

ELMBANK CARAVAN PARK, COW ROAD, SPITTAL, NORTHUMBERLAND



Archaeological Appraisal and Geophysical Survey



Oxford Archaeology North

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**Rural Solutions and Richard
Roberts**

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SUMMARY

Following proposals by Rural Solutions for the expansion of the Elmbank Caravan Park, Cow Road, Spittal, Northumberland (NGR NU 0055 5101), the Northumberland County Council Conservation Team (NCCCT) issued a brief for a programme of archaeological investigation to be undertaken in advance of the development, in order to further inform the planning process. The planning application covers two fields with a total area of 4.2ha, although only the central 1.7ha will be developed under current proposals. Oxford Archaeology North (OA North) was subsequently commissioned by Rural Solutions to undertake an archaeological appraisal of the development area, which was conducted in January 2008. The appraisal comprised three phases: a review of the available aerial photographs of the site, a site visit, and a geophysical survey.

The aerial photographic analysis examined all available images, comprising nine examples from the Northumberland Historic Environment Record (NHER), and one from the Newcastle Museum of Antiquities. Three putative cropmarks of potential archaeological origin were identified on several photographs, and a further two cropmarks appeared just once. None of these features could be defined as extant earthworks by the walkover survey, although one additional feature, a slightly raised earthwork platform, was identified. The clearest of these cropmarks lies within that part of the site which will be developed for static caravans as part of the present proposal. Two lie within an area that has already been developed, whilst the remainder fall to the east on sloping ground which will not be developed as part of the present proposals.

Despite severe magnetic disturbance over a large part of the site, the geophysical survey, undertaken by GSB Prospection, successfully identified several anomalies of archaeological potential, including a ring ditch clearly visible on aerial photographs. In addition, there are suggestions of a possible adjacent small rectilinear enclosure and a potential concentration of archaeological features in the western extremity of the survey area, the latter of which presently falls outside of that part of the site which will be developed. However, any interpretation is tempered by the extent of magnetic from services and modern features in the area.

The proposed development is likely to have a major effect on these putative archaeological features, and it is recommended that a trial trench evaluation is undertaken of the area to be developed. The evaluation should focus on the identified features, together with a control sample to test the veracity of the geophysical results in areas that are nominally blank or affected by magnetic interference. Any future groundworks affecting those areas of the application site that fall outside of the present development proposals should also be preceded by an archaeological evaluation.

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Oxford Archaeology North (OA North) would like to thank Ian Butter of Rural Solutions for commissioning the project and his assistance and support during the works. OA North are also grateful to Karen Derham and Nick Best, Assistant County Archaeologists for the Northumberland County Council Conservation Team. OA North would also like to thank Keith Elliott at the Northumberland County Council Historic Environment Record (NCCHER) for his advice and assistance, together with Chantelle Smith at the National Monument Record (NMR), Lindsay Allason-Jones at the Museum of Antiquities, Newcastle, and Rose Desmond at the Unit for Landscape Modelling at Cambridge University, for their assistance during the project.

Chris Healey undertook the archaeological appraisal and wrote this report, and Marie Rowland produced the drawings. The geophysical survey was undertaken by GSB Prospection under the direction of John Gater. Stephen Rowland managed the project and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Rural Solutions, on behalf of Richard Roberts (hereafter the ‘client’), submitted a planning application (planning reference B38/47; 4160) for the expansion of the Elmbank Caravan Park, Cow Road, Spittal, Northumberland (NGR NU 0055 5101; Fig 1). The application area comprises two fields lying immediately adjacent to the southern extent of Spittal and the northern limit of the current Elm Bank Caravan Park. The larger of the fields, to the east, covers approximately 2.9 ha and is divided into three distinct zones. The most easterly zone (Area 1) is steeply sloping, and will not be developed as part of the present scheme; that to the centre has already been partially developed for static caravans under a separate application; the third, larger, part of the field (Area 2) will be developed for static caravans as part of the present application. Such works will include the setting out of tracks and hard standings, together with appropriate services. The smaller field (Area 3), to the west, covers approximately 1.3ha and, although within the application area, will not be developed as part of the present scheme.
- 1.1.2 The proposed development site is considered to lie within an area of archaeological potential and forms part of a landscape containing evidence of prehistoric and Romano-British settlement activity. Together with several cropmarks, this includes the Romano-British settlement at Springhill, a Scheduled Ancient Monument (SM 341) approximately 250m to the south-west of the proposed development area. Several circular cropmarks lie within, and immediately around, the proposed development site. Accordingly, Northumberland County Council Conservation Team (NCCCT) issued a brief (*Appendix 1*) for a programme of archaeological appraisal to be undertaken to further inform the planning process, allowing any necessary decisions for archaeological mitigation to be made in advance of the development. The investigative programme within the proposed development area was to comprise three elements: firstly, an appraisal of available aerial photographs in order to identify the location and extent of any putative cropmarks indicative of archaeological activity; secondly, a detailed walkover in order to determine the presence of any visible earthwork remains of archaeological potential; and, thirdly, a geophysical survey.
- 1.1.3 Oxford Archaeology North (OA North) compiled a project design (*Appendix 2*) to meet the requirements of the NCCCT brief and, following acceptance of that document by NCCCT, were commissioned by Rural Solutions to undertake the programme of works in January 2008. The aerial photographic analysis and walkover survey were undertaken by OA North, the geophysical survey by GSB Prospection. The following report details the results of all three stages of the work programme, with the complete report on the geophysical works included as *Appendix 3*.

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 Where possible, the NCCCT-approved OA North project design (*Appendix 2*) was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice. The only diversions from the project design related to the conduct of the geophysical survey: as detailed within *Section 2.4*, due to a number of constraints, it was not possible to survey the entirety of the application area, although every effort was made to maximise the area surveyed.

2.2 AERIAL PHOTOGRAPHIC ANALYSIS

- 2.2.1 The assessment of aerial photographs covering the development area comprised a search of records held by the Northumberland Historic Environment Record (NHER) in Morpeth, the National Monuments Record in Swindon, the Unit for Landscape Modelling at Cambridge University, and the Museum of Antiquities, Newcastle. The purpose of this procedure was to review the available aerial photographic material in order to define the presence, location and extent of cropmarks within the proposed development area. All available photographs were reviewed, and copies of those that showed evidence of putative archaeological remains were digitally duplicated at high resolution, so that they could be reproduced within reports. The location of the identified cropmarks within the study area are shown on Figure 2 and Plates 3 and 4.

2.3 VISUAL INSPECTION

- 2.3.1 A site visit was conducted to enable a walkover of the development site. The purpose of this procedure was to identify surface features of potential archaeological interest, areas of disturbance, hazards and constraints.

2.4 GEOPHYSICAL SURVEY

- 2.4.1 The programme of geophysical survey aimed to cover 50% of the sample area in staggered linear transects. The survey grid was set-out and tied-in to the Ordnance Survey (OS) grid using tapes. The detailed magnetometer survey (*Appendix 3*) utilised a Bartington Grad 601-2 instrument operating at a traverse separation of 1.0m and a reading interval 0.25m. The survey was divided into three sections (Areas 1–3; Fig 3). Area 1 was overgrown with long grass and thistles; it was very difficult to walk over with the instruments and in places impossible due to the uneven nature of the ground. For Health and Safety reasons only a small portion could be surveyed. By contrast, conditions in Areas 2 and 3 were far better, though dumps of spoil and building debris restricted the area available for survey in Area 2.

2.5 ARCHIVE

- 2.5.1 A full professional archive has been compiled in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be provided in the English Heritage Centre for Archaeology format and will be submitted to the Northumberland County Record Office on completion of the project. Copies of the report will be submitted to NCCCT in digital and bound paper formats. The Arts and Humanities Data Service (AHDS) online database Online Access index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project. A copy will also be offered to the National Monuments Record.

3. BACKGROUND

3.1 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The proposed development site at Spittal lies on the coast of Northumberland, on the opposite side of the mouth of the river Tweed to the principal settlement of Berwick, c 1km to the north (Fig 1). The study area, of which c 20% has been developed for static caravans, otherwise comprises rough pasture bound along the southern and eastern sides by Cow Road, with the principal open areas separated by the Highcliffe Jubilee Centre (Fig 2). The site is located on land which slopes substantially eastwards towards the coast, from 75-50m AOD.
- 3.1.2 The solid underlying geology comprises rocks of Carboniferous Limestone (Countryside Commission 1998, 14). These repetitive sediments outcrop in the Tweed estuary area to form eroded soft limestone headlands and cliffs, with glacial deposits occurring inland (*op cit*, 13-15)

3.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.2.1 **Introduction:** the following section presents a brief background to the archaeology and history of the development site and the wider locality, allowing the site to be considered within an appropriate context.
- 3.2.2 **Prehistoric Period (c 8000 BC - AD 43):** little in the way of confirmed prehistoric settlement has been identified in this most northerly part of Northumberland, and the earliest definitive evidence close to the development site is a possible Bronze Age cist at Tweedmouth (LUAU 1996). However, this lack of investigation belies a much wider potential for prehistoric human activity and settlement, as indicated by the results of aerial surveys. These have revealed what appear to be settlement remains along the eastern coast south of the Tweed, alongside possible large field systems. A potential prehistoric settlement focus, in the form of a circular cropmark (SMR 4217) alongside smaller circular enclosures, has also been identified within the application area (*Section 4.1*; Fig 2).
- 3.2.3 **Romano-British Period (c AD 43 - AD 410):** the Scheduled Ancient Monument site at Springhills (SMR 4131; SM 341), some 250m to the south-west of the study area, was initially thought to be a Roman fort. The site has since been reassessed as a native settlement, although the alignment of a Roman Road (the Devil's Causeway) towards Tweedmouth may indicate some form of hitherto unidentified Roman military presence on the southern side of the river (Keys to the Past REF N13761, accessed 2008).
- 3.2.4 **Early Medieval Period (AD 410 - 1066):** little is known of the early medieval history of the immediate region and, in the centuries immediately following the end of Roman Britain, the area is likely to have fallen within various petty tribal polities until its subsumation into the Anglian kingdom of Northumbria, which stretched well into modern lowland Scotland. There is virtually no

material evidence for such activity, although Berwick is believed to be of Anglian origin, its name perhaps deriving from the Old English *berewic*, meaning barley farm, denoting a grange or outlying part of an estate (Hunter 1982).

