Carlisle Archaeological Unit

Evaluation Proposals and Client Reports No 3/97

REPORT ON A FIELD EVALUATION PROJECT AT CROSBY-ON-EDEN, CARLISLE

ASSESSMENT AND UPDATED PROJECT DESIGN SUBMITTED TO ENGLISH HERITAGE

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ILLUSTRATIONS

SUMMARY

Archaeological excavation in advance of road construction at High Crosby, Carlisle, in 1993 revealed a palimpsest of features, provisionally dated by reference to artefacts and radiocarbon determinations to the Neolithic and Bronze Age. This unexpected discovery raised the possibility that other fields in the immediate vicinity might also contain archaeological remains. In September 1994, a proposal for a limited programme of field evaluation to test this idea was made to English Heritage. The proposal was approved, and in March-April 1995 Carlisle Archaeological Unit carried out this work, with the consent of the two farmers.

This paper contains the report on this work (Part 1), and in view of the discoveries, includes a proposal (Part 2) for further limited investigation. This proposal is based on guidance provided by English Heritage in *Management of Archaeological Projects* (1991, 3.6) and *Exploring Our Past* (English Heritage 1991, 36-8, 45). Moreover, the site lies within the Hadrian's Wall World Heritage Zone, the *Management Plan* of which includes an objective 'to develop policies for... recording and research' (English Heritage 1996).

PART 1. REPORT ON A FIELD EVALUATION, 1995

1 BACKGROUND

1.1 In September 1994, Carlisle Archaeological Unit submitted a proposal to English Heritage for undertaking a limited programme of field evaluation in fields to the north of High Crosby Farm, Carlisle, Cumbria (Flynn and McCarthy 1994). This proposal followed an archaeological evaluation and subsequent excavation of fields to the south which revealed Neolithic and Bronze Age features. These discoveries were located in a landscape that had otherwise provided little evidence of archaeological material, apart from work in 1934, after which it was assumed that a Roman fort lay adjacent to the High and Low Crosby road.

1.2 Given the dearth of knowledge pertaining to almost the entire prehistoric period in northern Cumbria (Bewley 1994 notwithstanding), the 1993 discoveries are considered to be especially important in a regional context. As these finds would have been undetectable by any means other than excavation, it was thought likely that more features might exist in adjacent fields. Consideration of the micro-topography suggested a number of likely locations for further archaeological remains. Two areas were selected in fields to the north of the 1993 excavations, a sandy ridge and a knoll to the south of it. Wetlands surrounded these areas on three sides. The initial key objective was to determine whether the 1993 discoveries were isolated, or whether further remains were present over a wider area. This work would also help to place the 1993 discoveries in a wider context.

2 LOCATION

2.1 High Crosby lies on the north bank of the River Eden, approximately four miles east of Carlisle on the A689 Carlisle-Brampton road. Improvements to this road in 1993 led to the discovery of significant prehistoric remains, to the west of Grandsire or Vicarage Lane. Part of this site was destroyed during the road construction programme, but part lies relatively undisturbed to the south.

2.2 The location of the evaluation reported on here lies on the northern side of the road (Fig 1), between Grandsire/Vicarage Lane and Sandy Lane. To the west of Grandsire Lane, the fields are flat, improved agricultural land, now under a mixture of crops and pasture. Between Grandsire and Sandy Lanes the topography is much more varied, with locally prominent knolls separated by hollows. Some of the fields have been improved and are allocated to silage or crops, of which cereals are the most important and root vegetables relatively insignificant. Some of the land has not been improved and is in use as rough grazing.

2.3 The topography, combined with knowledge gained during the excavations in 1993, suggests that in the past there may have been a natural network of streams with well-drained sandy knolls in between. These were considered to be possible locations for ancient settlement.

3 AIMS AND METHODS

3.1 Objectives

3.1.1 The objectives were straightforward and strictly limited in scope. The primary aims

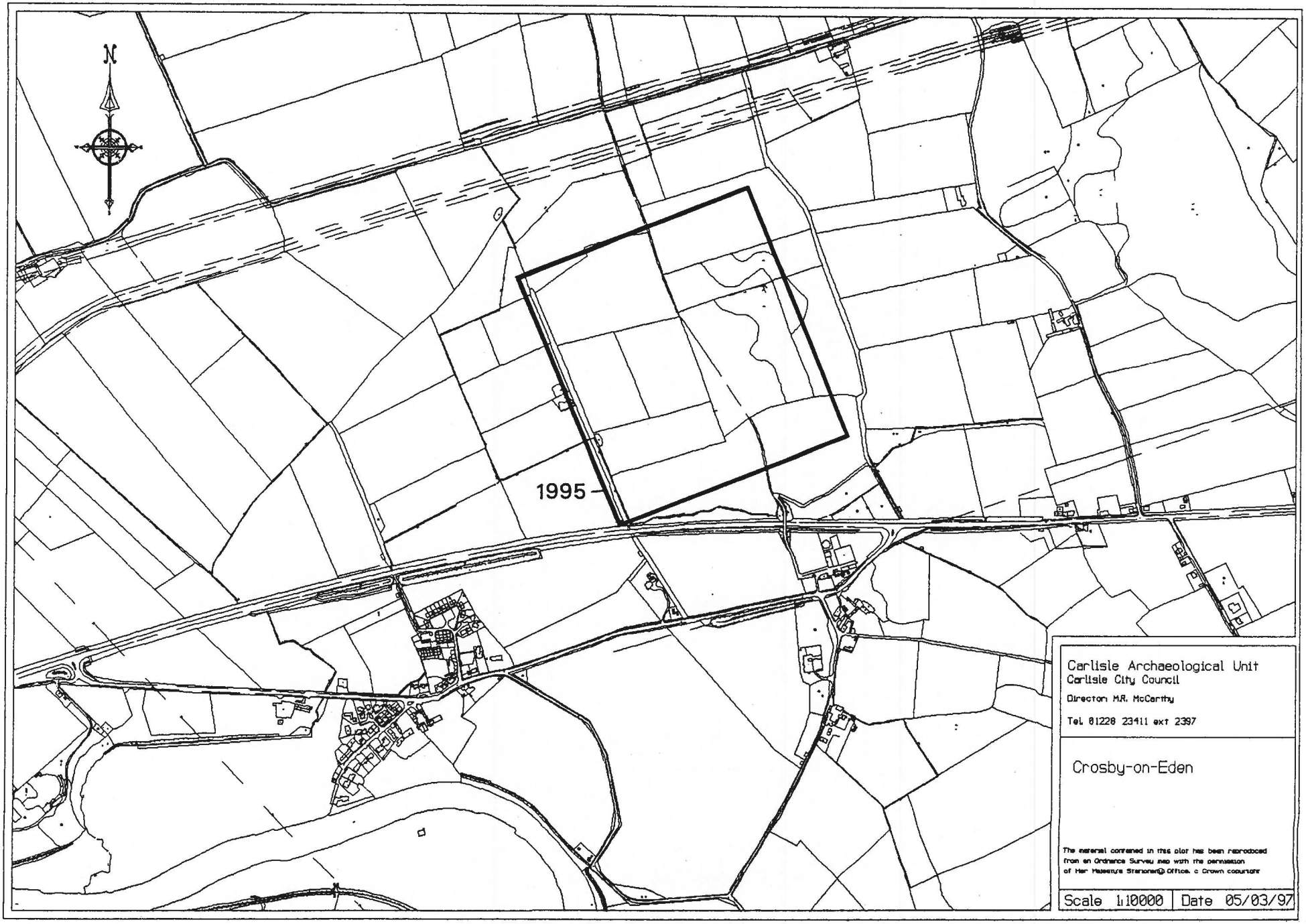

Fig 1 Location map showing Low Crosby village and High Crosby Farm south of the Carlisle-Brampton road. The area investigated in 1995 is outlined.

were (i) to ascertain whether archaeological remains survive in three fields to the north of the 1993 excavations, and (ii) to determine whether deposits of peat exist in some of the hollows between Grandsire Lane and Sandy Lane.

3.1.2 If primary aim (i) was achieved, the secondary objective was to obtain dating material and to characterise any features in order to enable a view to be formed as to their potential function and date-range (modern, medieval, or Roman/prehistoric).

