settled infill of the clay extraction pit.

5.2.13 ***Site 102, Track and Gatepost:*** north-west of the revetment wall for the millrace and weir at Lowca Beck (Sites **75-76**) were the remains of a disused trackway (Fig 4), possibly for Blacketholme Gate Farm. Parallel banks, 16m apart, lead from the area above the millrace north, towards a cement platform along the length of the dismantled railway. This would likely have been an early crossing point for access to the fields below the railway. The western bank appears denuded and spread, measuring 0.3m high with a width of 4m and an observable length of 16m. The eastern bank remains apparantly stable with a full height of 0.9m and maximum width of 6m. From the north, this eastern bank runs 18m before turning north-east, parallel with the southern field boundary. The northern-most stone gatepost remains erect (Plate 11).

6. WATCHING BRIEF RESULTS

6.1 INTRODUCTION

6.1.1 The watching brief was undertaken during the course of groundworks not covered by the evaluation exercise, in areas predominantly where there was topsoil strip for the scheme. No separation of topsoil and subsoil was made by the plant during the course of the topsoil strip, which made it difficult to characterise the individual layers. Various plant was used during the process of the topsoil strip. Mechanical excavators, equipped with toothed buckets, regularly machined a strip down the long axis of a field, and bulldozers were then utilised to strip the remaining soil and sculpt and consolidate it into bunds. Though this method allowed for rapid machining of large areas, it did have the effect of making conditions poor for the identification of archaeologically significant remains (Plate 12). On occasion all stripping was undertaken by bulldozers, and, in this instance such as Fields 1 and 2, ground conditions were such that no features could be identified.

6.1.2 The scheme was separated into 35 fields (Figs 2a-2c), and a summary table of results by field is provided (*Appendix 5*, below); the significant results are discussed in detail (*6.2*, below). Field drains were uncovered in most fields along the scheme. The drains were constructed in various forms: stone-lined, rubble-filled and clay-lined. All were invariably aligned down towards Lowca Beck.

6.2 RESULTS

6.2.1 ***Field 3:*** a probable mine adit, comprising a roughly rectangular cut, 5m long by 2.2m wide, was identified against a steeply-sloping bank (approx 40° incline) above Low Gill. The feature, ***2009***, was densely packed with a bright orange rubble/hardcore fill, ***2010***, which stood out pronouncedly against the blue-grey clay natural geology.

6.2.2 ***Field 10:*** at the south-west corner of Field 10, a deep circular depression, ***2105***, measuring 5m in diameter, and identified as Site **G91** (Bell Pit) in the archaeological design (*ibid*), was recorded. The total depth of the feature was not measured, due to safety constraints, although it was in excess of 1.2m. The eastern quarter was excavated by machine. A dark, humic layer of topsoil (***2033***), approximately 0.15m deep at the surface of the cut, and expanding to approximately 0.3m towards the excavated limit at the base, was stripped with a 7-tonne machine equipped with a toothless bucket working under archaeological supervision. This soil was derived primarily from rotten vegetation mixed with some slumped material. No finds were retrieved from this deposit. Immediately to the north-west of the shaft, an ovoid layer of redeposited natural was uncovered, apparently represent the material excavated from the bell pit. This layer (***2034***) measured approximately 0.2m deep by 4.5m wide by 5m along the north-west/south-east axis. The layer was composed of grey-blue sandy-clay, as per the natural geological soils, and

sealed a layer of buried topsoil (***2032***). Even given natural slumping and erosion, the volume of soil within this layer would not account for the full volume of soils removed from the cut. It is conceivable that some spoil was washed away by the adjacent stream, or otherwise removed from the area.

6.2.3 A hollow way, ***2106***, was also examined in this field (see *5.2.10*, above). A 7-tonne excavator with a toothless ditching bucket was used for the topsoil strip of this feature. A mixed loamy soil (***2044***) was excavated from the hollow way to a depth of 0.2m along the edge of slope, and approximately 0.3m at the base of the feature. The silty content of the soil, especially at the base of the feature, may suggest that the hollow way was instead a diversion of the adjacent stream, possibly concurrent with ore extraction activity at the Bell Pit shaft. A single fragment of modern glass was discovered from the mixed soils.

6.2.4 A 1.2m wide by 0.15m deep ditch, ***2029***, aligned north-west/south-east was uncovered by bulldozers in this field; as such, the course of the feature could only be traced for 5m across the spread before it became too indistinct due to the quality of the strip. The fill of the feature (***2030***) was a mottled orange-brown sandy-soil. It is likely that this feature represents a sunken or depressed trackway, or the remains of a relict field boundary.

6.2.5 ***Field 13:*** approximately 12 furrows were identified in this field, though again due to the quality of the strip performed by the bulldozers and excavated with toothed buckets, the full extent of the ridge and furrow system could not be accurately recorded. All were aligned roughly west to east and spaced at intervals of approximately 5m.

6.2.6 ***Field 16:*** during the topsoil strip, the area of the millrace was heavily graded up from Lowca Beck; the majority of the feature where it passed through the easement, had been destroyed. Where it was visible, the cut, ***2103***, measured approximately 0.9m wide with an average estimated depth of 0.3m. The fill of the millrace, ***2104***, was largely slumped topsoil material with a silty-sand content towards the base.

6.2.7 ***Field 26:*** machining in the vicinity of Barf's Quarry uncovered the remains of a rectangular cement block-constructed structure, which measured 1.6m wide by 3.1m long. Using a mechanical excavator with toothless bucket, the fill of the structure was excavated down 0.5m to reveal a roughly poured concrete floor. The structure survived to two courses of block. Within the fill was various modern demolition debris. The size and construction of the structure suggested that it was either associated with the dismantled railway, over which the structure is situated, possibly a signal box, or operations at Barfs Quarry.

6.2.8 ***Field 35:*** the listed milestone at Lillyhall (Site **123** (HA 2005)) was carefully hand-excavated under archaeological supervision and removed to secure storage, awaiting reinstatement at the end of the road improvements. The limestone milestone (***2011***) stood to 0.8m above ground level, and was buried another 0.6m, making the full height 1.4m. Within the fill of the resulting hole modern glass and ceramic were recovered, suggesting that the milestone was not *in situ* and had been moved to this location, probably during previous roadworks along the A595. A shaped rectangular padding stone (0.3m x 0.2m

x 0.1m) was uncovered from the base of the hole and would likely have acted as a support to prevent the heavy milestone sinking into the surrounding clay and rubble made-ground (***2002*** and ***2003***).

7. THE FINDS

7.1 INTRODUCTION

7.1.1 In all, 345 fragments of artefacts were recovered during the investigation, coming from a wide range of contexts. Of these 298 fragments were pottery, 11 glass, one iron, nine ceramic building material, 22 clay tobacco pipe and four of industrial debris. The full archive listing of finds is produced below (*Appendix 6*).

7.2 RESULTS

7.2.1 The pottery assemblage was relatively large and, although the condition of individual fragments varied considerably, few fragments were in excess of 50mm in maximum dimension. A few of the fragments were discoloured, refired, or frost-spalled, suggesting that some of the material might have reached its place of deposition via midden-spreading.

7.2.2 There is a small group of 11 fragments of medieval pottery, from nine contexts (***1014, 1021, 1024, 1031, 1034, 1036, 1076, 1527,*** and ***1623***), of which only ***1021*** (topsoil) and ***1024*** (fill of furrow ***1025***) produced more than one fragment. All of the fragments are small, but only one is badly abraded. Several fabrics are represented, spanning much of the medieval period, but probably all but one can be placed within the range late twelfth – fourteenth century.

7.2.3 Most of the pottery assemblage can be dated to the late eighteenth century or later, comprising a range of kitchenwares (mainly black-glazed redwares) and fine tablewares, for instance creamware and pearlware plates, typical of the late eighteenth and early nineteenth centuries, with a large group of under-glaze transfer-printed white earthenwares extending the date range to the present day. Small amounts of tin-glazed wares (from ***1524*** and ***1505*** (both topsoil)) and white salt-glazed stonewares (from ***1006*** and ***1014*** (both topsoil)) might suggest that deposition began a little earlier, perhaps in the early to mid-eighteenth century. This assertion can be supported by the presence of a single fragment of an earlier eighteenth century press-moulded dish (***1014***). Although they lack any diagnostic features to aid dating, there are also several fragments of thin-walled, hard-fired blackwares that could, at their earliest, date to the later seventeenth century, but are again most likely to be of earlier eighteenth century date.

7.2.4 The range of later eighteenth century tablewares seems to suggest that the pottery derived from moderately well-to-do households, and the presence of a small group of porcelain teawares, probably of Chinese or Japanese origin, is of interest in this, such vessels being luxury items, reaching Britain through the eighteenth century tea trade.

7.2.5 None of the objects in the other material categories are of particular interest. A single fragment from the neck of an eighteenth century wine bottle from ***1536***

(topsoil) adds weight to the dating evidence gained from the pottery, and a single, possibly late seventeenth century clay tobacco pipe bowl from ***1541*** (fill of pit ***1539***) seems to add weight to the suggestion that activity in the area of this feature might well have started in the early part of the eighteenth century. The single fragment of iron, from ***1073*** (topsoil) is part of the blade and tang or a scale-tang knife, probably of a similar date, although it cannot be dated with more precision.

8. CONCLUSION

8.1 PREVIOUS WORK

8.1.1 The evaluation works carried out prior to this phase of work (HA 2005; Hyder Consulting 2005; ArchaeoPhysica 2006) highlighted the archaeological potential of the land crossed by the scheme. It was originally believed that there was a high potential for Roman features and material to the north of Moresby Fort; the evaluation scheme undertaken at this site (Hyder Consulting 2005), however, located only two finds of Roman date, comprising pottery. They were domestic vessels, perhaps suggesting there was some sort of settlement in the vicinity.

8.1.2 The results of this fieldwork did, however, show that the targeted geophysical anomalies corresponded very closely with the archaeological features revealed within the trial trenches. These features predominantly related to the post-medieval agricultural landscape, consisting mainly of field drainage and field boundaries. The success of this phase of work lead to a geophysical survey being undertaken along the remainder of the scheme (ArchaeoPhysica 2006). This revealed a thin scatter of potential archaeological features noted along the route, mostly relating to previous land divisions, field systems and drainage. In two areas, a greater density of features were located, indicating potential medieval or post-medieval industrial remains, in one case coal mining, and in the other, perhaps, milling.

8.2 CURRENT WORK

8.2.1 No features or finds relating to the prehistoric or Roman periods were identified during the course of the current programme of works. This is not particularly surprising when taking into account the similarities with the results of the previous evaluation works (Hyder Consulting 2005).

8.2.2 Medieval ridge and furrow was positively identified in Trenches 12, 13 and 35, which was not identified by the geophysical survey (ArchaeoPhysica 2006). Further undated ridge and furrow was identified within Trenches 107, 110, 111 and 113, some of which could possibly date to the medieval period. No sign of this ridge and furrow was visible on the geophysical survey (*ibid*).

8.2.3 The majority of sites and finds identified during the current programme of works dated to the post-medieval period. The extent and nature of the known sites relating to extraction (Sites **65**, **66** and **82**) has been augmented by features recorded in evaluation Trenches 3, 4, 73-7, 80, and 152. Sites **65** and **82** were also subjected to topographic survey, which enabled their full extent to be recorded prior to their destruction. Further extraction sites, G**91** and **93**, were also subjected to topographic survey prior to their destruction. Site G**91** was further investigated during the course of the watching brief. A mine adit was also located in Field 3, during the course of the watching brief.

8.2.4 Trenches 51 and 52 targeted earthworks which were part of sites G**96-99**; no remains associated with the earthworks were identified, although the topographic survey elucidated the pattern of field boundaries and trackways present in the area. Topographic survey at site **102** recorded a track, whilst the various components of Moresby Mill (Sites **75** and **76**) were also recorded by topographic survey. Further post-medieval sites were revealed during the course of the watching brief, comprising two possible hollow ways in Field 10, ridge and furrow in Field 13, and a possible signal box in Field 26.

8.2.5 The work has highlighted the relative dearth of significant archaeological remains within the immediate vicinity of the scheme; this mirrors the situation observed by the earlier phase of evaluation trenching at the southern end of the scheme (Hyder Consulting 2005). This runs somewhat contrary to the potential highlighted in the ES, but appears to be genuine, rather than a function of uneven preservation. The earliest activity identified by the work was medieval farming, evidenced by furrows, but this was only identified in a few areas and it remains uncertain how widespread this activity might have been.

8.2.6 During the post-medieval period the majority of the land take for the scheme appears to have given over to agriculture, as was shown by the large numbers of land drains identified, initially by geophysical survey (ArchaeoPhysica 2005 and 2006), and later verified by the evaluation trenching. The only major exception to this appears to have been the few sites encountered which were associated with extractive industries. Coal and sand extraction both appear to have been important along the route of the scheme, with only Moresby Mill representing any further diversity to the industry previously undertaken.

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10. ILLUSTRATIONS

10.1 FIGURES

Figure 1: Scheme Location Plan

Figure 2a: Location of evaluation trenches (T1-46) and watching brief areas (Fields 1-14)

Figure 2b: Location of evaluation trenches (T35-112) and watching brief areas (Fields 12-25)

Figure 2c: Location of evaluation trenches (T96-130) and watching brief areas (Fields 23-35)

Figure 3: Plan of Trenches 12 and 13, with selected sections

Figure 4: Topographic survey of Sites **75**, **76**, **102** and G**96-99**

Figure 5: Detail of millrace at Site **75**

Figure 6: Topographic Survey of Site **65**, Howgate Pit/ Quarry.

Figure 7: Topographic Survey of Site **82**, Benthow Sand Pit.

Figure 8: Topographic Survey of Sites G**91** and **93**, mine shaft and associated features

