PROPOSED RESIDENTIAL DEVELOPMENT, LAND NORTH OF MINSTER WAY, BEVERLEY, EAST YORKSHIRE

ARCHAEOLOGICAL ASSESSMENT

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CONTENTS

EXECUTIVE SUMMARY

In July 2018, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Peter Ward Homes Ltd to produce an Archaeological Assessment in support of a proposed planning application for a major residential development on the north side of Minster Way (the Beverley Southern Relief Road), Beverley, East Yorkshire (NGR TA 0346 3777 centred). The proposed development area covers c.16.68ha and some 430 houses are proposed to be built in several phases.

This Archaeological Assessment report describes the archaeology and heritage of the area, and assesses the nature, extent and significance of any heritage assets which might be affected by the proposed development. It also presents the results of a geophysical survey undertaken across the whole of the proposed development area. The report has been produced by Ed Dennison Archaeological Services Ltd (EDAS), and is in accordance with the revised National Planning Policy Framework (NPPF) paragraph 189.

The proposed residential development will affect six identified assets. These are primarily cropmark sites or remains identified by the geophysical survey, and it is concluded that the archaeological potential of the site is high to medium. Previous archaeological excavations along the line of the Beverley Southern Relief Road, which borders the southern side of the development site, identified a small late Iron Age settlement towards the western end of the site which was followed by early Roman activity dating to the 2nd and early 3rd centuries AD. During the late Roman period (late 3rd and 4th centuries AD), a rectilinear field system was established on the western part of the site and the central part of the site became the focus of activity in the form of pits, small gullies and at least two posthole structures; a human burial may also belong to this period. Finally, a specific phase of late 4th century activity was noted, which incorporated further large-scale boundary demarcation, and additional pits and gullies containing domestic waste and iron slag.

Of the identified assets, two are considered to be of Medium importance or value, three are of Low importance, and one is of Negligible importance. In most cases, the magnitude of impact is considered to substantial, given the nature of the development, although for one asset on the south side of Minster Way, only a relatively small proportion of the site will be affected by the proposed new roundabout. In terms of the Overall Significance of Effect, there will be two Large negative or adverse effects, two Moderate negative effects, and two Slight negative effects.

Further intrusive archaeological investigations, in the form of trial trenching, together with areas of open area excavation where development impact is already known, is recommended.

1 INTRODUCTION

1.1 In July 2018, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Peter Ward Homes Ltd to produce an Archaeological Assessment in support of a proposed planning application for a major residential development on the north side of Minster Way (the Beverley Southern Relief Road), Beverley, East Yorkshire (NGR TA 0346 3777 centred) (see figures 1 and 2). The proposed development area covers c.16.68ha and some 430 houses are proposed to be built in several phases.

1.2 The purpose of this Archaeological Assessment report is to describe the archaeology and heritage of the area, and to assess the nature, extent and significance of any heritage assets which might be affected by the proposed development. It has been produced by Ed Dennison Archaeological Services Ltd (EDAS), and is in accordance with the revised National Planning Policy Framework (NPPF) paragraph 189 (DCLG 2018, 55). It should be noted that this is not a 'Design and Access Statement'.

2 METHODOLOGY AND SOURCES

2.1 For the purposes of this Archaeological Assessment report, a study area of 1km radius centred on the proposed development site was defined, although information for the more general area was also collected (see figure 6).

2.2 In line with standard archaeological practice (e.g. CIfA 2014), and guidance contained in the National Planning Policy Framework (NPPF) (DCLG 2018) and the requirements of the local archaeological curators (Humber Archaeology Partnership), the following sources of information were examined to produce this Archaeological Assessment.

Sources of Information

2.3 The Humber Historic Environment Record (HHER), which is held and maintained by the Humber Archaeology Partnership in Hull, was consulted for information on the known archaeological heritage of the area. Other on-line data from the 'Heritage Gateway' website (*http://www.heritagegateway.org.uk/gateway*), which provides links to the National Heritage List for England (NHLE), the National Record of the Historic Environment (NRHE - Pastscape), the National Monument Record Excavation Index (NMREI) and the Register of Historic Parks and Gardens, was also collected. A number of other archaeological databases were searched for relevant information, for example the Defence of Britain database for details of Second World War sites (*http://archaeologydataservice.ac.uk/archives/view/dob/*), the British and Irish Archaeological Bibliography for records of previous archaeological investigations (*https://archaeologydataservice.ac.uk/library/*), and the artefacts and finds recorded by the Portable Antiquities Scheme (*http://finds.org.uk/*). Information on those buildings listed as being of Special Architectural or Historic Interest was obtained from Historic England's 'Images of England' website (*http://www.imagesofengland.org.uk*).

2.4 The Ordnance Survey's historic maps of the study area were also consulted, at both 6" and 25" scales, from those available via the National Library of Scotland website (*http://maps.nls.uk/index.html*). Visits were also made to the East Riding Archives Office (ERAO) in Beverley, to examine historic maps, local history material and other relevant documents.

2.5 A range of published and unpublished documentary sources in both local and national collections was consulted for background information and specific data on specialised aspects of the history and archaeology of the study area. A list of all the sources consulted for this assessment is provided in the bibliography (Chapter 7) below.

Records of Previous Research or Investigations

Beverley Southern Relief Road (Minster Way)

2.6 A series of major archaeological investigations were carried out prior to the construction of the Beverley Southern Relief Road (now called Minster Way), part of which borders the southern boundary of the proposed development site; this particular section to the east of Shepherd Lane was designed 'Area 5'. Preparatory works for the bypass as a whole included an Environmental Statement, which covered Cultural Heritage topics in the form of a desk-top assessment (WYG 2008; WYG 2011), and geophysical surveys (Stratascan 2008; GSB 2008). As a result, an archaeological evaluation comprising the excavation of 52 trenches was carried out along the route (AOC 2012). The alignment was then divided into a number of areas in which detailed excavations were carried out by AOC Archaeology and Oxford Archaeology North in 2013 and 2014 (AOC 2013; AOC 2015, OAN 2017). Areas 1 to 6 lay at the eastern end of the alignment, between the Morrison's A164/Victoria Road roundabout and Long Lane, Areas 7 to 9 lay between Long Lane and the Hull to Beverley railway line, Areas 10 to 13 lay on the east side of the railway line, and Areas 14 to 22 lay between the railway line and the A174 Hull Road; in the event, scheme changes meant that no work was required in Areas 1, 10, 11, 12 and 13. The most significant areas, in terms of results, were Areas 5 to 9, and, as already noted, Area 5 forms the southern boundary of the current proposed development site. The results of the detailed excavations are still being collated and written up, but some interims and initial reports are available (AOC 2015; OAN 2017), and the results are discussed in Chapters 4 and 5 below.

Other Investigations within the Study Area

2.7 A geophysical survey followed by trial trenching was undertaken in 2010-2011 prior to the construction of a housing development on the east side of Queensgate (**Site 56**). The initial geophysical survey did not record any significant anomalies, and it was felt that modern dumping could be masking archaeological deposits. In the event, no archaeological features or artefacts were uncovered by the subsequent trenching work (On Site Archaeology 2010; 2011).

2.8 A number of watching briefs have also been undertaken on small-scale developments within the study area along Long Lane. One, on land east of West View (**Site 38**), identified part of the underlying ridge and furrow field system and two early modern land drains (Tibbles 2015). Another, opposite Holycroft Farm on the west side of the lane, revealed a large ditch which might be part of the surrounding Iron Age/Romano-British landscape (Dennison 2002) (**Site 37**).