- 3.2.5 **Medieval Period (AD 1066 - 1540):** Berwick is not mentioned in the Domesday book, but this should not be interpreted as a lack of settlement activity in the area; England's border with Scotland was under constant dispute. It is thus not surprising that the earliest documentary reference dates to 1097, when Fordun's Chronicle records the gift of lands in the 'village of Berwick' by the Scottish (but very Anglian-sounding) King Edgar to the monastery of Coldingham (LUAU 1996, 8).
- 3.2.6 From the twelfth century, the Scottish kings appear to have minted coins at Berwick (Gordon 1985, 44). The thirteenth century marked the peak of Berwick's importance and prosperity, with a population believed to number several thousand people, and the town frequently was used as a base by the Scottish kings. It was captured by Edward I of England, retaken by Robert the Bruce, and changed hands between English and Scots 14 times before the English successfully recovered and held the town in 1482 (LUAU 1996, 8; OA North forthcoming), by which time Berwick was little more than a garrison town. The town's defences became seriously dilapidated and the town became a shadow of its former self. The wool trade collapsed as connections with the wool-producing hinterland were severed and trading became impossible due to persistent warfare (OA North forthcoming).
- 3.2.7 Medieval religious establishments were major landowners in the town of Berwick, and five religious hospitals were also located around the town. The thirteenth-century leper hospital (SMR 4135), located approximately 250m to the west of the study area, gives the town of Spittal its name.
- 3.2.8 **Post-Medieval and Industrial Periods (AD 1540 - present):** whilst the town plan of Spittal appears to retain some medieval appearance, with burgage plots aligned perpendicular to the main street, concentrated settlement is more likely to have originated in the sixteenth or seventeenth centuries (Keys to the Past REF N13761, accessed 2008). Herring fishing is one possible reason for the growth of Spittal, with a fisherman's shiel located on Spittal Point and some of the older cottages in the town are thought to represent fisherman's cottages. The further growth of the village during the later post-medieval period is tied to the exploitation of coal, in keeping with much of the North East. A steam engine of some description was located within 100m of the study area to the south-west, associated with the 'Old Berwickhill Pit' (SMR 4155).

4. RESULTS

4.1 AERIAL PHOTOGRAPH ANALYSIS

4.1.1 **Introduction:** a number of sources of aerial photographs were consulted as part of the project, and the results are detailed below, according to repository.

4.1.2 **The National Mapping Programme (NMP):** prior to the undertaking of the present scheme of works, NCCCT ascertained that the NMP, which was completed in 2003, had not identified any cropmarks on the development site on the following photographs:

- Oblique military photographs taken in 1941 and 1948-9
- Oblique photographs taken between 1977 and 1999
- Variable vertical photographs taken up to 1991

Consultation with the NMP indicated that they were not in possession of any further aerial photographs outside of the above dates.

4.1.3 **The National Monuments Record at Swindon:** this repository did not have any material that had not been reviewed as part of the NMP.

4.1.4 **The Unit for Landscape Modelling at Cambridge University:** queries were lodged with this repository, but have yet to be answered within the timeframe of the present project.

4.1.5 **The Museum of Antiquities, Newcastle:** a single photograph, taken since the completion of the NMP in 2003, was made available by the Museum of Antiquities, Newcastle. No cropmarks were identified from this photograph.

4.1.6 **Northumberland County Council Historic Environment Record (NHER):** the NHER proved to be the principal source of aerial photographs, with nine vertical examples, dating from 1947 - 1960. Analysis identified putative cropmarks on five out of these nine photographs, with the positive results summarised in *Table 1* and illustrated on Figure 2. These putative cropmarks did not appear on all of the five photographs in question, mainly because only a few of the photographs captured the whole site, but perhaps partly because of the varying conditions on the occasions that the photographs were taken. The most consistently appearing cropmark, **a**, is visible within the north-western corner of what, in 1950, was a large square field, but now corresponds with the northern end of Area 2. The cropmark is shown on four photographs and comprises an incomplete circle, *c* 16m across, with an 'opening' to the east.

4.1.7 To the east, at the northern end of the field now occupied by static caravans, is a cluster of what appear to be three separate cropmarks, **b**. Appearing on two photographs, the individual features of cropmark cluster **b** are similar in form to cropmark **a**, but slightly smaller at *c* 10-12m across. The cropmarks of cluster **b** are less clear than cropmark **a**, and it is uncertain whether their form

has been affected by what appears to be especially rough ground in this part of the field, or whether the cropmarks are themselves a product of this rough ground. Cropmark *c* comprises a fairly distinctive darker area that appears to represent the perpendicular conjunction of two linear features to form a cross on a similar alignment to the modern field system. The cruciform configuration appears on two of the photographs, whilst a third suggests the presence only of the east/west aligned section. Cropmarks *d* and *e* appear on only one photograph, and are neither particularly distinct nor particularly convincing, occurring within the rougher ground of Area 1 and the area now occupied by static caravans. Cropmark *d* comprises a circular feature, perhaps 40m across, whilst Cropmark *e* represents two features 10-15m across, one completely circular, the other open to the west.

Photograph	Coverage	Features observed (see text for descriptions)
4345	Whole Site	Cropmarks <i>b</i> , <i>d</i> and <i>e</i>
BKS522436	Areas 2 and 3	Cropmark <i>a</i>
BKS522437	Areas 2 & 3	Cropmarks <i>a</i> and <i>c</i> (east/west aligned section only)
BKS522470	Areas 1, 2 and statics	Cropmarks <i>a</i> , <i>b</i> and <i>c</i> (cruciform)
BKS522471	Whole Site	Cropmarks <i>a</i> , <i>b</i> and <i>c</i> (cruciform)

Table 1: Summary of putative archaeological features identified during aerial photographic analysis

4.1.8 Larger scale photography and the 1947 RAF photographs did not produce evidence of any cropmarks, and for the most part, the fields are obscured by straw or hay bales. The 1947 RAF transcription, however, notes the presence of possible earthworks aligned approximately north/south to the immediate west of the study area, leading northwards into the area now occupied by the housing on the Highcliffe Estate (K Elliott *pers comm*). Although this wide linear cropmark is visible on BKS 61350, and crosses the far western extent of the study area, it is likely to be the remains of older, enclosure period, field boundaries that are depicted on the earlier Ordnance Survey maps (OS 1866; 1899; 1925).

4.2 VISUAL INSPECTION

4.2.1 A site visit conducted in January 2008 established that the study area was being used for general recreational purposes associated with the overall use of the site as a caravan park (Plate 1). The centre of the more easterly of the fields is occupied by seven groups of four and two single static caravans, arranged around a network of tarmac road surfaces (Fig 2). Immediately to the south-west, along the southern field boundary, there is an electricity sub-station, an access gate, and a collection of refuse bins and skips.

4.2.2 The topography of the majority of both fields comprised an uneven slope covered by rough grass which, in the centre of the study area, had evidently been cut. Some gravel had been laid down in the vicinity of the static caravans and access gate in the centre of the southern boundary of the easternmost field, within an area defined by small spoil heaps. The creation of an earthen bank

along the northern boundary of this field may possibly have adversely affected any archaeological remains (Plate 2), although if the bank originated as a temporary site boundary during the construction of the adjacent Highcliffe housing estate, it may seal intact archaeology. A further small spoilheap to the south of this bank may also be associated with this activity. To the east of the static caravans, a footpath leads towards the eastern boundary of the site through very rough grass.

- 4.2.3 An area close to the north-western corner of the easternmost field appeared to comprise a very rough platform approximately 0.1m higher than the surrounding grassland. Given the overall appearance of the topography within the study area, it is possible that this platform feature may have resulted from differential erosion along the hillside. With the possible exception of this example, there were no apparent topographical features which corresponded to any of the features identified during the aerial photograph analysis.
- 4.2.4 Whilst no above-ground hazards were noted during the visual inspection, the electricity sub-station against the southern boundary represents a serious risk to any below-ground investigations, particularly since the supply to this sub-station appears to cross the field on a north-west/south-east alignment from the far north-western corner of the study area. The static caravans, small spoil heaps surrounding the refuse skips and the skips themselves, the bank along the northern boundary and the adjacent spoil heap present constraints to achieving complete coverage of the site during the geophysical survey.

4.3 GEOPHYSICAL SURVEY

- 4.3.1 The results of the detailed magnetometer survey showed hundreds of ferrous responses in all three survey areas; these are almost certainly all modern in origin and relate to past landscaping and the scatter of rubbish across the site. They have been ignored in the interpretation categories but are visible as spikes in the data on the XY traces in the Archive Figures (*Appendix 3*). Numbers in parentheses refer to anomalies highlighted in the interpretation (Fig 3).
- 4.3.2 **Area 1:** due to the complications described above in *Section 2.4*, a sample block was placed in the only part of the field that could be surveyed. The results indicate the presence of a large ferrous pipe running approximately north/south and parallel to the road that forms the eastern boundary of the site. Newly-erected marker posts, visible in the field boundaries, suggest that this pipe may have been laid relatively recently. The magnetic responses are of a strength that they will have totally masked any buried archaeology if present. Away from the magnetically disturbed area there are a few other strong ferrous responses but nothing in the data to suggest the presence of archaeological features.
- 4.3.3 **Area 2:** the north-eastern, eastern and south-eastern fringes of this area could not be investigated due to dumped material. In addition, a large man-made bank, some 10m in width, runs along the whole of the northern perimeter of the field. The results show a magnetically very disturbed site. In addition to

the dumped material and general rubbish that has already been mentioned, a large iron railing fence forms the western boundary and this has cast a large magnetic shadow. Additionally, the club house building has resulted in a broad area of magnetic disturbance along the western edge of the survey. The southern edge of the survey is totally swamped by the presence of a pipe (or pipes) and the northern edge is also totally disturbed, presumably by material that has spread from the man-made bank. Finally the magnetic effects of some of the dumped building material are visible in the north-eastern part of the survey area.

- 4.3.4 Given the extensive disturbance over much of the field it is perhaps surprising that several anomalies of archaeological potential are visible in the data. The most striking is the curving magnetic anomaly (**1**) which corresponds to a segment of ring ditch and this is clearly the feature visible on cropmarks (**a**). Although the magnetic anomaly appears incomplete, this may simply be due to the surrounding magnetic disturbance; it does not necessarily imply that the ring ditch is damaged.
- 4.3.5 To the south of the ring, is a rather poorly defined rectilinear response (**2**) that may just indicate a small enclosure. An area of increased magnetic responses (**3**) appears, from the shape and nature of the responses, to be modern but it might just indicate large pit-like features, including possible areas of burning, which could be of archaeological interest. It is assumed that the band of magnetic erratic responses (**4**) coincides with an old field boundary. Elsewhere in the data are a few trends that have been highlighted which may be of archaeological interest.
- 4.3.6 **Area 3**: the effects of the club house are immediately visible in the data along the eastern edge of the survey area and there is a similar, if not more extensive, concentration of ferrous-type responses across the whole field. Another presumed old field boundary is highlighted on the interpretation (Fig 3). The western half of the field, particularly the north-western corner, would appear to have some archaeological potential. There is a curving magnetic anomaly, a few pit-like anomalies and an area of increased magnetic response (**5**), all of which appear to coincide with a slightly elevated piece of ground.