10.2 PLATES

Plate 1: Modern material ***1574***, within Trench 1

Plate 2: Pit ***1534***, within Trench 34

Plate 3: Furrow ***1529***, within Trench 35

Plate 4: Pit ***1510***, within Trench 45

Plate 5: Probable former drainage channel at Sites G96-99

Plate 6: Site **75**, Moresby Mill Weir

Plate 7: Site **76**, Moresby Mill Millrace

Plate 8: Site G**91**, Mine shaft

Plate 9: Site G**91**, Feature associated with mine shaft

Plate 10: Site **93**, Lowca Beck Quarry

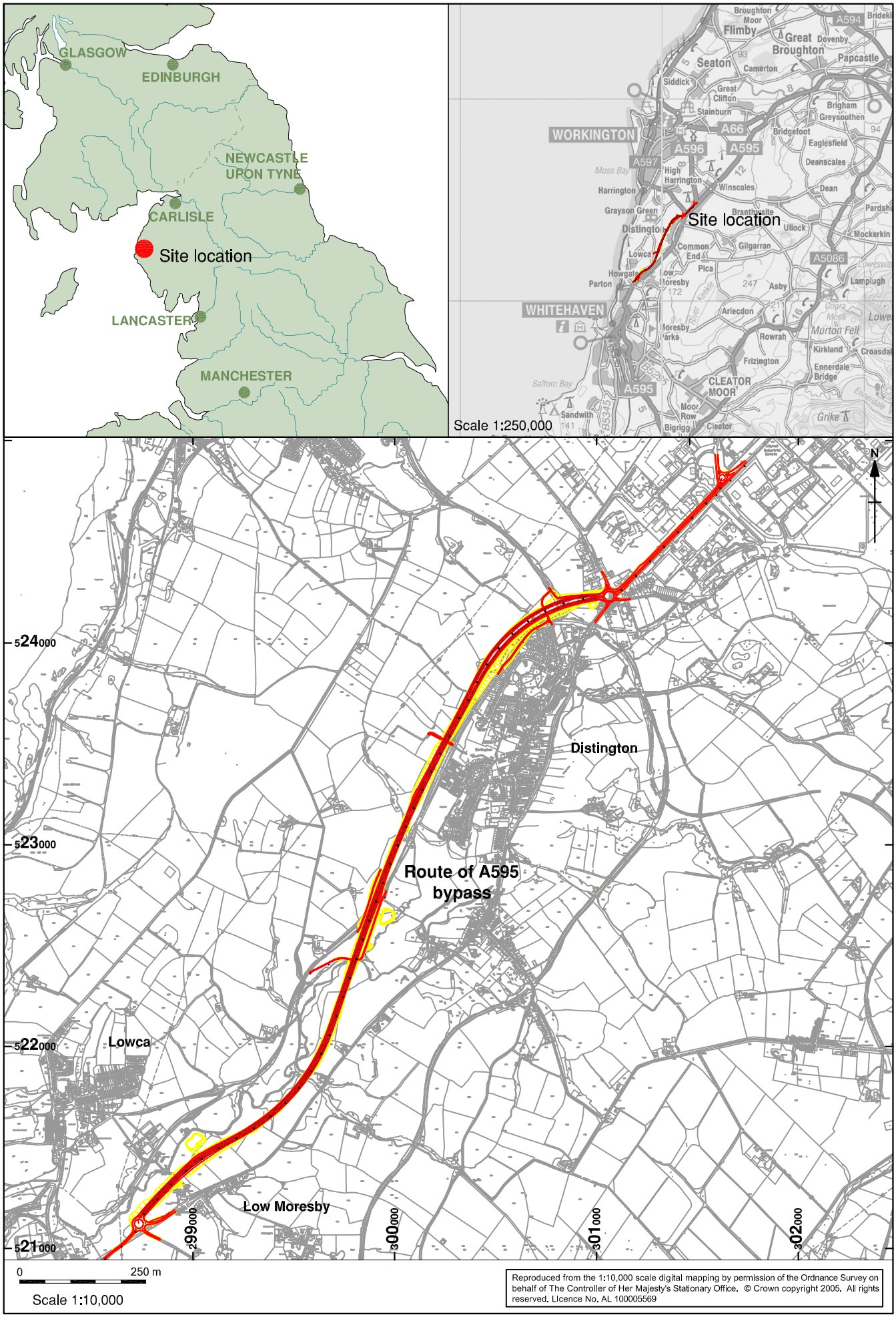

Figure 1: Scheme location plan

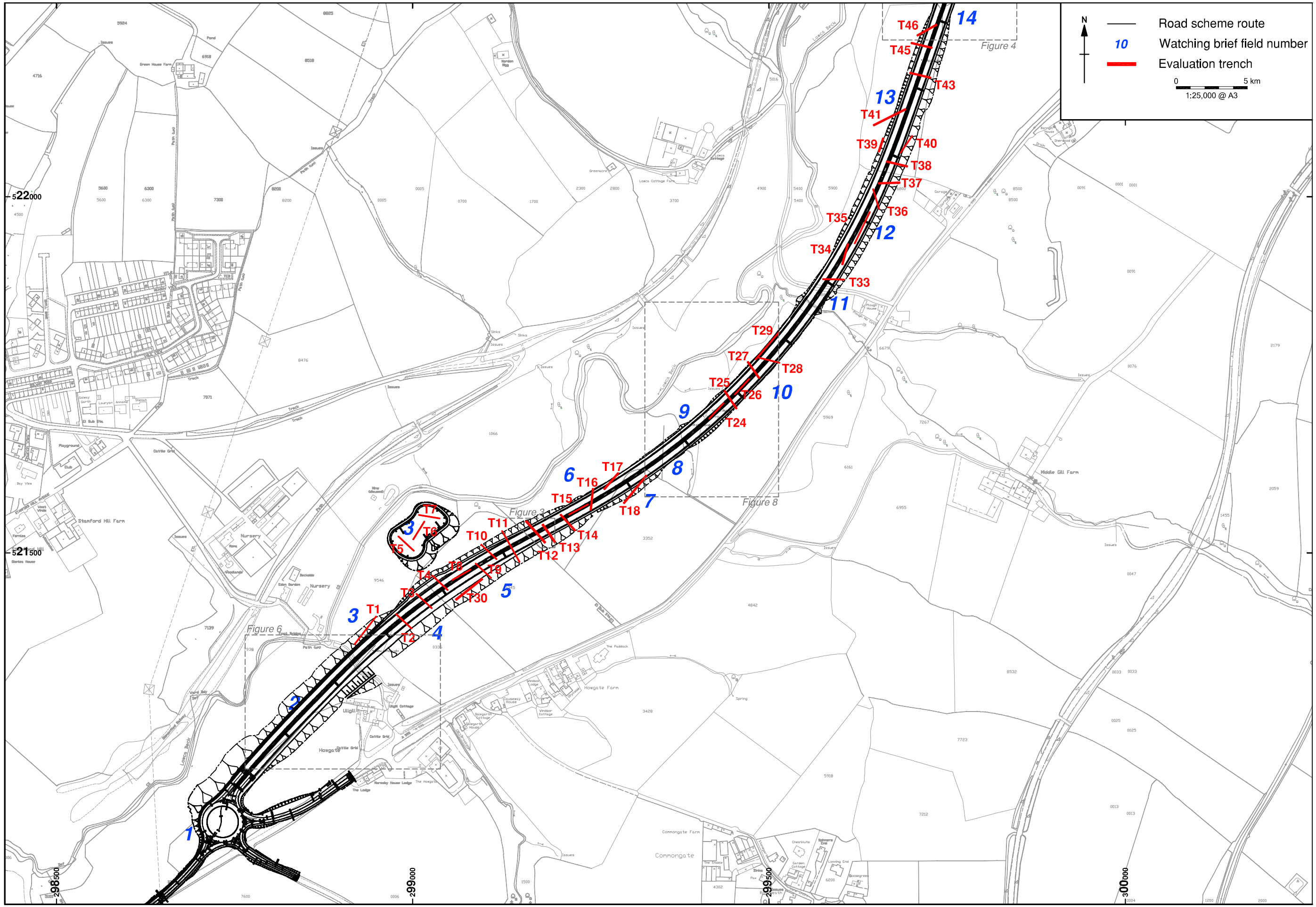

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Figure 2a: Location of evaluation trenches (T1-46) and watching brief areas (Fields 1-14)

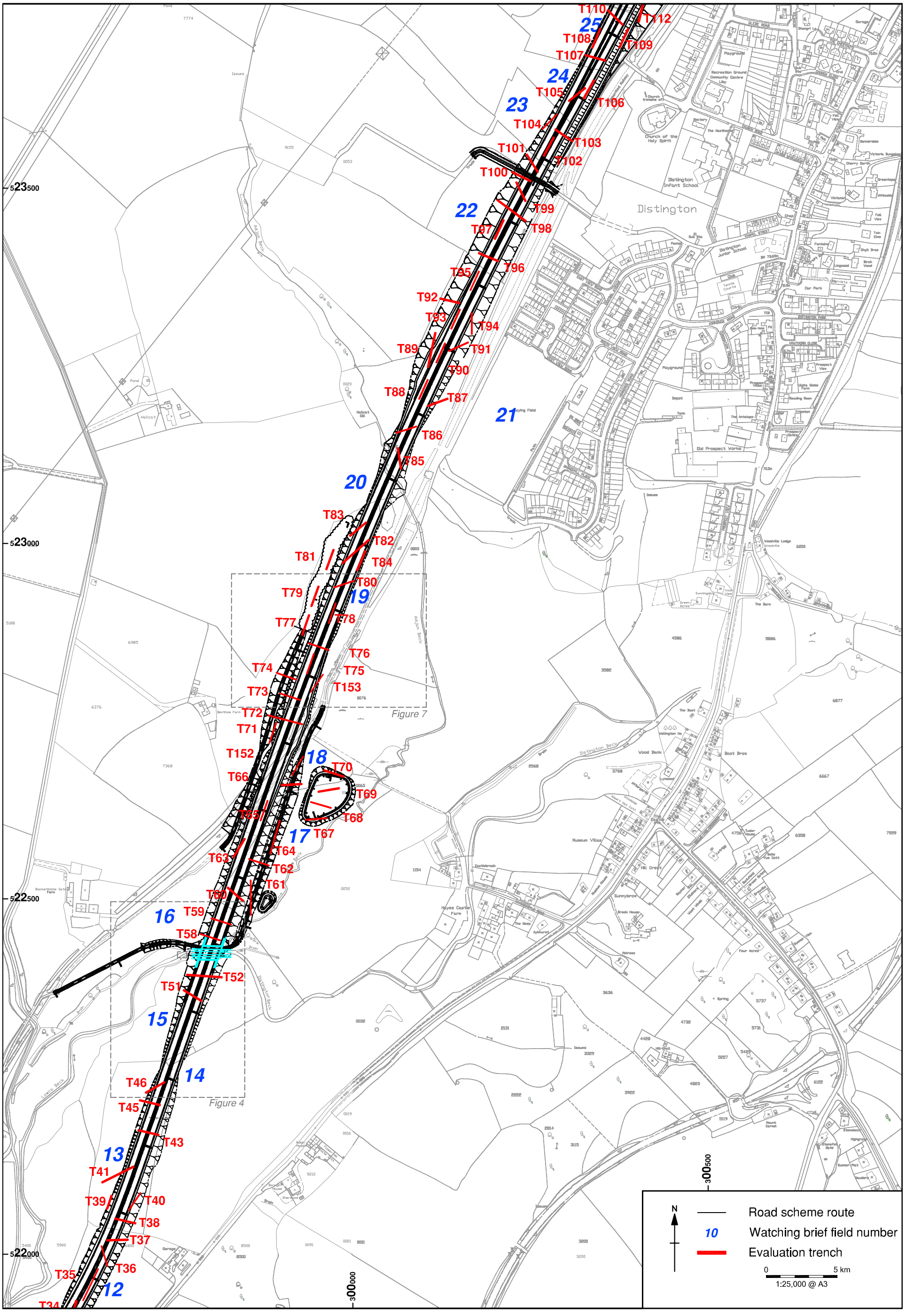

Figure 2b: Location of evaluation trenches (T35-112) and watching brief areas (Fields 12-25)

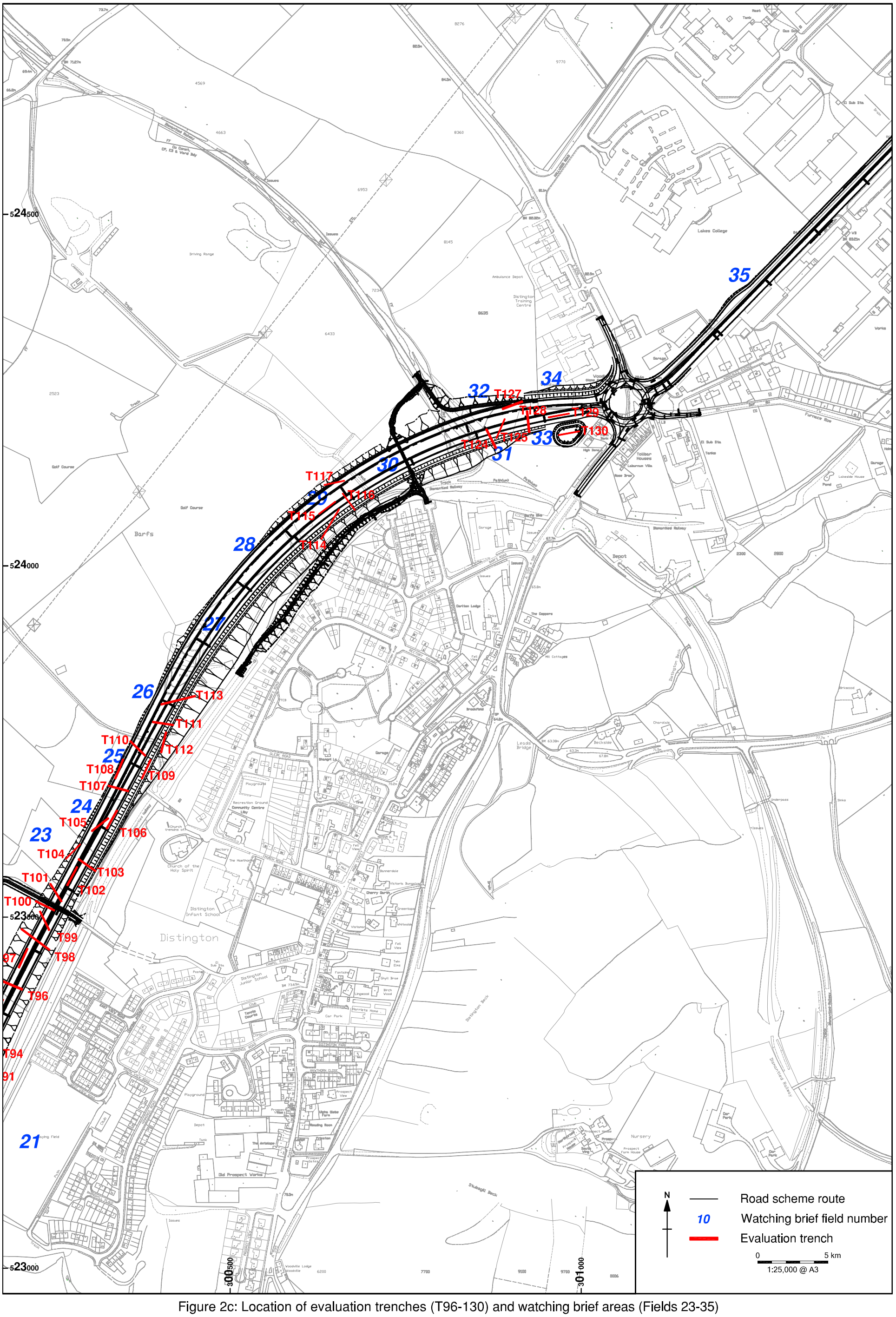

Figure 2c: Location of evaluation trenches (T96-130) and watching brief areas (Fields 23-35)