2.9 Various architectural and archaeological surveys have been undertaken at Old Hall Farm, in the south-eastern part of the study area (**Sites 33, 34 and 36**). In 1992, a detailed report outlined the history of the site, examined the remaining 17th century and later structures at the farm, and undertook some survey work to identify the site of an earlier hall (Dennison 1992). A watching brief was then carried out in 1998 during the demolition and reconstruction of some of the farm buildings

(Tibbles 1998), and some further building recording was done prior to the demolition of a Grade II Listed barn (Rawson 2013).

2.10 In 1992, a geophysical survey was undertaken along the line of then proposed Lincoln Way link road, running east and then north from the east side of Victoria Road; some tentative linear ditches and pit-type anomalies were identified (GSB 1992; **Site 61**). On the north side of the link road, a desk-based assessment was carried out by York Archaeological Trust prior to a housing development (Stenton 2015), and a later evaluation in 2016 revealed evidence for a number of presumed Iron Age inhumation burials (Reeves 2017; **Site 12**). On the opposite side of the road, at the former Brown's Yard, an archaeological evaluation was undertaken in 2000 prior to a housing development (Johnson 2000; **Site 13**).

2.11 Several phases of archaeological investigations were undertaken between Willow Lane and Woodmansey Mile, prior to the Keldmarsh school developments (**Site 51**). In 2001, a geophysical survey revealed possible archaeological anomalies and a programme of trial trenching revealed a number of drainage ditches and gullies thought to be associated with water management related to adjacent early post-medieval mills (Fraser 2002). A subsequent watching brief on land to the north-east in 2003 also revealed a possible medieval ditch or gully (Jobling 2003). However, recent trial excavation around this latter site in advance of residential development did not reveal any archaeological remains (**Site 69**) (Wells & Williams 2017).

2.12 The construction of the Ganstead to Asselby gas pipeline also led to another significant excavation of a late Iron Age settlement straddling Shepherd Lane to the south of the proposed development site in 2006 (Network Archaeology 2011, 32-43; **Site 48**).

2.13 In addition to the above archaeological investigations, detailed documentary research into the study area, which largely falls within an area known as Beverley Parks, has been produced by the Victoria County History (Allison 1989a), while other work discusses the former deer park (Neave 1991, 20-21) and the Old Hall Farm complex (Neave & Waterson 1988, 14-15).

Geophysical Survey of the Development Site

2.14 A geophysical survey of the proposed development site was undertaken by Archaeological Services WYAS over the whole of the proposed development site, in late July 2018 (Brunning & Trace 2018). The survey grid was laid out using a Trimble VRS differential global positioning system, and a number of Bartington Grad601 magnetic gradiometers was used for the data collection. Readings were taken at 0.25m intervals on zig-zag traverses 1.0m apart within 30m by 30m grids, so that 3,600 readings were recorded in each grid. These readings were stored in the memory of the instrument and later downloaded to a computer for processing and interpretation; Geoplot 3 (Geoscan Research) software was used to process and present the data. Appendix 1 provides a non-edited copy of the survey report and the results of the survey are given and discussed in Chapter 6 below.

3 DESIGNATED ASSETS AND PLANNING POLICY CONTEXT

Designated Assets

3.1 Designated Heritage Assets are defined as comprising World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks

and Gardens, Registered Battlefields and Conservation Areas (DCLG 2018, 66). It should be noted that there is also a lower level of heritage assets, which may or may not be of equivalent significance to a Scheduled Monument, but which are currently undesignated.

Scheduled Monuments

3.2 Scheduled Monuments are considered to be of national importance and are protected under the Ancient Monuments and Archaeological Areas Act 1979, and they are administered by Historic England (formerly English Heritage) on behalf of the Secretary of State. Under the terms of Part 1 Section 2 of the Act, it is an offence to damage, disturb or alter a Scheduled Monument either above or below ground without first obtaining permission (Scheduled Monument Consent) from the Secretary of State.

3.3 There are no Scheduled Monuments within or immediately adjacent to the study area. The nearest is Hall Garth moated site, to the south of Beverley Minster (NHLE 1008122) and Bentley Cross, a Beverley sanctuary limit stone (NHLE 1012590), 1.3km to the north-north-east and 1.5km to the south-west of the proposed development site respectively.

Listed Buildings

3.4 Listed Buildings are afforded protection under the Planning (Listed Buildings and Conservation Areas) Act 1990. Listing is a national designation, but Listed Buildings are divided into three grades, I, II* and II, which relate to their architectural and historical value. Section 66 of the 1990 Act states that planning authorities must have special regard for the desirability of preserving (*inter alia*) the setting of any Listed Building that may be affected by the grant of planning permission.

3.5 There are six Grade II Listed Buildings within the study area, five of which lie towards the south-east edge (see figure 6). Further information on these assets are included in Chapter 5 below.

Other Designated Assets

3.6 There are no World Heritage Sites, Protected Wreck Sites, Registered Parks and Gardens, or Registered Battlefields within 10km of the study area. The nearest Conservation Area is the Minster (Area 8), part of the wider Beverley Conservation Area and revised in 2013 (ERYC no date). The nearest part of the Conservation Area lies 1.2km to the north of the proposed development site.

National Planning Policy Framework (2012)

3.7 The National Planning Policy Framework, originally published in 2012 and revised in 2018 (DCLG 2018) sets out the Government's planning policies for England and how these are to be achieved, with the purpose of planning being to help achieve sustainable development. At the heart of the policy framework is the presumption in favour of sustainable development (paragraph 11).

3.8 NPPF policies relating to conserving and enhancing the historic environment state that, when determining applications, local planning authorities should require an applicant to describe the significance of any affected heritage asset, including any contribution made by their setting. This should be proportionate to the assets'

importance and, where a development site may include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, undertake a field evaluation (paragraph 189).

3.9 When considering the impact of a proposed development on the significance of a designated heritage asset, the NPPF notes that great weight should be given to the asset's conservation. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Substantial harm to Grade II Listed Buildings, or Grade II Registered Park or Gardens, should be exceptional. Substantial harm to or loss of heritage assets of the highest significance, including Scheduled Monuments and Grade I and II* Listed Buildings, should be wholly exceptional (paragraphs 193-194). Significance (for heritage policy) is defined as "the value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting" (Appendix 2).

3.10 Where a proposed development would lead to substantial harm or total loss of significance of a designated heritage asset, the NPPF states that local planning authorities should refuse consent unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits (paragraph 195). Where a development will lead to less than substantial harm of the significance of a designated asset, this harm should be weighed against the public benefits of the proposal (paragraph 196). The document goes on to state that the effect of an application on the significance of a non-designated heritage asset should also be taken into account when determining an application, a balanced judgement being required having regard to the scale of any harm or loss and the significance of the heritage asset (paragraph 197).

3.11 Finally, the NPPF states that local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and the archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted (paragraph 199).

East Riding Local Plan 2016

3.12 The East Riding Local Plan was adopted by East Riding of Yorkshire Council in 2016. The policies in this document relating to the historic environment are grouped under headings such as 'Integrating High Quality Design', 'Promoting a High Quality Landscape', 'Valuing our Heritage', 'Conserving and Enhancing Biodiversity and Geodiversity', 'Strengthening Green Infrastructure' and 'Managing Environmental Hazards' (ERYC 2016a, 122-158).

3.13 Of particular relevance to this Archaeological Assessment report is Policy ENV3 dealing with 'Valuing our Heritage'. This states, as follows (ERYC 2016a, 134):

A. Where possible, heritage assets should be used to reinforce local distinctiveness, create a sense of place, and assist in the delivery of the economic well-being of the area. This can be achieved by putting assets, particularly those at risk, to an appropriate, viable and sustainable use.