5. DISCUSSION, SIGNIFICANCE, IMPACT AND RECOMMENDATIONS

5.1 DISCUSSION

5.1.1 The appraisal has identified a number of features of archaeological potential within the proposed development site. Principal among these is the feature identified from aerial photography as Cropmark **a**, and which is highly likely to equate to feature **1** detected during the magnetometry survey. Despite the extensive magnetic disturbance, and various physical limitations, the geophysical survey was able to highlight a number of putative features which were not immediately apparent from the analysis of the aerial photographs. Within the proposed development site this is particularly clear with features **2** and **3**, whilst feature **5**, in the north-west corner of the field which will not be developed as part of the present proposal, is especially interesting. Although the geophysical survey covered the area occupied by cropmark **c**, no completely analogous response was identified. However, considering the degree of magnetic disturbance, it is possible to ‘miss’ responses that may be of interest: the magnetic noise levels can easily mask archaeological-type anomalies and, as such, any interpretation must be viewed with caution. It should also be borne in mind that, while portions of the site may be magnetically disturbed, this does not necessarily mean that any archaeological features present are disturbed or damaged. In the same way that magnetically disturbed areas can mask archaeological features, it is also possible to misinterpret some responses as having archaeological potential when in fact they are simply modern features. Due to physical constraints, cropmarks **b**, **d** and **e**, identified from aerial photographs (albeit rather tenuously, in the case of the latter two instances) fell outside the scope of the geophysical survey.

5.1.2 Given the proximity of the site to a Romano-British settlement site (SM341 at Springhills), it is possible that the cropmarks relate to a Romano-British settlement system. The features may, however, potentially be Iron Age or Bronze Age in date, and the scarcity of such settlement features in this northern part of Northumberland has been noted (*Section 3.3.2*).

5.2 SIGNIFICANCE CRITERIA

5.2.1 In total, four features of archaeological interest have been identified within the proposed scheme area. None of these sites have any legal designation, although they lie within 300m of a Scheduled Ancient Monument (SM 341 at Springhills), and the sites identified during the present study may be associated with this settlement. There are a number of different methodologies used to assess the archaeological significance or importance of sites; that to be used here is the ‘Secretary of State’s criteria for scheduling ancient monuments’ which is included as Annex 4 of PPG 16 (DoE 1990). The sites were each considered using the criteria, with the results presented below.

5.2.2 **Period:** the sites identified within the boundary of the proposed application area probably date from the prehistoric or Romano-British periods. It is

considered likely that remains from these periods could survive *in-situ* within the scheme area, reflecting the lack of intensive development in subsequent periods. It is possible that some of the cropmark sites relate to unrecorded eighteenth- or nineteenth-century mining activity, associated with the working of the Scremerston Coal Measures and the 'Old Berwickhill Pit' (*see Section 3.3.8 above*).

- 5.2.3 **Rarity:** although there are a number of examples of cropmarks identified by aerial photography within the region, scientifically excavated and securely dated remains of prehistoric and native Romano-British settlements are rare within the North East region.
- 5.2.4 **Documentation:** the wider area is well-covered by historic mapping, and further documentary research may furnish additional evidence pertaining to the general area. There is less documentation relating to the identified sites, and is otherwise restricted to the relevant aerial photographs and to the present study.
- 5.2.5 **Group value:** the buried remains may potentially form a contemporary group of prehistoric structures or dwellings. As individual sites or as a group they may be associated with the Springhills settlement (SM 341) nearby, and thus form a larger group within a contemporary historic landscape.
- 5.2.6 **Survival/Condition:** there is no survival of above-ground archaeological remains within the scheme area. The extent to which any buried archaeological remains survive beneath the modern ground surface is unknown, although geophysical survey has provided some indication of the extents of the sites present. An apparent lack of intensive development inside the study area during recent periods means that there is good potential for the preservation of remains from earlier periods. The area appears to have sustained little modern disturbance, although the extent to which the construction of the adjacent Highcliffe housing estate and Jubilee Centre destroyed remains within the study area is uncertain.
- 5.2.7 **Fragility:** any surviving buried remains will be adversely affected by the proposed development in the event that any ground disturbing activities are involved, or if any large earthmoving plant is operating in the study area.
- 5.2.8 **Diversity:** the remains are likely to relate to putative prehistoric or Romano-British settlement: as such, there is the potential for a diverse range of social, economic and industrial activities to be undertaken on and around the site.
- 5.2.9 **Potential:** all the identified prehistoric/Romano-British sites have the potential to reveal specific information that is not available from other sources. Given the effect of magnetic disturbance upon the geophysical survey, there is some potential for the survival of other unidentified remains belonging to these and other periods.

5.3 SIGNIFICANCE

5.3.1 Table 2 shows the sensitivity of archaeological sites scaled in accordance with its relative cultural heritage importance, with guideline recommendations for a mitigation strategy. All of the archaeological sites identified within the boundary of the proposed application area are considered to be of either Regional/County importance, and potentially of National importance should the sites prove to comprise part of a group including the Springhills settlement site nearby (SM 341).

Importance	Examples of Site Type	Mitigation
National	Scheduled Monuments (SMs), Grade I and II* Listed Buildings	To be avoided
Regional/County	Conservation Areas, Registered Parks and Gardens (Statutory Designated Sites), Grade II Listed Buildings Sites and Monuments Record/Historic Environment Record	Avoidance recommended
Local/Borough	Sites with a local or borough value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Low Local	Sites with a low local value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Negligible	Sites or features with no significant value or interest	Avoidance unnecessary

Table 2: Criteria used to determine Importance of Sites

5.4 IMPACT

5.4.1 In its *Planning Policy Guidance Note 16*, the Department of the Environment (DoE) advises that archaeological remains are a continually diminishing resource and ‘*should be seen as finite, and non-renewable resource, in many cases, highly fragile and vulnerable to destruction. Appropriate management is therefore essential to ensure that they survive in good condition. In particular, care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed*’. It has been the intention of this study to identify the archaeological potential of the study area, and assess the impact of redevelopment, thus allowing the advice of the DoE to be enacted upon. Assessment of impact has been achieved by the following method:

- assessing any potential impact and the significance of the effects arising from redevelopment;
- reviewing the evidence for past impacts that may have affected the archaeological sites;
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce or remedy adverse archaeological impacts.

5.4.2 The impact is assessed in terms of the sensitivity or importance of the site to the magnitude of change or potential scale of impact during future redevelopment scheme. The magnitude, or scale of an impact is often difficult to define, but is termed as substantial, moderate slight, or negligible, as shown in Table 3.

Scale of Impact	Description
Substantial	Significant change in environmental factors; Complete destruction of the site or feature; Change to the site or feature resulting in a fundamental change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Moderate	Significant change in environmental factors; Change to the site or feature resulting in an appreciable change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Slight	Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Negligible	Negligible change or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

Table 3: Criteria used to determine Scale of Impact

5.4.3 The interaction of the scale of impact (Table 3) and the perceived importance of the archaeological site (Table 2) produce the impact significance. This may be calculated by using the matrix shown in Table 4:

Resource Value (Importance)	Scale of Impact Upon Archaeological Site			
	Substantial	Moderate	Slight	Negligible
National	Major	Major	Intermediate/ Minor	Neutral
Regional/County	Major	Major/ Intermediate	Minor	Neutral
Local/Borough	Intermediate	Intermediate	Minor	Neutral
Low Local	Intermediate / Minor	Minor	Minor/ Neutral	Neutral
Negligible	Neutral	Neutral	Neutral	Neutral

Table 4: Impact Significance Matrix

5.4.4 The extent of any previous disturbance to buried archaeological horizons is an important factor in assessing the potential impact of the proposed scheme of redevelopment. In the case of the proposed development site this is largely unattested, although it seems probable that the adjacent intensive twentieth-century development will not have had a substantial impact on any buried archaeological remains of earlier periods within the development area itself. Deep ploughing within the area is likely to have had a more serious impact,

although the fact that features identified by geophysics are fairly clear, despite magnetic interference, may imply that they are either quite substantial, or have not been heavily truncated. There would appear, therefore, to be considerable potential for significant archaeological remains to survive. Within the eastern field, existing impacts include services and the static caravans, with their associated tracks. Services are likely to cause more localised, but deeper, disturbance, whilst damage from the tarmac surfaces is likely to be more shallow, but also more wide-spread: there is thus the potential for preservation of archaeological remains associated with cropmarks *b* and *d*, even within these nominally developed areas.

5.5 IMPACT ASSESSMENT

5.5.1 Following on from the above considerations, the significance of impact from the proposed development has been determined as substantial based on an assumption that there will be earth-moving works; the results are summarised in Table 5. Features *5* and *e* lie outside of the area that will be developed for caravans and the impact of the present scheme will therefore be negligible. However, since the aim of the appraisal is to inform future decisions concerning the whole application area, it should be understood that any development within the areas of each of these features will have a substantial impact. The locations of cropmarks *d* and *e* would suggest that they have already been subject to some degree of disturbance in association with the previous development of this site; any future groundworks within this area could impact upon these remains.

Feature	Importance	Impact	Significance of Impact
<i>1/a</i>	Regional/County	Substantial	Major
<i>2</i>	Regional/County	Substantial	Major
<i>3</i>	Regional/County	Substantial	Major
<i>5</i>	Regional/County	Substantial/Negligible	Major/Neutral
<i>b</i>	Regional/County	Substantial	Major
<i>c</i>	Regional/County	Substantial	Major
<i>d</i>	Regional/County	Substantial	Major
<i>e</i>	Regional/County	Substantial/Negligible	Major/Neutral

Table 5: Assessment of the impact significance on each site during development

5.6 RECOMMENDATIONS

5.6.1 The development will have a substantial impact upon the identified archaeological resource and, in order to further inform the planning process, it is important that the state of preservation, nature, extent and date of that resource should be better-understood through an intrusive archaeological evaluation. The exact programme of work would need to be established in consultation with NCCCT, but is likely to comprise the excavation of a series of trial trenches placed to examine putative features identified by the appraisal, as well as a number of ‘control’ trenches to test the results of the geophysics. As the present development proposal include construction only within the area

between the existing static caravans and the club house (effectively, geophysics Area 2), this *c* 1.7ha area should be the subject of the evaluation. Should development extend outside of this area, these parts of the site should also be evaluated.