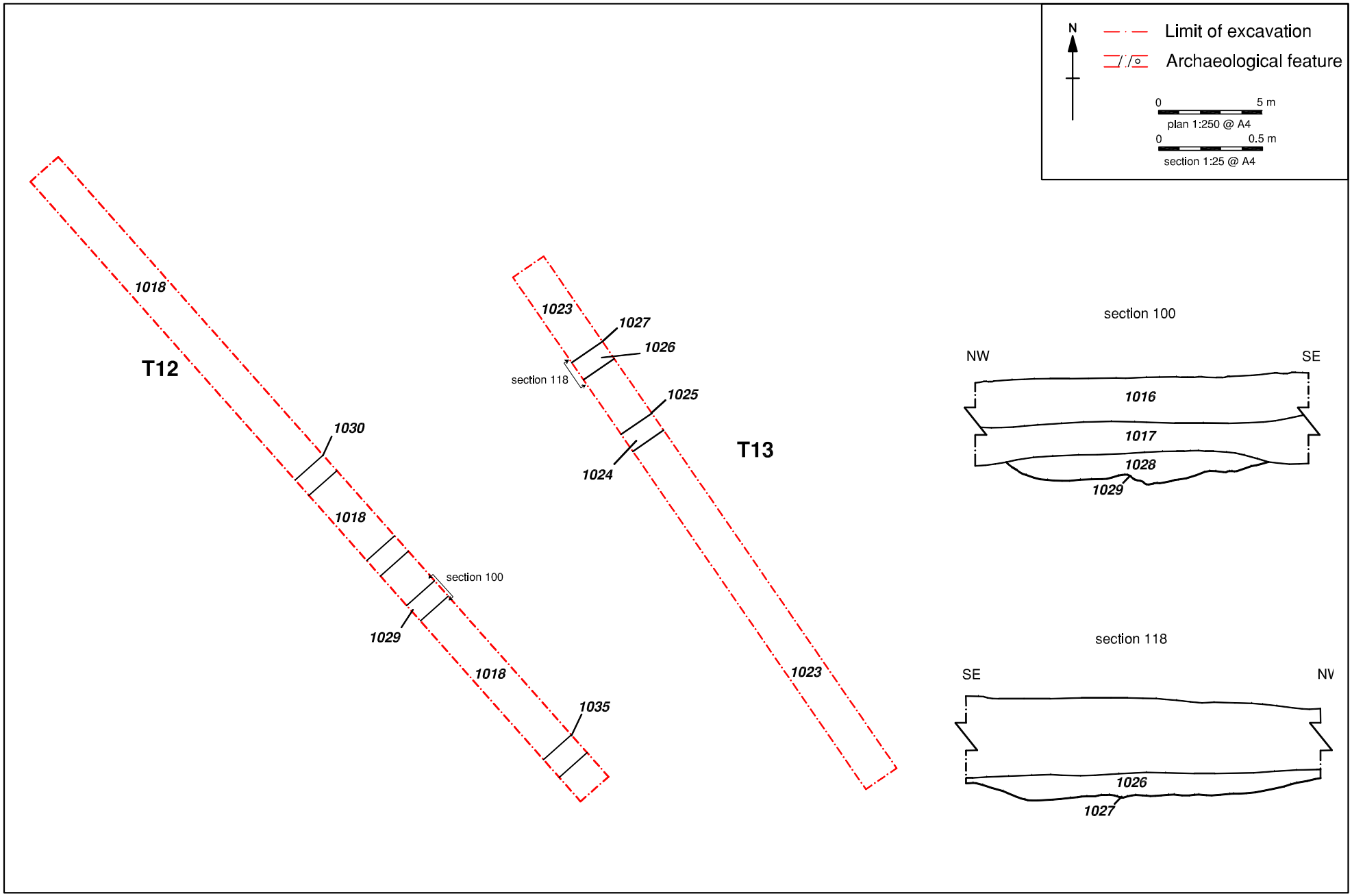

Figure 3: Detail plan of Trenches 12 and 13, with selected sections

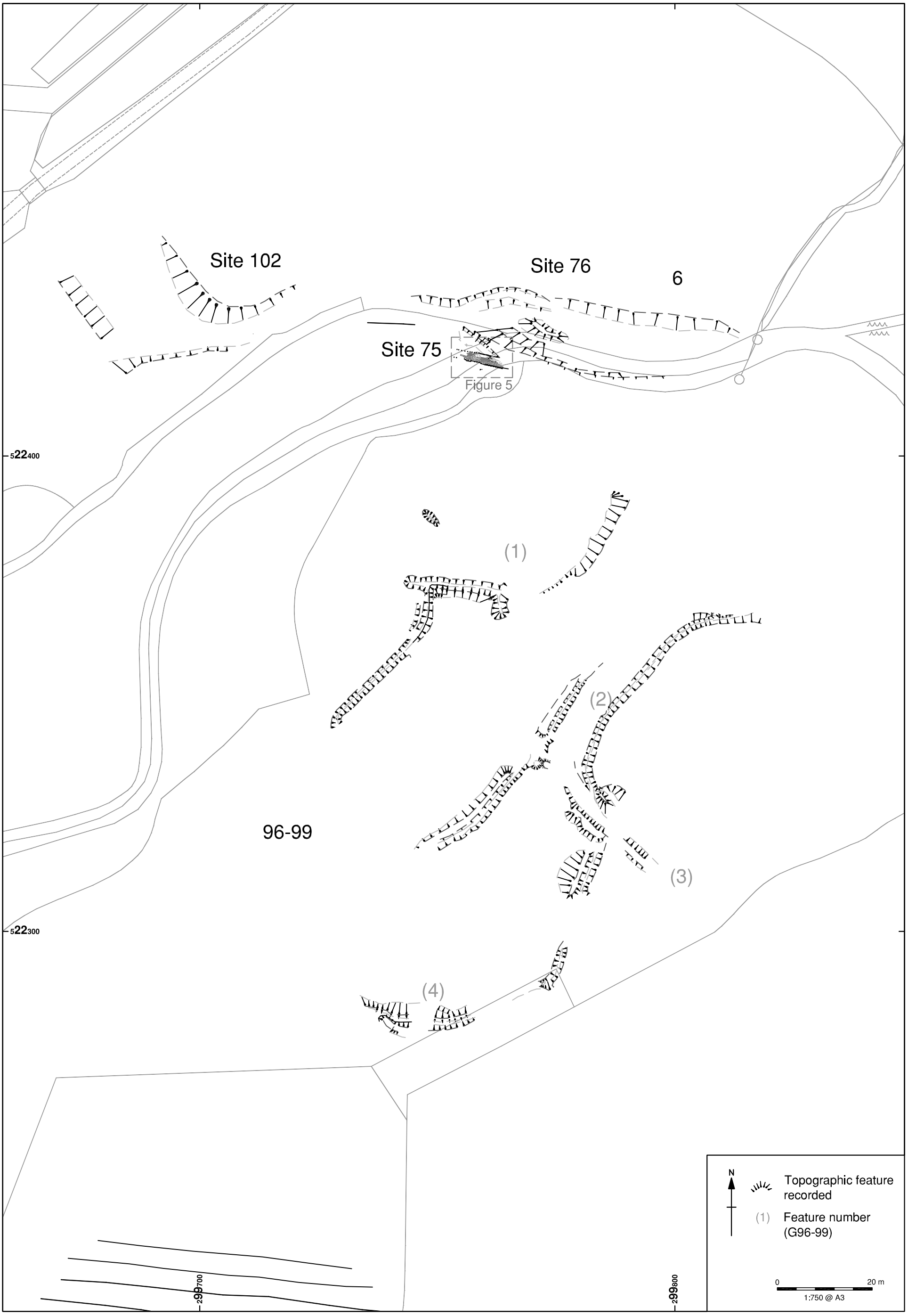

Figure 4: Topographic survey of Sites **75**, **76**, **102** and G**96-99**

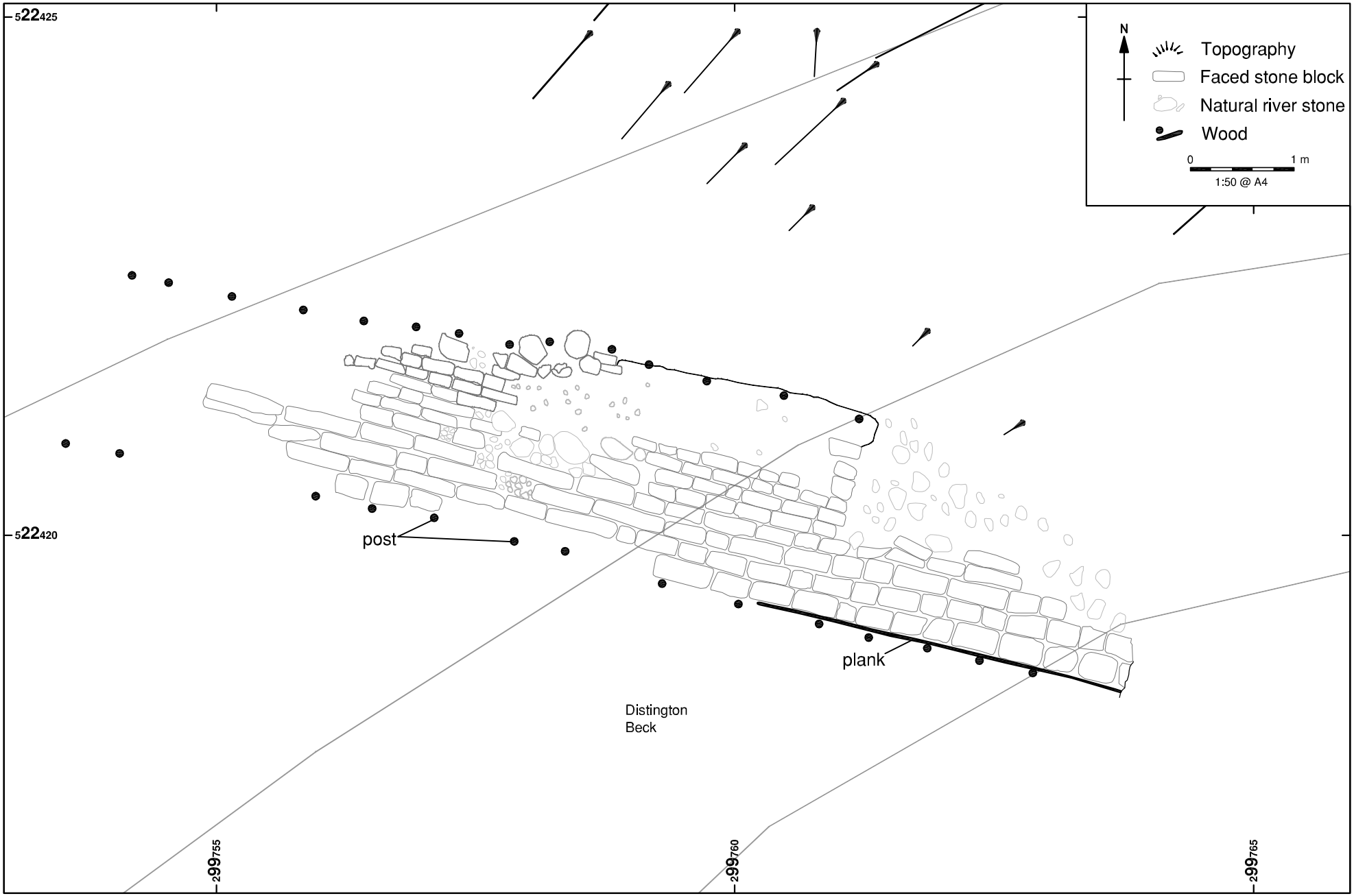

Figure 5: Detail of millrace at Site **75**

Figure 6: Topographic survey of Site **65**, Hargrave Pit / Quarry

Figure 7: Topographic survey of Site **82**, Benthaw Sand Pit

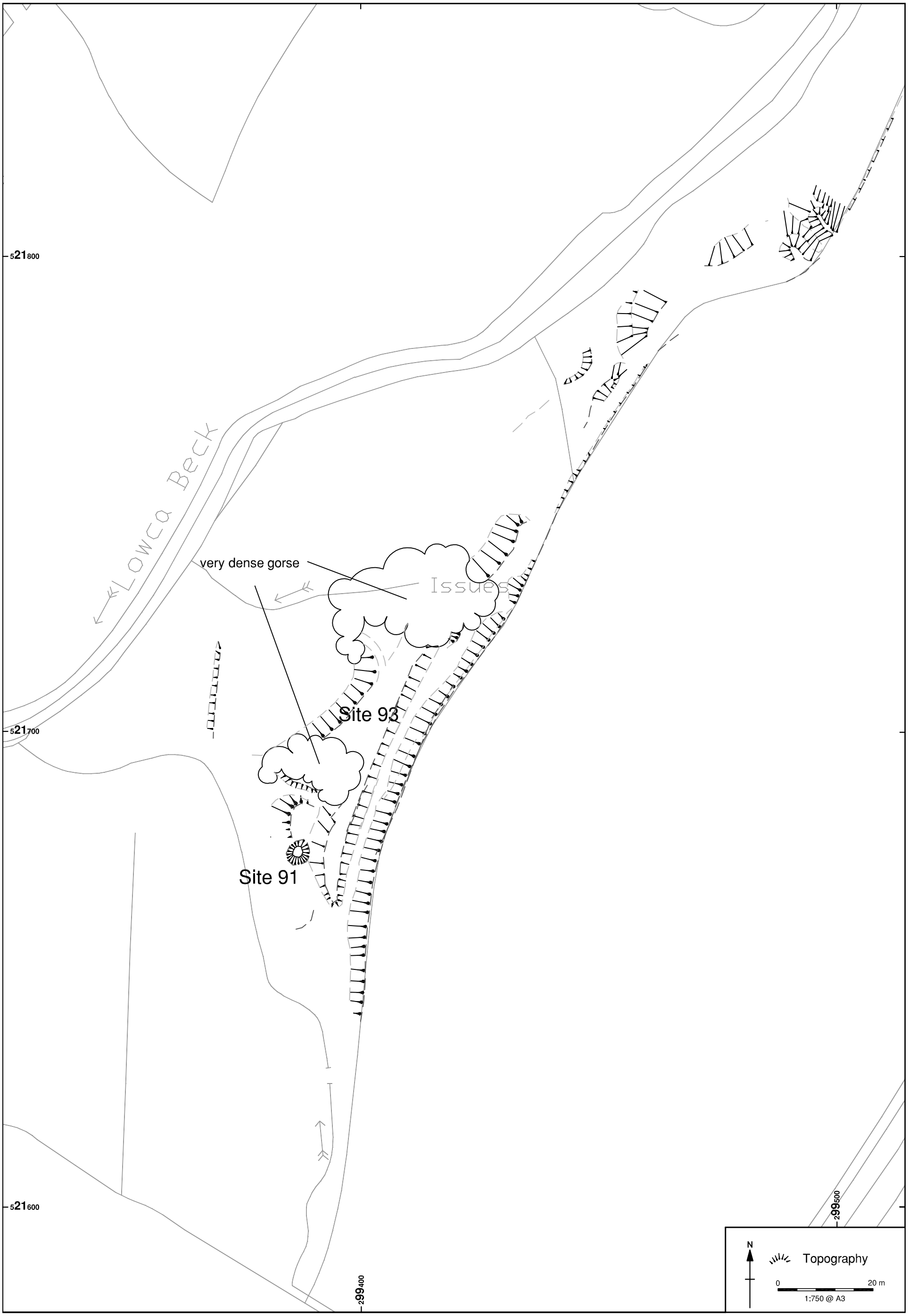

Figure 8: Topographic survey of Sites **91**, and **93**, mine shaft and associated features

Plate 1: Modern material ***1574***, within Trench 1

Plate 2: Pit ***1534***, within Trench 34

Plate 3: Furrow ***1529***, within Trench 35

Plate 4: Pit ***1510***, within Trench 45

Plate 5: Probable former drainage channel at Sites G**96-99**

Plate 6: Site **75**, Moresby Mill Weir

Plate 7: Site **76**, Moresby Mill Millrace

Plate 8: Site G**91**, Mine shaft

Plate 9: Site G**91**, Feature associated with mine shaft

Plate 10: Site **93**, Lowca Beck Quarry

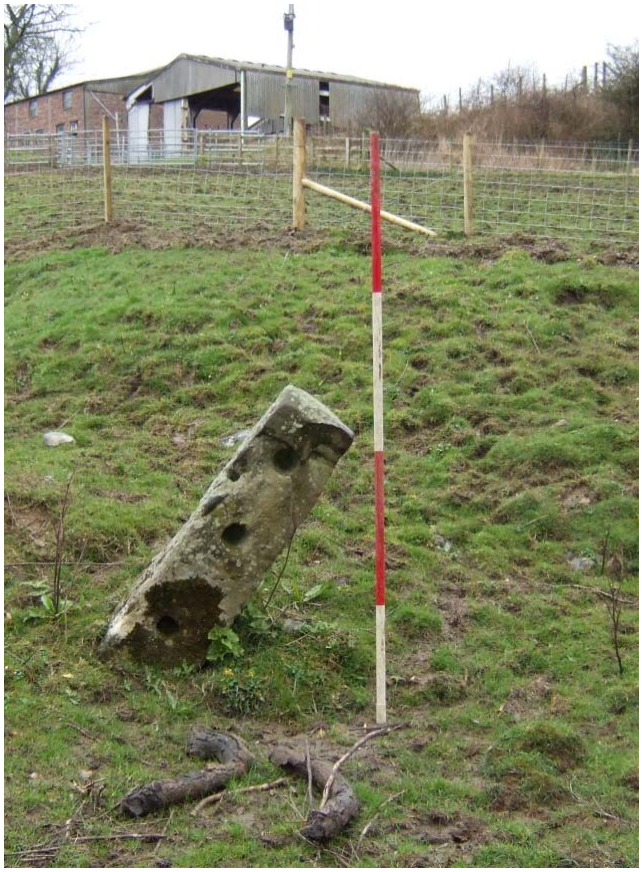

Plate 11: Site **102**, gatepost

Plate 12: General view of stripping conditions during watching brief

Plate 13: Signal Box, located in Field 26

Plate 14: Milestone at Lillyhall (Site **123**) being removed

APPENDIX 1: ARCHAEOLOGICAL DESIGN

1. INTRODUCTION

The following document outlines the outstanding archaeological fieldwork to be carried out in Phase 2 of the A595 Parton to Lillyhall Scheme construction programme in West Cumbria. This design has been prepared in response to the Volume 2 Works Information Section 5, and complies with the guidelines laid down in the Highways Agency's *Design Manual for Roads and Bridges* volume 10, the Institute of Field Archaeologists' (IFA) *Standard and Guidance for Archaeological Evaluations* (1999), the IFA *Standard and Guidance for Archaeological Excavations* (1999) and the IFA *Standard and Guidance for Archaeological Watching Briefs* (1999).

2. SUMMARY OF PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

A limited amount of archaeological evaluation work has been carried out to assess the impact of the Parton to Lillyhall scheme on cultural heritage. These works comprise a DMRB Stage 2 desk based assessment and walkover survey from public rights of way (Capita 1994), updated in 2002 for the draft Stage 3 ESSR (Capita 2002).

The Stage 3 was updated with a more detailed Oxford Archaeology North (OAN) 'level 1' survey of the study area (OAN 2003). A watching brief was maintained during the opening and mechanical excavation of a series of geotechnical test pits and trial trenches along the line of the proposed route in May/June 2003.

All the above is summarised in Volume 1 and detailed in Volume 2 of the 2005 Environmental Statement (Highways Agency 2005). Subsequent to publication of the Environmental Statement, a programme of archaeological evaluation was undertaken at the southern end of the proposed A595 Parton-Lillyhall Road Improvement Scheme, West Cumbria. Oxford Archaeology North undertook evaluation of the area, including geophysical survey and trial trenching to target an area identified from the ES as being of high archaeological potential. The evaluation area was positioned close to Moresby Roman Fort (SM 277) (on the west side), and the possible route of the Roman road (on the east side). It was, therefore, postulated that the area between the two might contain evidence of a Roman settlement associated with the fort. The intention was to assess the effectiveness of such a programme of archaeological evaluation for the remainder of the road scheme. The results of the fieldwork showed the targeted geophysical anomalies corresponded very closely with archaeological features revealed within the trial trenches. Most of the features relate to the post-medieval agricultural landscape, consisting mainly of field drainage and field boundaries. It was anticipated that finds of Roman date would be recovered during the trial trenching, given the proximity of Moresby Roman fort, and the route of the Roman road lying close to the A595. However, only two finds of Roman date were retrieved, consisting of pottery fragments. As domestic vessels, they do, perhaps, lend some credence to the suggestion of a nearby settlement. The report on the work forms an addendum to the technical chapter of an Environmental Statement (ES) submitted in 2005 (Highways Agency 2005).

Subsequent to the above, geophysical survey of the remaining available areas of the route was carried out in July/August 2006 (ArchaeoPhysica 2006). A thin scatter of archaeological features was noted along the route in the geophysical data and most relate to previous land divisions, field systems and drainage. In two areas a greater density of features (in the data and from field observation) were located, indicating potential medieval or post-medieval industrial remains, in one case coal mining and in the other, perhaps, milling.

3. ARCHAEOLOGICAL POTENTIAL

Archaeological potential is detailed in the Environmental Statement and summarised below. The desk-based assessment identified a relatively large number of sites of archaeological interest in the vicinity of the development area, but only a few are directly affected as shown

in Figures 3251 to 3264. The following sites would appear to be within the footprint of the proposed route: **02, 06, 17, 19, 20, 52, 58, 59, 65, 75, 76, 82, 86, 93, 102** and **123**.

- ***Sites 02, 06, 19 and 20:*** the first dismantled railway line (Site **02**) and its associated trackway (Site **06**) will be affected immediately to the east of Benthow Farm and possibly for some distance to the north and south where the proposed route crosses at an acute angle. This section of the railway will be completely destroyed by the road, whereas the trackway will remain and its surroundings will be landscaped. In addition, it is proposed that the bridge (Site **19**) be demolished and the cutting infilled to accommodate a new cycleway link. The second dismantled railway line (Site **20**) will be affected immediately to the west of the junction on the north side of Distington, immediately to the south-west of the bypass and rejoining the current A595 route, where a section will be destroyed by the groundworks. The cycleway that runs along the remains of the railway will be diverted and will cross the road further south.

- ***Sites 52 and 82:*** Benthow sand pit (Site **82**), directly to the east of Benthow Farm, lies directly under the footprint of the proposed route and will be destroyed. The quern stone (Site **52**) found in the sand pit, which remains on site, will also be affected but this does not lie *insitu* and therefore the impact will be minimal.

- ***Site 58 and 59:*** the probable route of the Roman road and later turnpike (along with the possible survival of the toll bar) will be directly affected at both north and south ends of the proposed development where the bypass will junction on to the current route of the A595. Any remains of either feature are likely to be completely destroyed by the groundworks.

- ***Sites 75 and 76:*** the weir and millrace water management at Moresby/Harrington Mill (Site **47**) is beneath the footprint of the proposed route and ancillary works, and will be destroyed by the cutting or groundworks for the road. The associated landscaping will also directly affect the sites, in particular any waterlogged palaeoenvironmental deposits.

- ***Site 102:*** a track and associated gateposts is likely to be affected by the ancillary works, although the ground works are to be confirmed at a later date.

- ***Sites 17 and 86:*** the waggonway and ponds associated with Barf's Quarry will be affected by the proposed road scheme. The ponds lie directly beneath the footprint of the proposed route and ancillary works, and will be in filled. A section of the wagon way at the southern and eastern end will be destroyed by the groundworks.

- ***Site 93:*** Lowca Beck Quarry at Barngill Bridge will be affected by the landscaping associated with the road. Any waterlogged palaeoenvironmental deposits may be destroyed if the hydrology is affected.

- ***Site 65:*** Pit Field will be crossed by the proposed route and will therefore be directly affected by the groundworks and any landscaping.

- ***Site 123:*** a milestone located to the south of Lillyhall Industrial estate will be affected by the widening of the road, and will require removal and re-siting.

In addition, two other features/sites were recorded during the geophysical survey. In the field to the south of Lowca Beck, a large number of linear earthworks within the bend in the river (**G96-99**) may be interpreted as former stream channels, whilst others have been tentatively interpreted as more artificial due to low magnetic field. These are likely to be filled with stone or have voided interiors. Mining remains are evident on land to the north of Howgate Farm. A shaft (**G91**), a possible horse engine platform and other earthworks lie within the corridor.

4. METHODOLOGY

Details relating to the impacts of the Scheme and the proposed mitigation measures are contained in Volume 2 of the Environmental Statement. The proposed mitigation works, in terms of field investigation, comprise Phase 2 pre-construction evaluation, Phase 2 pre-construction earthwork and/or photographic recording, Phase 2 pre-construction open area

excavation as informed by the pre-construction evaluation and Phase 2 watching brief during the initial stages of construction.

Site No.	**Site Type**	**Impact**	**Proposed Mitigation**
02	Railway Line	Small section will be destroyed by groundworks	Phase 2 Survey and Phase 2 watching brief
06	Railway track associated with (**02**) above	Small section will be destroyed by groundworks	
017	Barfs Quarry Ponds	To be in filled and thereby destroyed	Phase 2 survey and Phase 2 watching brief
019	Railway bridge	Bridge to be demolished and its cutting in filled	Phase 2 survey and Phase 2 watching brief
020	Railway line	Small section will be destroyed by groundworks; cycleway being rerouted	Phase 2 survey and Phase 2 watching brief
052	Benthow quern find	Groundworks will destroy environs of feature, but not *in situ*	Phase 2 watching brief
058	Distington Toll House	Site of feature to be destroyed by groundworks	Phase 2 evaluation
059	Parton Roman Road/turnpike	Underlies most of proposed route and thereby any remains will be destroyed	Phase 2 survey and Phase 2 evaluation
065	Howgate Pit, Quarry	Groundworks and landscaping through field	Phase 2 evaluation
075	Moresby Mill Weir	Groundworks will destroy part of feature and landscaping may affect waterlogged deposits	Phase 2 survey and Phase 2 evaluation
076	Moresby Mill Millrace	Groundworks will destroy part of feature and landscaping may affect waterlogged deposits	Phase 2 survey and Phase 2 evaluation
082	Benthow Sand Pit	Groundworks will destroy feature	Phase 2 survey and Phase 2 evaluation
086	Waggonway	Southern and eastern section to be destroyed by the groundworks	Phase 2 survey and Phase 2 evaluation
093	Lowca Beck Quarry	Some landscaping on the edge of the Beck may affect waterlogged deposits	Phase 2 survey
102	Nr. Moresby watermill, track and gateposts	Groundworks will potentially destroy feature	Phase 2 survey
123	Lillyhall	Road to be widened	Phase 2 hand

	Industrial Site Grade II Listed milestone	requiring the re-siting of the milestone	excavation and removal to temporary storage during construction in accordance with Listed Building consent and then re-sting after construction completion
G91	Mine shaft and associated features	Groundworks will destroy feature	Phase 2 survey
G96-99	Earthworks at Lowca Beck	Groundworks will destroy features	Phase 2 survey and Phase 2 evaluation

Table 4-1 Mitigation of known sites

5. FIELDWORK METHODOLOGIES

A programme of targeted fieldwork will be implemented during construction, to mitigate the significant effects of the scheme on the cultural heritage resource.