B. The significance, views, setting, character, appearance and context of heritage assets, both designated and non-designated, should be conserved, especially the key features that contribute to the East Riding's distinctive historic character including:
   1. Those elements that contribute to the special interest of Conservation Areas, including the landscape setting, open spaces, key views and vistas, and important unlisted buildings identified as contributing to the significance of each Conservation Area in its appraisal;
   2. Listed Buildings and their settings;
   3. Historic Parks and Gardens and key views in and out of these landscapes;
   4. The dominance of the church towers and spires as one of the defining features of the landscape, such as those of Holderness and the Wolds;
   5. Heritage assets associated with the East Yorkshire coast and the foreshore of the Humber Estuary;
   6. The historic, archaeological and landscape interest of the Registered Battlefield at Stamford Bridge;
   7. The historic cores of medieval settlements, and, where they survive, former medieval open field systems with ridge and furrow cultivation patterns;
   8. The nationally important archaeology of the Yorkshire Wolds; and
   9. Those parts of the nationally important wetlands where waterlogged archaeological deposits survive.

C. Development that is likely to cause harm to the significance of a heritage asset will only be granted permission where the public benefits of the proposal outweigh the potential harm. Proposals which would preserve or better reveal the significance of the asset should be treated favourably.

D. Where development affecting archaeological sites is acceptable in principle, the Council will seek to ensure mitigation of damage through preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development.

3.14 This policy replaces previous, more disparate, policies which were included in the former Beverley Borough Local Plan (adopted June 1996), the East Yorkshire Borough Wide Local Plan (adopted June 1997), and the Joint Structure Plan for Kingston upon Hull and the East Riding of Yorkshire (adopted June 2005).

East Riding Local Plan: Land to the South-West of Beverley Masterplan: Supplementary Planning Document (2016)

3.15 The proposed development site forms part of a wider area allocated for housing by East Riding Council, under the general heading of BEV-J. A specific masterplan and supplementary planning guidance for this area has been produced and was adopted by East Riding of Yorkshire Council in July 2016. The area allocated under BEV-J covers 76.52 hectares to provide for an indicative 1,820 dwellings; this represents the largest single site for housing development within the emerging East Riding Local Plan to 2029.

3.16 Under the heading of 'Heritage', the document notes that "the site (i.e. BEV-J) is not located in a Conservation Area nor are there any listed buildings on or adjoining its boundary (ERYC 2016b, 14-15). Beverley does however lie within a much older archaeological landscape dating back to the prehistoric era.

Therefore, like most allocated sites on the periphery of the modern town, the area could contain heritage assets of archaeological interest which may need to be addressed. There are recorded archaeological remains within the masterplan area".

3.17 The document continues: "An extensive cropmarks complex representing the remains of ditches and enclosures have been identified that date from the Iron Age and/or Romano-British to the post-medieval period. These cropmarks relate to early settlement and settlement remains are already known to exist within this area. They include Iron Age/Romano-British field systems and occupation evidence, including enclosures and ring ditches. Archaeological work along the southern bypass, revealed a wealth of remains. Amongst the earliest structural remains found were a Bronze Age round barrow and a possible Bronze Age cremation. Iron Age remains included a small cemetery of at least four square barrows within the route of the bypass - there were probably more beyond the limits of the road - and at least two separate Late Iron Age settlement sites, one of which had at least four roundhouses within the excavated area. There were also associated animal pens, enclosures, ovens, pits and fence-lines. Both of these settlement sites continued in use into the Romano-British period. It is advised that geophysical surveys should take place, prior to any determination of planning applications for the allocation".

3.18 Finally, the document notes that "the Council updated its Landscape Character Assessment for Beverley in 2013. This recognised the relationship between new development and the historic environment, and in particular upon the landscape setting of the town and views of Beverley Minster. It looked at the potential effects which the development of these areas might have upon the significance of heritage assets within their vicinity in line with advice from Historic England. In terms of the assessment for land south of Beverley (Area 11- Beverley Parks), within which this site is located, it concluded that: "Despite the historical importance of the area and its proximity to the Minster, the landscape is not of the highest scenic quality. It is considered that the area does have capacity to accommodate further development. It is important that the new development respects views of Beverley Minster and retains where possible the historic field boundaries, especially towards the southern edge of Beverley. Any development proposals in this area should demonstrate an understanding of the role of the landscape to the setting of Beverley and recognise the importance of views to Beverley Minster (including views from the new bypass, whilst maintaining the existing flood storage capacity." Development proposals will have to protect and enhance long distance views of Beverley Minster. This is a key design parameter for the masterplan but should be viewed as an opportunity to be integrated into the design of the development, rather than a constraint".

3.19 Under the general heading of 'Masterplan Requirements', the document has further advice under heritage and landscape, as follows: "Archaeological deposits within the masterplan area have been discovered as part of building the southern relief road. Geophysical surveys should take place, prior to any determination of planning applications for the site. This is so that the nature and extent of any archaeological remains are understood, prior to the development being agreed within this area. There is insufficient information as to the full extent of archaeological deposits within the area covered by the allocations. Therefore, it is important that a detailed programme of archaeological work is undertaken, beginning with a pre-determination desk-based assessment, accompanied by a walkover survey. This should be supported by the results of a pre-determination geophysical survey of all the Greenfield areas which lie within the area covered by

the masterplan. Geophysical survey is a reasonably rapid, non-intrusive investigative technique, which is much cheaper than excavation. However, there may be some parts of the masterplan area which may not be suitable for its application (e.g. where there are extant hard surfaces, scatters of ferrous debris or building rubble, or dense undergrowth). Should this prove to be the case, then the use of other forms of investigation may need to be considered. Geophysical survey work should be undertaken prior to any determination of any planning application within this area, so the nature and extent of any archaeological remains can be understood" (ERYC 2016b, 34).

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Introduction

4.1 The following summary of the archaeological and historical background to the study area has been complied from a variety of sources and databases, listed in the bibliography (Chapter 7 below). In this and the following chapter (Chapter 5 below), the identifiers assigned by the Humber Historic Environment Record (HHER), the National Heritage List for England (NHLE), the National Record of the Historic Environment (NRHE), and the National Monument Record Excavation Index (NMREI), are quoted where appropriate.

Early Prehistoric Periods (500,000 BC-2,000 BC)

4.2 There is a general lack of material dating to the Palaeolithic (5,000,000-10,000 BC), Mesolithic (10,000-4,000 BC) or Neolithic (4,000-2,000 BC) periods from within the study area or its immediate surroundings, at least compared to later periods. Such evidence that is known from the Hull Valley comes from isolated lithic finds (Fenwick *et al* 2000, 89; van de Noort *et al* 2000, 244-245); these finds are closely associated with the River Hull and the raised outcrops of boulder clay that lie slightly above the prevailing marshy, wetland, landscape. A slight ridge of boulder clay that lies beneath Beverley may have formed a reasonably dry route across the Hull valley, and it has been suggested that this could have formed a natural routeway connecting the Wolds with the wetland resources of the Holderness Plain to the east. It was possibly utilised from the late Mesolithic period onwards, mirroring changing mobility patterns identified elsewhere within the Humber wetlands (Evans 2000, 13; van de Noort 2004, 40).

4.3 Within the wider Hull Valley, the evidence for Mesolithic activity appears to be closely associated with the River Hull (van de Noort & Ellis 2000, 245), and this pattern appears to continue into the Neolithic period. Nevertheless, an isolated Neolithic axe head was found at Lurk Lane to the south of the Minster (Evans 1990, 270), and a recent reassessment of aerial photographs for English Heritage's National Mapping Programme has identified a number of round barrows and pit alignments in the Hull Valley which potentially have Neolithic origins (Evans *et al* 2012, 7). Excavations at Park Grange Farm, just to the east of the study area, recovered parts of mature oak trees which have been dated to the late Neolithic period (Evans 2000, 13; HHER 6619), and further evidence for Neolithic activity, represented by pits and flints, was also recently found at Low Farm in Dunswell (Evans 2017, 174-175), as well as on the route of Minster Way (see Chapter 5 below).