6. BIBLIOGRAPHY

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OA North, forthcoming, *Blackburn and Price Garage, Silver Street, Berwick-upon-Tweed, Northumberland: Archaeological Evaluation*, draft unpubl client rep

7. ILLUSTRATIONS

7.1 LIST OF FIGURES

Figure 1: Site Location

Figure 2: Plan Showing Results of the Walkover Survey and of Aerial Photographic Analysis

Figure 3: GSB Prospection Plan Showing Interpretation of Geophysics Results

7.2 LIST OF PLATES

Plate 1: General view of the development area

Plate 2: The embankment running along the northern edge of the development area

Plate 3: Detail of Aerial Photograph BKS522471 highlighting cropmarks *a*, *b* and *c*

Plate 4: Detail of Aerial Photograph RAF4345 highlighting cropmarks *d* and *e*

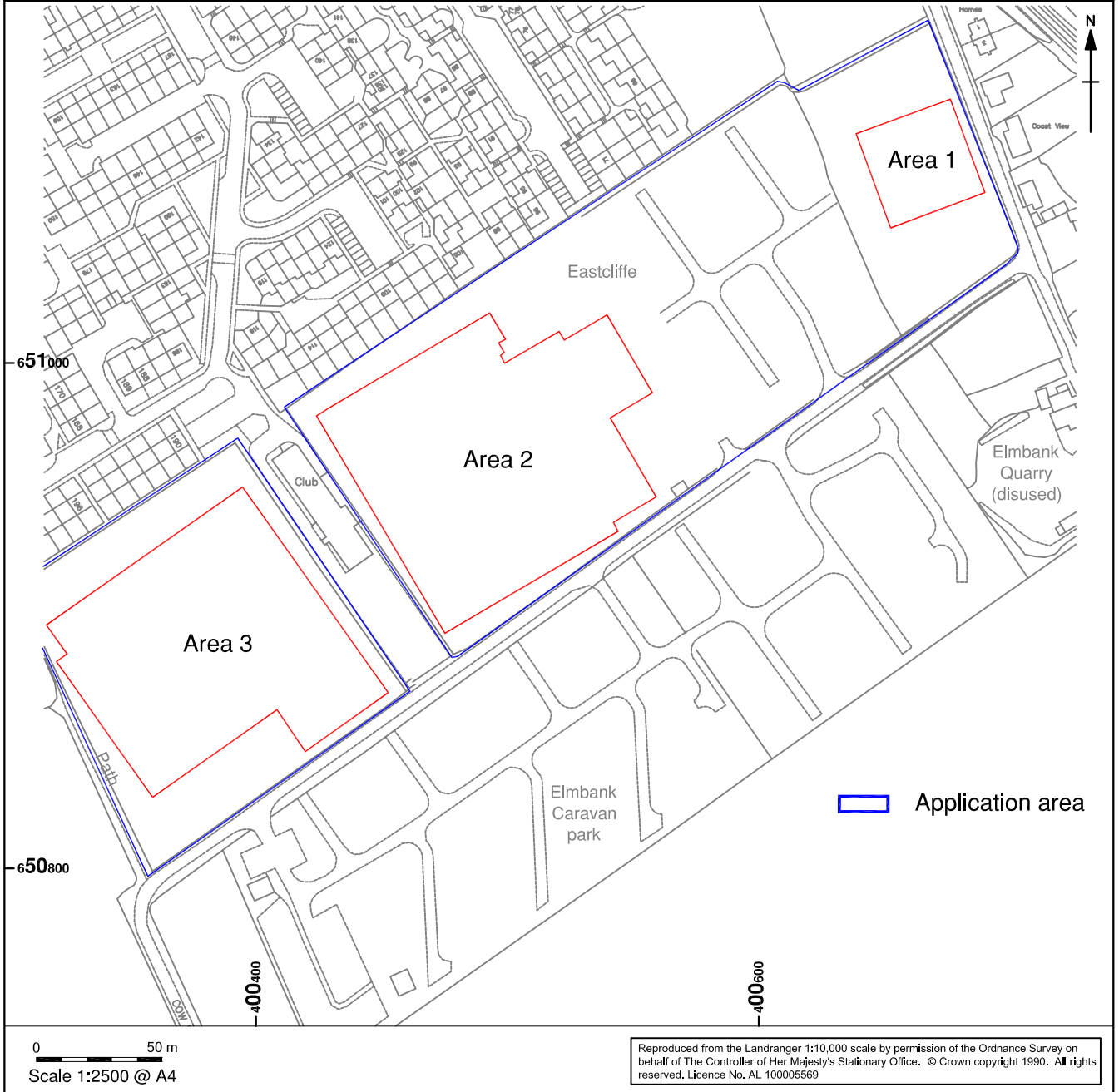
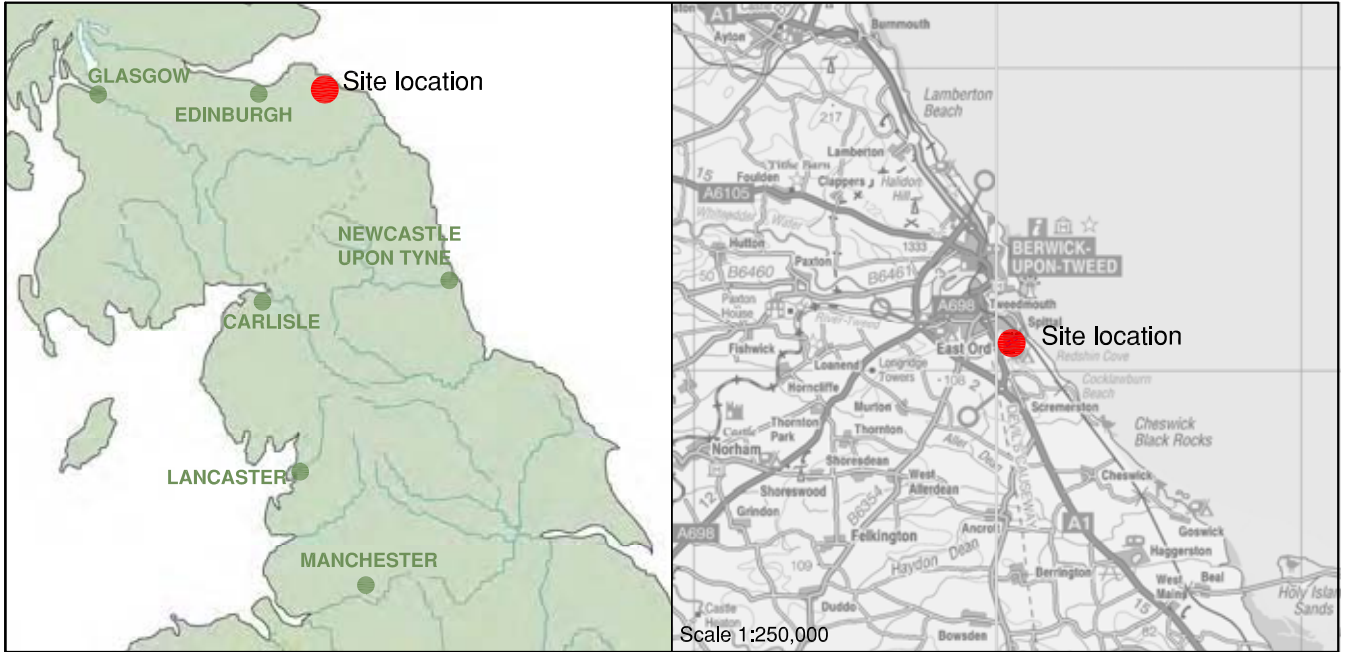


Figure 1: Site location



- Features identified in the Walkover Survey
- Appearing on 1 aerial photograph
- Appearing on 2-3 aerial photographs
- Appearing on 4 aerial photographs