5.1 GRADE II LISTED MILESTONE, LILLYHALL INDUSTRIAL ESTATE

Listed building consent has been obtained from Allerdale Borough Council for temporary removal and re-siting of the Listed Milestone as identified on drawing number 3264. The following methodology was stated on the consent application.

The milestone will be photographed and surveyed in-situ, then carefully hand-excavated to expose the buried part of the stone to effect removal. The stone will then be lifted, with cloth straps, by mechanical means (hi-ab crane on back of lorry) on to a pallet. This enables easy transportation of the milestone into 'safe storage' within a secure compound, for the duration of the construction period. The milestone will then be replaced within the soft landscaping area of the new scheme (when all construction and landscaping is complete), to the immediate north of its current location. All work will be undertaken in accordance with relevant standard and guidance contained within DMRB, and guidance published by English Heritage, The Institute of Field Archaeologists and the former Royal Commission on the Historical Monuments of England (RCHME).

5.2 PHASE 2 PRE-CONSTRUCTION EARTHWORK AND PHOTOGRAPHIC SURVEY

The sites known to require earthwork and photographic surveys are listed in Table 4-1 above and on drawing nos. 3251 to 3264 (Appendix 1). All earthwork and photographic surveys should be executed in a competent and professional manner, in accordance with standard archaeological procedures and legislation and guidance documents listed in 5.5.1.3 of the Employers Requirements.

As the earthwork surveys in conjunction with photographic surveys will be the main method used to achieve the 'preservation by record' of upstanding monuments affected by the Scheme. The work will accord with the requirements of a Level 3 survey as defined by the former RCHME. The photographic survey will accord with the requirements of a photographic survey as defined by the former RCHME.

5.3 Phase 2 Evaluation Trenching

In order to systematically assess the archaeological potential of the route corridor, a programme of evaluation trenching over the known impacted sites highlighted in the Stage 3 DMRB assessment and 'blank areas' where the geophysical survey information is negative,

will be undertaken. An indicative trench location plan is provided on drawing Nos. 3251 to 3264, however the exact location and combination of trench dimensions may change once detailed geophysical survey information and on-site practicalities are more clearly defined. The site encompasses an area of 25.1ha (excluding landfill areas, quarries and previously evaluated area, but including proposed compound area).

It is proposed that a minimum sample for trenching will be 3% of the available area, equating to approximately 7530m2, with a contingency for an additional 2% in the event of significant archaeological deposits being revealed which require further clarification. A 3% sample equates to the excavation of 136 trenches measuring 30 x 1.85 m and indicative trench locations are shown on drawing nos. 3251 to 3264. The trench location plan is **indicative only** and exact location and combination of trench dimensions may change once detailed geophysical survey, services information and on-site practicalities are supplied to the Archaeological Contractor. Trenches are targeted on sites/anomalies listed in Table 4-1.

Due to environmental constraints any fieldwork must be authorised by the Environmental Clerk of Works prior to commencement. The constraints include a newt exclusion zone where excavation of trenches cannot be undertaken until exclusion lifted. No mechanical excavation is permitted within 50m of any tree identified as being of 'bat potential' on site clearance drawing nos. 0201 to 0215. Any structures to be photographed and recorded may be potential or confirmed bat roosts.

Trench depth will vary depending on depth of overburden but typically will extend to the top of the first archaeological horizon, or to the top of the natural undisturbed substratum, whichever is higher.

All evaluation will be conducted in compliance with the Institute of Field Archaeologists *Standard and Guidance for Archaeological Field Evaluations* (as amended 1994). Arrangements will be made with the local Museum, or other suitable repository, for the deposition of the archive and finds, subject to agreement with the Highways Agency.

All trenches will be surveyed using a Total Station and tied in to the Ordnance Survey grid. Details of permanent ground markers will be supplied by Morrison Construction.

Each trench will be 'topsoil' stripped using a mechanical excavator with 1.8m wide toothless ditching buckets under the direct supervision of an archaeologist. Topsoil will then be stored separately from subsoil/made ground. Spoil will be stored adjacent to, but at a safe distance from trench edges. Machine spoil will be checked for artefacts.

Machining will then continue in spits down to 1m or archaeological deposits, whichever is first encountered. Once archaeological deposits have been exposed further excavation will proceed by hand and the appropriate use of the machine. A sample of archaeological features and deposits will be excavated and recorded sufficient to address the project aims and objectives. In the event of the identification of an exceptional number and complexity of archaeological deposits, sample excavation will be more circumspect and will aim to be minimally intrusive. Excavation will, however, still be sufficient to resolve the principal aims of the evaluation.

A complete drawn record of excavated archaeological features and deposits will be compiled, including both plans and sections, drawn to appropriate scales (1:20 for plans, 1:10 for sections) and with reference to a site grid tied to the OS National Grid references. The OD height of all principal features and levels will be calculated and plans/sections will be annotated with OD heights.

A full photographic record will be maintained using both colour transparencies and black and white negatives (on 35mm film). Digital photographs will be used for record purposes. The photographic record will illustrate both the detail and the general context of the principal features, finds excavated and the Site as a whole.

Finds and environmental samples will be treated in accordance with the Institute of Field Archaeologists *Standard and Guidance for Archaeological Field Evaluations* (as amended 1994).

All artefacts will be retained from excavated contexts, except features or deposits undoubtedly of modern date. In these circumstances sufficient artefacts will only be retained to elucidate the date and function of the feature or deposit. The machine-excavated spoil will be examined for artefacts and these will be retained and recorded. Material of undoubtedly modern date from the spoil heaps will be noted but not retained.

All retained artefacts will, as a minimum, be washed, marked counted weighed and identified. The metal work will be X-rayed and stored in stable conditions as will other fragile and delicate material.

The strategy for sampling archaeological and environmental deposits will be developed in consultation with the Archaeological Contractor's environmental managers. Their advice will be sought and a visit may be arranged to determine the importance that should be attached to the various deposit types.

Where bulk environmental soil samples are collected they will be of 30 litres and taken from sealed archaeological features for plant macro fossils and small animal bones. Where appropriate, column samples for molluscan remains will be taken.

Bulk environmental soil samples will be processed by flotation and scanned to assess the environmental potential of deposits, but will not be fully analysed. The residues and sieved fractions will be recorded and retained with the project archive.

Where appropriate, a specialist geo-archaeologist will visit the Site to comment on and record deposit sequences, such as those within any palaeochannels, to inform an understanding of site formation processes.

Detailed soil micromorphological analysis will not however be undertaken at this stage.

Unless specifically instructed not to do so, all trenches will be back-filled with the arisings and levelled off. No other specialist reinstatement will be undertaken.

6. PHASE 2 MITIGATION

In addition to the suggested mitigation for the identified sites that will be directly impact upon, outlined in Table 4-1, a range of other potential mitigation measures is likely to be needed to deal with further archaeological constraints discovered by the scheme-wide evaluation trenching outlined above in Section 5.2. The type of specific mitigation appropriate will be defined by the evaluation, and the range will include, but is not exclusive to, the following options:

- ***Preservation in situ:*** where possible, any archaeological sites identified during the scheme-wide evaluation trenching will be preserved *in situ*. Whilst it is recognised that this option will not be appropriate for sites or parts of sites directly on the proposed route, it may, for example, be possible to redesign areas of embankment and/or landscaping to preserve *in situ*. In addition, some areas of specific sites subject to other mitigation measures may be suitable for preservation *in situ*.

- ***Extensive excavation:*** specific sites identified by the scheme-wide evaluation may need to be extensively excavated. If the initial evaluation work is not sufficient to define a set of objectives for the excavation, then further evaluation work may be necessary. Once the basic parameters of the site (date, character, extent, complexity etc) had been established, a series of site-specific objectives would be outlined, targeted on optimal areas for recovery of archaeological information. The aim would be to answer specific research questions (defined by reference to the ongoing Regional Research Framework) rather than data gathering for the sake of it.

- ***Limited excavation:*** specific features within evaluation trenches and/or small-scale sites identified may need to be subject to limited excavation in order to clarify further the potential of such sites. Whilst it is possible that sufficient archaeological work could be undertaken to complete what is required, it is possible that sites of this nature may necessitate further archaeological works, thereby becoming extensive excavations.

- ***Strip and Record:*** some sites identified by the scheme-wide evaluation process may be suitable for mitigation by watching brief, whereby a site is stripped with machines fitted with toothless ditching buckets working under constant archaeological supervision and targeted/limited sample excavation is then undertaken of identified features. Again, it is possible that sites of this nature could require further archaeological works, thereby becoming limited or extensive excavations.

Watching Brief: for all other areas where no other type of mitigation has been identified, observation will be maintained of the main contractor's plant during topsoil stripping and storage (including access tracks, compounds, retention ponds and borrow pits), drainage works, ground modelling (including the construction and grading of embankments and cuttings) and tree planting. Again, it is possible that sites identified by this process could require further archaeological works, but in most cases recording can be undertaken with minimal delay to the construction programme.

7. FURTHER ARCHAEOLOGICAL INVESTIGATIONS

Following the completion of any of the Identified Archaeological Works set out in Sections 3 and 4 above, the results may indicate that further investigations are required to meet the aims of the archaeological work and investigate 'Expected' or 'Discovered' Archaeological Sites. This extra work may take the form of limited excavations following trial trenching, extensive excavations following trial trenching, limited excavations or additional excavations following the extensive excavations.

'Expected' archaeological remains are defined as being archaeological remains which are known or suspected to exist within the Identified Archaeological Sites above, for which pre-construction mitigation works have already been defined or outlined.

'Discovered' archaeological remains are considered to be archaeological remains which are more significant, complex, extensive, or unexpected than might otherwise be reasonably expected or predicted (based on professionally competent collation, analysis, evaluation and interpretation of all readily available documents and materials relevant to the Scheme), and which would not normally be dealt with as part of a standard watching brief methodology. It is likely that such remains will be identified in areas covered by watching brief only, but it should be noted that they might occur anywhere within or outside the Identified Sites.

If 'Expected' archaeological remains are identified as a result of the Phase 2 evaluation works or if they are exposed as a result of the Phase 2 watching brief (and subsequent archaeological cleaning and planning), the Archaeological Contractor should immediately (and within a maximum of five working days) inform the Project Manager that 'Expected' archaeological remains have been uncovered. If 'discovered' archaeological remains are identified as a result of ground reduction or other construction works, the Main Contractor should cease the stripping of topsoil or ground reduction or ground disturbance in the vicinity of the feature(s) of possible interest and inform the Project Manager in a similar way.

The notification will serve as an 'early warning notice' to the Project Manager, in advance of further work being undertaken. The Project Manager will decide if the archaeological consultees need to be contacted as a result of the 'discovered' archaeological remains and if this proves necessary, the Main Contractor will erect temporary fencing around the feature/area of possible interest and allow the archaeological consultees, or their representatives, access to the Site if it is deemed safe to do so.

All 'Expected' and 'Discovered' archaeological remains will be recorded on a general site plan by means of an instrument survey. Such plans will be to 1:1000 scale (or larger if

necessary to delineate the archaeological remains clearly) and should show, as a minimum, the location of the archaeological remains, the boundaries of the relevant parts of the Site within which the archaeological remains are located, the extent of the areas stripped, the site grid and the chainage at 100m intervals.

As soon as reasonably practicable after identifying any 'Expected/Discovered' archaeological remains (and in any event within five days of such identification), the Main Contractor should submit the plans referred to above to the Project Manager together with a Further Archaeological Design(s) which should include, as a minimum;

- The circumstances of the discovery
- An outline written description of the 'Expected/Discovered' archaeological remains including earthwork plans, geophysical plots, trench plans and sections etc.; and
- Proposals for the further investigation and recording of such 'Expected/Discovered' archaeological remains to mitigate the effect of the works on the 'Expected/Discovered' archaeological remains. The latter should include excavation sampling strategies, environmental sampling strategies and finds recovery and conservation strategies.

All or any works relating to 'Expected/Discovered' archaeological remains will only be undertaken after approval of the Further Archaeological Design(s) and then completed as soon as reasonably possible and in any event, prior to the construction of any works affecting or likely to affect the remains, unless a watching brief is the relevant agreed mitigation measure.

The Archaeological contractor will investigate all 'Expected/Discovered' archaeological remains by hand excavation to such extent as is necessary to confirm their archaeological nature and to evaluate their importance and undertake appropriate detailed recording commensurate with the archaeological standards referred to above.

In order to minimise the risk of delay to the construction works the Archaeological Contractor will be required to put in place a rapid reaction capability, agreed with the Contractors Archaeologist and archaeological consultees, to enable site visits, site assessments, consultation, decision making, documentation and mobilisation to be as efficient and effective as possible. The Archaeological Contractor will provide proposals for liaison procedures to achieve this objective and allow for this within their costs.

The Main Contractor may instruct the Archaeological Contractor to undertake additional currently unforeseen works arising from the Identified Works, Excavations and Strip and Record.

The Main Contractor may instruct the Archaeological Contractor to carry out additional archaeological works as a result of the watching brief undertaken during the construction phase.

The requirement and resources for any Further Archaeological Works will be agreed with the Main Contractor prior to any works commencing.

8. MONITORING

The Project Manager and his/her representatives informed of the progress of the Archaeological Works throughout the duration of the project. During the archaeological fieldwork, this will be through the provision of written weekly reports together with regular site meetings to view the works while they are in progress. During the post-excavation phases, written progress reports will be provided monthly. This monitoring and liaison will also extend to the archaeological 'consultees'.

9. POST-FIELDWORK METHODOLOGIES

An outline MAP2 type assessment will be undertaken to determine a suitable post fieldwork project design. The volume and diversity of the recovered materials, the potential importance of the finds and the resultant publication and archiving requirements will be established.

The outlines of post fieldwork project assessment will ensure that the following requirements are fulfilled:

(a) provision of adequate finance;

(b) adequate level of human and technical resources;

(c) nomination of relevant specialists;

(d) pre-determined levels of analysis;

(e) clearly defined project management structure.

The assessment will result in the production of a project design, which sets out post fieldwork proposals for the approval of the client and to meet the requirements of MAP 2. No post fieldwork analysis will begin until this process has been fully undertaken.

A fully integrated and structured site matrix will be produced such that the site may be accurately and comprehensively phased in addition to other dating evidence. This completed matrix will be incorporated into the final evaluation report.

PUBLICATION AND DISSEMINATION

An archaeological project is incomplete until it has been adequately published. A flexible strategy is required, and the potential scale and scope of an archaeological publication may not become apparent until the post fieldwork period, which will include;

- the production of a research archive; and
- the production of reports for publication.

Adequate resources will be allocated to facilitate these functions. The resources will include provision for reviews of the extent to which the objectives are being met, bearing in mind that the process of synthesis can often lead to a revision of the original stated aims.

Two types of report are required, academic and popular. Academic reports are primarily intended to inform the specialist and professional, while popular reports are intended to make the results of the publicly funded work available to the wider non-specialist community. The Archaeological Contractor will be responsible for preparing and procuring the publication of the Academic Report.

ACADEMIC REPORT(S)

The Archaeological Contractor will produce one or more Academic Report(s) on the results of the archaeological work. The report(s) will describe and explain the results of the work and will normally include the following:

- A list of contents and figures used in the report;
- An explanation of the road Scheme and the reasons for the archaeological project;
- A non-technical summary that explains the main issues in layman's terms;

- A general introduction to the project, including details of the site locations, the planning applicant, the archaeological contractor and the author(s) of the report;
- The aims and objectives of the project;
- The methodology used in the project;
- A description of the historical and archaeological background and context of the sites;
- A description of the geology and topography of the sites and the results of any previous archaeological fieldwork in the vicinity;
- The methods used to investigate the site;
- Specialists reports on the finds (if appropriate) including any significant dating evidence;
- A palaeoenvironmental analysis of the site following consultations with specialist(s)
- A detailed description of the results, with a detailed discussion and interpretation on the reliability of the findings;
- Details of the project timetable with details of the project manager and staff structure;
- Details of the location of the project archive and finds at the time of the compilation of the report, and the proposed date of their eventual deposition;
- Sufficient illustrations to support the text including figures to show the location of the sites in a national, regional and local context, the location of the investigations, detailed figures of the site plans and appropriate sections, and sufficient interpretative drawings to illustrate the main findings, including the effect of the scheme on archaeology; T
- The project brief and specification will be included in the Report as appendices;
- Tabulated lists of contexts and finds, matrices and acknowledgements, a bibliography and a glossary of terms for the non-specialist; and
- Sufficient supporting information to enable an independent judgement to be made regarding the interpretation of the archaeological results;
- Draft Reports will be made available to the Contractor within 12 months of the completion of the archaeological investigation to which it relates;
- The Report(s) will be published in an appropriate outlet conforming to the requirements defined in MAP 2 and in agreement with the Employer's Agent.

ARCHIVE AND FINDS DEPOSITION

All retained artefacts will be cleaned, conserved and packaged in accordance with the requirements and guidelines of the United Kingdom Institute for Conservation's' *Conservation Guidelines No. 2*, the Council for British Archaeology's *First Aid for Finds* (Second Edition, 1987) and the Institute of Field Archaeologists' *Guidelines for Finds Work* (1992). Small finds will be boxed separately from the bulk finds.

Artefacts recovered during the archaeological investigations will be taken away from the site at the end of each working day and will be stored in a secure off-site location.

A resource contingency will be assigned for any unforeseen or extra finds conservation work which may be required on organic or other material which may be liable to deterioration after recovery.

Appropriate local specialists will be approached for artefact analysis.

Should palaeoenvironmental sampling be necessary, appropriate arrangements will be made for this. All sampling (if applicable) should follow the procedures in *A Guide to Sampling Archaeological Deposits for Environmental Analysis* (Murphy and Wiltshire, 1994). Subject to the landowner's consent and subject to the guidelines and requirements of MAP 2, all artefacts recovered from the archaeological evaluation will be deposited with the appropriate approved museums. All recovered artefacts will be fully catalogued, and the material from any one site will constitute one single deposit and will be deposited within two years of the completion of the archaeological works.

Prior to the deposition of the archive, arrangements will be reached between the Museum and the Archaeological Contractor on the following:

- a project number will be obtained and all finds will be marked with this project number;
- all finds packaging, including boxes and bags will be clearly marked with the assigned project number;
- relevant guidelines and requirements of the Museum for the acceptance of finds will be adhered to;
- agreement will be reached with the Museum on a sample size for the deposition of bulk finds; and
- agreement will be reached with the Museum on cost estimates for any special requirements for finds deposition (if appropriate).

The project's archive comprises every record relating to that project, from written records and illustrative material to the retained artefacts. The Archaeological Contractor's project manager will ensure that every element of the archive is kept clean and secure, and that it is stored in a suitable environment.

The archive comprising written, drawn, photographic and electronic media, will be fully catalogued, indexed, cross referenced and checked for archival consistency.