Bronze Age (2,000-700 BC)

4.4 It is now thought that, during the later Neolithic and the early Bronze Age periods, there was a partial shift in activity away from the River Hull and palaeo-environmental evidence suggests that there was also limited woodland clearance taking place at this time (van de Noort 2004, 41). Fieldwork undertaken as part of the Humber Wetlands Survey, together with aerial reconnaissance and developer-led archaeological investigations, has significantly enhanced the previously limited evidence for late prehistoric and Romano-British occupation in this part of East Yorkshire over the last decade. Many of the settlements show extended periods of occupation, for example recent discoveries of significant Bronze Age, Iron Age and Romano-British occupation at Low and Poplar Farms near Dunswell, the Bronze Age material being found in several pits (Evans & Atkinson 2009, 258-259 & 282; Evans 2017, 174-175). An earthwork, possibly a Bronze Age barrow, has been noted in a field to the north of Cherry Tree Cottage, off Long Lane (HHER 20068), and cropmarks possibly representing 14 barrows have been identified to the east of Old Hall Farm (Evans *et al* 2012, 7 & 49). There has been the find of a socketed axe in the area (HHER 667), and a Bronze Age axe was also found near Park Grange Farm (HHER 18386). Bronze Age pottery has also been recovered from a natural hollow at Low Farm, Cottingham (Tibbles 2002). More importantly, evidence for significant Bronze Age activity and settlement was recently discovered along Minster Way, and this is discussed in more detail in Chapter 5 below.

Iron Age and Romano-British Periods (700 BC-AD 410)

4.5 Palaeo-environmental research suggests that, during the late Bronze Age and early Iron Age, woodland clearance in the region became more extensive (van de Noort 2004, 57). As a result, there is more evidence for an increasingly settled and farmed Iron Age/Romano-British landscape in and around the study area than was present for earlier periods. Much of the evidence comes from cropmarks on aerial photographs, visible as patterns caused by differential growth of crops over varying depths of soil (see figure 3). A pattern of isolated farmsteads surrounded by field systems is reinforced by the results of the Humber Wetlands survey, which identified this as a common feature across their study area (van de Noort 2004, 123).

4.6 The majority of evidence for occupation in the Iron Age and Romano-British periods comes from the recorded continuity of the earlier settlement, and it is anticipated that this continuity will be demonstrated at other cropmark sites of similar form within the study area and the wider region (see figure 3). The general lack of military and overland transport infrastructure in Holderness and the Hull Valley limited urban development, and the degree to which the rural population of the area, particularly away from the Humber, was exposed to, and engaged in, a Romanised economy at the local level. Handmade ceramics in the Iron Age tradition continued in use throughout the occupation of many rural sites within the wider vicinity of the Humber, with Romanised vessel forms appearing in larger numbers only in the 3rd and 4th centuries. This suggests a fairly late expansion of Roman influences into the area, and perhaps also of the market economy. Apart from ceramics, the extent to which the rural population adopted other aspects of the Roman way of life is currently uncertain, and it seems that many native characteristics were retained for some considerable time (OAN 2017, 17).

4.7 To the south of the study area, a significant Iron Age settlement site was excavated in 1997-98 to the south of Low Farm, on the site of the Creyke Beck electricity sub-station. The work revealed up to seven roundhouses, six smaller

enclosures which may have been stock pens, boundary ditches, rubbish pits and post-hole structures, dating to the 2nd and 1st centuries AD (Evans & Steedman 2001, 67-68). Other more recent work to the west of Low Farm revealed a rectilinear system of ditches together with an enclosure and a number of pits, the enclosure being redefined and recut during subsequent phases, all dating to the Romano-British period (Evans 2017, 174).

4.8 In 1989 a major Iron Age and Romano-British settlement was discovered during commercial fishpond excavations at Park Grange Farm, just to the east of the study area. This site lies in an area where cropmarks representing archaeological occupation had previously been recorded (HHER 6619). A number of hollows filled with white sand had been cut into the gravel substrate, and were interpreted as deriving from an ancient spring. They contained late Iron Age/early Roman pottery together with later Roman potsherds and animal bone which may have been rubbish disposed of from the adjacent cropmark occupation sites. Four stacked lower horse jaws were also found which may suggest a ritual element in their deposition (WYG 2013, 6).

4.9 Several metal-detectorist finds of Roman brooches from the vicinity of the cropmarks in the south-east part of the study area suggest that this area also witnessed activity, possibly settlement, during this period (HHER 18166; HHER18516; WYG 2013, 6-7). A small number of Roman artefacts, including coins, have also been found near Holycroft Farm, just off the south-east edge of the study area (HHER 15551). However, the extent, density and complexity of Iron Age/Romano-British settlement in the region was reinforced by the Minster Way excavations, and these are discussed in more detail in Chapter 5 below.

Saxon and Early Medieval Periods (c.410 to 1065 AD)

4.10 Evidence of early medieval activity within the region appears to be focussed on villages and towns whose origins lie within this period (van de Noort 2004, 127). The town of Beverley is thought to have its origins in the 8th century when a monastic site was founded by Bishop John of York, on an island surrounded by poorly drained wetlands. Excavations to the south of the Minster between 1979 and 1982 revealed timber structures and cobbled pathways dating from the early 8th century to the mid 9th century, indicating settlement at the time of Bishop John (died 721 AD, canonised 1037). The southern edge of the monastic precinct was also identified, although its church probably lay below the present Minster. The monastery was abandoned in the mid 9th century and re-established as a college of secular canons in the early 10th century (Evans 2000; Evans 1990, 272-273).

4.11 No sites or finds of early medieval date are recorded on the Humber HER within or around the study area, and it considered likely that the majority of archaeological remains from this period will be focussed within the historic core of the town. This is borne out by the limited evidence from excavations within Beverley, for example on a medieval timber framed house site (HHER 4685) and a dye house (HHER 7461) which both contained early medieval material and the find of a brooch (HHER 4627) (WYG 2013, 7).

4.12 Two, probably associated, pits suggesting early industrial activity were located at the eastern end of the Minster Way, just to the east of the study area (in Area 15). The smaller pit contained iron ore, iron bloom, oak charcoal and burnt clay, and was connected to the larger pit by a short, shallow channel, or flue; the larger pit contained almost pure oak charcoal. Radiocarbon dating of a burnt twig from the fill produced an early medieval date (OAN 2017, 66).

Medieval Period (AD 1066-1540)

4.13 Beverley was an important provincial town in the medieval period and by 1377 it was the eleventh largest town in England. The cult of St John was a significant element in this prosperity, attracting pilgrims and helping to secure privileges for the town (Pevsner & Neave 1995, 280; Evans 1990, 273-274). St John's shrine became an important sanctuary which allowed fugitives to enter the town for a period of 30 days to allow time for a canon to negotiate with their pursuers. The limits of the sanctuary were marked by stones, one of which is located to the south-west of the study area on the A164; it is a Scheduled Monument and dates from the 13th century. The focus of medieval development within the town lay to the north of the minster and by the mid 12th century two additional churches had been founded, St Mary's and St Nicholas' (Pevsner & Neave 1995, 280). A Dominican Friary was also established in the town in 1240, and its plan has largely been established through excavation (Evans 1990, 276).

4.14 From the 12th century, Beverley was a major centre of the wool trade, the transportation of wool to the cloth towns of the Low Countries being greatly assisted by the navigable beck that runs from the east side of the town to the River Hull (Pevsner & Neave 1995, 282). As a result, the town became a major trading centre, with twice weekly markets, until Hull grew in importance from the late 13th century. A number of medieval industries were practised in the town, including smithing, pottery production, brick and tile making, leather tanning, fulling and dyeing. Brick and tile works had also been established by the 14th century (Evans 1990, 276-279). However, economic decline badly affected the town from the late 15th century, and by the mid 16th century the wool trade was extinct and the cloth trade much reduced (Pevsner and Neave 1995, 282).