3.1.3 Finally, depending on the success or failure of the evaluation, and following further consultation with English Heritage, consideration would be given to the submission of a Research Design for further work, taking account of palaeoenvironmental and geomorphological issues alongside matters regarding preservation and the importance of the site.

3.2 Methodology

3.2.1 The archaeological remains as established in 1993 are generally extremely subtly defined and are recognisable only by the most skilled and meticulous excavation. This is due largely to the very sandy subsoils and the relatively insubstantial nature of many of the features, and is, perhaps, a reason why the sites have failed to show up from the air. It is thought that geophysical prospecting, specifically resistivity and magnetometry, would yield few results for the same reason.

3.2.2 The method used was to excavate trenches entirely by hand rather than to use any mechanical means. This method not only facilitates the recovery of artefacts in the topsoil, but it also avoids the costs of re-seeding in the rough pasture.

3.2.3 A total of 29 trenches, varying in length from 2-4m and 2m wide, were excavated (Fig 2). The trenches were located in two areas selected on topographic grounds. One area (Trenches 1-6) is under cultivation, but all other trenches were located in unimproved rough pasture.

3.2.4 Trenches 1-6 lay at the northern end of the site, south of a hedge and at the edge of a promontory. Trenches 7-16 and 28-29 lay on the opposite side of the hedge, and extended east-west along a ridge. Trenches 17-27 lay further south on a knoll isolated on three sides at the present day by wet ground.

3.2.5 The trenches were cleaned and features recorded in the normal manner, but they were left undisturbed as far as possible.

3.2.6 The number of contexts recorded was 127, of which Trenches 1-16 and 28-9 (at the northern end of the site) account for 93 (73%), and 34 (27%) were recorded in Trenches 17-27 at the southern end of the area investigated. Some 83 plans and sections were drawn.

3.2.7 Mrs J P Huntley, Department of Archaeology, University of Durham, visited the site on 18th April 1995, and undertook a rapid assessment by coring areas selected for their potential peats. Coring used a 'walking stick' 1cm gouge auger for depths up to 1m. A Wing (Edelman) auger was used for greater depths. The coring was undertaken on a deliberately subjective basis rather than on a pre-determined grid. Stratigraphy was described in the field, and notes made on the broad topography and local vegetation.

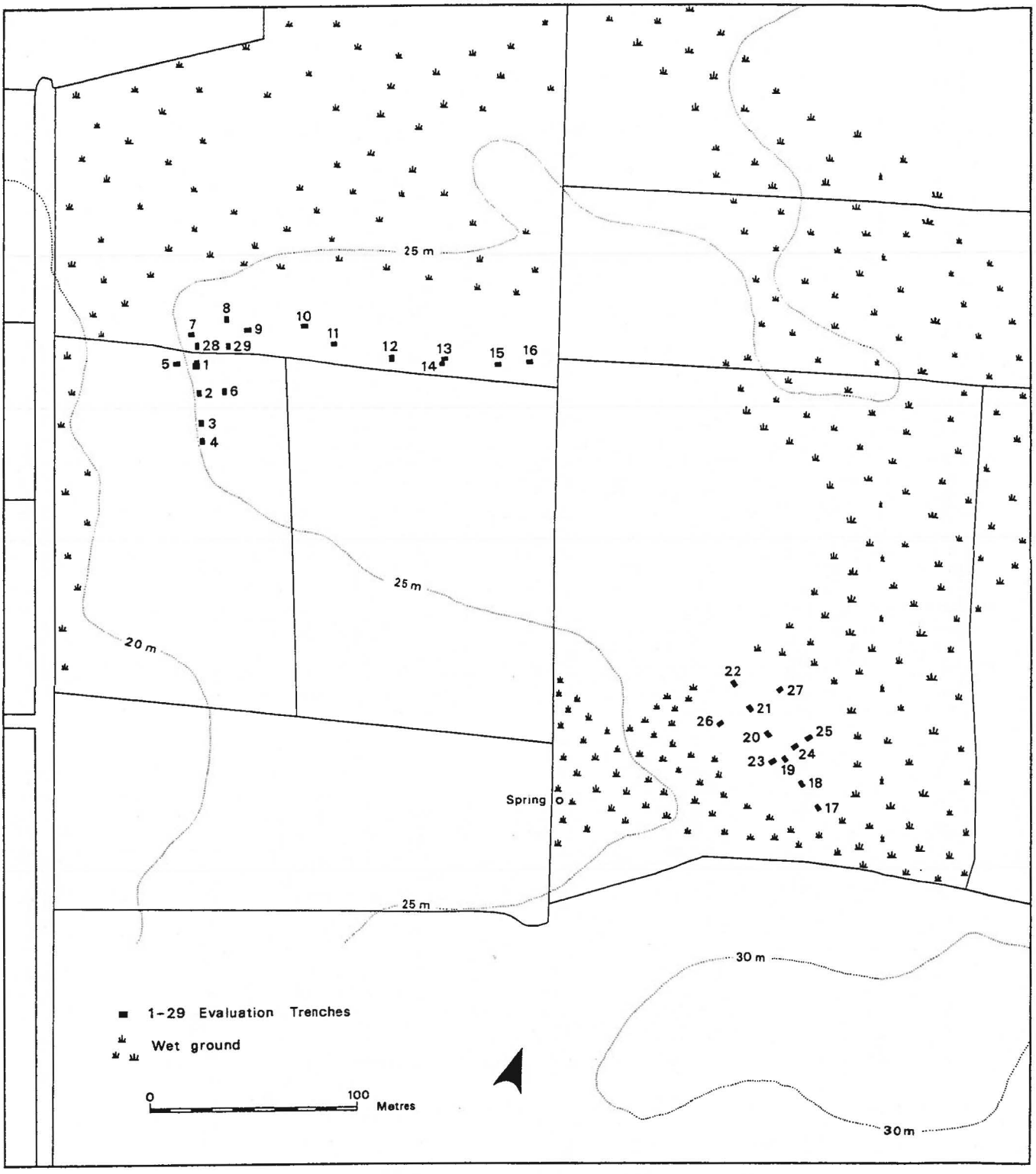

Fig 2 Location of trenches.

3.3 Timescale and labour

3.3.1 The work was undertaken between 16th March and 21st April 1995 under the direction of P A Flynn, using three other experienced fieldworkers, one of whom was deputed to assist Mrs Huntley with the coring for one day.

4 RESULTS

4.1 Excavation - Trenches 1-16, 28-29 - the northern end

4.1.1 The trenches measured 3m long by 2m wide in all cases unless stated otherwise. The topsoil was generally 0.2-0.3m in depth in Trenches 1-6, whilst in trenches to the north of the hedge it tended to be shallower, with depths of 0.08-0.20m. The natural subsoil in most cases was formed of fine sandy silts. In Trenches 1-6 plough marks aligned approximately north-south were recorded in many instances. It is thought that these are relatively recent in date.

4.1.2 Only those trenches containing archaeological features are listed below. Animal runs and burrows were regularly observed.

4.1.3 **Trench 1** (Fig 3) was L-shaped, measuring 4m long by 3m at its widest point. It contained a ditch (8) aligned approximately E-W; it was 2.4m wide, 1m deep, and it had a flat base. There were indications that it might have been lined with clay. The fill included fire-cracked pebbles. The ditch was traced for a distance of 3m.

After the ditch had been filled, it was cut by a second ditch (4), 1.5m wide by 0.5m deep, and aligned slightly differently, ENE-WSW (see Fig 4 for section of ditches). Roman pottery, including 4th-century Huntcliff ware, was recovered from the fill.

4.1.4 **Trench 2** (Fig 3) contained a slot (4), 0.32-0.38m wide by 0.08-0.15m deep, which was traced in an E-W direction for approximately 2m. In addition a number of possible stake- or postholes were identified in the slot fill, but not all were fully excavated. One contained a packing stone.

4.1.5 **Trench 3**. A ditch or gully (5) was traced for 3.2m in a NNW-SSE direction (Fig 3). It measured 0.8m wide by 0.3m deep.