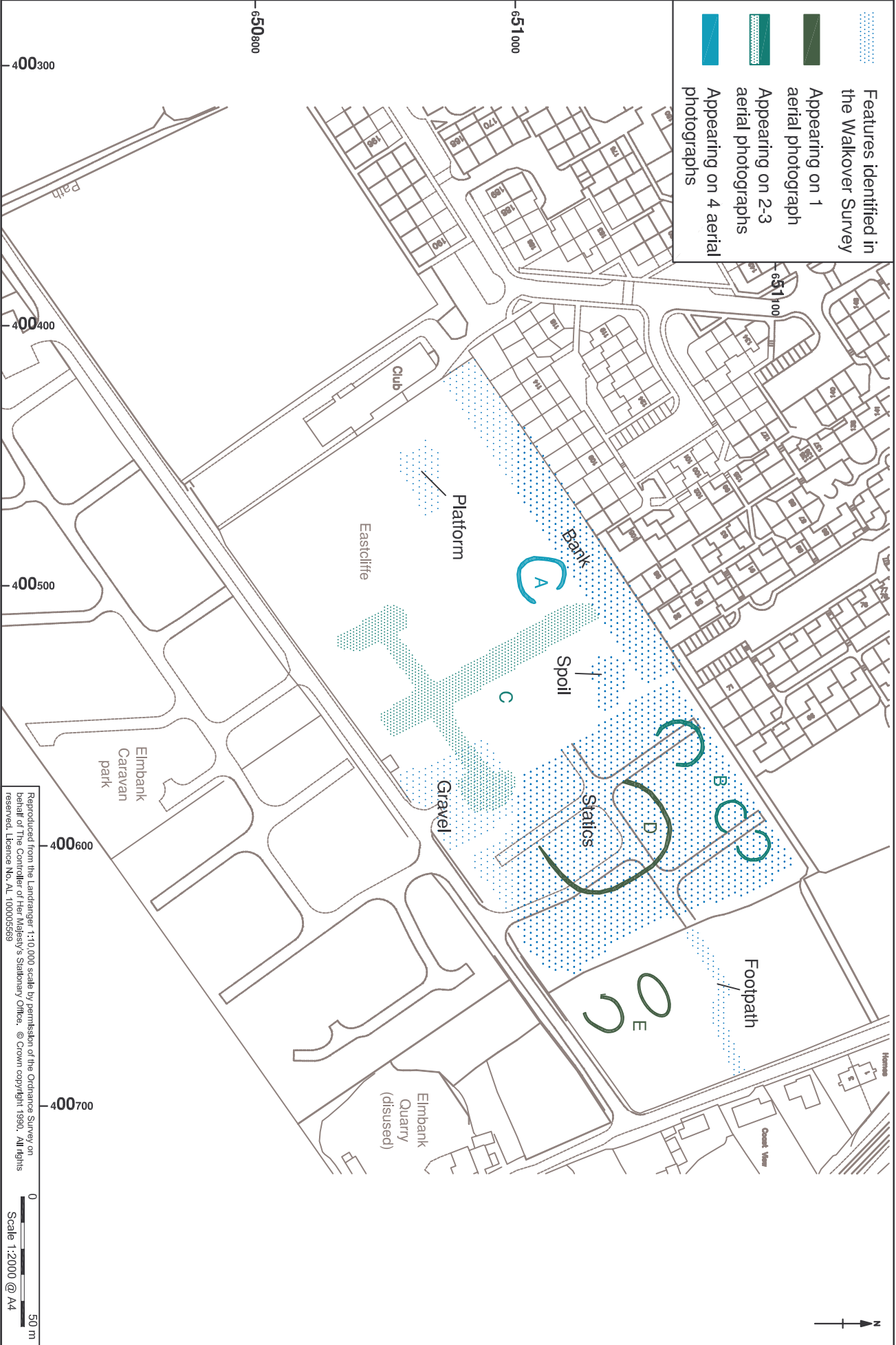
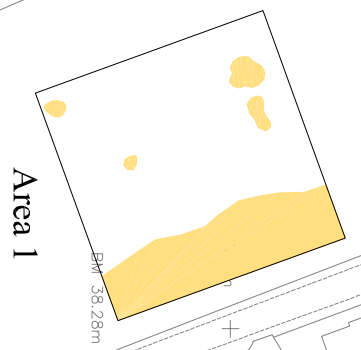
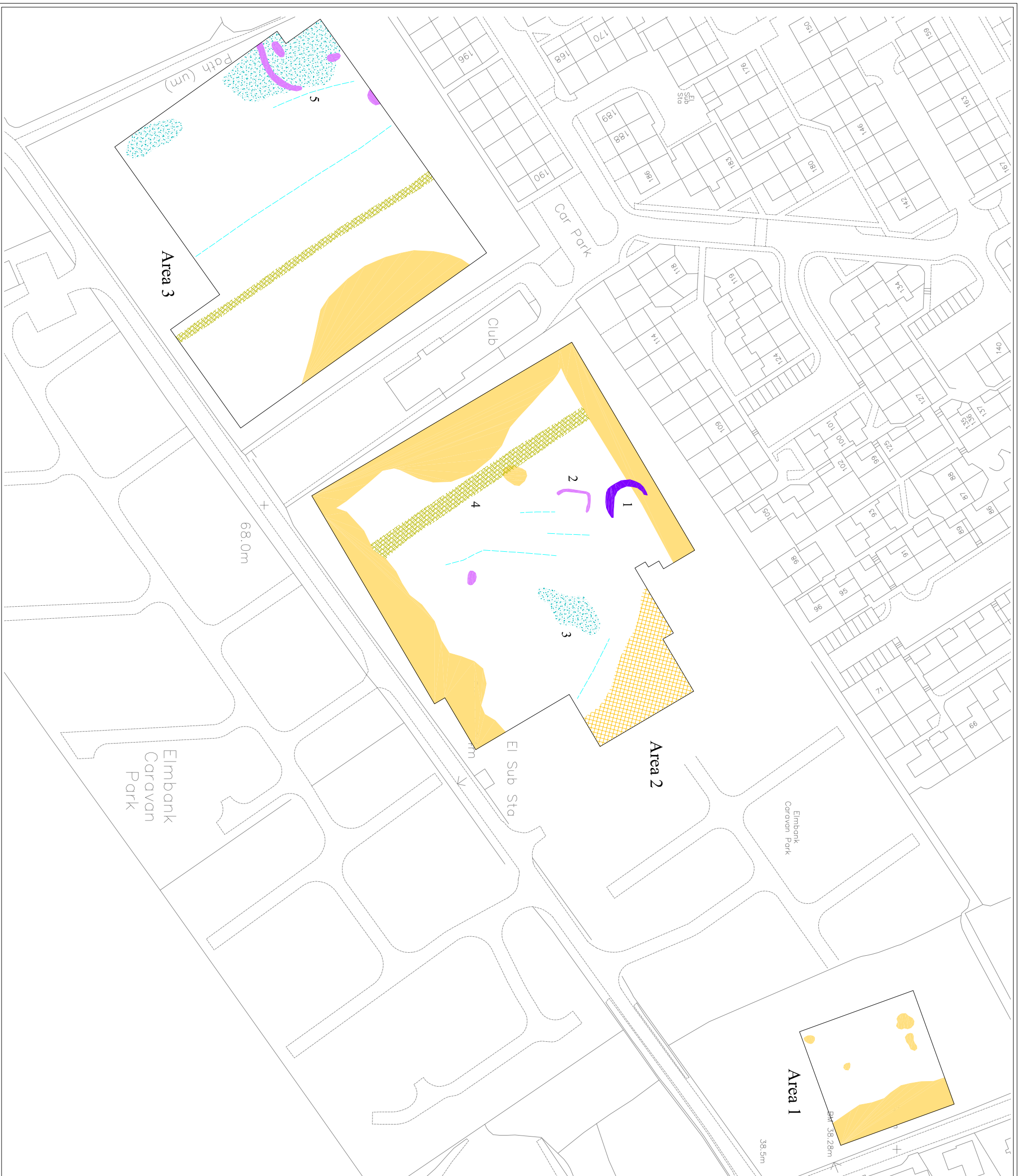







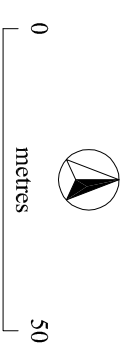


Figure 2: Plan Showing results of the Walkover Survey and of the Aerial Photograph Analysis



-  Archaeology
-  ?Archaeology
-  Trend
-  ?Old Field Boundary
-  Increased Magnetic Response
-  Magnetic Disturbance
-  Ferrous



GSB PROSPECTION Ltd.

2008/03 Elmbank Caravan Park

Summary Interpretation

Reproduced from the Ordnance Survey Map with the permission of the Controller of HMSO © Crown Copyright (AL100018665)

Figure 3

APPENDIX 1: PROJECT BRIEF

APPENDIX 2: PROJECT DESIGN

**ELMBANK
CARAVAN PARK,
COW ROAD,
SPITTAL,
NORTHUMBERLAND**

**ARCHAEOLOGICAL
APPRAISAL: PROJECT
DESIGN**



Oxford Archaeology North

January 2008

Rural Solutions

Grid Reference: NU 0055 5101

Planning Reference: B38/47: 4160

OA North Job No: L9968

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Rural Solutions (hereafter the 'client') has submitted a planning application (B38/47; 4160) for the expansion of the Elmbank Caravan Park, Cow Road, Spittal, Northumberland (NGR NU 0055 5101). The proposed development site is considered to lie within an area of archaeological potential and, accordingly, Northumberland County Council Conservation Team (NCCCT) issued a brief for a programme of archaeological investigation to be undertaken in advance of the development, in order to further inform the planning process. At the request of the client, the following project design for an archaeological appraisal has been compiled by Oxford Archaeology North (OA North) to meet the requirements of the NCCCT brief.

1.2 ARCHAEOLOGICAL BACKGROUND

1.2.1 The proposed development site lies within a wider landscape containing evidence of prehistoric and Romano-British settlement activity. Much of this evidence comprises cropmarks, such as the nearby Springhill Romano-British settlement, a Scheduled Ancient Monument, and there is evidence that several circular cropmarks lie within, and immediately around, the proposed development area itself. These include a putative circular enclosure within the western part of the site, whilst a series of smaller circular features were located within the south-eastern corner of the proposed development site. Those cropmarks just outside the development site are again small and circular, and lie to the north-west and south-east; if of archaeological origin, it is entirely possible that these relate to those within the development area.

1.3 OXFORD ARCHAEOLOGY NORTH

1.3.1 The company, both as Oxford Archaeology North and under the former guise of Lancaster University Archaeological Unit (LUAU), has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past 25 years. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

1.3.2 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) **registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

2.1 The following programme has been designed to identify the potential for and, where possible, the location of, surviving archaeological deposits within and immediately around the development area in order to assist in the understanding of the impact of the proposed development upon the archaeological resource, and to help formulate an appropriate programme of further investigation that could be used to inform a programme of mitigation. To this end, the following programme of archaeological work has been designed; the results of each stage will influence that which ensues and will provide information as to whether further mitigation works are required prior to, or during, ground works associated with the development:

- 2.2 **Aerial Photographic Analysis:** to review the available aerial photographic material in order to define the presence, location and extent of cropmarks within the proposed development area.
- 2.3 **Visual Inspection:** to conduct a walkover of the development site in order to identify surface features of potential archaeological interest, areas of disturbance, hazards and constraints.
- 2.4 **Geophysical Survey:** to implement a programme of geophysical survey covering 50% of the sample area in staggered linear transects.
- 2.5 **Report and Archive:** a written report will assess the significance of the data generated by this programme within a local and regional context. It will present the results of the evaluation and would make an assessment of the archaeological potential of the area, and any recommendations for further work.

3 METHOD STATEMENT

3.1 AERIAL PHOTOGRAPHIC ANALYSIS

3.1.1 The principle source of aerial photographs will be the Northumberland County Council Sites and Monuments Record (SMR). All available photographs will be reviewed, and digital copies of those that show evidence of putative archaeological remains will be digitally duplicated at high resolution, so that the photographs can be manipulated, if necessary, for integration with the geophysical data and can be reproduced within reports. Dependent upon the variability of the aerial photographs, other sources will be consulted as appropriate and, where aerial photographs additional to those already viewed are available, selected examples will be examined. Such examples, however, will not include those used for the National Mapping Programme, which failed to find evidence of cropmarks on the development site on the following photographs:

- Oblique military photographs taken in 1941 and 1948-9
- Oblique photographs taken between 1977 and 1999
- Variable vertical photographs taken up to 1991

3.1.2 Due to the fact that receipt of these images can often take a long time, it may be necessary to incorporate the analysis and illustration of these photographs within an amendment to the first report. These additional repositories comprise:

- The National Monuments Record, Swindon
- The Unit for Landscape Modelling at Cambridge University
- The Museum of Antiquities, Newcastle.

3.2 VISUAL INSPECTION

3.2.1 Following an appraisal of the aerial photographs from the SMR, the site will be visited in order to relate the existing topography and land use to research findings, and assess evidence not available through documentary sources. It will also provide an understanding for areas of impact by the proposed redevelopment.

3.2.2 The survey will note present land use, the condition and visibility of features identified in the documentary research and any features of potential archaeological interest, any areas of potentially significant disturbance, and hazards and constraints to undertaking further archaeological work on site. The inspection will pay particular attention to any open sections demonstrating the local stratigraphy, for example, those exhibited by open and

clear ditches, that might provide clues concerning the survival and depth of any preserved organic horizons on site.