4.15 In the medieval period, the parish was the basic unit of ecclesiastical administration, while the township was the economic basis of settlement. Generally, parishes were made up of more than one township, although in many cases the two units were synonymous. The proposed development site, and indeed the whole of the study area, lies in a district known as Beverley Parks, on the southern edge of the town. Although this area is often treated as a separate township, it in fact formed part of the combined township of Woodmansey and Beverley Parks, within the ecclesiastical parish of St John, Beverley.

4.16 In the medieval period, Beverley Parks formed part of the Manor of Beverley. The archbishops of York, who had land in Beverley when the Domesday Book was compiled in 1086, held the manor until 1542 when it was exchanged with the Crown (Allison 1989b, 210). The name 'Parks' derives from the deer park which was held by the archbishops of York from the early medieval period. At its greatest extent, it would have extended from Queensgate and Bentley in the west, Hall Garth to the north, Woodmansey and Thearne in the east, and to the northern edge of Cottingham parish in the south (see figure 4). The first documentary record of the park occurs in 1258, when Archbishop Sewall de Boviil persuaded the burgesses of the town to exchange their rights of common there. From the 1260s onwards there are frequent accounts of trespassing and poaching in the park, probably representing the burgesses discontent at having lost their common rights (Neave 1991, 20). A survey of the park was made in 1388, in which it was noted that "400 beasts, counting by the short hundred, can be fed in the park over and above the sustenance of game" (Dennison 1992, 22). A reference from 1554-55 suggests that, by this date, the park was six miles in circumference and contained over 2,200 acres (Allison 1989a, 276) (see below).

4.17 Although the park was primarily reserved for the archbishop's deer and other game, it also included areas of arable (155 acres in the 1530s), meadow and pasture as well as some woodland. Few buildings are known to have stood in the park during the medieval period, apart from the archbishop's hunting lodge at what was later Old Hall Farm (see below), as well as a manor house immediately to the south of the Minster (Hall Garth) and water mills close to the town (Allison 1989, 271). Access to the park appears to have been via the route now known as Long Lane, although this name does not appear in documents until the late 17th century (Allison 1989a, 271).

Post-medieval Period (AD 1540 onwards)

4.18 A decline in trade in the 15th century and the suppression of the Minster college in 1548 led to a fall in Beverley's prosperity, and during the 16th and 17th centuries it was reduced to being a market town for the surrounding countryside. However, from the late 17th century Beverley became the administrative centre of the East Riding and a wealth of Georgian buildings in the town testify to its increased prosperity and industries such as ironworking, milling, tanning and shipyards once again flourished (Neave 1990). An additional suburb in the vicinity of Queensgate grew up over this period and isolated farmhouses became established within the Beverley Parks area.

4.19 In 1542, the archiepiscopal deer park passed to the Crown and its keepership and palership was granted to Sir Michael Stanhope. In 1548 he built or rebuilt a small hunting lodge using stone from the archbishop's former manor house at Hall Garth, and timber from the nearby St John's Wood (sometimes known as Bentley Wood or Park) and Rigg Wood. The site of this lodge has been located to just south-east of Old Hall Farm, just outside the current study area (Dennison 1992, 33-34; HHER 11481). When the park was surveyed in 1554-54 it was described as being six miles in circumference, two miles long, and a mile and three-quarters wide. Reference was also made to previous and contemporary land use within the park. There was a paled or fenced lawn, said to measure two miles in circumference, as well as 800 acres of pasture which had previously been arable, 160 acres of meadow, and carr ground where coarse hay was grown. There were also several coppices and springs, and sufficient mature woodland to provide timber for repairing the park pale or fence, which was broken down at several points. Around 650 fallow deer were counted in the park, and it was estimated that a further 300 had escaped through the broken paling into the woods outside (Dennison 1992, 22-23; Neave 1991, 20).

4.20 In 1573 Beverley Parks was leased to Michael Warton, son of Laurence Warton, a prosperous Hull merchant (Allison 1989b, 210). In the following year the area was described as having been 'lately disparked' (Poulson 1829, appendix, 26). Michael Warton died in 1590, and the lease was left to his eldest son, Michael (later Sir Michael) Warton. In 1628 Sir Michael purchased the estate from the Crown and on his death in 1655 it passed to his grandson, also called Michael (Allison 1989b, 210). By 1667 part of the estate had been re-emparked and restocked with deer. This new park was considerably smaller than the former archiepiscopal park, covering perhaps about 250 acres, and extending further west so that almost half of it lay in Bentley township (Neave 1991, 20). By the mid 17th century the Wartons owned land throughout the East Riding and were the wealthiest family in eastern Yorkshire; their land at Beverley Parks was worth £909 (Dennison 1992, 23). Several members of the family served as Members of Parliament for Beverley during the 17th and early 18th centuries, and they exerted considerable influence in the town. In 1672 the Warton's principal house was North Bar House in

Beverley, although Michael Warton also had a modest two-hearthed house at Beverley Parks, which was presumably the Stanhope's former stone and timber hunting lodge mentioned above; this was to become known as Old Lodge when a much grander house, New Lodge, was built in the 1670-80s, together with outbuildings and walled gardens. Warburton's 1720 plan of Yorkshire shows the still fenced park at its greatest extent, surrounding the New Lodge (see figure 5 left). New Lodge was described as being in a ruinous condition in 1769, and it was demolished sometime after 1775, although the service wing, converted into the present Old Hall farmhouse, remains (see Site 5 below).

4.21 In 1775 Beverley Parks, valued at £57,525, became the property of Charles Anderson Pelham of Brocklesby in Lincolnshire, later the first Lord Yarborough (ERAO DDX/85/14). At this time, the area was divided into 96 holdings, two-thirds of which were of less than ten acres, and which chiefly consisted of closes of meadow or pasture. Fifteen tenants farmed more than 50 acres, of whom ten had farms of more than 100 acres. Most of the farmhouses mentioned in the 1775 survey have now been demolished or rebuilt, but houses which may date from the late 17th century or early 18th century survive at Poplar Farm and Halfway House Farm (Allison 1989a, 274; Pevsner & Neave 1995, 765) (see figure 4 right).

4.22 The economic base of the study area and its immediate environs outside the town retained its agricultural regime during the later post-medieval period. However, transport routes improved, for example the Beverley to Hessle road (now Victoria Road and Queensgate in the study area) was turnpiked in 1769 (see Site 7 below), while Shepherd Lane is recorded as early as 1775 (see Site 25 below) to provide a link between the medieval roads of Queensgate and Long Lane. The Ordnance Survey map of 1855 (the first detailed map of the area) shows the rectilinear field patterns and footpath alignments characteristic of the later post-medieval period, together with their associated farm complexes (see figure 8). Many of the fields were improved with manuring and the disposal of night soil from the town, meaning that isolated medieval and post-medieval artefacts are frequently found; a rapid walkover survey for the Minster Way development identified concentrations of late post-medieval pottery and artefacts to the south of the town centre, with the density of material decreasing further away from the urban centre and the east and west (WYG 2009). Nevertheless, evidence for some industrial development is also visible, for example, various brickworks and whiting works on the turnpike road leading south from Beverley (see Sites 9, 10, 15 and 55 below). The town also received an impetus to development from the opening of the Hull to Scarborough Railway in 1846 (see Site 49 below).

5 THE STUDY AREA

Introduction

5.1 As previously noted, the study area for this assessment report measures 1km in all directions from the centre point of the proposed development (see figure 6).