4.1.6 **Trench 6**. A rectilinear post-pit, 0.6m long by 0.54m wide and 0.08-0.10m deep, was filled with sandy silts and cobbles (Fig 3). At the base of the pit was the impression of a post-pipe, approximately 0.3m in diameter, penetrating 0.06m below the base of the post-pit.

4.1.7 **Trench 10**. A V-shaped ditch (6) was traced for a distance of 2.2m (Fig 5). It was 2.2m wide, but this is almost certainly due to erosion factors, and it is thought that originally it may only have been 1.2m wide. The ditch was 0.7m deep, with lenses of sands and silts above the primary fill. There were cobbles, pebbles and some sandstones in the upper fill. The trench also revealed a second feature (9), cut by ditch 6. The nature and shape of ditch 9 remains unclear, although it was apparently U-shaped in section (see Fig 5 for section of ditches).

4.1.8 **Trench 11**. A slight hollow, possibly natural in origin, was recorded.

4.1.9 **Trench 12**. Part of a feature (4), at least 0.8m long and wide by 0.14m deep, was recorded at the edge of the trench. A second feature (6), measuring about 0.40m in diameter, was 0.44m deep.

4.1.10 **Trench 13**. A curving feature (5), possibly butt-ended, 0.20-0.38m wide by 0.12m deep, with a varied fill including some pebbles, was recorded. A possible continuation of this feature was recognised (6).

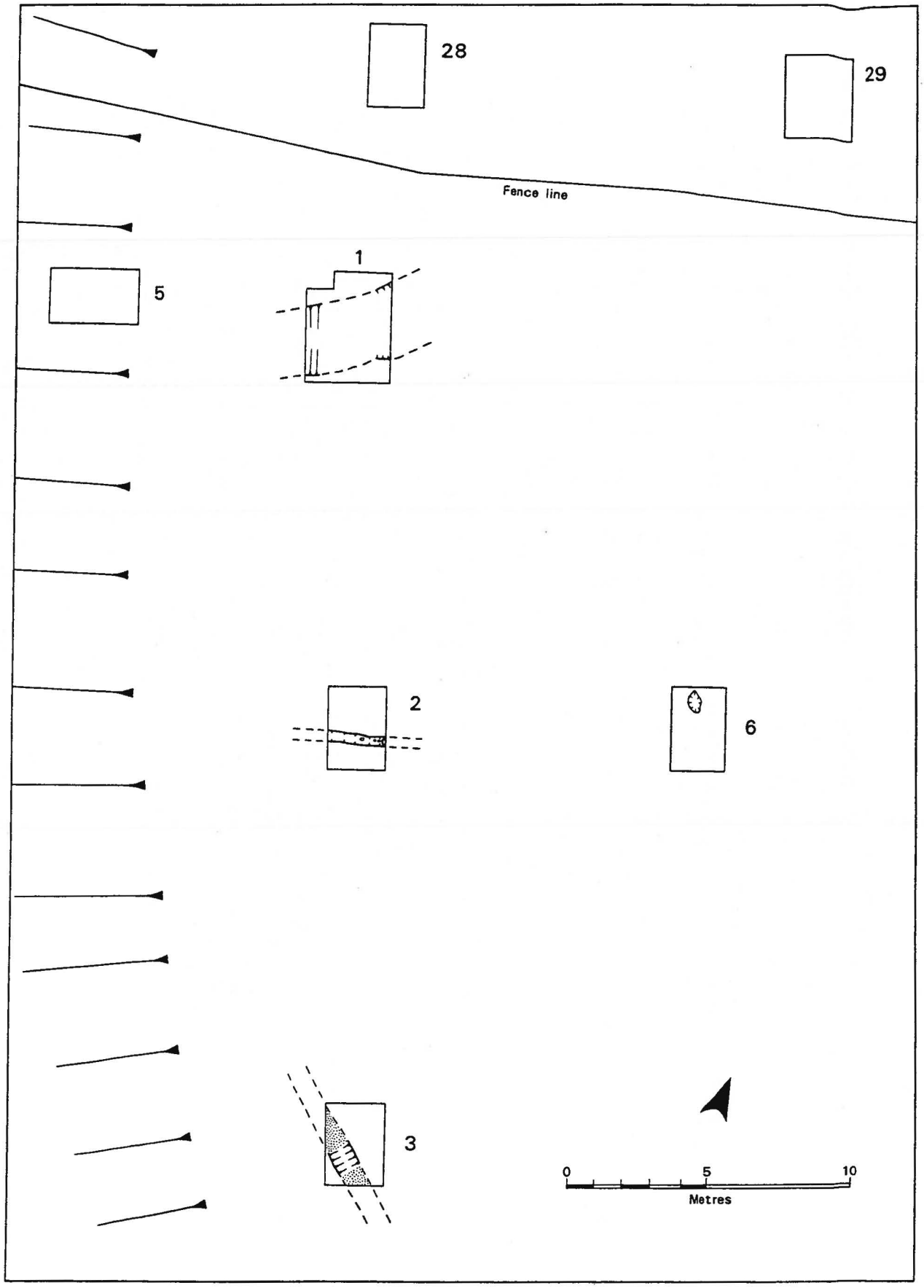

Fig 3 Trenches 1-6, showing major features.

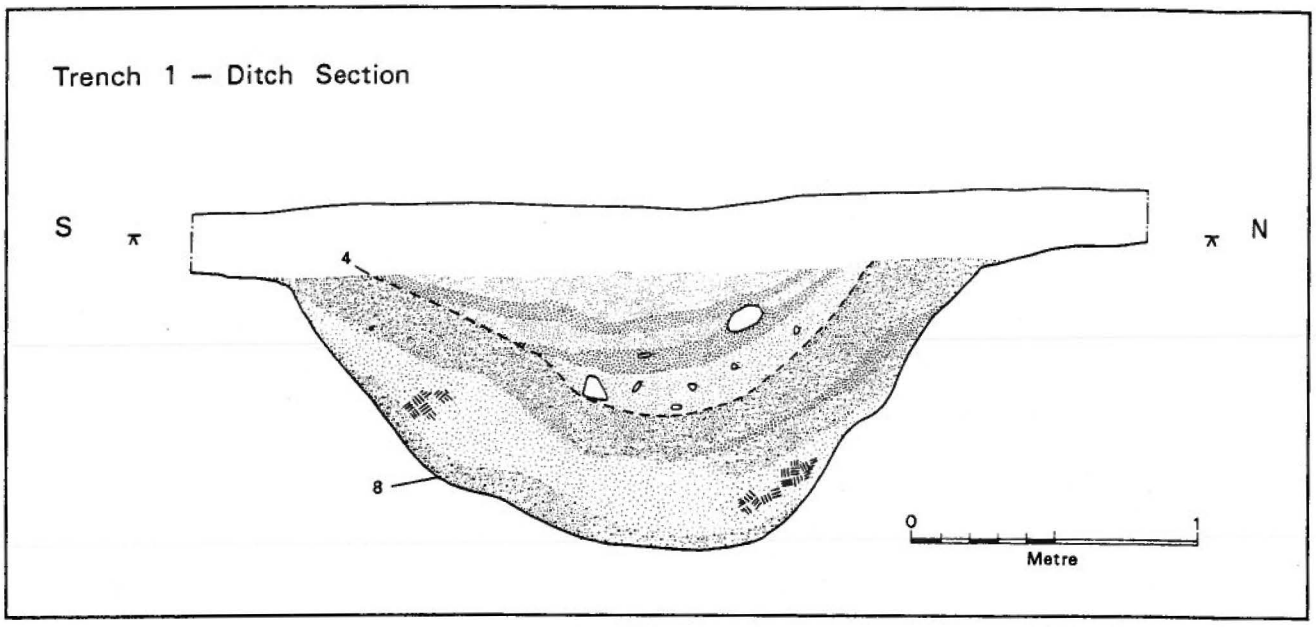

Fig 4 Trench 1: section through ditches.

4.1.11 **Trench 14** measured 2m square. A curving U-shaped feature (4), 0.26-0.5m wide by 0.20m deep, was recorded. There was a possible shallow pit (6), 0.90 long by 0.40 wide and 0.26m deep.

4.1.12 **Trench 15**. A shallow depression (5), 0.8m in diameter by 0.2m deep, was noted.