APPENDIX 2: METHOD STATEMENT

1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 The Parton to Lillyhall section is situated on a single carriageway segment of the A595 Trunk Road, on the routes from Cockermouth (via the A66) and Workington, south to Whitehaven. It is proposed to re-route the A595 Trunk Road around and to the west of Distington. The bypass will be located from NX 989 212 to NY 009 241 and will pass through predominantly agricultural land. The work is being done on behalf of the Highways Agency (hereafter the client) and Hyder Consulting (UK) Ltd, as part of the Phase 2 works.

1.1.2 The proposed bypass runs from just south of Ulgill and after the construction of a new junction will continue northwards, west of the present A595 and east of Lowca Beck, along the side of the relatively gentle valley side. It will cross the Distington Beck and pass a small wood, just south-west of Hill Crest and the remains of Hayes Castle. The route will then cross the line of the dismantled railway, east of Benthow Farm and follow the western side of the dismantled railway around Distington before rejoining the A595 at Woodlands, on the junction of the A597 and the A595. The improvements will then be completed where the A595 main road joins the A595 Trunk road to Workington.

1.1.3 A limited amount of archaeological evaluation work has been carried out to assess the impact of the Parton to Lillyhall scheme on cultural heritage. These works comprise a DMRB Stage 2 desk based assessment and walkover survey from public rights of way (Capita 1994), updated in 2002 for the draft Stage 3 ESSR (Capita 2002). The Stage 3 was updated with a more detailed Oxford Archaeology North (OA North) 'level 1' survey of the study area. A watching brief was maintained during the opening and mechanical excavation of a series of geotechnical test pits and trial trenches along the line of the proposed route in May/June 2003. The details are summarised in Volume 1 and detailed in Volume 2 of the 2005 Environmental Statement (Highways Agency 2005).

1.1.4 Subsequent to publication of the Environmental Statement (ES), a programme of archaeological evaluation was undertaken by OA North at the southern end of the proposed A595 Parton-Lillyhall Road Improvement Scheme. The work included geophysical survey and trial trenching, which targeted an area identified from the ES as being of high archaeological potential. The evaluation area was positioned close to Moresby Roman Fort (SM 277) (on the west side), and the possible route of the Roman road (on the east side). The results of the fieldwork showed the targeted geophysical anomalies corresponded very closely with archaeological features revealed within the trial trenches. Most of the features relate to the post-medieval agricultural landscape, consisting mainly of field drainage and field boundaries. It was anticipated that finds of Roman date would be recovered during the trial trenching, given the proximity of Moresby Roman fort, and the route of the Roman road lying close to the A595. However, only two finds of Roman date were retrieved, consisting of pottery fragments. As domestic vessels, they do, perhaps, lend some credence to the suggestion of a nearby settlement. The report on the work forms an addendum to the technical chapter of an ES submitted in 2005 (Highways Agency 2005).

1.1.5 Subsequent to the above, geophysical survey of the remaining available areas of the route was carried out in July/August 2006 (ArchaeoPhysica 2006). A thin scatter of archaeological features was noted along the route in the geophysical data and most relate to previous land divisions, field systems and drainage. In two areas a greater density of features (in the data and from field observation) were located, indicating potential medieval or post-medieval industrial remains, in one case coal mining and in the other, perhaps, milling.

1.1.6 Further information concerning the location, extent, survival and significance of the known archaeological remains on the site, as well as the potential for unknown archaeological remains to survive, is still required. Consequently, the archaeological consultant acting on behalf of the client produced an archaeological design brief setting out the requirements for an

archaeological evaluation, to determine the nature and extent of the below ground survival of archaeological remains within the route corridor of the proposed bypass, and to determine the measures necessary to mitigate the impact of the route development on any remains of archaeological significance. The following method statement has been produced in response to the consultant's archaeological design brief.

1.2 SCOPE OF THE PROJECT

1.2.1 The project involves three aspects of work;

- Milestone and Earthwork, photographic and survey recording
- Evaluation trenching
- Watching brief

1.2.2 In the case of the milestone and the earthwork surveys the aim of the work will be to record the monuments and sites prior to disturbance and used to achieve the preservation by record of the remains. The evaluation exercise will aim to determine, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed road construction. An adequate representative sample of all areas where archaeological remains are potentially threatened will be studied. This includes those areas of archaeological potential identified by the Stage 3 DMRB assessment and the geophysical survey, as well as apparently blank areas, where the archaeological potential remains unknown.

1.2.3 A series of linear trial trenches will be excavated to sample approximately 3% of the route corridor. This will total around 7 530m² of trenches, with a contingency for an additional 2% in the event of significant archaeological deposits being revealed, which require elucidation. The area of trenching equates to 136 trenches each measuring 30m long by 1.85m wide. All deposits and features of archaeological interest identified within those trenches will be investigated and recorded, unless otherwise agreed with the archaeological consultant.

1.2.4 The evaluation will aim to provide a predictive model of surviving archaeological remains detailing zones of relative importance against known development proposals.

1.2.5 A programme of watching briefs may be required at any stage of the works. These provide the mitigation strategy for all other areas where no other type of mitigation has been identified, observation will be maintained of the main contractor's plant during topsoil stripping and storage (including access tracks, compounds, retention ponds and borrow pits), drainage works, ground modelling (including the construction and grading of embankments and cuttings) and tree planting. It is possible that sites identified by this process could require further archaeological works, but in most cases recording can be undertaken with minimal delay to the construction programme.

1.3 METHODOLOGY FOR PROJECT

1.3.1 This method statement is to be read in conjunction with the project health and safety plan, which defines in detail the health and safety measures to be undertaken on site. An initial risk assessment has also been undertaken, with more required for any subsequent phases of work that may become necessary. The methodology for the photographic and earthwork surveys, evaluation trenching and watching brief exercises are detailed below.

1.4 PHOTOGRAPHIC AND EARTHWORK SURVEYS

1.4.1 This is the most detailed level of purely interpretative survey and is equivalent to the former RCHM(E) Level 3 survey. It involves very detailed interpretative hachure draughting of surface features and is intended for output at scales of up to 1:50. Because of the intricacy of detailed draughting it is inappropriate for large scale generalised mapping but instead is

typically applied to the recording of complex earthworks, which involve considerable spatial analysis. Textually the relationship between individual features is contextually assessed and provides for detailed, internal analysis of a complex site. This is undertaken in addition to the description and overall assessment appropriate for the Level 2a survey.

1.4.2 Surveys undertaken at Level 3 from the outset involve the use of similar basic instrument methodologies as the lower level survey, in particular Level 2b, although the draughting is more detailed and analytical. This enhanced level of evaluation survey recording incorporates a relatively large quantity of raw survey data, which can define the extent and form of individual monuments in considerable detail. The raw survey data is typically captured with sufficient density to enable the mapping of the resource appropriate up to 1:250 or reduced scale output and would require extensive field enhancement of the CAD record.

1.4.3 Archaeological features are defined in outline and earthworks are defined in sufficient detail, to show the character and form of individual earthworks. The record incorporates a basic level of textual description of individual features and an overall interpretative assessment of complete site groups. This basic level of survey would typically be undertaken alongside trial excavation work as part of an evaluation ACAO, (Association of County Archaeological Curators 1993).

1.4.4 If a Level 3 survey is produced by upgrading a level 2b survey, then it is typically possible to use manual field survey techniques to enable the graphic enhancement of the more basic survey. An upgraded Level 3 survey is generally depicted on separate layers from the original Level 2b survey to enable subsequent more generalised output at lower scales if required. The design of the Level 3 survey is designed to be enhanced by the provision of contour detail into a Level 4 surface modelled survey. Subject to the requirements of the ACAO, the Level 3 survey can serve as a mitigative record for intermediary graded monuments.

1.5 METHODOLOGY FOR EVALUATION TRENCHING

1.5.1 The evaluation trenches, have been positioned to investigate a combination of geophysical anomalies and 'blank' areas of unknown potential; in the latter case, the positioning has been determined by factors such as slope and aspect.

1.5.2 Access to all areas of the site is to be arranged by the client, who is currently in the process of fencing the area defined by the CPO (Compulsory Purchase Order) boundaries. Work will begin once all considerations including the newt exclusion, trees containing bats and any other possible issues, such as badgers, have been addressed. Trenches will be located for evaluation using Global Positioning System (GPS) techniques, which uses electronic distance measurements along radio frequencies to satellites to enable a fix in Latitude and Longitude, which can be converted mathematically to Ordnance Survey National Grid. As long as differential GPS techniques are employed then it is possible to achieve an accuracy of greater than +/- 1m.

1.5.3 The uppermost modern surface of the evaluation trenches will be removed by a mechanical excavator (fitted with a 1.8m wide toothless ditching bucket) under archaeological supervision to the surface of the first significant archaeological deposit, or the established natural, whichever is reached first. The topsoil will be stored separately to the subsoil/made ground, at a safe distance from the trench edges. If widespread archaeological deposits are encountered further excavation will proceed by hand and the appropriate use of the machine. Thereafter, the trenches will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions.

1.5.4 If necessary the trenches will be excavated to a maximum depth of 1.2m. The evaluation will be undertaken to sufficient depth in order to establish the character of the archaeological remains. In some cases it may be advisable to mechanically investigate a small area within an area of the trench, usually at one end, in order to ensure the natural sequence of deposits is understood. If a depth of greater than 1.2m is required then the excavation will be stepped.

1.5.5 Any investigation of intact archaeological features will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features which appear worthy of preservation *in situ*.

1.5.6 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Digital photographs will be taken for illustrative purposes. Primary records will be available for inspection at all times.

1.5.7 Results of all field investigations will be recorded on *pro-forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:20 for plans and 1:10 for sections), and drawing points tied to the OS National Grid. The levels and resultant Ordnance Datum (OD) of all the main features will be recorded on the drawings.

1.5.8 All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration. All finds from stratified contexts will be retained unless of modern date. The machined spoil will be checked for artefacts. They will subsequently be washed, labelled and recorded. The metalwork will be x-rayed, where appropriate, and stored in stable conditions. Finds will be treated in accordance with the IFA guidelines 'Standard and Guidance for Archaeological Field Evaluations, (1994).

1.5.9 The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner prior to the work taking place. Except for items subject to the Treasure Act, all artefacts found during the course of the project will be donated to an appropriate receiving museum.

1.5.10 Environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from suitable deposits (i.e. the deposits are reasonably well dated and are from contexts the derivation of which can be understood with a degree of confidence). Where such deposits are encountered, an appropriate sampling strategy will be agreed with the consultant.

1.5.11 A suitably qualified specialist will 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 any waterlogged deposits, should they be present.

1.5.12 Advice will also 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 will be undertaken. Faunal remains, collected by hand and sieved, will be assessed and analysed, if appropriate.

1.5.13 Samples will also be collected for technological, pedological and chronological analysis as appropriate. If necessary, access to conservation advice and facilities can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeoecology specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.

1.5.14 Advice from a suitably qualified soil scientist will also be sought as to the whether soil micromorphological study or 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, palaeochannels etc. If so, analysis should be undertaken.

1.5.15 Human remains, are not envisaged during the project but, will be left *in situ*, covered and protected when discovered. No further investigation will normally be permitted beyond that necessary to establish the date and character of the burial, and the archaeological consultant, the County Archaeology Service and the local Coroner must be informed immediately. If removal is essential, it will only take place under appropriate Home Office and environmental health regulations.

1.5.16 Should any trenches need to be left open overnight, the contractor will be informed of their number and location in sufficient time to enable them to fence them before the end of the working day. The trenches will be back-filled using the spoil and levelled off unless instructed to not do so.

1.6 METHODOLOGY FOR WATCHING BRIEF

1.6.1 A programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits during the ground disturbance for areas not covered by the evaluation exercise. These groundworks will be carried out under constant archaeological observation.

1.6.2 The watching brief will comprise archaeological observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified.

1.6.3 Discovery of archaeological remains will require a temporary cessation of the clearance/construction work, to allow OA North archaeologists sufficient time to ascertain the significance of the remains. Provided the remains are not considered to be of major significacnce, they will be recorded as rapidly as possible, to minimise disruption to the work programme.

1.6.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

1.6.5 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to the large-scale digital plan. A photographic record will be undertaken simultaneously.

1.7 FURTHER ARCHAEOLOGICAL INVESTIGATIONS

1.7.1 Dependant on the ongoing results of the evaluation trenching, features or sites of archaeological significance may require mitigation. For the majority of archaeology requiring further work, this will be of an 'Expected' type. The archaeology can be defined as Expected or Discovered.

1.7.2 ***Expected*** archaeological remains are defined as being archaeological remains which are known or suspected to exist within the already Identified Archaeological Sites, for which pre-construction mitigation works have already been defined or outlined.

1.7.3 ***Discovered*** archaeological remains are considered to be archaeological remains which are more significant, complex, extensive, or unexpected than might otherwise be reasonably

expected or predicted (based on professionally competent collation, analysis, evaluation and interpretation of all readily available documents and materials relevant to the Scheme), and which would not normally be dealt with as part of a standard watching brief methodology. It is likely that such remains will be identified in areas covered by watching brief only, but it should be noted that they might occur anywhere within or outside the Identified Sites.

1.7.4 It is anticipated that if significant 'Expected/Discovered' archaeological remains are identified (and in any event within five days of such identification), there will be a need to submit Further Archaeological Design(s) which will include;

- the circumstances of the discovery
- an outline written description of the Expected/Discovered archaeological remains including earthwork plans, geophysical plots, trench plans and sections etc.
- proposals for the further investigation and recording of such Expected/Discovered archaeological remains to mitigate the effect of the works on the Expected/Discovered archaeological remains.

1.7.5 There are five types identified and the appropriate mitigation type will be defined by the evaluation or possibly watching brief works;

- Preservation in situ
- Extensive excavation
- Limited excavation
- Strip and record
- Watching brief

1.7.6 ***Preservation in situ:*** where possible, any archaeological sites identified during the scheme-wide evaluation trenching will be preserved *in situ*. Whilst it is recognised that this option will not be appropriate for sites or parts of sites directly on the proposed route, it may, for example, be possible to redesign areas of embankment and/or landscaping to preserve *in situ*. In addition, some areas of specific sites subject to other mitigation measures may be suitable for preservation *in situ*.

1.7.7 ***Extensive excavation:*** specific sites identified by the scheme-wide evaluation may need to be extensively excavated. If the initial evaluation work is not sufficient to define a set of objectives for the excavation, then further evaluation work may be necessary. Once the basic parameters of the site (date, character, extent, complexity etc) had been established, a series of site-specific objectives would be outlined, targeted on optimal areas for recovery of archaeological information. The aim would be to answer specific research questions (defined by reference to the ongoing Regional Research Framework) rather than data gathering for the sake of it. The methodology for the fieldwork would remain broadly the same as established for the evaluation.

1.7.8 ***Limited excavation:*** specific features within evaluation trenches and/or small-scale sites identified may need to be subject to limited excavation in order to clarify further the potential of such sites. Whilst it is possible that sufficient archaeological work could be undertaken to complete what is required, it is possible that sites of this nature may necessitate further archaeological works, thereby becoming extensive excavations. The methodology for the fieldwork would remain broadly the same as established for the evaluation.

1.7.9 ***Strip and Record:*** some sites identified by the scheme-wide evaluation process may be suitable for mitigation by watching brief, whereby a site is stripped with machines fitted with toothless ditching buckets working under constant archaeological supervision and

targeted/limited sample excavation is then undertaken of identified features. Again, it is possible that sites of this nature could require further archaeological works, thereby becoming limited or extensive excavations. The same principal standards of fieldwork would be applied to any excavation undertaken, as outlined for the evaluation.

1.7.10 ***Watching Brief:*** for all other areas where no other type of mitigation has been identified, observation will be maintained of the main contractor's plant during topsoil stripping and storage (including access tracks, compounds, retention ponds and borrow pits), drainage works, ground modelling (including the construction and grading of embankments and cuttings) and tree planting. Again, it is possible that sites identified by this process could require further archaeological works, but in most cases recording can be undertaken with minimal delay to the construction programme.

2 POST-EXCAVATION AND REPORT PRODUCTION

2.1 ARCHIVE

2.1.1 The results of the evaluation and watching briefs will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects, 2nd edition, 1991*) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.

2.2.1 This archive can be provided in the English Heritage Centre for Archaeology format, both as a printed document and on computer disks as ASCii files (as appropriate). The paper archive will be deposited with the appropriate Cumbria Record Office (Whitehaven) within six months of the completion of the fieldwork. The material archive (artefacts and ecofacts) will be deposited with an appropriate museum following agreement with the client. The museum's requirements for the transfer and storage of finds will be discussed before the project commences. The landowner(s) will be encouraged to transfer the ownership of finds to a local or relevant specialist museum. Details of the landowners are to be provided by the client following appointment. The client and the County Historic Environment Service will be notified of the arrangements made.

2.2 REPORT

2.2.1 The archaeological work will result in an outline MAP 2 type assessment report, which will include as a minimum:

- a site location plan, related to the national grid;
- a front cover/frontispiece which includes the national grid reference of the site;
- the dates on which the fieldwork was undertaken;
- a concise, non-technical summary of the results;
- a fully integrated site matrix;
- an explanation of the project and any agreed variations to the brief, including justification for any analyses not undertaken;
- a descriptive rendition of the physical, historical and archaeological background for the overview of the sites;

- 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;
- 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;
- an outline for the provision of adequate finance, human and technical resources, identifying the relevant specialists to use and the levels of analysis;
- a project design, with proposals for full analysis and publication / dissemination;
- appendices to include the project brief, context list, finds list and any extraneous tables and data.

2.2.2 Copies of the MAP 2 assessment report will be submitted and the associated draft report be made available to the client.

2.2.3 Cumbria HER (Historic Environment Record) is taking part in the pilot study for the Online Access to Index of Archaeological Investigations (OASIS) project. The online OASIS form at http://ads.ahds.ac.uk/project/oasis will therefore also be completed as part of the project.

APPENDIX 3: TRENCH REGISTER

The following table provides a concise description of each trench excavated and a summary of the deposits found within. A detailed description of each context can be found in *Appendix 4,* below.