Physical Characteristics

5.2 The study area lies on the south-western edge of Beverley, in an angle between Shepherd Lane to the south-west, Minster Way (the Beverley Southern Relief Road) to the south, an existing housing estate to the north and north-west, and a public footpath and field boundary to the east. The underlying solid geology is Cretaceous chalk of the Flamborough formation, overlain by Devensian till

deposits (*http://mapapps.bgs.ac.uk/geologyofbritain/home.html*). The soils are a typical stagnogley soil of the Holderness Association (Soil Survey 1983).

Designated Heritage Assets

5.3 As noted in Chapter 3 above, there are six Grade II Listed Buildings within the study area, as follows (see figure 6):

Asset	*Name*	*LB Grade*	*NHLE no*	*Concordance*	*NGR*
1	Chalk Villa, Victoria Road	II	1310093	HHER 9168	TA 027003 8069
2	White Hall, Shepherd Lane	II	1161458	HHER 9149	TA 03820 37228
3	Garden Walls at Low Hall, Shepherd Lane	II	1310090	HHER 9165	TA 03955 36989
4	Barn at Low Hall (site of), Shepherd Lane	II	1103419	HHER 9166	TA 04056 36999
5	Old Hall, Shepherd Lane	II	1103420	HHER 9167; NRHE 969888	TA 04082 36962
6	Gate piers at Low Hall Farm, Shepherd Lane	II	1346992	HHER 9164	TA 04091 36972

5.4 Chalk Villa (**Site 1**) lies off the west side of Victoria Road on the approach into Beverley. It is dated to c.1800 and is built of chalk blocks, now rendered and colour-washed, and has a graduated slate roof, hipped with twin axial stacks. It is of two storeys, and three bays in a symmetrical elevation, with the left and right bays rising as round bows through the full height of house. Inside, it has an early 19th century open string stair with spindle balusters, and the room to the right has an original doorcase, flanked by panelled cupboards. It was built between 1835 and 1839 by William Brown, an army commissary, and there was a small lodge on the Victoria Road (**Site 8**).

5.5 White Hall farmhouse (**Site 2**) lies on the west side of Shepherd Lane, and the Listed Building description notes that it dates to the late 18th or early 19th century. It is built in the Gothick style, of two storeys, with a prominent canted bay to the centre. There is a blank oculi above the door and windows, a first floor band and a battlemented parapet. The house was actually rebuilt in c.1805, probably by Joseph Dickinson, who bought the farm and its 340 acres after having occupied it since c.1780 (Allison 1989a, 274; Pevsner & Neave 1995, 766).

5.6 The other four Listed Buildings are all grouped at Old Hall Farm, on the south-eastern edge of the study area. The present house (**Site 5**) is a remnant of the large country house, originally known as the New Lodge, built for Michael Warton in the mid 1670s (see above). A sketch by Samuel Buck in c.1720 shows a typically late 17th century country house, of seven-bays, two storeys with attics and a hipped roof with dormers. It was mostly demolished in c.1775-80 leaving only the service wing which was converted into a farmhouse and sub-divided in c.1919. It is a seven bay single storey building, with the east half raised to two stories in the 20th century. It is brick-built with a pantile roof, hipped to the west gable. Part of an elaborate moulded eaves cornice of five courses remains, together with part of a rare 17th century timber mullion and transom window (Pevsner & Neave 1995, 765-766; Neave & Waterson 1988, 14-15). To the east of the farmhouse is a pair of 3m high brick gate piers with chamfered rustication (**Site 6**), while to the north was a late 17th century brick-built barn (**Site 4**); this barn was demolished in 2013 with some limited architectural recording (Rawson 2013). Two large garden enclosures (**Site 3**), formed by high buttressed brick walls and representing a

pleasure garden and a kitchen garden, lie to the west; these are also in a deteriorating condition.

5.7 There are no other designated assets (i.e. World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields or Conservation Areas) within or immediately adjacent to the study area.

Non-Designated Heritage Assets

5.8 A total of 60 non-designated assets have been identified within the study area, as set out in the following table. Their locations are shown on figure 6. It should be noted that the stated National Grid References (NGRs) only relate to the study area, and may not necessarily be the full extent of the identified assets.

Asset	*Name*	*Concordance*	*NGR (centre)*
7	Victoria Road/Queensgate (former Beverley-Hessle turnpike)	HHER 9237	TA 0268 3731-TA 0298 3863 (linear)
8	Chalk Villa Lodge, west side of Victoria Road	HHER 12151	TA 0281 3809
9	Whiting Works (site of), west side of Victoria Road	HHER 12157; NRHE 1565964	TA 0245 3803
10	Brickfield (site of), east side of Victoria Road	HHER 13028	TA 0286 3793
11	Cropmarks (site of), east side of Victoria Road	HHER 1508	TA 0289 3780
12	Iron Age burials (excavation), north and west side of Lincoln Way	-	TA 0286 3766
13	Iron age and Roman pottery (excavation), Brown's Yard, west side of Victoria Road	HU 1046; HHER 20095; HHER 20096; HHER 20097; NMREI 1355148	TA 0264 3772
14	Victoria Barracks (site of), west side of Victoria Road	HHER 12985; NRHE 1566013	TA 0260 3755
15	Queensgate Whiting Works (site of), west side of Victoria Road	HHER 12986; NRHE 1566047	TA 0260 3740
16	Medieval/Post-medieval pottery (finds), east side of Victoria Road	HHER 7514; NMREI 657953	TA 027 375
17	Milestone, east side of Victoria Road	HHER 12987	TA 0272 3747
18	Victoria Cottages, west side of Victoria Road	HHER 13000	TA 0269 3745
19	Bramble Hill Farm and well, east side of Victoria Road	HHER 12988; HHER 13027	TA 0281 3735; TA 0278 3737
20	Post-medieval drains (excavations), Minster Way (Area 2)	-	TA 0296 3756
21	Prehistoric enclosure (cropmarks), north-east of Bramble Hill Farm	HHER 1508	TA 0302 3765
22	Pre-medieval field system and ditches (excavations), Minster Way (Area 3)	-	TA 0309 3754
23	Ridge and furrow (site of), north side of Shepherd Lane	HHER 11178; NRHE 1566279	TA0328 3789
24	Woodbine Cottage, south side of Shepherd Lane	HHER 12148	TA 0305 3766
25	Shepherd Lane	HHER 11478	TA 0275 3776-TA 0414 3700 (linear)

26	Post-medieval field system (excavations), Minster Way (Area 4)	-	TA 0328 3752
27	Cropmarks, north-east of Shepherd Lane	HHER 11178	TA 0344 3777
28	Cropmarks and ridge and furrow, north of Minster Way	HHER 11178	TA 0364 3773
29	Late Iron Age/Romano-British settlement, industrial activity and field systems (excavations), Minster Way (Area 5)	-	TA 0361 3758
30	Cropmarks, north of White Hall	HHER 1494	TA 0367 3715
31	Cropmarks, south of White Hall	HHER 1509; NRHE 1566058	TA 0380 3710
32	Multi-period cropmark complex, east of Old Hall	HHER 1500; NRHE 1565931 NRHE 1565989; NRHE 1566164; NRHE 1566166	TA 0430 3707
33	Building recording, Old Hall Farm	HU 2098	TA 0405 3699
34	Watching brief, Old Hall Farm	HU 674; NMREI 1328960	TA 0406 3701
35	Beverley Parks	HHER 8446	TA 034 372
36	Long Lane		TA 0372 3863-TA 0428 3740 (linear)
37	Watching brief, The Bungalow, west side of Long Lane	HHER 19784; HU 808; NMREI 1360600	TA 0430 3732
38	Watching brief, West View, east side of Long Lane	HU 2446	TA 0434 3750
39	Cropmark complex, west side of Long Lane	HHER 1510; NRHE 1566055	TA 0415 3755
40	Roman brooch (finds), west side of Long Lane	HHER 18516	TA 0419 3755
41	Cropmark complex, west side of Long Lane	HHER 6623; NRHE 1566125; NRHE 1566129	TA 0387 3782
42	Cropmarks, west side of Long Lane	HHER 6624; MNR 1566068	TA 0379 3813
43	Black House Farm	HHER 12147	TA 0409 3809
44	Cropmarks, south of Black House Farm	HHER 6623	TA 0413 3796
45	Cropmarks, east side of Long Lane	HHER 6623	TA 0421 3777
46	Cropmarks, east of Black House Farm	HHER 6620	TA 0425 3811
47	Ridge and furrow (site of), east side of Long Lane	HHER 11178	TA 0391 3847
48	Late Iron Age/Romano-British settlement (excavations), Shepherd Lane	-	TA 0364 3734
49	Hull to Scarborough railway	HHER 8811; NRHE 1375144	TA 0402 3857-TA0445 3734 (linear)
50	Silver bodkin (find), Willow Lane	HHER 20859	TA 0349 3849
51	Archaeological investigations, north side of Willow Lane	HU 951; HU 952; HHER 20003; NMREI 1383044	TA 0345 3862
52	Anglo-Saxon brooches (finds), north side of Willow Lane	HHER 4627	TA 0359 3863
53	Roman coin (find), south side of Willow Lane	HHER 15550	TA 0342 3863