4.1.13 **Trench 16**. A possible post-pit (5), perhaps rectilinear in plan, and at least 0.58m wide by 0.41m deep, was recorded.

4.2 Excavation - Trenches 17-27 - the southern end

4.2.1 The natural subsoil on the knoll was formed of fine orange brown sand with occasional pebbles. Evidence of very extensive animal disturbance (rabbits and moles) was encountered. Trench 18 contained linear features (3) that could have been plough marks (of uncertain date). In Trench 20 there was a U-shaped scoop, thought to be a natural hollow (4); and a possible U-shaped slot 0.4m wide was recorded in Trench 22 (4). There were no other archaeological features of interest, although three fragments of flint were recovered from Trenches 17 and 26.

4.3 Finds

4.3.1 Some 32 sherds of Roman/prehistoric pottery were recovered in total, and were examined by M L Hird. Thirty sherds are Roman in date, 19 of which are attributed to the 4th century AD. Of these, 18 are Huntcliff ware and one is BB1. In addition there is a single sherd of amphora (Class 25) and a small number of abraded grey and oxidized wares. It is noticeable that the Huntcliff ware sherds are larger in size than the others. Amongst them is a large fragment of Huntcliff ware rim in a relatively fresh condition (Fig 6). There is also a fine Nene Valley Colour-coated ware beaker base (Fig 6). The Roman pottery was largely distributed between Trenches 1, 6 and 10.

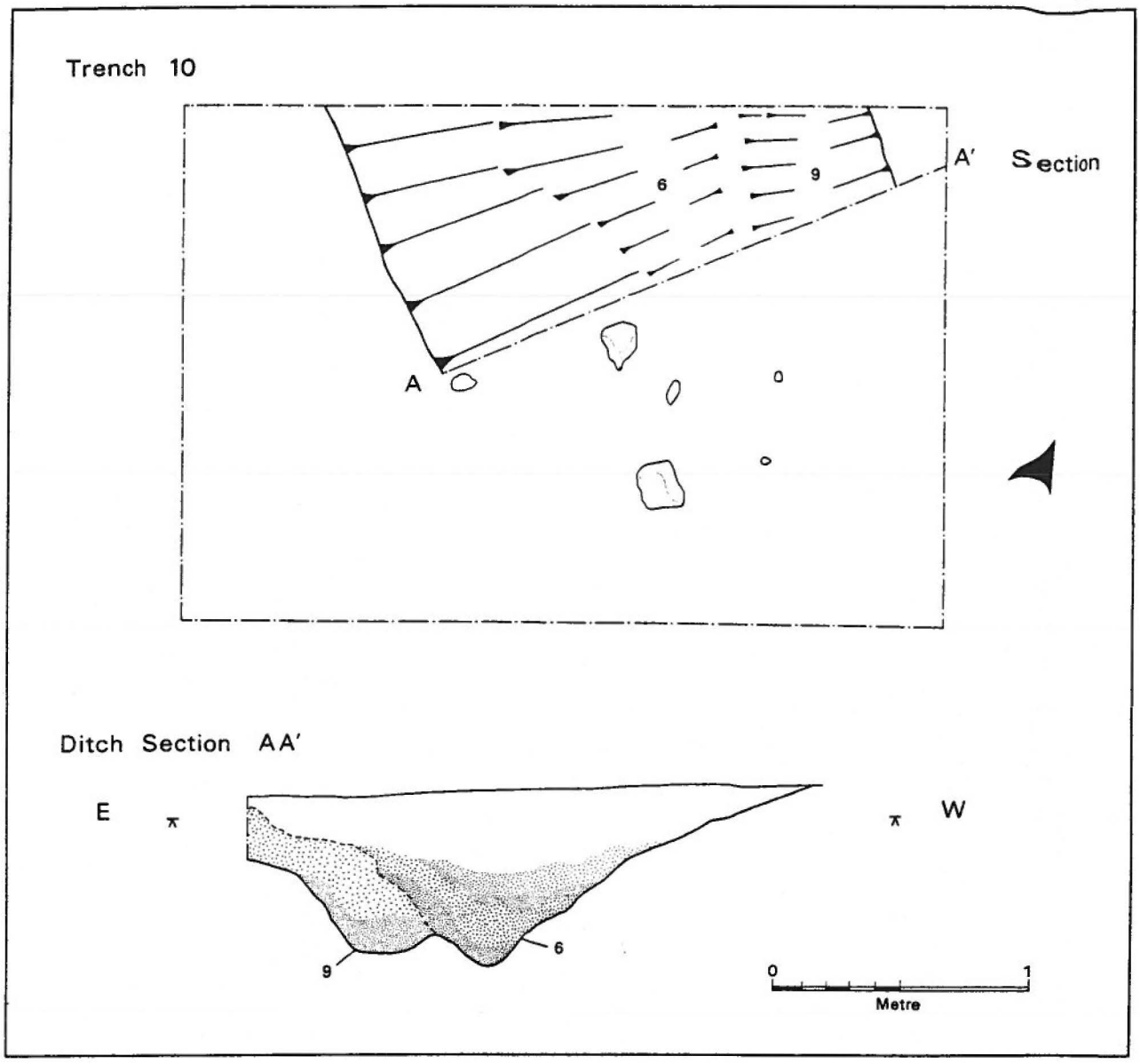

Fig 5 Trench 10: plan and section across ditches.

4.3.2 Trench 1 produced two fragments of very coarse, micaceous pottery thought to be prehistoric in date. One sherd was found in the early ditch fill and the other in the later ditch fill. The sherds could be from the same vessel, although they do not join.

4.3.2.1 The dating of these sherds is difficult. As they do not resemble anything recognisably Neolithic, Bronze Age, Roman or medieval, the current view is that the likely date is either Iron Age or post-Roman. No pottery of either of these two periods is known from Cumbria. The nearest large collection of Iron Age pottery is that recovered from the Iron Age site at Thorpe Thewles, near Stockton-on-Tees, Cleveland (Swain 1987), where over 1,500 sherds were found. The thickness of the sherds from Crosby suggests that they may be from shouldered forms rather than bowls, bucket or barrel-shaped vessels. One sherd bears a burnished wavy line (not present at Thorpe Thewles) and a straight line.

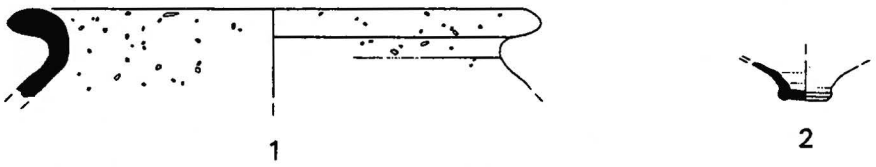

Fig 6 Roman pottery: (1) Huntcliff ware rim; (2) Colour-coated ware.

4.3.2.2 A small collection of pottery with a very similar fabric was recovered from a hill-top site at Scotby Road, Durranhill, Carlisle, in January 1997. No rims or bases were recovered in this fabric, but one sherd appears have a finger-nail or finger-tip impression. The thickness and form of this vessel is reminiscent of shouldered jars, as at Thorpe Thewles and probably at Crosby. The Scotby Road site also produced sherds from a number of other, larger vessels (currently being conserved at the University of Durham), which have not yet been studied in detail but which superficially resemble larger bucket or barrel-like forms known elsewhere from Iron Age sites.

4.3.2.3 At Thorpe Thewles the pottery was associated with Phases 2 and 3, and was subjected to thermoluminescence dating at the University of Durham. TL dates range from the 5th to 2nd centuries BC (Bailiff 1987, 71-2).

4.3.2.4 If the two sherds from Crosby-on-Eden are correctly identified as being Iron Age in date, they represent the first such discoveries in Cumbria, and are very important.

4.3.3 Other finds included five fragments of flint and a possible fragment of chert. These have not yet been examined by lithic specialists, but none seem to be diagnostic of any specific period, although some show signs of retouch. There were many fire-cracked pebbles and sandstone, and one metallic residue-coated object, possibly a stone (recorded as slag in the site archive), which derives from metalworking.