Trench	Alignment	Dimensions	Description
1	NW/SE	Length: 50m Width: 1.85m Depth: 0.42m	Topsoil ***1570*** A large cut, ***1573***, 38m long, containing modern building material, ***1574***, occupied most of the trench. Two sondages were excavated through this feature to depths of 1.3m and 1.4m; the cut extended beyond these limits. It is believed that this was material deposited here during the construction of the nearby Travelodge. Subsoil ***1571*** Natural ***1572*** No features of archaeological significance were observed.
2	E/W	Length: 30m Width: 1.85m Depth: 0.65m	Topsoil ***1567*** Three north/south aligned land drains were observed within the trench, whilst a fourth was aligned north-west/south-east. Subsoil ***1569*** Natural ***1568*** No features of archaeological significance were observed.
3	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1038*** Coal extraction pit ***1039*** was identified towards western end of the trench, but remained unexcavated. A north/south aligned stone-lined field drain was positioned towards the eastern end of the trench. Natural ***1041*** No features of archaeological significance were observed.
4	E/W	Length: 30m Width: 1.85m Depth: 1.3m	Topsoil ***1559*** Two large coal extraction pits, ***1560*** and ***1562***, were identified within the trench; ***1560*** was 1.3m deep and more than 4.7m wide, whilst ***1562*** was 6m wide and remained unexcavated. Natural ***1564*** No features of archaeological significance were observed.
5	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1046*** Two north-west/south-east aligned ditches, ***1048*** and ***1050***, were observed within this trench. Ditch ***1050*** was 0.6m wide and 0.1m deep, whilst ***1048*** was 0.9m wide and 0.27m deep. Natural ***1051***

6	N/S	Length: 30m Width: 1.85m Depth: 0.9m	Topsoil ***1052*** Subsoil ***1053*** Natural ***1054*** A sondage was excavated to a depth of 0.9m at the northern end of the trench to clarify the natural geology. No features of archaeological interest were observed.
7	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1055*** A gully, ***1057***, measuring 0.5m wide and 0.12m deep, was observed towards the western end of the trench. Natural ***1058***
8	NE/SW	Length: 30m Width: 1.85m Depth: 0.27m	Topsoil ***1557*** Natural ***1558*** No features of archaeological interest were observed.
9	E/W	Length: 30m Width: 1.85m Depth: 0.26m	Topsoil ***1555*** Natural ***1556*** No features of archaeological significance were observed.
10	E/W	Length: 30m Width: 1.85m Depth: 0.28m	Topsoil ***1553*** A field drain was observed running north-east/south-west across the south-eastern corner of the trench. Natural ***1554*** No features of archaeological significance were observed.
11	NW/SE	Length: 50m Width: 1.85m Depth: 0.35m	Topsoil ***1036*** A tree throw was observed projecting from the north-eastern baulk, towards the south-eastern end of the trench. Four parallel land drains ran north-east/south-west across the trench. Natural ***1037*** No features of archaeological significance were observed.
12	E/W	Length: 40m Width: 1.85m Depth: 0.57m	Topsoil ***1016*** Subsoil ***1017*** Five stone-lined land drains were observed running north/south across the trench, one of which, ***1032***, was investigated; it measured 0.32m wide and was greater than 0.13m deep. Four shallow north/south aligned furrows were identified within the trench, three of which, ***1029***, ***1030*** and ***1035***, were investigated. Furrow ***1029*** was 1.26m wide and 0.16m deep, ***1030*** was 1.12m wide and 0.07m deep, whilst ***1035*** was 1.15m wide and 0.16m deep. Furrow ***1030*** was truncated by land drain ***1032***. Natural ***1018***
13	E/W	Length: 30m Width: 1.85m	Topsoil ***1021*** Subsoil ***1022***

		Depth: 0.45m	Two stone-lined field drains were observed towards the eastern end of the trench, whilst two furrows, ***1025*** and ***1027*** were observed further west. Furrow ***1025*** was 0.8m wide and 0.1m deep, and ***1027*** was 1.4m wide and 0.1m deep. Natural ***1023***
14	E/W	Length: 30m Width: 1.85m Depth: 0.35m	Topsoil ***1551*** Two north/south aligned stone-filled land drains were observed within the trench. Natural ***1552*** No features of archaeological significance were observed
15	NE/SW	Length: 30m Width: 1.85m Depth: 0.42m	Topsoil ***1549*** Natural ***1550*** No features of archaeological significance were observed.
16	NE/SW	Length: 30m Width: 1.85m Depth: 0.26	Topsoil ***1014*** Natural ***1015*** No features of archaeological significance were observed.
17	N/S	Length: 30m Width: 1.85m Depth: 0.28m	Topsoil ***1012*** A modern posthole was the only identified feature within the trench. Natural ***1013*** No features of archaeological significance were observed.
18	N/S	Length: 50m Width: 1.85m Depth: 0.3m	Topsoil ***1019*** One field drain was observed running east/west across the centre of the trench Natural ***1020*** No features of archaeological significance were observed.
24	N/S	Length: 30m Width: 1.85m Depth: 0.25m	Topsoil ***1010*** Natural ***1011*** No features of archaeological significance were observed.
25	E/W	Length: 30m Width: 1.85m Depth: 0.30m	Topsoil ***1008*** Natural ***1009*** No features of archaeological significance were observed.
26	N/S	Length: 25m Width: 1.85m Depth: 0.25m	Topsoil ***1004*** A pair of parallel land drains was identified in this trench, running east/west. Natural ***1005*** No features of archaeological significance were

			observed.
27	NNW/SSE	Length: 25m Width: 1.85m Depth: 0.35m	Topsoil ***1002*** Natural ***1003*** No features of archaeological significance were observed.
28	E/W	Length: 25m Width: 1.85m Depth: 0.40m	Topsoil ***1000*** Natural ***1001*** No features of archaeological significance were observed.
29	N/S	Length: 50m Width: 1.85m Depth: 0.85m	Topsoil ***1006*** Natural ***1007*** No features of archaeological significance were observed.
30	N/S	Length: 50m Width: 1.85m Depth: 0.38m	Topsoil ***1565*** Eight land drains, aligned broadly east/west, were observed within the trench, with a further land drain aligned north-west/south-east. Natural ***1566*** No features of archaeological significance were observed.
33	NW/SE	Length: 25m Width: 1.85m Depth: 0.30m	Topsoil ***1533*** Five land drains were identified within this trench, three aligned north-east/south-west, the remaining two aligned north/south. Natural ***1534*** No features of archaeological significance were observed.
34	NW/SE	Length: 30m Width: 1.85m Depth: 0.35m	Topsoil ***1530*** Subsoil ***1531*** Seven land drains were identified within the trench, six of them aligned broadly north-east/south-west, the other aligned east/west. Pit ***1539***, which was truncated by two of the land drains, were observed towards the north-western end of the trench. The pit was 1.2m in diameter and 0.4m deep. Natural ***1532***
35	N/S	Length: 50m Width: 1.85m Depth: 0.53m	Topsoil ***1536*** Seven stone-lined land drains were revealed within this trench, all aligned broadly east/west. Three ditches, ***1527***, ***1528*** and ***1529***, aligned east/west, were also revealed within this trench. Ditch ***1529*** was 0.8m wide and 0.18m deep. Natural ***1537***
36	NW/SE	Length: 50m Width: 1.85m	Topsoil ***1524*** Subsoil ***1525*** A number of land drains were observed in the trench,

		Depth: 0.53m	broadly aligned north-east/south-west. Natural ***1526*** No features of archaeological significance were observed.
37	NE/SW	Length: 30m Width: 1.85m Depth: 0.30m	Topsoil ***1517*** Subsoil ***1518*** Ditch ***1520***, measuring 0.4m wide by 0.45m deep, was identified running east/west across the trench. It truncated the earlier land drain, ***1522***, which was aligned north/south. Natural ***1519*** No features of archaeological significance were observed.
38	NE/SW	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1545*** Natural ***1546*** No features of archaeological significance were observed.
39	NW/SE	Length: 20m Width: 1.85m Depth: 0.60m	Topsoil ***1547*** A single north-east/south-west aligned land drain was identified within this trench. Natural ***1548*** No features of archaeological significance were observed.
40	NE/SW	Length: 30m Width: 1.85m Depth: 0.24m	Topsoil ***1515*** A single north-east/south-west aligned land drain was identified within this trench. Natural ***1516*** No features of archaeological significance were observed.
41	NE/SW	Length: 50m Width: 1.85m Depth: 0.32m	Topsoil ***1512*** Subsoil ***1513*** Two north/south aligned land drains were identified within this trench. Natural ***1514*** No features of archaeological significance were observed.
43	NNE/SSW	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1507*** Subsoil ***1508*** Natural ***1509*** No features of archaeological significance were observed.
45	NE/SW	Length: 30m Width: 1.85m Depth: 0.26m	Topsoil ***1505*** A single pit, ***1511***, measuring 0.4m wide and 0.37m deep, was revealed, with it extending beneath the

			western limit of excavation. Natural ***1506***
46	N/S	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1503*** Natural ***1504*** No features of archaeological significance were observed.
51	NE/SW	Length: 30m Width: 1.85m Depth: 0.52m	Topsoil ***1500*** Subsoil ***1501*** Natural ***1502*** No features of archaeological significance were observed.
52	NE/SW	Length: 50m Width: 1.85m Depth: 1.1m	Topsoil ***1542*** Subsoil ***1543*** A single north/south aligned land drain was identified within this trench. Natural ***1544*** No features of archaeological significance were observed.
58	E/W	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1632*** Subsoil ***1633, 1634*** A single north-east/south-west aligned land drain was identified within this trench. Natural ***1635, 1636*** No features of archaeological significance were observed.
59	NE/SW	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1628*** Subsoil ***1629*** Natural ***1630, 1631*** No features of archaeological significance were observed.
60	E/W	Length: 30m Width: 1.85m Depth: 0.3m	Topsoil ***1089*** Two north/south aligned land drains were observed within the trench. A natural coal deposit was also present. Natural ***1090*** No features of archaeological significance were observed.
61	NW/SE	Length: 50m Width: 1.85m Depth: 0.35m	Topsoil ***1091*** Two north/south aligned land drains were observed within the trench. Natural ***1092*** No features of archaeological significance were observed.

62	WSW/ENE	Length: 30m Width: 1.85m Depth: 0.3m	Topsoil ***1084*** Eight north/south aligned land drains were observed within the trench. Natural ***1085*** No features of archaeological significance were observed.
63	N/S	Length: 30m Width: 1.85m Depth: 0.65m	Topsoil ***1625*** Natural ***1626, 1627*** No features of archaeological significance were observed.
64	NNW/SSE	Length: 50m Width: 1.85m Depth: 0.3m	Topsoil ***1082*** Three north/south aligned land drains were observed within the trench. Natural ***1083*** No features of archaeological significance were observed.
65	NW/SE	Length: 30m Width: 1.85m Depth: 0.85m	Topsoil ***1637*** Subsoil ***1638*** Two north-east/south-west aligned land drains were observed within the trench. Natural ***1639*** No features of archaeological significance were observed.
66	NW/SE	Length: 50m Width: 1.85m Depth: 0.66m	Topsoil ***1062*** Four broadly east/west aligned land drains, ***1065, 1067, 1070*** and ***1072***, were observed within the trench. Drain ***1067*** truncated an earlier coal-rich deposit, ***1066***. Natural ***1063*** No features of archaeological significance were observed.
67	NE/SW	Length: 29.5m Width: 1.85m Depth: 0.25m	Topsoil ***1073*** Numerous parallel plough scars, ***1074***, aligned broadly north-west/south-east were observed within this trench; these remained unexcavated. Natural ***1075*** No features of archaeological significance were observed.
68	E/W	Length: 30m Width: 1.85m Depth: 0.30m	Topsoil ***1078*** A north/south aligned land drain and a parallel feature, ***1081***, were revealed within the trench. It seems most likely that ***1081***, which was 0.4m wide and 0.31m deep, represented a further drain. Natural ***1079*** No features of archaeological significance were observed.

69	NNE/SSW	Length: 30m Width: 1.85m Depth: 0.32m	Topsoil ***1076*** Six land drains were observed within this trench, Natural ***1077*** No features of archaeological significance were observed.
70	NE/SW	Length: 30m Width: 1.85m Depth: 0.82m	Topsoil ***1059*** Subsoil ***1060*** A single north-west/south-east aligned land drain was observed within the trench. Natural ***1061*** No features of archaeological significance were observed.
71	N/S	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1593*** A single north-west/south-east aligned land drain was revealed in this trench. Natural ***1594*** No features of archaeological significance were observed.
72	NE/SW	Length: 50m Width: 1.85m Depth: 0.3m	Topsoil ***1585*** A single east/west aligned feature, ***1587***, was revealed in this trench. This feature measured 0.38m wide and 0.23m deep and may represent either a drainage ditch or a field boundary. Natural ***1588***
73	E/W	Length: 30m Width: 1.85m Depth: 1.2m	Topsoil ***1578*** A single feature, ***1580***, measuring >5m wide and >1.2m deep was revealed within this trench. It seems most likely that this feature represents a quarry. Natural ***1581*** No features of archaeological significance were observed.
74	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1582*** Three dumps of modern rubbish, ***1583***, were the only features revealed within this trench. Natural ***1584*** No features of archaeological significance were observed.
75	N/S	Length: 40m Width: 1.85m Depth: 1.2m	Topsoil ***1589*** Two probable sand quarries, ***1599*** and ***1600*** were revealed in this trench, backfilled with demolition debris and rubbish. Natural ***1590*** No features of archaeological significance were observed.
76	E/W	Length: 30m	Topsoil ***1601***

		Width: 1.85m Depth: 0.6m	A dump of modern rubbish, ***1602***, within this trench overlay a former turf line, ***1621***. This in turn sealed sequential deposits of subsoil (***1622*** and ***1623***), which overlay a clay layer ***1624***, which overlay the natural geology. Natural ***1603*** No features of archaeological significance were observed.
77	ENE/WSW	Length: 30m Width: 1.85m Depth: 2.00m	Topsoil ***1687*** Natural ***1688*** No features of archaeological significance were observed.
78	E/W	Length: 30m Width: 1.85m Depth: 0.2m	Topsoil ***1604*** Natural ***1605*** No features of archaeological significance were observed.
79	E/W	Length: 30m Width: 1.85m Depth: 0.3m	Topsoil ***1097*** A modern water pipe was the only feature observed within this trench. Natural ***1098*** No features of archaeological significance were observed.
80	NE/SW	Length: 30m Width: 1.85m Depth: 0.9m	Topsoil ***1606*** A posthole, ***1608***, measuring 0.46m in diameter and 0.25m in depth was revealed within this trench. A thin layer was observed sealing the natural towards the north-eastern end of the trench. Subsoil ***1609*** Natural ***1610, 1611*** No features of archaeological significance were observed.
81	N/S	Length: 30m Width: 1.85m Depth: 0.55m	Topsoil ***1612*** Natural ***1613*** No features of archaeological significance were observed.
82	NE/SW	Length: 50m Width: 1.85m Depth: 0.50m	Topsoil ***1618*** A water pipe running through the centre of the trench was the only feature revealed. Natural ***1619*** No features of archaeological significance were observed.
83	NE/SW	Length: 30m Width: 1.85m Depth: 0.43m	Topsoil ***1616*** A water pipe was revealed within this trench. Natural ***1617*** No features of archaeological significance were

			observed.
84	N/S	Length: 30m Width: 1.85m Depth: 0.3m	Topsoil ***1614*** Natural ***1615*** No features of archaeological significance were observed.
85	NNW/SSE	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1658*** Natural ***1659*** No features of archaeological significance were observed.
86	NE/SW	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1656*** A single land drain was observed towards the centre of the trench. Natural ***1657*** No features of archaeological significance were observed.
87	NE/SW	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1654*** Natural ***1655*** No features of archaeological significance were observed.
88	NNE/SSW	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1652*** Natural ***1653*** No features of archaeological significance were observed.
89	ENE/WSW	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1650*** Two land drains were revealed by this trench. Natural ***1651*** No features of archaeological significance were observed.
90	NE/SW	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1646*** Two land drains were identified within this trench. Natural ***1647*** No features of archaeological significance were observed.
91	E/W	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1644*** Two land drains were identified within this trench. Natural ***1645*** No features of archaeological significance were observed.
92	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1648*** A pair of parallel land drains was identified within this trench. Natural ***1649*** No features of archaeological significance were

			observed.
93	NE/SW	Length: 30m Width: 1.85m Depth: 0.3m	Topsoil ***1640*** A single stone-filled land drain was the only feature identified within this trench. Natural ***1641*** No features of archaeological significance were observed.
94	N/S	Length: 30m Width: 1.85m Depth: 0.6m	Topsoil ***1642*** Three land drains were identified within this trench. Natural ***1643*** No features of archaeological significance were observed.
95	NE/SW	Length: 30m Width: 1.85m Depth: 0.35m	Topsoil ***1689*** Natural ***1690*** No features of archaeological significance were observed.
96	NW/SE	Length: 30m Width: 1.85m Depth: 0.32m	Topsoil ***1125*** Natural ***1126*** No features of archaeological significance were observed.
97	N/S	Length: 30m Width: 1.85m Depth: 0.37m	Topsoil ***1123*** Natural ***1124*** No features of archaeological significance were observed.
98	NW/SE	Length: 30m Width: 1.85m Depth: 0.57m	Topsoil ***1121*** Two land drains were observed within this trench. Natural ***1122*** No features of archaeological significance were observed.
99	NW/SE	Length: 30m Width: 1.85m Depth: 0.50m	Topsoil ***1119*** Three land drains were identified within this trench. Natural ***1120*** No features of archaeological significance were observed.
100	NW/SE	Length: 30m Width: 1.85m Depth: 0.53m	Topsoil ***1111*** A single land drain was identified within this trench. Natural ***1112*** No features of archaeological significance were observed.
101	NW/SE	Length: 30m Width: 1.85m Depth: 0.60m	Topsoil ***1105*** A single feature, ***1107***, measuring 0.77m in width and 0.80m in depth, was identified. The feature ran underneath the north-eastern baulk and may have

			represented a pit or a ditch terminus. Natural ***1106***
102	NE/SW	Length: 30m Width: 1.85m Depth: 0.65m	Topsoil ***1099*** Three land drains were identified within this trench. Natural ***1100*** No features of archaeological significance were observed.
103	E/W	Length: 30m Width: 1.85m Depth: 0.72m	Topsoil ***1103*** A single land drain was identified within this trench. Natural ***1104*** No features of archaeological significance were observed.
104	N/S	Length: 30m Width: 1.85m Depth: 0.90m	Topsoil ***1101*** Five land drains were identified within this trench. Natural ***1102*** No features of archaeological significance were observed.
105	NE/SW	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***2053*** Subsoil Two land drains were observed in this trench; a 4" ceramic drain, ***2055***, which was aligned north/south, and a north-west/south-east aligned clay-sealed drain, ***2057***. A possible furrow was revealed towards the eastern end of the trench. Natural ***2054*** No features of archaeological significance were observed.
106	NE/SW	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***2060*** Two land drains, ***2062*** and ***2064***, were observed in this trench, both aligned north/south. Natural ***2061*** No features of archaeological significance were observed.
107	WNW/ESE	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***2066*** Four land drains were revealed in this trench; two stone-filled drains, ***2068*** and ***2072***, and 2 ceramic pipe drains, ***2070*** and ***2074***. Natural ***2067*** No features of archaeological significance were observed.
108	NNE/SSW	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***2076*** Subsoil ***2077*** A single stone-capped and stone-lined drain, ***2079***, was uncovered within this trench.