54	Butt Lane	HHER 11477	TA 0298 3858-TA 0338 3876 (linear)
55	Brickfield (site of), east side of Queensgate	HHER 13023	TA 0302 3853
56	Archaeological investigations, east side of Queensgate	HU 2172; HU 2173	TA 0300 3842
57	Neolithic remains, Bronze Age settlement and burials, Iron Age/Romano-British settlements, industrial activity and field systems (excavations), Minster Way (Area 6)	-	TA 0393 3775
58	Bronze Age/Iron Age field systems (excavation), Minster Way (Areas 7-9)	-	TA 0415 3790
59	Pre-medieval pits (excavations), Minster Way (Area 14)	-	TA 0431 3809
60	Roman brooch (find), west side of Long Lane	HHER 18166	TA 0406 3782
61	Geophysical survey, east of Victoria Road	HU 2555;	TA 029 376
62	20th century military camp (site of), west of Victoria Road	NRHE 1566045; NRHE 1566049; NRHE 1566051	TA 0252 3775
63	Agricultural building (site of), north-east of Shepherd Lane	-	TA 0335 3789
64	Cropmarks, south of Minster Way	HHER 11178	TA 0375 3752
65	Medieval copper alloy seal matrix (find), north of Black House Farm	HHER 19833	TA 0409 3820
66	Isolation Hospital (site of), east side of Victoria Road	-	TA 0296 3809

Discussion of the Archaeological Resource

5.9 As implied from the archaeological background section above (Chapter 4), widespread evidence for Bronze Age to later Romano-British occupation in the study area can be seen from the numerous cropmarks visible on aerial photographs. Typical features include circular or curvilinear structures, ditches, pits, former earthworks and field boundaries, revealed as patterns caused by differential growth of crops over varying depths of soil (see figure 4). Subsequent excavation of some of these cropmarks, mostly as a result of the construction of Minster Way, has confirmed the density and complex nature of the archaeological remains. It is clear that the cropmarks, which can be patchy and ephemeral in nature due to the underlying geology and climatic conditions, represent only a partial element of the buried resource.

Early Prehistoric Periods (500,000 BC-AD 43)

5.10 Until recently, there have been no archaeological finds or other material from the early prehistoric periods found within the study area. However, excavations along Minster Way did reveal the remains of a small Neolithic, or perhaps Bronze Age, building, located close to the north-east side of Area 6B adjacent to the west side of Long Lane (**Site 57**). The sub-rectangular structure was formed by several postholes and stakeholes, and measured up to 5.0m by 3.8m, and other postholes and stakeholes in the same area may well have been associated (OAN 2017, 40).

Bronze Age (2,000-700 BC)

5.11 The evidence for Bronze Age funerary activity and land division in the study area is supplemented by artefactual evidence that may be more indicative of settlement. For example, fragments of Bronze Age domestic Beaker pottery were found in association with other features and charcoal during an archaeological evaluation at the former Brown's Yard on the west side of Victoria Road (Johnson 2000; **Site 13**).

5.12 A complex of multi-phase cropmarks including enclosures, ditches and several possible barrows has been observed on the west side of Long Lane from aerial photographs (**Sites 39 and 41**). Some have been recorded and assigned to the Bronze Age, although others are clearly much later in date. Those cropmarks on the south side of Minster Way extend for some distance, as far south as White Hall, and include an elongated group of enclosures, trackways and a probable hut circle; their alignment is generally north-west to south-east, parallel to Long Lane. Subsequent archaeological investigations through this area in 2013 prior to the construction of Minster Way confirmed a number of significant and important Bronze Age structures within Area 6 (**Site 57**) (OAN 2017, 40-42). One post-built roundhouse, represented by two concentric groups of postholes, a ring gully and a hearth, was identified on the north-western edge of the excavation area on a slightly elevated area of sandy geology (Area 6B). Just to the south-west, a group of 16 postholes may suggest several other, perhaps superimposed, structures. Another circular structure, 7.5m in diameter, was noted to the west, and Bronze Age pottery was recovered from some of the postholes. The remains of a further circular structure were noted in Area 6E, close to Long Lane. The remains of several late Bronze Age/Iron Age barrows and associated features were also identified during the excavations, their edges being defined by shallow ditches. These included five examples with more complete ditch circuits in Area 6W, of which two were round barrows and three were square barrows; with one exception, all contained central crouched inhumations. There were also two more rather putative examples of square barrows, neither of which contained human remains (OAN 2017, 44-50).

5.13 The above-mentioned cropmarks also continue between Long Lane and the Hull to Beverley railway line, to the south of Black House Farm (**Sites 44 and 45**). They suggest a triple-ditched linear feature extending for c.300m, probably representing a trackway bisected by Long Lane. At its eastern end, there are three connecting enclosures extending north to another narrow double-ditched linear feature. These may be additional farmstead enclosures situated either side of trackways, although no internal features are visible. The linear cropmarks of the presumed field system extend some distance to the south (Dennison 1992, 20). The excavation of part of this area in 2013 (Areas 7 and 9; **Site 58**) revealed a series of ditches and gullies forming perhaps three phases of a Bronze Age/Iron Age field or enclosure system. The earliest phase was represented by several undated and closely spaced gullies aligned north-north-west/south-south-east at the eastern end of the area. The second phase had a north-north-east/south-south-west alignment, while the third trended more north-east/south-west. On each of these two latter alignments, there was a pair of ditches or gullies, c.6m apart, suggestive of a trackway. Within the southern part of the area (Area 9), the ditches that lay on a corresponding north-north-east/south-south-west alignment were notably more substantial than those to the north, and appeared to have seen more maintenance. Good pollen assemblages from the excavated deposits suggested that the surrounding environment was open, with some woodland and also possible cultivation. Very few discrete features were found that might have been related to these ditches,

although in the south-west corner of Area 9, an isolated posthole contained a sherd of handmade pottery of Iron Age or early Roman date (OAN 2017, 50-52).

5.14 Several probable Bronze age barrows have also been identified within an extensive cropmark complex to the east of Old Hall Farm (**Site 32**) (see below).