4.3.4 Approximately 20 sherds of later pottery were recovered. There are one or two sherds that may be medieval in date, but the majority are post-medieval (mostly Victorian). A single clay-pipe stem fragment was found.

4.4 Coring (based on Huntley 1997)

4.4.1 Two sequences of cores were undertaken using the 'walking stick' gouge auger. A third sequence was also taken with the Wing auger.

4.4.2 Significant deposits of sand (up to 1m in depth) was encountered. In one place deposits of gravel, perhaps from a former stream bed, were revealed at a depth of 0.4-0.6m. A red-brown organic deposit, almost a peat, was located in one area at a depth of 0.37-0.44m, but it was absent elsewhere.

5 INTERPRETATION

5.1 The evaluation was successful in two key respects. Firstly, it demonstrated the presence of archaeological remains, showing that the discoveries made in 1993 are not isolated phenomena. On that basis, it may be surmised that the landscape around High Crosby contains a much more extensive palimpsest of archaeological

features than had previously been recognised.

5.2 Secondly, the evaluation provided stratigraphic and artefactual material suggestive of at least two occupational phases (Trenches 1 and 10). Structural elements included ditches and gullies, as well as slots, postholes and pits. Two trenches (13, 14) yielded shallow curving gullies or slots, which raises the possibility that one or both may represent round-houses.

5.3 It is not possible to define the nature of the occupation in either phase, however. Although no features diagnostically funerary, military or ritual were discovered, and clearly cannot be ruled out at this stage, the simplest hypothesis is to suggest a domestic/agricultural context, with structural elements including ditches, walls and/or fences, as shown by the presence of a slot (Trench 2) and postholes and shallow pits.

5.4 The dating of the phases is problematic. A prehistoric element seems likely for the earlier phase. Lithics and fire-cracked stones were a feature of the 1993 excavations on the line of the Crosby bypass, where settlement attributed to the Neolithic/Bronze Age was discovered (Flynn and McCarthy 1994). The later phase is probably Roman in date on the evidence of the pottery. Whilst it is possible to argue that pottery may be spread widely across the landscape through the activities of manuring, and it is therefore not necessarily indicative of settlement in the immediate vicinity, in northern Cumbria Roman pottery is not found very frequently in fieldwalking. The concentration of Roman sherds may therefore indicate Roman activity, whilst the relatively large proportion of late Roman sherds at this site suggests that there may have been activity here in the fourth century AD. Two possible contexts suggest themselves, either military activity along the military road to the south of Hadrian's Wall, or farming and domestic settlement alongside the road.

5.5 The coring for peat failed to achieve its objective with regard to the environmental potential. Significant deposits of peat were not confirmed around the knoll at the southern end of the site, but this does not mean that deposits are absent, and the use of a piston corer (Livingston) may have greater success.

PART 2. A PROPOSAL FOR FURTHER WORK

6 THE ACADEMIC CONTEXT

6.1 General academic background

6.1.1 Excavation and evaluation in 1993 (Sections 1.1-2 above; see also Appendix 1) and in 1995 (Sections 4-5 above) have demonstrated the existence of archaeological features in the fields close to High Crosby Farm, Carlisle, spanning the Neolithic-Roman periods, where there had previously only been a suspicion of Roman activity (Birley 1961; Simpson *et al* 1936, 182-4).

6.1.2 The work at High Crosby in 1993 provided one of the first indications of prehistoric settlement activity in northern Cumbria, and is regarded as very important from a regional, if not a national, perspective. More recently, further prehistoric activity has been located to the west of Carlisle as well as to the east. Settlement and 'ritual' features tentatively ascribed to the Neolithic, Bronze and Iron Ages have been located through aerial photography and archaeological evaluation. In some instances these discoveries have been accompanied by artefactual material. This work aside, however, it remains the case that knowledge of prehistoric settlement and society is seriously underdeveloped by comparison with other regions of Britain.

6.1.3 Carlisle Archaeological Unit is working in active cooperation with other researchers at the Universities of Newcastle, Durham, York, Southampton and Birmingham employing a suite of techniques which will greatly enhance our understanding of landscape development. For example, in addition to archaeological work, research on the geomorphology of the Tyne valley, especially the upper reaches of the South Tyne, combined with pollen analysis, has led to the conclusion that prior to the arrival of the Romans there, settlement was small in scale, with little permanent impact on the forests (Passmore and Macklin forthcoming, 13-14). Not only is this conclusion at variance with the archaeological record for the Tyne Valley (*ibid*, 14), but it may also be untrue for the Eden Valley as well. Research is in progress which has as one of its long-term aims the testing of some of these issues.

6.1.4 Furthermore, the extent to which off-site records, such as pollen from blanket mires (Barber 1993; Dumayne and Barber 1994) and radiocarbon-dated alluvial sequences, are a reflection of anthropogenic activity elsewhere in the river catchment, as opposed to climatic factors, is as yet unresolved. No geomorphological work has yet been undertaken in the valley of the River Eden or its tributaries, but archaeological excavation, as at Crosby-on-Eden in 1993 and 1995, combined with work at Carlisle Airport and other sites around Carlisle, clearly has a significant role to play in this debate.

6.1.5 The identification and study of ancient landscapes are identified by English Heritage as an important academic objective (*Exploring Our Past*, 37-9). At present our knowledge of the landscape around Crosby-on-Eden is very limited, and the present proposal (Section 9 below) is intended to clarify a number of issues concerning the nature and dating of two periods of activity (Iron Age and late Roman) discovered in 1995, but for which there appeared to be little evidence in the 1993 work on the Crosby bypass. Moreover, it is possible that this work may

entail at least two and possibly three landscape types: wetland, arable and permanent pasture, using the definitions provided in *Ancient Monuments in the Countryside* (Darvill 1987, 31).

6.2 Management background

6.2.1 The *Hadrian's Wall Military Zone World Heritage Site Management Plan* (English Heritage 1996) lays particular emphasis on understanding the needs of present-day land-users and enhancing the landscape as a means of conserving the Wall, its associated features and its atmosphere. This report acknowledges that the Wall has considerable potential for understanding landscape change. The evolution of the frontier in the late 1st and 2nd centuries AD impacted on existing land-use and determined future land-use for nearly 2,000 years. As the report states, 'the Wall is of significance also to prehistorians and to medievalists, as it acts as a horizon against which other changes can be measured' (2.2.3).

6.2.2 It is partly within this context that the present proposal is submitted. First, the probability that Iron Age occupation exists very close to Hadrian's Wall (4-500m to the north), and a mere 400m west of the fort at White Moss, is of considerable interest in the light further work could shed on settlement and land-use in the centuries immediately prior to the arrival of the Romans. Secondly, the demonstration in 1995 of late Roman occupation provides an extremely rare opportunity to examine a rural site, whether domestic or military is as yet uncertain, in the lee of the Wall itself. Hitherto, activity of this date has been located only in the forts and *vici*; much of the evidence for rural settlement seems to be focused on the Antonine-Severan periods.

6.2.3 Within the context of Hadrian's Wall and its Management Plan alone, further work at Crosby could yield further useful information of academic interest in a regional sense, as well as in terms of informing future management decisions.

7 THE ACADEMIC IMPORTANCE OF THE SITE

7.1 Notwithstanding the comments made with regard to preservation (8.1-2), the site is important, and adds further strands to the results of the 1993 excavations (Appendix 1). The Iron Age dimension to this project is especially interesting for Cumbria as no other similarly dated sites, except possibly now Scotby Road, Carlisle, have been recognised. Large numbers of enclosures are known from aerial photography in northern Cumbria (Bewley 1994; Higham and Jones 1975; Jones and Walker 1983), but the majority have been regarded as probably belonging to the Roman period, reflecting more settled conditions in the lee of Hadrian's Wall, notwithstanding the general lack of excavation (Higham and Jones 1985). This view has been challenged (Young 1994; McCarthy forthcoming), and current opinion holds that some of the sites known from aerial survey probably antedate the Roman invasion. This is almost certainly the case in the Tyne Valley (Topping 1989). Archaeological and radiocarbon-dated pollen sequences also bear this out, with levels of non-arboreal pollen showing a decline in the Iron Age (Hanson 1996).