			Natural ***2078*** No features of archaeological significance were observed.
109	N/S	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***2081*** Subsoil ***2082*** A single land drain, ***2084***, was uncovered within this trench. Natural ***2083*** No features of archaeological significance were observed.
110	NW/SE	Length: 30m Width: 1.85m Depth: 0.55m	Topsoil ***2086*** Subsoil ***2087*** Four furrows, ***2089-2092***, were uncovered within this trench. The furrows were all aligned east/west and had an average width of 1.5m Natural ***2088***
111	NNE/SSW	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***2093*** Subsoil ***2094*** One furrow and a single field drain (both aligned south-west/north-east) were exposed in the southern half of Trench 111. A sondage was excavated into the northern extent of the trench to test the natural soils. Natural ***2095*** No features of archaeological significance were observed.
112	WNW/ESE	Length: 30m Width: 1.85m Depth: 0.6m	Topsoil ***2096*** Subsoil ***2097*** Natural ***2098*** No features of archaeological significance were observed.
113	ENE/WSW	Length: 50m Width: 1.85m Depth: 0.4m	Topsoil ***2099*** Subsoil ***2100*** Two narrow field drains were exposed at the eastern extent of the trench. At 20m (from west) a dark red sandy layer (***2102***) was observed. It is probable this layer represents a change in the natural geology. Natural ***2101*** No features of archaeological significance were observed.
114	N/S	Length: 50m Width: 1.85m Depth: 0.40m	Topsoil ***1109*** Two land drains were identified within this trench. Natural ***1110*** No features of archaeological significance were observed.
115	N/S	Length: 30m Width: 1.85m	Topsoil ***1115*** Natural ***1116***

		Depth: 0.45m	No features of archaeological significance were observed.
116	E/W	Length: 30m Width: 1.85m Depth: 0.43m	Topsoil ***1117*** Four land drains were identified within this trench. Natural ***1118*** No features of archaeological significance were observed.
117	N/S	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1113*** Two land drains were identified within this trench. Natural ***1114*** No features of archaeological significance were observed.
124	NW/SE	Length: 30m Width: 1.85m Depth: 1.15m	Topsoil ***1679*** Subsoil ***1680, 1681*** Two land drains were observed within this trench. Natural ***1682*** No features of archaeological significance were observed.
125	E/W	Length: 30m Width: 1.85m Depth: 0.39m	Topsoil ***1677*** Two land drains were observed within this trench. Natural ***1678*** No features of archaeological significance were observed.
126	NW/SE	Length: 30m Width: 1.85m Depth: 0.45m	Topsoil ***1674*** Subsoil ***1675*** Natural ***1676*** No features of archaeological significance were observed.
127	E/W	Length: 30m Width: 1.85m Depth: 0.66m	Topsoil ***1671*** Subsoil ***1672*** Natural ***1673*** No features of archaeological significance were observed.
128	N/S	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1666*** Subsoil ***1670*** Natural ***1667*** No features of archaeological significance were observed.
129	E/W	Length: 30m Width: 1.85m Depth: 0.4m	Topsoil ***1660*** Four land drains were identified within this trench. Natural ***1661*** No features of archaeological significance were

			observed.
130	E/W	Length: 30m Width: 1.85m Depth: 0.5m	Topsoil ***1662*** Subsoil ***1663*** Five land drains were identified within this trench, one of which, ***1665***, was excavated. Natural ***1664*** No features of archaeological significance were observed.
150	N/S	Length: 60m Width: 1.85m Depth: 1.24m	Topsoil ***1086*** Two land drains were identified within this trench. Natural ***1087*** No features of archaeological significance were observed.
151	N/S	Length: 30m Width: 1.85m Depth: 0.33m	Topsoil ***1093*** A single ditch, ***1096***, aligned east/west, was revealed within this trench. The feature measured 0.95m wide and 0.15m deep. Natural ***1094***
152	N/S	Length: 30m Width: 1.85m Depth: 1.1m	Topsoil ***1597*** A probable sand quarry, ***1596***, was revealed within this trench, occupying most of the trench and deeper than 1.1m in depth. This feature had been backfilled with modern rubbish. Natural ***1598*** No features of archaeological significance were observed.
153	NE/SW	Length: 10m Width: 1.85m Depth: 0.75m	Topsoil ***1683*** This trench targeted a possible hollow way (***1684/1685***), although it remained uncertain whether this was a natural or man-made feature.

APPENDIX 4: CONTEXT REGISTER

Context	Trench/Site/Field	Depth	Description
1000	Trench 28	0.20m	Silty-clay topsoil
1001	Trench 28		Clay natural
1002	Trench 27	0.22m	Silty-clay topsoil
1003	Trench 27		Clay natural
1004	Trench 26	0.23m	Silty-clay topsoil
1005	Trench 26		Clay natural
1006	Trench 29		Silty-clay topsoil
1007	Trench 29		Gravelly clay natural
1008	Trench 25	0.26m	Silty-clay topsoil
1009	Trench 25		Clay natural
1010	Trench 24	0.25m	Silty-clay topsoil
1011	Trench 24		Clay natural
1012	Trench 17	0.25m	Sandy-clay topsoil
1013	Trench 17		Sandy-clay natural
1014	Trench 16	0.26m	Sandy-clay topsoil
1015	Trench 16		Sandy-clay natural
1016	Trench 12	0.40m	Sandy-clay topsoil
1017	Trench 12	0.17m	Sandy-clay subsoil
1018	Trench 12		Sandy-clay natural
1019	Trench 18	0.30m	Silty-clay topsoil
1020	Trench 18		Clay natural
1021	Trench 13	0.23m	Silty-clay topsoil
1022	Trench 13	0.22m	Sandy-clay subsoil
1023	Trench 13		Clay natural
1024	Trench 13	0.10m	Silty-clay fill of ***1025***
1025	Trench 13	0.10m	Furrow
1026	Trench 13	0.10m	Silty-clay fill of ***1027***
1027	Trench 13	0.10m	Furrow
1028	Trench 12		Fill of ***1029***
1029	Trench 12		Furrow
1030	Trench 12	0.07m	Furrow
1031	Trench 12	0.07m	Sandy-clay fill of ***1030***
1032	Trench 12		Fill of ***1033***
1033	Trench 12		Modern land drain
1034	Trench 12	0.16m	Fill of ***1035***

1035	Trench 12	0.16m	Furrow
1036	Trench 11	0.35m	Sandy-clay topsoil
1037	Trench 11		Sandy-clay natural
1038	Trench 3	0.30m	Clayey-silt topsoil
1039	Trench 3	Unexcavated	Coal hole
1040	Trench 3	Unexcavated	Sandy-clay fill of ***1039***
1041	Trench 3		Clayey-silt natural
1046	Trench 5	0.20m	Sandy-silt topsoil
1047	Trench 5	0.27m	Silty-gravel fill of ***1048***
1048	Trench 5	0.27m	Drainage ditch
1049	Trench 5	0.10m	Sandy-silt fill of ***1050***
1050	Trench 5	0.10m	Drainage ditch
1051	Trench 5		Gravelly-sand natural
1052	Trench 6	0.24m	Silty-clay topsoil
1053	Trench 6		Silty-clay subsoil
1054	Trench 6		Sandy-gravel natural
1055	Trench 7	0.30m	Clayey-silt topsoil
1056	Trench 7	0.12m	Silty-clay fill of ***1057***
1057	Trench 7	0.12m	Gully
1058	Trench 7		Sandy gravel natural
1059	Trench 70	0.42m	Sandy-silt topsoil
1060	Trench 70	0.30m	Clayey-silt subsoil
1061	Trench 70		Clayey-sand natural
1062	Trench 66	0.32m	Silty-clay topsoil
1063	Trench 66		Clay natural
1064	Trench 66	0.23m	Sandy-clay fill of ***1065***
1065	Trench 66	0.23m	Drainage ditch
1066	Trench 66	0.10m	Coal-rich deposit
1067	Trench 66	0.15m	Drainage ditch
1068	Trench 66	0.15m	Silty-sand fill of ***1067***
1069	Trench 66	0.14m	Sandy-silt fill of ***1070***
1070	Trench 66	0.14m	Drainage ditch
1071	Trench 66	0.12m	Sandy-silt fill of ***1072***
1072	Trench 66	0.12m	Drainage ditch
1073	Trench 67	0.25m	Silty-sand topsoil
1074	Trench 67	Unexcavated	Plough scars
1075	Trench 67		Sandy-clay natural
1076	Trench 69	0.30m	Sandy-silt topsoil

1077	Trench 69		Clay natural
1078	Trench 68	0.39m	Silty-clay topsoil
1079	Trench 68		Clay natural
1080	Trench 68	0.31m	Sandy-clay fill of ***1081***
1081	Trench 68	0.31m	Drainage ditch
1082	Trench 64	0.30m	Silty-sand topsoil
1083	Trench 64		Sandy-clay natural
1084	Trench 62	0.30m	Silty-sand topsoil
1085	Trench 62		Sandy-clay natural
1086	Trench 150	0.28m	Clayey-silt topsoil
1087	Trench 150		Clayey-sand natural
1089	Trench 60	0.32m	Silty-clay topsoil
1090	Trench 60		Gravelly-clay natural
1091	Trench 61		Topsoil
1092	Trench 61		Natural
1093	Trench 151	0.33m	Sandy-silt topsoil
1094	Trench 151		Clayey-sand natural
1095	Trench 151	0.15m	Clayey-silt fill of ***1096***
1096	Trench 151	0.15m	Ditch
1097	Trench 79	0.30m	Silty-sand topsoil
1098	Trench 79		Sand natural
1099	Trench 102	0.38m	Sandy-clay topsoil
1100	Trench 102		Sandy-clay natural
1101	Trench 104	0.50m	Clayey-sand topsoil
1102	Trench 104		Silty-clay natural
1103	Trench 103	0.45m	Sandy-clay topsoil
1104	Trench 103		Silty-clay natural
1105	Trench 101	0.30m	Clayey-sand topsoil
1106	Trench 101		Sandy-clay natural
1107	Trench 101	0.80m	Pit
1108	Trench 101	0.80m	Clay fill of ***1107***
1109	Trench 114	0.35m	Clayey-sand topsoil
1110	Trench 114		Sandy-clay natural
1111	Trench 100	0.22m	Sandy-clay topsoil
1112	Trench 100		Clay natural
1113	Trench 117	0.27m	Clayey-sand topsoil
1114	Trench 117		Sandy-clay natural
1115	Trench 115	0.28m	Sandy-clay topsoil

1116	Trench 115		Sandy-clay natural
1117	Trench 116	0.30m	Clayey-sand topsoil
1118	Trench 116		Sandy-clay natural
1119	Trench 99	0.26m	Sandy-clay topsoil
1120	Trench 99		Sandy-clay natural
1121	Trench 98	0.28m	Sandy-clay topsoil
1122	Trench 98		Sandy-clay natural
1123	Trench 97	0.23m	Sandy-clay topsoil
1124	Trench 97		Clay natural
1125	Trench 96	0.24m	Sandy-clay topsoil
1126	Trench 96		Sandy-clay natural
1500	Trench 51	0.36m	Sandy-clay topsoil
1501	Trench 51	0.16m	Sandy-silt subsoil
1502	Trench 51		Sandy-clay natural
1503	Trench 46	0.30m	Sandy-clay topsoil
1504	Trench 46		Sandy-clay natural
1505	Trench 45	0.26m	Sandy-clay topsoil
1506	Trench 45		Sandy-clay natural
1507	Trench 43	0.25m	Sandy-clay topsoil
1508	Trench 43	0.20m	Sandy-clay subsoil
1509	Trench 43		Sandy-clay natural
1510	Trench 45	0.37m	Silty-sand fill of ***1511***
1511	Trench 45	0.37m	Fire pit
1512	Trench 41	0.20m	Sandy-silt topsoil
1513	Trench 41	0.12m	Sandy-clay subsoil
1514	Trench 41		Sandy-clay natural
1515	Trench 40	0.24m	Sandy-clay topsoil
1516	Trench 40		Clay natural
1517	Trench 37	0.22m	Sandy-clay topsoil
1518	Trench 37	0.08m	Sandy-clay subsoil
1519	Trench 37		Clay natural
1520	Trench 37	0.45m	Ditch
1521	Trench 37	0.45m	Clay fill of ***1520***
1522	Trench 37		Land drain
1523	Trench 37		Sandy-clay fill of ***1522***
1524	Trench 36	0.41m	Sandy-clay topsoil
1525	Trench 36	0.13m	Sandy-clay subsoil
1526	Trench 36		Clay natural

1527	Trench 35		Furrow
1528	Trench 35		Furrow
1529	Trench 35	0.18m	Furrow
1530	Trench 34	0.16m	Sandy-clay topsoil
1531	Trench 34	0.12m	Sandy-clay subsoil
1532	Trench 34		Clay natural
1533	Trench 33	0.30m	Sandy-clay topsoil
1534	Trench 33		Clay natural
1535	Trench 35	0.18m	Silty-clay fill of ***1529***
1536	Trench 35		Topsoil
1537	Trench 35		Natural
1538	Trench 35		Fill of ***1528***
1539	Trench 34	0.40m	Pit
1540	Trench 34	0.05m	Sandy-clay upper fill of ***1539***
1541	Trench 34	0.35m	Lower fill of ***1539***
1542	Trench 52	0.30m	Clayey-sand topsoil
1543	Trench 52	0.50m	Silty-sand subsoil
1544	Trench 52		Silty-clay natural
1545	Trench 38	0.30m	Loam topsoil
1546	Trench 38		Clayey-gravel natural
1547	Trench 39	0.25m	Clayey-sand topsoil
1548	Trench 39		Silty-clay natural
1549	Trench 15	0.40m	Sandy-clay topsoil
1550	Trench 15		Sandy-clay natural
1551	Trench 14	0.30m	Clayey-sand topsoil
1552	Trench 14		Sandy-clay natural
1553	Trench 10	0.28m	Sandy-clay topsoil
1554	Trench 10		Clay natural
1555	Trench 9	0.26m	Sandy-clay topsoil
1556	Trench 9		Clay natural
1557	Trench 8	0.27m	Sandy-clay topsoil
1558	Trench 8		Clay natural
1559	Trench 4	0.20m	Sandy-silt topsoil
1560	Trench 4	1.30m	Coal hole
1561	Trench 4	1.30m	Sandy-silty-clay fill of ***1560***
1562	Trench 4		Coal hole
1563	Trench 4		Sandy-silty-clay fill of ***1562***
1564	Trench 4		Sandy-clay natural

1565	Trench 30		Sandy-clay topsoil
1566	Trench 30		Sandy-clay natural
1567	Trench 2	0.20m	Sandy-clay topsoil
1568	Trench 2		Clay natural
1569	Trench 2	0.45m	Sandy-clay subsoil
1570	Trench 1	0.10m	Sandy-silt topsoil
1571	Trench 1	0.23m	Sandy-clay subsoil
1572	Trench 1		Sandy-clay natural
1573	Trench 1	>1.40m	Modern pit
1574	Trench 1	>1.40m	Modern fill of ***1573***
1578	Trench 73	0.08m	Sandy-silty-clay topsoil
1579	Trench 73	>1.20m	Sandy-silty-clay fill of ***1580***
1580	Trench 73	>1.20m	Sand quarry
1581	Trench 73		Sandy-clay natural
1582	Trench 74	0.40m	Sandy-silt topsoil
1583	Trench 74		Modern rubbish deposit
1584	Trench 74		Sand natural
1585	Trench 72	0.30m	Silty-sand topsoil
1586	Trench 72	0.23m	Sandy-silt fill of ***1587***
1587	Trench 72	0.23m	Land drain/boundary ditch
1588	Trench 72		Sand natural
1589	Trench 75	0.24m	Sandy-clay topsoil
1590	Trench 75		Sand natural
1591	Trench 75		Fill of ***1599***
1592	Trench 75		Fill of ***1600***
1593	Trench 71	0.30m	Silty-sand topsoil
1594	Trench 71		Sand natural
1595	Trench 152	1.10m	Sandy-silt fill of ***1596***
1596	Trench 152	1.10m	Modern rubbish pit
1597	Trench 152	0.23m	Sandy-silt topsoil
1598	Trench 152		Sand natural
1599	Trench 75		Sand quarry
1600	Trench 75		Sand quarry
1601	Trench 76		Sandy-silt topsoil
1602	Trench 76		Sandy modern deposit
1603	Trench 76		Sand natural
1604	Trench 78	0.20m	Silty-sand topsoil
1605	Trench 78		Sand natural

1606	Trench 80	0.20m	Sandy-silt topsoil
1607	Trench 80	0.25m	Sandy-silty-clay fill of ***1608***
1608	Trench 80	0.25m	Posthole
1609	Trench 80	0.15m	Sandy-silt subsoil
1610	Trench 80		Sand natural
1611	Trench 80		Sand natural
1612	Trench 81	0.28m	Sandy-silt topsoil
1613	Trench 81		Sand natural
1614	Trench 84	0.30m	Silty-sand topsoil
1615	Trench 84		Sand natural
1616	Trench 83	0.38m	Sandy-silt topsoil
1617	Trench 83		Gravelly-sand natural
1618	Trench 82	0.30m	Sandy-silt topsoil
1619	Trench 82		Sand natural
1620	Trench 77	2.00m	Silty-clay
1621	Trench 76		Buried turf line
1622	Trench 76		Subsoil
1623	Trench 76		Subsoil
1624	Trench 76		Clay
1625	Trench 63	0.36m	Sandy-silt topsoil
1626	Trench 63		Disturbed sandy-clay natural
1627	Trench 63		Sandy-gravel natural
1628	Trench 59	0.25m	Sandy-silt topsoil
1629	Trench 59	0.31m	Sandy-silt subsoil
1630	Trench 59		Sandy-gravel natural
1631	Trench 59		Silt natural
1632	Trench 58	0.25m	Silty-sand topsoil
1633	Trench 58	0.17m	Sandy-clay subsoil
1634	Trench 58	0.05m	Sandy-clay subsoil
1635	Trench 58		Sandy-clay natural
1636	Trench 58		Sandy-clay natural
1637	Trench 65	0.25m	Sandy-silt topsoil
1638	Trench 65	0.15m	Sandy-clay subsoil
1639	Trench 65		Sandy-gravel natural
1640	Trench 93		Loam topsoil
1641	Trench 93		Sandy-clay natural
1642	Trench 94	0.30m	Sandy-clay topsoil
1643	Trench 94		Sandy-clay natural

1644	Trench 91	0.23m	Sandy-clay topsoil
1645	Trench 91		Sandy-clay natural
1646	Trench 90	0.25m	Sandy-clay topsoil
1647	Trench 90		Sandy-clay natural
1648	Trench 92	0.25m	Sandy-clay topsoil
1649	Trench 92		Sandy-clay natural
1650	Trench 89		Topsoil
1651	Trench 89		Natural
1652	Trench 88	0.30m	Sandy-clay topsoil
1653	Trench 88		Sandy-clay natural
1654	Trench 87	0.30m	Sandy-clay topsoil
1655	Trench 87		Clayey-sand natural
1656	Trench 86		Sandy-silt topsoil
1657	Trench 86		Clayey-sand natural
1658	Trench 85	0.40m	Sandy-clay topsoil
1659	Trench 85		Sandy-clay natural
1660	Trench 129	0.25m	Sandy-clay topsoil
1661	Trench 129		Clayey-sand natural
1662	Trench 130	0.20m	Sandy-clay topsoil
1663	Trench 130	0.10m	Clayey-silt subsoil
1664	Trench 130		Sandy-clay natural
1665	Trench 130	0.18m	Land drain
1666	Trench 128	0.28m	Sandy-clay topsoil
1667	Trench 128		Silty-sand natural
1670	Trench 128	0.10m	Sandy-clay subsoil
1671	Trench 127	0.24m	Sandy-clay topsoil
1672	Trench 127	0.30	Sandy-clay subsoil
1673	Trench 127		Gravelly-clay natural
1674	Trench 126	0.20m	Sandy-clay topsoil
1675	Trench 126	0.15m	Silt subsoil
1676	Trench 126		Sand natural
1677	Trench 125	0.24m	Clayey-sand topsoil
1678	Trench 125		Sandy-clay natural
1679	Trench 124	0.30m	Clayey-sand topsoil
1680	Trench 124	0.20m	Sandy-clay subsoil
1681	Trench 124	0.44m	Clayey-silt subsoil
1682	Trench 124		Clayey-sand natural
1683	Trench 153	0.24m	Clayey-sand topsoil