3.3 GEOPHYSICAL SURVEY

- 3.3.1 **Introduction:** the programme of detailed magnetometer survey will aim to identify areas of possible archaeological interest and to establish the extent and character of any putative archaeological features, including those that are already identified from aerial photographs, together with any previously unknown elements of these cropmarks or additional sites.
- 3.3.2 **Survey:** sample transects will evaluate 50% of the application area: these transects will be targeted over existing cropmarks and 'blank' areas. Where possible, areas of modern disturbance associated with the caravan park will be avoided. *GSB* will establish and tie-in (to permanent landscape features) the survey areas (20m by 20m grids) using tapes and a total station theodolite; where appropriate, semi-permanent marker pegs will be left on site, so that the grid can be accurately re-located by a third party. Alternatively, or additionally, a *Trimble Explorer GPS* may be used to tie-in survey areas. The survey will be undertaken with a Bartington Grad 601-2 Magnetometer, taking readings at intervals of 0.25m and operating at a Traverse Separation of 1m. The readings are stored in the memory of the instrument and are later downloaded to computer for processing and interpretation. *Geoplot 3 (Geoscan Research)*, *GPR Slice* (for GPR surveys) and in-house *GSB* software will be used to process and present the data.
- 3.3.3 **Contingency plan:** a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather or vandalism. This has been included in the separately provided Costings document, and would be charged in agreement with the client.
- 3.3.4 The geophysical survey will provide a predictive model of surviving archaeological remains detailing zones of relative importance against known development proposals. In this way, an impact assessment will also be provided.

3.4 REPORT AND ARCHIVE

- 3.4.1 **Report:** one bound and one unbound copy of the final report will be submitted to the client and to NCCCT within 20 days of completion of fieldwork. Should the client require an interim statement on the aerial photographic analysis, such a document can be provided one week after the completion of the work. Four copies of the report will be submitted to the NCC SMR. The report will include:
- a site location plan related to the national grid
 - a front cover to include the planning application number and the NGR
 - the dates on which each phase of the programme of work was undertaken
 - a concise, non-technical summary of the results
 - an explanation to any agreed variations to the brief, including any justification for any analyses not undertaken
 - a description of the methodology employed, work undertaken and results obtained
 - an interpretation of the aerial photographs
 - a plan at an appropriate scale showing the location and position of surface features identified during the site visit
 - monochrome and colour photographs as appropriate, including appropriate reproduced aerial photographs where copyright allows
 - transcriptions onto scaled maps of putative archaeological remains identified on aerial photographs that cannot be reproduced for copyright reasons

- Plans showing the locations and results of the geophysical survey, including figures showing trace, greyscale and interpretative plots
 - a model of potential archaeological deposits within the development site and a consideration of generic impact
 - an interpretation and discussion of the results of the appraisal
 - a copy of this project design, and of the NCCCT brief together with indications of any agreed departure from that design
 - the report will also include a complete bibliography of sources from which data has been derived
- 3.4.2 This report will be in the same basic format as this project design; a copy of the report can be provided on CD, if required. Recommendations concerning any subsequent mitigation strategies and/or further archaeological work following the results of the field evaluation will be provided in a separate communication.
- 3.4.3 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- 3.4.4 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive will include summary processing and analysis of all features, finds, or palaeoenvironmental data recovered during fieldwork, which will be catalogued by context.
- 3.4.5 The deposition of a properly ordered and indexed project archive in an appropriate repository is essential and archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the NCC SMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects with the appropriate Record Office. An Archaeological Data Service OASIS (online access to the index of archaeological investigations) will be completed and submitted as part of the archiving processes.

4. HEALTH AND SAFETY

- 4.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.
- 4.2 Full regard will, of course, be given to all constraints (services etc) during the fieldwork as well as to all Health and Safety considerations. **Information regarding services within the study area have been received and will be used during the course of the evaluation.**

5 PROJECT MONITORING

- 5.1 Whilst the work is undertaken for the client, NCCCT will be kept fully informed of the work and its results, and will be notified a week in advance of the commencement of the fieldwork. Any proposed changes to the project design will be agreed with the NCCCT in consultation with the client. Fieldwork will be monitored by the NCCCT on behalf of the developer.

6 WORK TIMETABLE

6.1 AERIAL PHOTOGRAPH ANALYSIS AND VISUAL INSPECTION

6.1.1 Approximately five days will be required for this stage of the programme.

6.2 GEOPHYSICAL SURVEY

6.2.1 Approximately two days will be required to complete this element. Processing and analysis of the data will take approximately 15 days.

6.3 REPORT

6.3.1 Copies of the report, as outlined in *Section 3.4.1*, will be issued to the client and other relevant parties within 20 days of the completion of fieldwork, unless otherwise agreed prior to the commencement of fieldwork.

6.4 ARCHIVE

6.4.1 The archive will be deposited within six months following submission of the report, unless otherwise instructed.

7 STAFFING

7.1 The project will be under the direct management of **Stephen Rowland** (OA North Project Manager) to whom all correspondence should be addressed. The aerial photographic analysis and site visit will be undertaken by **Chris Healey**, OA North Project Officer. The geophysical Survey will be undertaken by GSB Prospection.

8 INSURANCE

8.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

9 REFERENCES

English Heritage, 1991 *Management of Archaeological Projects*, second edition, London

SCAUM (Standing Conference of Archaeological Unit Managers), 1997 *Health and Safety Manual*, Poole

UKIC, 1990 *Guidelines for the Preparation of Archives for Long-Term Storage*, London

UKIC, 1998 *First Aid for Finds*, London

APPENDIX 3: COMPLETE GEOPHYSICAL REPORT



Plate 1: General view of the development area



Plate 2: The embankment running along the northern edge of the development area



Plate 3: Detail of Aerial Photograph BKS522471 highlighting cropmarks a, b and c



Plate 4: Detail of Aerial Photograph RAF4345 highlighting cropmarks d and e

Planning ref: B38/47; 4160
NCCCT ref: 04/B/1012
Grid ref: NU 0055 5101

LAND AT ELMBANK CARAVAN PARK, COW ROAD, SPITTAL, NORTHUMBERLAND

Brief for an archaeological appraisal combining:

Stage 1: Aerial photographic analysis and site visit

Stage 2: Geophysical survey

1 Introduction

- 1.1 A planning application has been submitted for the change of use of land to a holiday park and recreational area at Elmbank Caravan Park, Cow Road, Spittal (Fig 1). The site is located in a wider archaeological landscape containing cropmark evidence of prehistoric and Romano-British sites including Springhill Romano-British settlement which has been designated a Scheduled Ancient Monument due to its national importance. Aerial photographs of the proposed development area have revealed evidence of an apparent circular enclosure in the western half of the site. Several smaller circular marks are visible outside the enclosure on the north-west and south-east sides which may be of archaeological origin. In addition, a series of possible circular cropmarks of uncertain origin were noted in the south-eastern corner of the site, adjacent to Albert Road. Historic maps indicate that this site was covered by a series of agricultural fields since at least 1860, although the central part of the site appears to contain a number of static caravan bases and a roadway associated with the caravan park to the south.
- 1.2 Based on the available information, it appears that this development has the potential to disturb archaeological remains of unknown date and function. Northumberland County Council Conservation Team has advised Berwick Borough Council that the archaeological potential of the site should be further investigated prior to the determination of this planning application. It has been agreed that this should take the form of an archaeological appraisal combining aerial photographic analysis and a site visit with geophysical survey.
- 1.3 This brief constitutes Northumberland County Council Conservation Team's justification for the investigation, its objectives and the strategy and procedures to apply to the programme of archaeological appraisal. **This brief does not constitute the 'written scheme of investigation'.**
- 1.4 The brief is intended to establish the project parameters to enable an archaeological consultant or contractor to tender for the work and once commissioned to prepare and submit an appropriate Method Statement, Project Design or Specification to the Conservation Team for approval prior to work commencing. The project design should be based on a thorough study of all relevant background information, in particular any assessment or evaluation reports or, in their absence, data held or referenced in Northumberland Sites and Monuments Record Office (SMR).
- 1.5 The extent of the development (Fig 1) has been taken from plans attached to the planning application. The archaeological consultant or contractor will need to confirm the extent of the development with the developer as part of the specification.

2 Site Specific Requirements

2.1 The proposed appraisal work is designed to ascertain whether there are any archaeological constraints that may affect the planned development. The purpose of this staged archaeological appraisal is to quickly evaluate the site by non-intrusive methods in order to identify the presence or absence of possible archaeological remains, their location and, if possible, a tentative interpretation of function and date. The results of the survey will help to identify specific anomalies that may warrant further archaeological evaluation, the most likely form of which would be a programme of trial trenching.

2.2 The appraisal will need to combine two stages of work which are detailed below:

2.3 Stage 1: Aerial photographic analysis and site visit

2.3.1 The proposed development area falls within an area which has been included in the National Mapping Programme (NMP) of the Till-Tweed area¹ funded by English Heritage. The NMP was designed to identify cropmarks of potential archaeological sites visible on aerial photographs. The project accessed aerial photographic collections at the National Monuments Record in Swindon, the Unit for Landscape Modelling at Cambridge University and the Museum of Antiquities in Newcastle. The project referred to mainly oblique photographs dating to between 1977 and 1999, oblique military photographs taken in 1941 and 1948-9 around Berwick-upon-Tweed and variable vertical photographic coverage of the Berwick-upon-Tweed area up to 1991. The NMP did not access the aerial photographs held at Northumberland County Council Sites and Monuments Record (SMR).

2.3.2 The visibility of archaeological cropmarks can vary dependant on ground conditions or the time of the day or year when the photograph was taken. This may account for the lack of cropmarks identified on the aerial photographs looked at by the NMP, compared with the visibility of potential cropmarks on the aerial photographs held at Northumberland County Council Sites and Monuments Record (SMR).

2.3.3 Appropriate aerial photographs should be looked at for the specific site and the immediate surrounding area. In this particular instance the most appropriate collections are likely to be:

- i) Northumberland County Council Sites and Monuments Record (SMR) which also has complete digital aerial photographic coverage of the county
- ii) Any aerial photographs in the collections listed in section 2.3.1 which were not looked at as part of the national mapping programme

2.3.4 A site visit should be carried out to assess:

- i) The location of visible archaeological remains such as earthworks
- ii) Any areas or features of recent date which may have heavily truncated or removed archaeological remains in specific areas
- iii) The current ground conditions

¹ Deegan, A., 2003 The Till-Tweed ALSF/NMP Project Summary report

2.4 Stage 2: Geophysical survey

- 2.4.1 The geophysical survey should comprise 50% of the proposed development area in **staggered linear transects**.
- 2.4.2 The plan of the location of the 50% sample should be agreed with the County Archaeological Officer prior to the commencement of detailed survey.
- 2.5 Access arrangements, should be confirmed with the person or body commissioning the work, and where appropriate also with the land owner.

3 General Standards

- 3.1 All work will be carried out in compliance with the codes of practice of the Institute of Field Archaeologists (IFA) ² and will follow the IFA Standard and Guidance for Archaeological Field Evaluation³ and the English Heritage Guidelines for Geophysical Survey⁴. Archaeological contractors must be able to prove that they have appropriate experience and current insurance to undertake the work.
- 3.2 All staff must be suitably qualified and experienced for their project roles.