7.2 The Roman material may also prove to be very significant. Sites of 4th-century date are extremely rare in the north beyond military sites (eg Barrock Fell, Birdoswald) and urban centres (eg Carlisle, Old Penrith). The whole question of the location and nature of rural settlement outside what may be loosely termed 'leadership' or elite sites has never been explored. Indeed, one of the difficulties with late Roman and sub-Roman rural settlement in northern England is the fact that it is invisible apart from hints of cereal cultivation in the pollen record. Yet, as is widely acknowledged, and assuming that large-scale depopulation did not take place, the sites must be there. The possibility that one of these sites may exist at High Crosby, albeit not well preserved, opens up a possible avenue for research.

7.3 The discovery of pollen-bearing deposits in peats on the eastern and northern margins of the site could be of great interest and importance in the light of prehistoric and Roman settlement in the immediate vicinity. The context for this lies in the archaeological work recently and currently being undertaken by Carlisle Archaeological Unit on ancient landscapes and Hadrian's Wall in northern Cumbria, especially around Carlisle and Stanwix.

7.4 A further important context is in the long-running research programme on climate and vegetation in the Hadrian's Wall zone, coordinated by Dr Keith Barber, Department of Geography, University of Southampton, and Dr Lisa Dumayne-Peaty, Department of Geography, University of Birmingham. Their work has focused on a number of ombotrophic mires in the Hadrian's Wall zone, specifically Bolton Fell Moss and Walton Moss. These are extensive mires which are suitable for palaeoecological work, and which provide a generalised picture of vegetation change in the area. In the case of work at Crosby, the mires bounding the site on its eastern and northern sides are much smaller, and may provide indications of vegetation change on a very localised scale, one which may reflect activities at the sites to be investigated archaeologically.

8 PRESERVATION

8.1 The work in 1993 and 1995 demonstrated with startling clarity the fragility of the archaeological remains. It was for this reason that in 1993 Cumbria County Council was persuaded to limit the areas of landfill and associated traffic in a field to the south of the new Crosby bypass, when features associated with Neolithic and later settlement were located.

8.2 The subsoil in the fields proposed for evaluation is sand, and features have suffered erosion through ploughing and animal burrowing. It is expected that floor levels will have been removed *in toto*. Animal bone is not anticipated because of the generally acidic condition of the soil, and metalwork is expected to be in a poor state of preservation.

9 THE PROPOSAL

9.1 Archaeological evaluation

9.1.1 Building on the 1995 work a further series of evaluation trenches is proposed, concentrating in two fields currently under cereals, and in one ownership. A

primary aim will be to determine the extent of settlement in the higher land occupied by the ploughed fields.

9.1.2 A key academic aim will be to determine whether any of the ditches discovered in 1995, or any others, formed an enclosure for defensive or other purposes, and to determine their date. A second key aim will be to shed light on the possibility hinted at in Trenches 2, 13 and 14, that both rectilinear and round-houses are present.

9.1.3 Particular attention will be paid to the possibility that there may have been buildings whose foundations were based on pads or ground-based sill beams, which may leave little trace in the archaeological record, although as floor levels are expected to have been removed by plough action, the likelihood of such features remaining is not great. Nevertheless it is important to search for such evidence, in testing the idea that putative late Roman activity continued seamlessly into the sub-Roman period. In the absence of sub-Roman artefactual assemblages, the only evidence anticipated for this elusive period would be the establishment of a succession of buildings, including the subtle and shadowy remains of surface-based structures.

9.1.4 Bearing in mind the issues raised above, the fill of all cut features will necessarily be sampled in order to establish the range of structural characteristics as well as to aid the recovery of artefactual material and carbonised grain. Where possible, material will be recovered for dating in the Oxford Radiocarbon Accelerator Unit, Research Laboratory for Archaeology and History of Art, Oxford. An allowance is made in the assessment costs (Section 14 below) for this element. Similarly, an allowance is also made for luminescence dating at the Luminescence Dating Laboratory, University of Durham.

9.2 Palaeoenvironmental work

9.2.1 In view of the proximity of prehistoric and Roman features and wetland, it is proposed that the search for pollen-bearing deposits is continued at the margin of the unimproved grasslands and valley mires in the ownership of Mr Foster on the northern and eastern sides of the site.

9.2.2 The Iron Age and late/sub-Roman periods represent important lacunae in our knowledge of this area. Clarification of their extent and character, together with the recovery of lithic and ceramic material, could shed important light on land-use in northern Cumbria, especially given the proximity of the Archaeological Unit's other work at both the Crosby bypass in 1993 and at Carlisle Airport in 1996. This work would effectively complement palynological/climatological research undertaken by Dr Keith Barber and Dr Lisa Dumayne-Peaty, from the Universities of Southampton and Birmingham respectively, in Walton and Bolton Fell Moss to the north-west (eg Barber 1993; Dumayne and Barber 1994). Drs Barber and Dumayne-Peaty will be invited to visit when the schedule for the work is known.

9.2.3 In addition there is a significant lacuna in the beetle fossil record with regard to prehistoric insect communities, and the possibility that fossils, specifically *indicator taxa*, may survive in peats is considered worth examination. Despite the advances made in archaeoentomology in the past 20 years, it remains the case that little work has been undertaken on pre-Roman insect communities. Of particular interest is the need to establish a range of taxa for certain ecological niches in the

pre-Roman Iron Age as a means of being able to quantify the impact the arrival of the Romans had on insect communities (H Kenward, pers comm). The possibility that Iron Age occupation may be present, together with the knowledge that a Roman military community was also present at the adjacent White Moss fort, underlines the importance of this site. Harry Kenward, Environmental Archaeology Unit, University of York, will be invited to visit the site when work on the valley mire edge is undertaken.

10 METHODOLOGY

10.1 Evaluation

10.1.1 The archaeological remains as established in 1993 and 1995 are generally subtly defined, and are recognisable only by the most skilled and meticulous excavation. This is due largely to the very sandy subsoils and the relatively insubstantial nature of many of the features. Geophysical survey has been considered but rejected as a non-destructive technique, because many of the features are insufficiently large or deep to register.

10.1.2 The method to be adopted will be to excavate the trenches entirely by hand rather than to use any mechanical means; this will also facilitate the recovery of artefacts in the topsoil.

10.1.3 The total number of trenches proposed is necessarily left imprecise, because weather conditions may impose constraints, and some new features may require some trenches to be slightly expanded in size and other planned investigations to be reduced.

10.1.4 Similarly the location of the trenches is left imprecise, and will be determined as work proceeds. The area of the proposed work is indicated in tone on Figure 7.

10.1.5 Notwithstanding the caveats expressed above, the following points can be made with regard to the trenches.

10.1.6 A series of trenches, up to ten in number and similar in size to those excavated in 1995, would attempt to characterise further the features discovered in 1995 in Trenches 1-3 and 6. They will attempt to follow the direction of the ditches/gullies in Trenches 1 and 3, and an attempt will be made to see whether post- or stakeholes or slots for a bank revetment exist next to the ditch in Trench 1.

10.1.7 It is also important to ascertain whether a slot with postholes in Trench 2 is part of a rectilinear building, and to see whether there are further structural features similar to the post-pit in Trench 6.

10.1.8 No work has taken place in the adjacent ploughed field to the east of Trenches 1-6. Confirmation that archaeological remains exist here is necessary before further work in subsequent years can be planned, although there is a strong probability of this, as can be seen in Trenches 10, 13 and 14, which extend the distribution of archaeological remains eastwards, albeit in a different field.