1684	Trench 153		Silty-clay bank
1685	Trench 153	0.75m	Clayey-silt fill of hollow way
1686	Trench 129		Fill of land drain 4
1687	Trench 77	0.25m	Silty-sand topsoil
1688	Trench 77		Sand natural
1689	Trench 95	0.28m	Sandy-clay topsoil
1690	Trench 95		Sandy-clay natural
2000	Site 123	0.10m	Sand topsoil
2001	Site 123	0.05m	Clayey-sand subsoil
2002	Site 123	0.20m	Sandy-clay made ground
2003	Site 123	0.60m	Sandy-clay made ground
2004	Fields 13-15	0.25m	Topsoil and subsoil from machine stripping
2005	Field 12		Stone-capped drainage ditch
2006	Field 12		Stone-capped drainage ditch
2007	Field 12		Stone-capped drainage ditch
2008	Field 12		Stone-capped drainage ditch
2009	Field 3		Mine adit
2010	Field 3		Rubble/hardcore fill of ***2009***
2011	Site 123		Milestone
2012	Fields 15-16		Weir
2013	Fields 15-16		Weir
2014	Site 102		Gatestone
2015	Site 102		Gatestone
2016	Site 75		Timber posts
2017	Site 75		Timber pane
2018	Site 75		Weir
2019	Site 75		Concrete fill of ***2018***
2020	Site 75		Timber posts alongside ***2019***
2021	Site 75		Timber posts
2022	Site 76		Aqueduct debris
2023	Site 76		Concrete structure
2024	Site 76		Cement block with buttresses
2025	Site 76		Concrete structure
2026	Site 76		Sluice gate handle
2027	Site 75		Timber posts
2028	Field 10		Land drain
2029	Field 10	0.15m	Land drain
2030	Field 10	0.15m	Sandy-clay fill of ***2029***

2031	Field 10	Unexcavated	Ditch
2032	Site G91/Field 10		Buried topsoil and subsoil
2033	Site G91/Field 10		Loam topsoil slumped within bell pit
2034	Site G91/Field 10		Sandy-clay upcast from bell pit
2035	Field 10		Land drain
2036	Field 10	0.18m	Sandy-clay fill of ***2035***
2037	Field 10	Unexcavated	Land drain
2038	Field 10	Unexcavated	Land drain
2039	Fields 5-10	0.20m	Loamy topsoil and sandy-clay subsoil
2040	Fields 1-2	0.30m	Loamy topsoil and sandy-clay subsoil
2041	Fields 11-13	0.40m	Loamy topsoil and sandy-clay subsoil
2042	Fields 16-18	0.30m	Sandy-clay topsoil and sandy-clay subsoil
2043	Site 102	0.20m	Loam topsoil and sandy-clay subsoil
2044	Field 10	0.40m	Fill of Hollow way
2045	Fields 1, 3-35		Sandy-clay natural
2046	Field 2		Sandy-clay natural
2047	Field 1	0.30m	Silty-clay topsoil and silty-clay subsoil
2048	Fields 3-5	0.30m	Sandy-clay topsoil and sandy-clay subsoil
2049	Site 82		Sand natural
2050	Field 10	Unexcavated	Probable farm track
2051	Site 75		Weir
2052	Site 76		Cement and Concrete structure
2053	Trench 105		Topsoil
2054	Trench 105		Natural
2055	Trench 105		Ceramic land drain
2056	Trench 105		Fill of ***2055***
2057	Trench 105		Land drain
2058	Trench 105		Clay fill of ***2057***
2059	Trench 105		Loose soil fill
2060	Trench 106		Topsoil
2061	Trench 106		Natural
2062	Trench 106		Stone-capped land drain
2063	Trench 106		Fill of ***2062***
2064	Trench 106		Land drain
2065	Trench 106		Fill of ***2064***
2066	Trench 107		Topsoil
2067	Trench 107		Natural
2068	Trench 107		Stone-filled land drain

2069	Trench 107		Fill of ***2068***
2070	Trench 107		Ceramic land drain
2071	Trench 107		Fill of ***2070***
2072	Trench 107		Stone-filled land drain
2073	Trench 107		Fill of ***2072***
2074	Trench 107		Ceramic land drain
2075	Trench 107		Fill of ***2074***
2076	Trench 108		Topsoil
2077	Trench 108		Subsoil
2078	Trench 108		Natural
2079	Trench 108		Stone-capped land drain
2080	Trench 108		Fill of ***2079***
2081	Trench 109		Topsoil
2082	Trench 109		Subsoil
2083	Trench 109		Natural
2084	Trench 109		Stone-capped land drain
2085	Trench 109		Fill of ***2084***
2086	Trench 110		Topsoil
2087	Trench 110		Subsoil
2088	Trench 110		Natural
2089	Trench 110		Furrow
2090	Trench 110		Furrow
2091	Trench 110		Furrow
2092	Trench 110		Furrow
2093	Trench 111		Topsoil
2094	Trench 111		Subsoil
2095	Trench 111		Natural
2096	Trench 112		Topsoil
2097	Trench 112		Subsoil
2098	Trench 112		Natural
2099	Trench 113		Topsoil
2100	Trench 113		Subsoil
2101	Trench 113		Natural
2102	Trench 113		?change in natural soils – deep red sand
2103	Site 76		Cut of millrace for Moresby Mill
2104	Site 76		Fill of ***2103***
2105	Site G91/Field 10		Cut of Bell Pit
2106	Site G91/Field 10		Cut of Holloway

2107	Field 26		Concrete block constructed structure – possible signal box for dismantled railway

APPENDIX 5: FIELDS OBSERVED BY WATCHING BRIEF

Field	Area (m^2)	Context	Description
1	10700		
2	13530		
3	3595	***2009***	Mine adit
4	5090		
5	8400		
6	6735		
7	1590		
8	1080		
9	1165		
10	6200	***2029***	Ditch
		2105	Bell Pit
		2032	Upcast from Bell Pit
		2106	Hollow way
11	1260		
12	7345		
13	8855		Ridge and Furrow
14	1335		No archaeologist during strip
15	6225		No archaeologist during strip
16	7540	***2103***	Millrace
17	12100		
18	4340		
19	22640		
20	1450		
21	15600		
22	9325		
23	3320		
24	3735		
25	4410		
26	6320	***2107***	Possible Signal Box
27	15035		
28	5060		
29	8365		
30	11075		
31	3175		
32	1740		
33	4260		

34	2510		
35	---	2011	Milestone

APPENDIX 6: FINDS CATALOGUE

Context	OR no	Material	Category	No frags	Description	Period
Topsoil	1025	Ceramic	Vessel	3	One fragment black-glazed redware; one fragment blue and white underglaze transfer-printed ware; one fragment late grey stoneware.	Nineteenth century or later
Topsoil	1028	Ceramic	Brick	1	Fragment of hand-made brick.	Post-medieval
Topsoil	1029	Ind debris	Slag	1	Small fragment glassy slag.	Post-medieval?
Topsoil	1030	Ceramic	Tobacco pipe	2	Plain stem fragment.	Post-medieval
1000	1027	Ceramic	Vessel	7	Four fragments blue and white underglaze transfer-printed ware; two fragments black-glazed redware; one fragment self-slipped sandy orange fabric.	Late eighteenth century or later
1002	1000	Ceramic	Vessel	8	One fragment mottled ware; two fragments black-glazed redware; one fragment early hard-fired black-glazed redware; two fragments creamware; two fragments blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1006	1003	Ceramic	Vessel	52	Nineteen fragments blue and white underglaze transfer-printed ware; six fragments black-glazed redware; three fragments yellow-slipped redware; three fragments late yellow ware; two fragments slip-decorated redware; two fragments creamware with blue sprigged decoration; three fragments white salt-glazed stoneware; five fragments creamware; two fragments industrial slipware; six fragments white earthenware; one fragment hand-painted white earthenware.	Mid-late eighteenth century or later
1006	1004	Ceramic	Tobacco pipe	4	One small bowl fragment and three plain stem fragments.	Post-medieval

1006	1005	Iron	Object	1	Unidentifiable fragment.	Not closely dateable
1006	1006	Stone		1	Natural fragment.	
1006	1007	Ceramic	Building material	4	Small abraded fragments.	Not closely dateable
1006	1008	Glass	Window	1	Mid-pane fragment thin bluish window glass.	Nineteenth century or later
1008	1038	Ceramic	Vessel	8	One fragment yellow-slipped redware; one fragment creamware; one fragment pearlware; four fragments blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1008	1039	Glass	Vessel	1	One fragment dark green bottle base.	Nineteenth century or later
1010	1034	Ceramic	Vessel	10	Three fragments black-glazed redware; one fragment cream-bodied brown-glazed ware; two fragments yellow-slipped redware; two fragments pearlware, one probably a second; one fragment industrial slipware; one fragment creamware.	Late eighteenth century or later
1010	1035	Ceramic	Tobacco pipe	1	Stamped stem fragment: HAM[ ]AVEN.	Nineteenth century
1012	1046	Ceramic	Vessel	9	Seven fragments blue and white underglaze transfer-printed ware; one fragment yellow-glazed industrial slipware; one fragment blackware cup with cream fabric.	Late eighteenth century?
1012	1046	Ceramic	Building material	1	Small fragment.	Not closely dateable
1014	1030	Ceramic	Vessel	11	One fragment cream-bodied blackware; one fragment press-moulded slip-decorated dish; three fragments pearlware; two fragments creamware; one fragment white salt-glazed ware; three fragments self-glazed redware.	Mid-late eighteenth century or later
1014	1051	Ceramic	Vessel	1	One fragment very fine white fabric.	Medieval
1014	1052	Ceramic	Tobacco pipe	3	Small bowl fragment and two plain stem fragments	Post-medieval

1014	1053	Glass	Window	1	Mid-pane fragment thin bluish window glass.	Nineteenth century or later
1016	-	Ceramic	Vessel	3	One fragment late yellow ware; one fragment brown-slipped redware; one fragment creamware.	Late eighteenth century or later
1019	1048	Ceramic	Vessel	16	Ten fragments black-glazed redware; two fragments yellow-slipped redware; one fragment late yellow ware; three fragments blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1021	1024	Ceramic	Vessel	2	Two small fragments cream-pink sandy fabric.	Medieval
1024		Ceramic	Vessel	2	Two fragments cream-pink sandy fabric with greenish-brown glaze.	Thirteenth-fourteenth century?
1031		Ceramic	Vessel	1	One fragment white sandy fabric.	Twelfth-thirteenth century
1034	1023	Ceramic	Vessel	1	One fragment white sandy fabric, burnt. Probably cooking pot.	Twelfth-thirteenth century
1036	1041	Ceramic	Vessel	22	Eight fragments black-glazed redware; three fragments slip-decorated redware; one fragment pale grey porcelain with red-painted figures; one fragment stoneware bowl, one fragment white porcelain; six small spalls white earthenware.	Late eighteenth century or later
1036	1042	Ceramic	Vessel	1	One fragment sandy completely reduced fabric with green glaze. Abraded.	Fourteenth-sixteenth century
1036	1043	Ceramic	Tobacco pipe	4	Plain stem fragment.	Post-medieval
1036	1044	Glass	Vessel	3	One fragment dark olive green wine bottle; one fragment thin bluish vessel; one colourless base.	Nineteenth century or later
1038	1010	Ceramic	Vessel	14	Two fragments yellow-slipped redware; three fragments pearlware; five fragments blue and white underglaze transfer-printed ware; one fragment white earthenware; one fragment blue-slipped ware; one	Nineteenth century or later

					fragment industrial slipware; one fragment late, moulded earthenware.	
1040	1126	Ceramic	Vessel	7	One fragment slip-decorated redware; four fragments white earthenware; two fragments blue-painted white earthenware.	Nineteenth century or later
1052	1011	Ceramic	Vessel	7	One fragment black-glazed redware; five fragments creamware; one fragment pearlware plate with blue feathered edge.	Late eighteenth century or later
1055	1059	Ceramic	Vessel	3	One fragment late yellow-ware; two fragments white earthenware.	Nineteenth century or later
1056	1078	Ceramic	Vessel	1	Small chip white sandy fabric with green glaze.	Medieval
1066	1073	Stone	Coal	1	Probably coal and an ironpan encrustation.	Not closely dateable
1073	1064	Iron	Blade	1	Fragment of scale-tang knife blade.	Post-medieval
1073	1068	Ceramic	Tobacco pipe	2	Plain stem fragment.	Post-medieval
1073	1071	Ceramic	Vessel	10	One fragment yellow-slipped redware; two fragments self-glazed redware; six fragments blue and white underglaze transfer-printed ware; one fragment creamware.	Late eighteenth century or later
1076	1074	Ceramic	Vessel	1	Chip unglazed sandy fabric.	Medieval?
1084	1063	Ceramic	Tobacco pipe	1	Plain stem fragment.	Post-medieval
1084	1066	Glass	Vessel	4	Four fragments dark green bottle.	Nineteenth century or later
1084	1067	Ceramic	Field drain	1	Small fragment of field drain.	Not closely dateable
1086	1060	Ceramic	Vessel	12	One fragment late yellow ware; three fragments white earthenware plates with feathered edge; one fragment late brown stoneware; five fragments white earthenware; two fragments blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1086	1062	Ceramic	Vessel	2	Two joining fragments	Nineteenth

					white chine with applied blue-glazed flowers.	century or later
1091	1061	Ceramic	Tobacco pipe	1	Plain stem fragment.	Post-medieval
1091	1065	Ceramic	Vessel	9	Two fragments white chine; one fragment black-glazed redware; two fragments pearlware; one fragment pearlware plate with blue feathered edge; two fragments blue and white underglaze transfer-printed ware; one fragment blue-sprigged white earthenware.	Nineteenth century or later
1500	1045	Ceramic	Vessel	1	One fragment blue and white underglaze transfer-printed ware, discoloured.	Late eighteenth century or later
1501	1036	Ceramic	Vessel	2	One fragment industrial slipware; one fragment brown-glazed redware.	Late eighteenth century or later
1505	1049	Ceramic	Vessel	4	One fragment blue and white underglaze transfer-printed ware; one fragment late brown stoneware; one fragment tin-glazed ware; one fragment unglazed sandy red fabric.	Eighteenth century or later
1515	1001	Ceramic	Vessel	2	Two fragments white earthenware.	Nineteenth century or later
1517	1017	Ceramic	Vessel	2	One fragment white earthenware; one fragment yellow-slipped redware.	Nineteenth century or later
1521	-	Ceramic	Vessel	1	One fragment cream-bodied blackware.	Mid-late eighteenth century or later
1524	1012	Ceramic	Vessel	7	Two fragments plain bluish tin-glazed ware; one fragment black-glazed redware; two fragments creamware; two fragments blue and white underglaze transfer-printed ware; one fragment grey-bodied porcelain with ring-foot – Chinese?	Late eighteenth century or later
1524	1013	Ceramic	Tobacco pipe	1	Plain stem fragment	Post-medieval
1527	1072	Ceramic	Vessel	1	One fragment white sandy fabric	Twelfth-thirteenth

						century
1536	1031	Ceramic	Vessel	10	Three fragments black-glazed redware; one fragment hard-fired early blackware; two fragments self-glazed redware; one fragment creamware; one fragment white earthenware plate; one fragment blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1536	1032	Glass	Vessel	1	One fragment neck of dark olive green wine bottle.	Eighteenth century
1536	1033	Ceramic	Tobacco pipe	1	Plain stem fragment.	Post-medieval
1541	1018	Ceramic	Tobacco pipe	1	Bowl fragment.	Late seventeenth century?
1555	1021	Ceramic	Vessel	8	Two fragments black-glazed redware; two fragments creamware plate with feathered edge; two fragments industrial slipware; one fragment blue and white underglaze transfer-printed ware; one fragment white earthenware.	Late eighteenth century or later
1557	1019	Ceramic	Vessel	2	Two fragments blue and white underglaze transfer-printed ware.	Late eighteenth century or later
1570	1055	Ceramic	Vessel	4	One fragment black-glazed redware; two fragments creamware; one fragment white earthenware.	Nineteenth century or later
1589	1069	Ceramic	Vessel	1	One fragment black-glazed redware.	Not closely dateable
1601	1015	Ceramic	Vessel	2	Two fragment pearlware.	Late eighteenth century or later
1601	1016	Ceramic	Vessel	1	One fragment garden ware.	Nineteenth century or later
1620	1056	Ceramic	Vessel	1	One fragment black-glazed redware.	Post-medieval
1623	1022	Ceramic	Vessel	1	One small fragment white sandy fabric with green glaze. Combed decoration.	Thirteenth-fourteenth century
1660	1020	Ceramic	Vessel	1	One fragment slip-	Eighteenth

					decorated redware.	century
1663	1041	Ceramic	Vessel	1	One fragment ?Chinese porcelain.	Eighteenth century?
1686	1026	Ceramic	Building material	1	Fragment of field drain.	
1686	1026	Ceramic	Vessel	1	One fragment industrial slipware.	Late eighteenth century or later
2009	1014	Ceramic	Vessel	2	One fragment blue and white underglaze transfer-printed ware; one fragment late grey stoneware.	Nineteenth century or later
Unstrat	1009	Stone		1	Fragment of natural iron-rich sandstone.	
Unstrat	1056	Ceramic	Vessel	1	One fragment blue and white underglaze transfer-printed ware.	Late eighteenth century or later
Unstrat	1070	Ceramic	Vessel	16	One late brown stoneware bottle; seven fragments black-glazed redware; one fragment stoneware; two fragments yellow-slipped redware; one fragment creamware plate with feathered edge; one fragment blue and white underglaze transfer-printed ware; three fragments white earthenware.	Late eighteenth century or later
Unstrat	1075	Ceramic	Vessel	2	One fragment yellow-slipped redware; one fragment black-glazed redware, sandy fabric.	Late eighteenth century or later
Unstrat	1075	Ceramic	Vessel	1	One fragment black-glazed redware.	Not closely dateable
Unstrat	1077	Ceramic	Vessel	1	One fragment early hard-fired black-glazed redware.	Late seventeenth to eighteenth century
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