4 Post excavation work, archive, and report preparation

4.1 Site Archive

- 4.1.1 The archive and the finds must be deposited in the appropriate local museum, within **6 months** of completion of the post-excavation work and report. This should comprise:
 - i) A copy of the report
 - ii) Raw geophysical data, original illustrations and photographs that are not included in the report
 - iii) A digital copy of the report and illustrations, where appropriate
- 4.1.2 Before the commencement of fieldwork, contact should be made with the landowners and with the appropriate local museum to make the relevant arrangements. Details of land ownership should be provided by the developer. Details of the appropriate museum can be provided by the Assistant County Archaeologist.
- 4.1.3 **Northumberland County Council will require confirmation that the archive had been submitted in a satisfactory form to the relevant museum.**

4.2 Report

- 4.2.1 The geophysical survey is the first stage in a potential multi-staged programme of archaeological work and has been requested prior to the determination of planning permission.
- 4.2.2 **Due to the strict deadlines laid out in the planning system, the archaeological contractor or consultant should submit a copy of the report to Northumberland**

² Institute of Field Archaeologists, 2000, Code of Conduct

³ Institute of Field Archaeologists, 2001, Standard and Guidance for archaeological field evaluation

⁴ David A, 1995. *Geophysical Survey in archaeological field evaluation*. English Heritage Research and Professional Services Guideline No. 1

County Council Conservation Team and their client within 20 working days of completing the fieldwork.

4.2.3 The Conservation Team require two copies of the report (one bound and one unbound)

4.2.4 Each page and paragraph should be numbered within the report and illustrations cross-referenced within the text.

4.2.5 The report should include as a minimum the following:

- i) Planning application number, Northumberland County Council Conservation Team reference, OASIS reference number and an 8 figure grid reference
- ii) A location plan of the site at an appropriate scale of at least 1:10 000
- iii) Copies of aerial photographs (AP) showing archaeological sites or plans with the cropmarks drawn in the correct location. Where copyright prevents the inclusion of an AP in the report, a hand-drawn/computer rectified transcription of any interesting features should be provided. Transcriptions should be made on to a modern map base at a recognisable planning scale, and located with reference to the national grid, to allow the results to be accurately plotted on the Sites and Monuments Record
- iv) A plan showing the location of any features or areas of later disturbance identified during the site visit This must be at a recognisable planning scale, and located with reference to the national grid, to allow the results to be accurately plotted on the Sites and Monuments Record
- v) A location plan showing the location of the blocks of geophysical survey. This must be at a recognisable planning scale, and located with reference to the national grid, to allow the results to be accurately plotted on the Sites and Monuments Record
- vi) Copies of the following plots:
 - i) trace
 - ii) grey scale
 - iii) interpretative
- vii) A summary statement of the results
- viii) A discussion and interpretation of the combined results of the appraisal
- ix) **Any variation to the above requirements should be approved by the planning authority prior to work being submitted**

4.3 OASIS

4.3.1 Northumberland County Council Conservation Team and SMR support the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.

4.3.2 The archaeological consultant or contractor must therefore complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>. If the contractors are unfamiliar with OASIS, they are advised to contact Northumberland SMR prior to completing the form. Once a report has become a public document by submission to or incorporation into the SMR, Northumberland SMR will validate the OASIS form thus placing the information into the public domain on the OASIS website. **The archaeological consultant or contractor must indicate that they agree to this procedure within the specification/project design/written scheme of investigation submitted to Northumberland County Council Conservation Team for approval**

4.4 Publication

- 4.4.1 A summary should be prepared for 'Archaeology in Northumberland' and submitted to Liz Williams, Northumberland SMR Officer, by December of the year in which the work is completed.
- 4.4.2 A short report of the work should also be submitted to a local journal if appropriate.

5 Monitoring

- 5.1 The County Archaeological Officer must be informed on the start date and timetable for the evaluation **in advance** of work commencing.
- 5.2 Reasonable access to the site for the purposes of monitoring the archaeological scheme will be afforded to the County Archaeologist or his/her nominee at all times.
- 5.3 Regular communication between the archaeological contractor, the County Archaeologist and other interested parties must be maintained to ensure the project aims and objectives are achieved.

6 Further Guidance

- 6.1 Any further guidance or queries regarding the provision of a specification should be directed to:

Karen Derham
Assistant County Archaeologist
Northumberland County Council
County Hall
Morpeth
Northumberland
NE61 2EF

Tel: 01670 534057
Fax: 01670 533086
e-mail: kderham@northumberland.gov.uk

19/1/05

FOR COPYRIGHT REASONS, ALL MAPS SUPPLIED BY NORTHUMBERLAND COUNTY COUNCIL MUST BE RETURNED TO THEM ON COMPLETION OF THE PROJECT

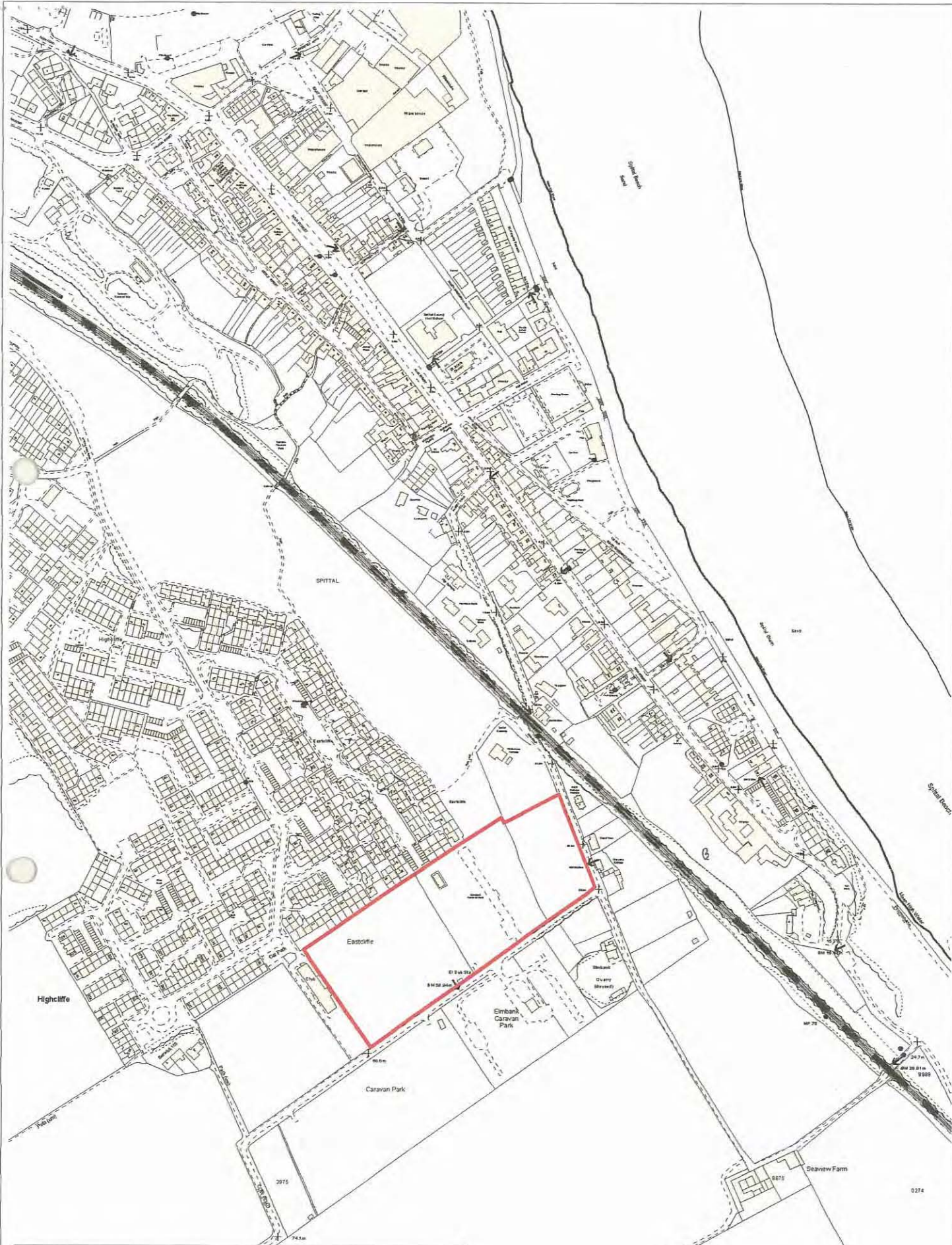


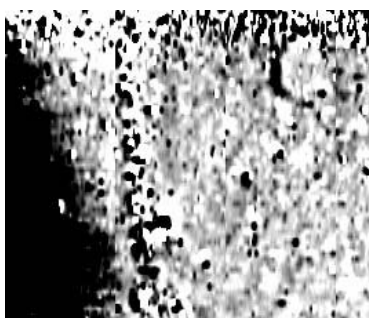
Fig 1: Site location (in red)

GSB

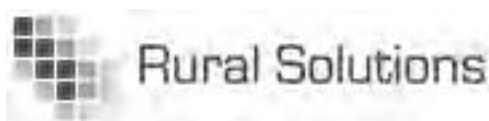
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**GEOPHYSICAL SURVEY REPORT
2008/03**

**Land at Cow Road, Elmbank Caravan Park,
Spittal, Northumberland**



Client:



on behalf of

Richard Roberts

Cowburn Farm, Market Street, Thornton, Bradford, West Yorkshire, BD13 3HW

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Specialising in Shallow and Archaeological Prospection

GSB Survey No. 08/03

Elmbank Caravan Park, Cow Road, Spittal

NGR	NU 003 508 (west) to NU 006 510 (east)
Location	Approximately 2km south of Berwick-upon-Tweed. Three fields located to the north of Cow Road, Spittal.
District / Parish	Northumberland, Berwick-upon-Tweed
Topography	Sloping relatively steeply eastwards towards the sea.
Current land-use	Caravan park, associated green space, open grass fields.
Soils	Soils of the area have been deemed as unsurveyed (U), mainly urban and industrial areas (<i>Soils of England and Wales. Sheet 1, Northern England. Soil Survey of England and Wales. 1983</i>).
Geology	Boulder clay and morainic drift.
Archaeology	Aerial photographic evidence indicates a circular enclosure in the western half of the middle field. Further cropmarks, of unknown origin, are to the north and south-east of the application area.
Survey Methods	Detailed magnetic (gradiometer) survey

Aims

To investigate three fields in advance of proposals to extend an existing caravan park. The work forms part of a wider archaeological assessment being carried out by **Oxford Archaeology North** on behalf of **Rural Solutions** for **Richard Roberts**.