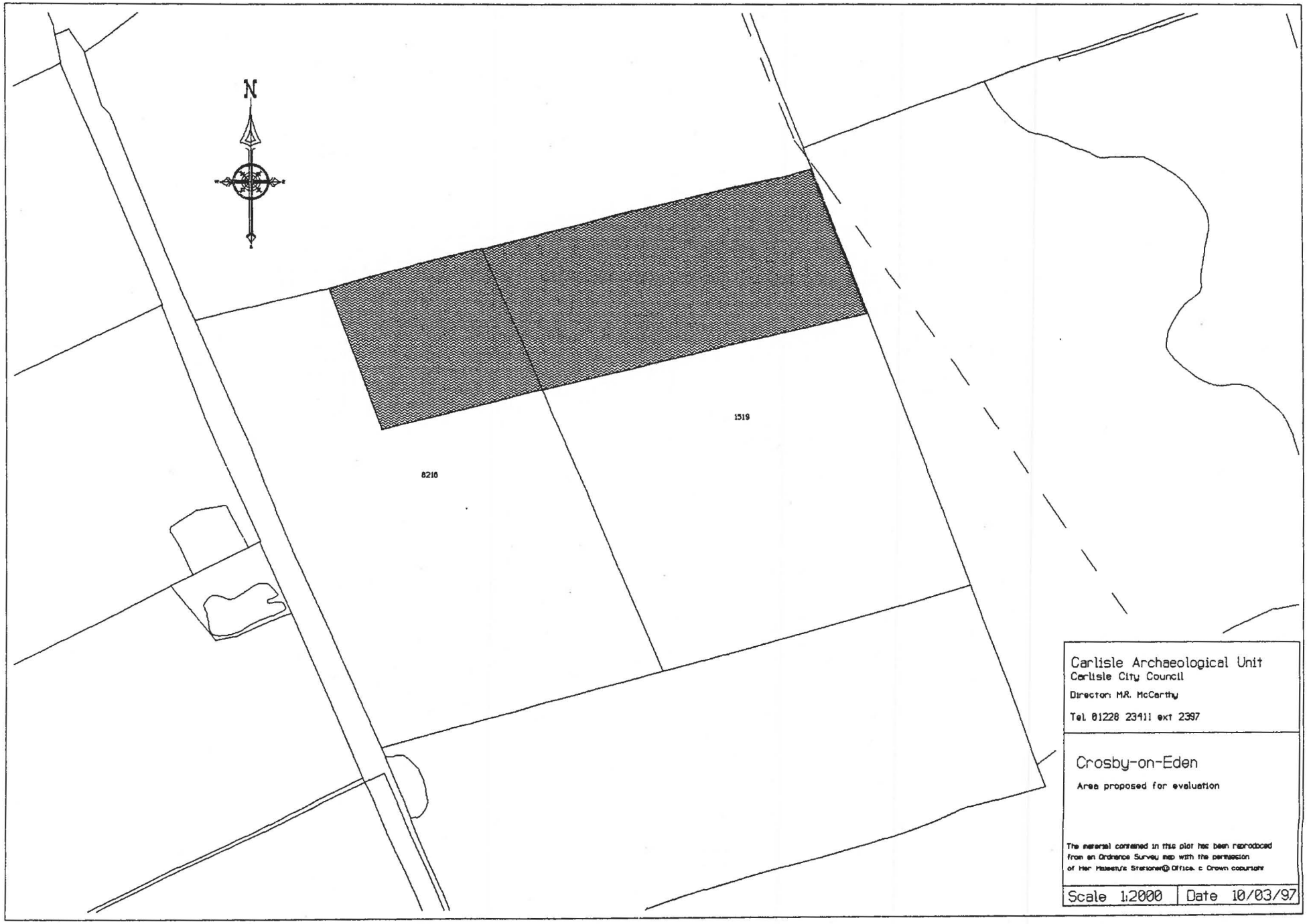

Fig 7 Location of areas proposed for further evaluation.

10.1.9 It is anticipated that 10-15 trenches will be excavated in this field.

10.1.10 Trenches 2-3m in width and 3-10m in length will be excavated. The trenches will be disposed to take account of both the topography, and the dataset recovered in 1995. The precise position of the trenches is not known at present, and may be determined by constraints imposed by the farmer, Mr Miller.

10.1.11 The trenches will be cleaned and features recorded in the normal manner. Excavation will be undertaken for the express purpose of attempting to characterize the features in terms of dimensions, fill and the recovery of datable material, but, as is Carlisle's usual practice, they will be disturbed as little as possible. The trenches will not be fenced as there is no public access anywhere near the site, and no danger from livestock. They will be backfilled.

10.2 Palaeoenvironmental study

10.2.1 Soil samples will be recovered for the extraction of carbonised seeds. These will be examined and identified by Mrs J P Huntley, Department of Archaeology, University of Durham, subject to English Heritage approval, using well-established techniques. Selected examples will be sent to the Oxford Radiocarbon Accelerator Laboratory for AMS dating.

10.2.2 The search for pollen-bearing deposits in the adjacent mosses, which are basically valley mires, will be undertaken by Mrs J P Huntley, subject to approval by English Heritage, using either a Livingston corer or by excavating 3-4 trenches with a JCB mechanical excavator. The alternatives are included because weather conditions will determine whether a JCB excavator can get access to the site. The latter would be preferred over a Livingston corer, because it affords the opportunity to make a visual inspection of the deposits *in situ*.

10.2.3 At this stage the search for peat deposits is simply intended to determine whether or not they are present, hence the deliberately coarse method to be employed. If deposits are located, samples will be taken from near the base and the middle of the deposits to see whether or not pollen grains are present at a magnitude of 100 grains or more per sample. This is low resolution work. It is further anticipated that a sample will be taken from the base of the peats for a radiocarbon determination, the purpose of which will be simply to provide a crude indication of when the peat may have started to accumulate.

10.2.4 The identification of peat deposits will highlight the question as to whether any beetle macrofossils are present. Sub-samples will be extracted from the peat for scanning by Frances Large, under the supervision of Harry Kenward, Environmental Archaeology Unit, University of York, subject to approval by English Heritage.

10.2.5 Input by J P Huntley and H Kenward will not exceed 5 days' commitment.

10.2.6 The outcome of the evaluation will be to shed further light on the archaeological/structural features, to provide more evidence for the site chronology, and to clarify the environmental potential of the adjacent valley mires with regard to pollen

and insects. The methods to be employed are deliberately small in scale and coarse in terms of their resolution, but they should provide sufficient information to enable an informed decision to be made as to the future research potential of this area.

11 LAND-OWNERSHIP AND LAND AVAILABILITY

11.1 The land under cultivation and used for silage is owned by Mr J Miller, High Crosby Farm, High Crosby, Carlisle. The land under rough pasture in adjacent fields used for grazing is owned by Mr R Foster, Low Wallhead, Crosby-on-Eden, Carlisle.

11.2 The only area within Mr Miller's ownership likely to be available for archaeological investigative work in the immediate future is indicated on Figure 7 (toned area), and is under cereal cultivation.

11.3 The land selected for coring is in the ownership of Mr R Foster.

11.4 Both landowners have proved to be extremely helpful and cooperative in the past, and there is no reason to suppose that they will not be helpful in this instance. The present writer will make an approach nearer the time when the farmer's own cropping schedules are known.

12 TIMESCALE AND LABOUR

12.1 The precise timing of the work will be a matter for discussion with the land-owners.

12.2 An allowance is made in the costs for some 20 days' excavation. The work will probably be undertaken under the direction of P Flynn, Field Officer, but another experienced Field Officer may be seconded to this, depending upon other commitments. A team of 8 experienced fieldworkers will be employed.

13 PUBLICATION

13.1 The present writer, in conjunction with Paul Flynn, has published an interim account of the 1993 work at Crosby in *Past* (Flynn and McCarthy 1994).

13.2 The assessment of the data from the 1993 campaign is still under way, and detailed publication proposals have yet to be formulated, although the current intention is to submit a report to the *Proceedings of the Prehistoric Society*. A final decision will be made once the full report on the palaeoenvironmental data and the outstanding radiocarbon dates have been received. It is also possible that the results of the proposals outlined above will influence the decision on the method and vehicle of publication.

13.3 A report setting out the main conclusions will be prepared for limited distribution as soon as the fieldwork is complete.

14 COSTS

14.1 *Excavation*

	£
Salaries/wages	8,502.00
Site accommodation	275.00
Equipment	100.00
Stationery/photography	700.00
Sub-total	**£9,577.00**

Assessment report preparation

	£	
Salaries	2,963.00	
Equipment	350.00	
Specialist report (seeds)	100.00	*Notes 1 and 2*
Specialist report (pollen)	1,000.00	*Notes 1 and 3*
Specialist report (insects)	260.00	*Notes 1 and 4*
Ceramic conservation	500.00	
C14 dates allowance (seeds)	750.00	*Note 5*
C14 dates allowance (pollen)	250.00	*Note 5*
TL date allowance	750.00	*Note 6*
Sub-total	**£6,923.00**	
TOTAL		**£16,500**

Notes

1. Specialists:
   J P Huntley, 1 day's fieldwork (pollen) and provision of advice on pollen and carbonized seeds, subject to English Heritage approval - no cost to project.
   H Kenward, advice during coring and assessment, subject to approval - no cost to project.
   Total time envisaged for J P Huntley and H Kenward, during fieldwork and report preparation - less than 5 days each.

2. Technical assistance (seeds), J Daniels, allowance of:
   preparing 4 samples @ £25 per sample - £100.

3. Technical assistance (pollen), J Daniels, allowance of:
   preparing 16 samples @ £25 per sample - £400;
   assessing 16 samples @ 4 samples per day @ £150 per day - £600.

4. Technical assistance (insects), F Large, allowance of: 2 days @ £130 per day - £260.

5. An allowance is made for three AMS radiocarbon dates for carbonised seeds, and for one AMS date to be taken from near the base of a peat deposit.

6. An allowance is made for up to three luminescence dates on ceramic material.

APPENDIX 1. SUMMARY OF PREVIOUS WORK

15 K HODGSON'S EXCAVATIONS, 1934

15.1 In 1934 the late Miss K Hodgson excavated a number of trenches in a deep cutting in the grounds of Crosby Lodge. Her discoveries, which included road metalling, roadside ditches and pottery, were summarised in Simpson *et al* 1936 and Birley 1961, and were thought to belong to the Roman Stanegate. It was largely on this basis that a Stanegate fort was postulated in the field to the north. These conclusions have remained and have never been seriously challenged, although doubts have been privately expressed.

16 CARLISLE ARCHAEOLOGICAL UNIT EXCAVATIONS, 1993

16.1 An evaluation by Carlisle Archaeological Unit in 1991 located a probable prehistoric site on a low hilltop on the line of then proposed High and Low Crosby bypass, a short distance to the north of the site of Hodgson's work in 1934. Carlisle Archaeological Unit was commissioned by Cumbria County Council to excavate the site in 1993 in advance of road construction. The excavation covered an area 150m long and up to 23m wide. At the same time the road contractor's need for a landfill site led to an evaluation being undertaken in the same field, adjacent to the excavation.

16.2 A preliminary assessment of the soils combined with the archaeology provides a crude model for landscape development in this part of northern Cumbria, perhaps extending from the early Holocene into more recent times. Following the deposition of an alluvial fan and the development of a Carr-type peat, perhaps containing alder, there seems to have followed a period of environmental change in which the peats were eroded and alluvium was redeposited. Whether or not this represents a phase of climatic change is not clear. Following this, four broad periods of anthropogenic activity were identified.

16.3 In **Period 1** some disturbance of the local landscape took place, leading to the movement of soil downslope. It is possible that this is contemporary with the earliest deposits recognised during evaluation work on the landfill site. A number of shallow pits, some of which could be post-settings, were discovered, containing several sherds of Neolithic pottery, tentatively ascribed to the Lyles' Hill or Grimston traditions. Several fragments of polished stone axes were also found, although not associated with the pottery. The nature of the Neolithic activity was not further elucidated, as it was confined to the area of the proposed landfill site.

16.4 It is thought that a more radical disturbance of the landscape took place in **Period 2**. The main excavation, located next to and within a former stream bed, revealed a series of five lines of palisades. A single radiocarbon determination (funded by English Heritage) from a piece of wood from one of the slots suggests a Middle or Late Bronze Age date (cal BC 1030-800; GU 5352). The bases of at least 12 posts survived in two parts of the circuit of palisade 2. The posts were closely spaced and appear to be whole trunks, up to 0.3m in diameter, with trimmed ends. Where best preserved, the slots, which had been dug to a width just large enough to receive the posts, were up to 0.5m deep.

16.4.1 No relationships were established between the various lines of palisade, and it remains uncertain as to whether more than one phase of activity is represented. The evidence from the main excavation and the adjacent evaluation suggests the presence of an enclosure measuring at least 70m by 70m.

16.5 **Period 3** included a concentration of posts and pits, one of which yielded carbonised grains of hulled barley. There was some evidence for collapse and repair work on the eroded northern circuit of the palisade, which might be related to the eroding southern edge of the stream bed. There was a gradual accumulation of humose soils in the increasingly wet late Bronze Age and Iron Age, but whether or not this is contemporary with Period 3 is uncertain.

16.6 **Period 4** provided limited evidence for land-use in the Roman period, and this is a point of interest with regard to the idea of a Stanegate fort (see 15.1 above), and to the proximity of the fort at White Moss. Renewed colluviation in the 12th-13th centuries AD, almost certainly a consequence of ploughing, led to the development of the modern ground surface.

16.7 Apart from the Neolithic pottery and axes, other finds included a small assemblage of undiagnostic flints, over 5,000 fire-cracked pebbles, and over 300 sherds of medieval pottery.

17 THE IMPORTANCE OF THE 1993 EXCAVATIONS

17.1 The site of the 1993 road excavations and landfill evaluation is a 'green field' site in the sense that prior to 1991, the year of the initial evaluation, there was no archaeological data pertaining to this land. Despite frequent aerial forays, no evidence of ancient settlement or land-use had been observed from the air by Carlisle Archaeological Unit, and given the very sandy soils and the insubstantial nature of the archaeological features, it is unlikely that geophysical techniques would produce meaningful information. In this situation, the only way of determining the presence/absence of archaeology is to excavate by hand.

17.2 The discovery of a palimpsest of archaeological features, including palisades, gullies, ditches, pits and scoops, associated with preserved radiocarbon-dated timbers, flints, fire-cracked pebbles, Neolithic pottery and axes, demonstrated beyond any doubt that remnants of a previously unsuspected prehistoric landscape exist.

17.3 A broad date-range for the features is suggested by Neolithic artefacts, and timbers whose date is currently thought to centre on around 1,000 BC. Settlement material of this date excavated under modern conditions is excessively rare in Cumbria. This date-band at Crosby marks the site out as being important at a regional level, and the fact that absolute dates have been obtained and more are awaited, together with the proximity of the site to a former stream bed containing peat deposits, emphasises their interest.

17.4 The proximity of this site to the north bank of the River Eden, together with the dates already established, adds to its interest. The Lower Eden Valley has not been subjected to any geomorphologically based study, but studies of river erosion and sedimentation histories in the catchment area of the River Tyne, only a short

distance away over the watershed, are proving increasingly important in understanding ancient land-use patterns (D Passmore, pers comm; Macklin *et al* 1992). One important conclusion of work on Holocene fluvial history is that there appears to be a widespread general correspondence across the country when river systems were actively eroding upstream and depositing sediments lower down. One of these episodes occurs at around the Bronze Age/Iron Age transition in the Middle Tyne valley as well as elsewhere in the south and the Cheviots (*ibid*, 135). This is also the approximate time-period to which an important phase of activity at Crosby-on-Eden belongs.

18 OTHER WORK IN THE VICINITY

18.1 In 1980 Julian Bennett, working for the Central Excavation Unit, English Heritage, excavated a section across Hadrian's Wall and its ditch and the Vallum at Walby. This work is unpublished.

18.2 In 1988-91, Lancaster University Archaeological Unit undertook survey and evaluation work in advance of the construction of the North Western Ethylene Pipeline for Shell Chemicals UK. They discovered a shallow pit containing over 50 sherds of Neolithic Peterborough Ware pottery at Old Grove, approximately 2.7km to the west.

18.3 In July 1994, Carlisle Archaeological Unit evaluated a field at Low Crosby, 0.7km west of High Crosby, and located a number of gullies thought to belong to prehistoric round-houses. Although no dating material has been obtained so far, work in progress at the time of writing suggests that an alternative interpretation for these 'round-houses' may be possible. It is hoped that this issue will be clarified in April-May 1997.

18.4 No excavation has taken place at the Roman camp at White Moss, although aerial photography has demonstrated that it is a multi-period site.

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