Summary of Results*

Despite severe magnetic disturbance over a large part of the site, the geophysical survey has successfully identified several anomalies of archaeological potential, including a ring ditch visible on aerial photographs. In addition, there are suggestions of a possible adjacent small rectilinear enclosure and a potential concentration of archaeological features in the western extremity of the survey area. However, any interpretation is tempered by the extent of the magnetic noise.

Project Information

Project Co-ordinator: J Gater
Project Assistants: E Collier, R Green, C Stephens, G Taylor and E Wood
Date of Fieldwork: 24th-25th January 2008
Date of Report: 13th February 2008

***It is essential that this summary is read in conjunction with the detailed results of the survey.**

Survey Specifications

Method

The survey grid was set out and tied in to the Ordnance Survey (OS) grid using tapes; see tie-in diagrams.

Technique	Traverse Separation	Reading Interval	Instrument	Survey Size
Magnetometer - Scanning (Appendix 1)	-	-	-	-
Magnetometer – Detailed (Appendix 1)	1.0m	0.25m	Bartington Grad 601-2	>2ha
Resistance – Twin Probe (Appendix 1)	-	-	-	-
Ground Penetrating Radar (GPR) (Appendix 1)	-	-	-	-

Data Processing

	Magnetic	Resistance	GPR
Zero Mean Traverse	Y	-	-
Step Correction	Y	-	-
Interpolation	Y	-	-
Filter	-	-	-

Presentation of Results

Report Figures (Printed & Archive CD): Location plots, data plots and interpretation diagrams on base map (Figures 1-3).
Tie-in information (Figure T1).

Reference Figures (Archive CD): Data plots at 1:500 - for reference and analysis. (See List of Figures).

Plot Formats: See Appendix 1: Technical Information, at end of report.

General Considerations

The survey was divided into three sections (Areas 1–3). Area 1 was overgrown with long grass and thistles; it was very difficult to walk over with the instruments and in places impossible due to the uneven nature of the ground. For Health and Safety reasons only a small portion could be surveyed. By contrast, conditions in Areas 2 and 3 were far better, though dumps of spoil and building debris restricted the area available for survey in Area 2.

The results showed hundreds of ferrous responses in all three survey areas; these are almost certainly all modern in origin and relate to past landscaping and the scatter of rubbish across the site. They have been ignored in the interpretation categories but are visible as spikes in the data on the XY traces in the Archive Figures.

Numbers in parentheses refer to anomalies highlighted in the interpretation (Figure 3).

Results of Survey

1. Magnetic Survey

Area 1

- 1.1 Due to the complications described above in the *General Considerations* section, a sample block was placed in the only part of the field that could be surveyed. The results indicate the presence of a large ferrous pipe running approximately N-S and parallel to the road that forms the eastern boundary of the site. Newly erected marker posts, visible in the field boundaries, suggest that this pipe may have been laid relatively recently. The magnetic responses are of a strength that they will have totally masked any buried archaeology if present. Away from the magnetically disturbed area there are a few other strong ferrous responses but nothing in the data to suggest the presence of archaeological features.

Area 2

- 1.2 The north-eastern, eastern and south-eastern fringes of this area could not be investigated due to dumped material. In addition, a large man-made bank, some 10m in width, runs along the whole of the northern perimeter of the field.
- 1.3 The results show a magnetically very disturbed site. In addition to the dumped material and general rubbish that has already been mentioned, a large iron railing fence forms the western boundary and this has cast a large magnetic shadow. Additionally the club house building has resulted in a broad area of magnetic disturbance along the western edge of the survey. The southern edge of the survey is totally swamped by the presence of a pipe (or pipes) and the northern edge is also totally disturbed, presumably by material that has spread from the man-made bank. Finally the magnetic effects of some of the dumped building material are visible in the north-eastern part of the survey area.
- 1.4 Given the extensive disturbance over much of the field it is perhaps surprising that several anomalies of archaeological potential are visible in the data. The most striking is the curving magnetic anomaly (1) which corresponds to a segment of ring ditch and this is clearly the feature visible on cropmarks. Although the magnetic anomaly appears incomplete, this may simply be due to the surrounding magnetic disturbance; it does not necessarily imply that the ring ditch is damaged.
- 1.5 To the south of the ring, is a rather poorly defined rectilinear response (2) that may just indicate a small enclosure. An area of increased magnetic responses (3) appears, from the shape and nature of the responses, to be modern but it might just indicate large pit-like features, including possible areas of burning, which could be of archaeological interest. It is assumed that the band of magnetic erratic responses (4) coincides with an old field boundary.
- 1.6 Elsewhere in the data are a few trends that have been highlighted which may be of archaeological interest.

Area 3

- 1.7 The effects of the club house are immediately visible in the data along the eastern edge of the survey area and there is a similar, if not more extensive, concentration of ferrous type responses across the whole field. Another presumed old field boundary is highlighted on the interpretation (Figure 3).
- 1.8 The western half of the field, particularly the north-western corner, would appear to have some archaeological potential. There is a curving magnetic anomaly, a few pit-like anomalies and an area of increased magnetic response (5), all of which appear to coincide with a slightly elevated piece of ground.

2. Conclusions

- 2.1 The magnetic survey has identified several anomalies of archaeological potential including a ring ditch visible on aerial photographs. There is also a possible small rectilinear enclosure and an elevated part of the western field with several responses indicating archaeological features.
- 2.2 However, all the fields surveyed were magnetically very disturbed and in such circumstances it is easy to ‘miss’ responses that may be of interest. The magnetic noise levels can easily mask archaeological type anomalies and as such any interpretation must be viewed with caution. It should also be borne in mind that while portions of the site may be magnetically disturbed, this does not necessarily mean that any archaeological features present are disturbed or damaged.
- 2.3 In the same way that magnetically disturbed areas can mask archaeological features it is also possible to mis-interpret some responses as having archaeological potential when in fact they are simply modern features.

List of Figures

Report Figures

Figure 1	Location of Survey Areas	1:1250
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Figure 3	Summary Interpretation	1:1250
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Reference Figures on CD

Figure A1	Area 1: XY and greyscale plot	1: 500
Figure A2.1	Area 2: Greyscale plot	1: 500
Figure A2.2	Area 2: XY plot	1: 500
Figure A3.1	Area 3: Greyscale plot	1: 500
Figure A3.2	Area 3: XY plot	1: 500



Gradiometer Survey



0 metres 100

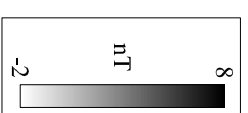
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Location Diagram

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Figure 1



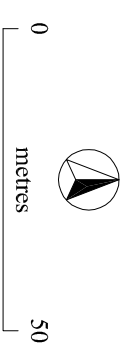
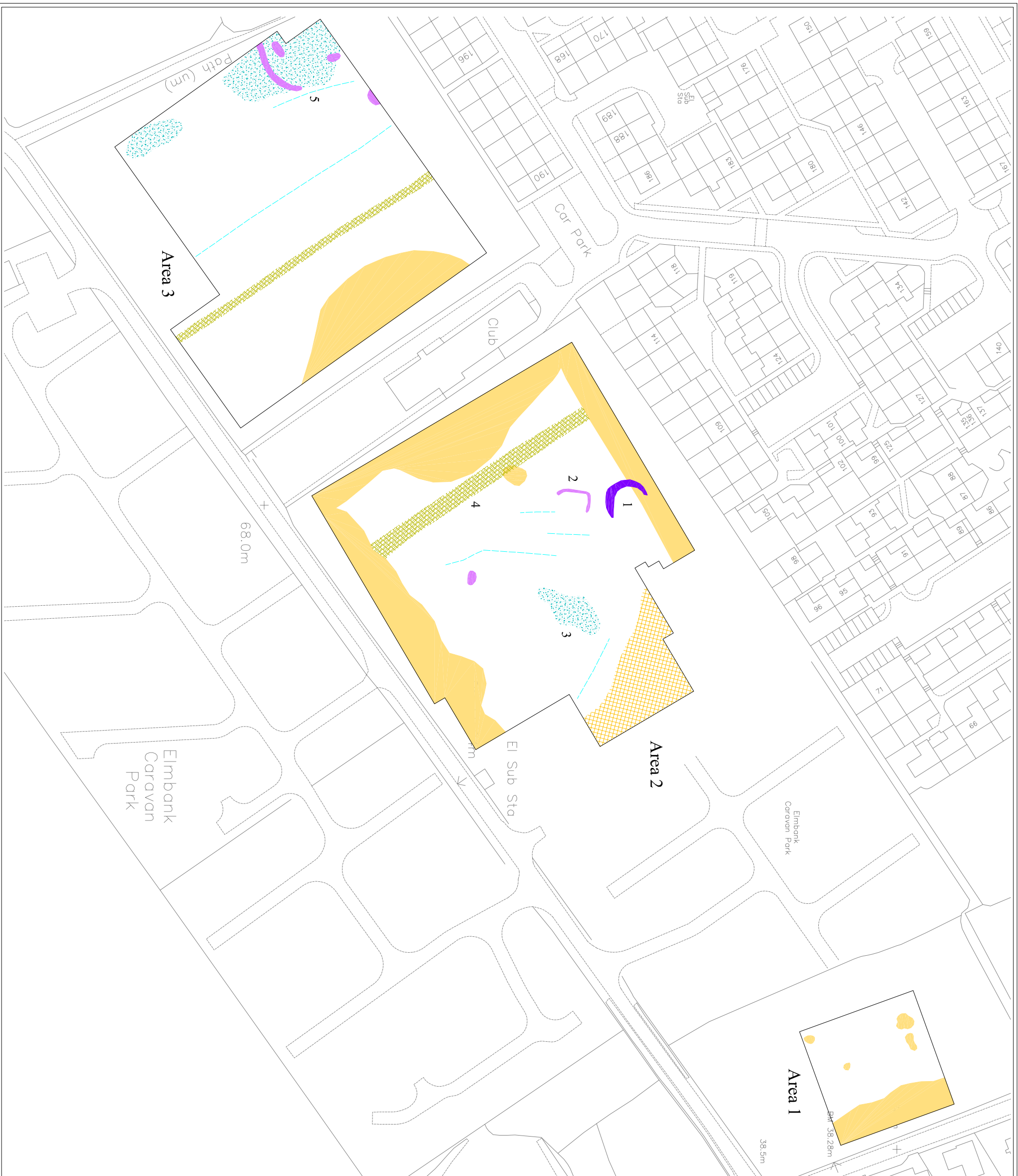
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Summary Greyscales

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Figure 2



-  Archaeology
-  ?Archaeology
-  Trend
-  ?Old Field Boundary
-  Increased Magnetic Response
-  Magnetic Disturbance
-  Ferrous

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Summary Interpretation

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Figure 3