Iron Age/Romano-British Period (700 BC- AD 410)

5.15 Archaeological excavations by Network Archaeology in 2006 in advance of the Ganstead to Asselby gas pipeline recorded a late Iron Age settlement straddling Shepherd Lane to the south of the proposed development site (**Site 48**). At least eight ring gullies indicating sequences of roundhouse construction were identified, as well as possible stock control features and boundary ditches. The settlement was focussed on a small ridge of higher ground and may have been enclosed by relatively shallow ditches which formed part of an associated field system. A number of different phases of activity were apparent at the site, indicated by the rebuilding of some structures and the realignment of the field systems. Later phase features also included a droveway and a possible metal-working hearth, and the site remained occupied into the Roman period (Moore 2008; Network Archaeology 2011, 32-43). It is likely that some of the adjacent cropmarks seen to the east (**Site 64**), on the south side of Minster Way, represent a continuation of the field systems seen at this site.

5.16 An apparently separate set of cropmarks lie to the north of Shepherd Lane, now bisected by Minster Way (**Site 28**) (see figure 3). However, they are on the same alignment as those further to the east (**Site 42**), and so are likely to represent part of the same field system. Two interconnected enclosures towards the north-west of this area may mark the site of additional roundhouses or other structures (Dennison 1992, 20). Other, seemingly isolated, short lengths of linear ditches seen to the west (**Site 27**) might also be connected. Excavations of the southern part of this area (Area 5) in advance of the Minster Way development (**Site 29**) revealed another small late Iron Age settlement, formed by three roundhouses and a boundary ditch (see figure 7A); these features almost certainly extent into the proposed development area (see **Site 67** below). They were superseded by a large rectilinear enclosure and two additional ring gullies, the latter thought to represent ancillary enclosures rather than dwellings. It was suggested that the rectilinear enclosure would have contained a roundhouse but this lay beyond the northern limit of excavation. A regionally significant assemblage of late Iron Age pottery was retrieved from these features, as well as limited evidence for ironworking (AOC Archaeology Group 2012).

5.17 The excavations in Area 5 (**Site 29**) also revealed a phase of activity datable to the early Roman period (2nd and early 3rd centuries AD). Its major component was another rectilinear enclosure, although its dating was problematic (see figure 7B). A number of refuse pits containing domestic waste, including one with a large quantity of charred grain, also belong to this phase. It is also possible that a later Roman field system laid out on the western part of the site had its origins in the early Roman period, and that an urned cremation belongs to this phase of activity. However, the features positively datable to this period were relatively sparse, and it is possible that some early Roman activity on the site was masked by the continued use of late Iron Age pottery forms. During the late Roman period (late 3rd and 4th centuries AD), a rectilinear field system was established on the western part of the site and the central part of the site became the focus of activity (see figure 7C). Numerous pits and small gullies were identified, and there is evidence for at least two posthole structures. A human burial may also belong to

this period. Finally, a specific phase of activity datable to the second half of the 4th century was noted, which incorporated further large-scale boundary demarcation and the excavation of additional pits and gullies; many of these features contained a mixture of domestic waste and fragments of iron slag. One furnace-like feature was encountered, but it was thought that the majority of the iron slag derived from an ironworking centre just beyond the northern limits of excavation. A well preserved domestic oven, dated to the second half of the 4th century, was also excavated near the northern edge of excavation, and a number of other oven-like features were also encountered at the site, although their dates remain unclear. It is thought that the central part of Area 5 may have been a working area during the late Roman period, suitable for the disposal of waste and where multiple activities took place. The site then appears to have been abandoned during the late 4th or early 5th century AD, when a series of subsoils accumulated across large parts of the excavated area; one of these may derive from a late Roman midden deposit (AOC Archaeology Group 2012).

5.18 The remains of one or two circular structures relating to Iron Age/early Roman settlement were also identified within the northern part of Area 6E, adjacent to Long Lane (**Site 57**). Both appeared to represent domestic structures, and comprised segments of ring gullies and postholes, together with occasional pits and hearths. Many of the pits contained pottery, with some flint and environmental material. Several ditches relating to various enclosures were also identified in this area and, although they may have varied in their date of origin, it is likely that at least some saw contemporary use as part of an integrated field system, possibly including a trackway. Some of the enclosure ditches were relatively large, one example being 3.75m wide and 0.60m deep. The principal elements of the system generally lay on an east-north-east/west-south-west alignment, and artefactual evidence suggests that many of the ditches remained open into the later Roman period (OAN 2017, 52-58).

5.19 The cropmarks of two large circular features, possibly ring ditches, within a large enclosure, have been identified to the north-west of White Hall Farm, together with other shorter ditches (**Site 30**) (see figure 3). One of the circular features has a possible cross in the centre, which might suggest the site of a later post mill, although none is mentioned in the available documentary record. The large enclosure measures 110m by 80m within which are two circular features and other less prominent boundaries (Dennison 1992, 20).

5.20 A group of prominent enclosures has also been noted to the south-west of White Hall, together with other ditches which lie at different angles to the existing and historic field boundaries (**Site 31**) (see figure 3). The cropmarks include two parallel boundaries on a south-west/north-east alignment and 30-40m apart, seen to the south-west of Old Hall Farm. This feature extends for at least 240m and is likely to represent a major track or droveway. Its eastern end is truncated by a field boundary and the southern walled enclosure to the west of the farm while unresponsive geological conditions mean that its western extent cannot be seen. However, it is possible that it continues to the east of the farm (see Site 32 below), and it may represent part of a long-distance route to the Wolds (Evans *et al* 2012, 14). A second narrower ditched feature on a similar alignment runs for some 250m to the south-east, which may represent a subsidiary trackway. On the southern side of the main trackway there are two connecting enclosures, each c.40m square. Both contain a large circular feature which almost certainly represents a round house. Two other rectangular enclosures of similar dimensions can also be seen, one to the east which has been truncated by the southern walled enclosure

at Old Hall Farm and one to the north-west which has been cut by the northern walled enclosure (Dennison 1992, 17).

5.21 A further very extensive cropmark complex, comprising a trackway, several enclosures, numerous ring ditches and possible barrows, as well as field boundaries, has been identified to the east of Old Hall Farm (**Site 32**) (see figure 3). The broad trackway mentioned above lies on a north-east/south-west alignment, and two further sections of the same feature lie to the west; overall, its length measures c.300m and it is probably connected with a similar feature to the west of the farm (see Site 31 above). A linear arrangement of three rectilinear enclosures flank the north-west side of the trackway, each c.40m square, and other fragmentary field boundaries are visible. The trackway appears to incorporate a probable Bronze age round barrow which lies on the alignment of the southern ditch of the trackway but does not appear to be cut by it; the barrow is c.30m in diameter. Another double-ditched circular feature lies nearby, probably another barrow, which appears to be overlain by the northern ditch of the trackway and one of the enclosures (Dennison 1992, 17-18). The surrounding ditches probably represent a coaxial field system of Roman date (Evans *et al* 2012, 47). The complex also includes a possible post-medieval stack stand which is evident as an earthwork on 1946 aerial photographs but which has since been ploughed out.

5.22 Other cropmarks are visible to the east of Black House Farm, on the west side of the Beverley to Hull railway line (**Site 46**) (see figure 3). A number of ditches were noted during the geophysical surveys and trial trenching for the Minster Way development (Area 14), and a watching brief during construction uncovered a number of pre-medieval pits containing burnt material (**Site 59**) (WYG 2012, 14; OAN 2017, 67). A number of other straight and intersecting ditches are visible as cropmarks on the west side of Long Lane, to the west of Black House Farm (**Site 42**). Some of the ditches join to form a probable stock enclosure. All are visible as earthworks on RAF 1945 aerial photographs, and probably represent modern drainage ditches and historic field boundaries rather than being part of the larger cropmark complex to the south (see Site 39).

5.23 Other enclosures and linear ditches seen as cropmarks on aerial photographs are also likely to date to the Iron Age/Romano-British period, although as noted above, only detailed excavation will show whether they actually have earlier origins. One such enclosure, visible on 1940s photographs, lay on the east side of Victoria Road, but the site has since been developed for housing (**Site 11**). Another similar enclosure lay to the north-east of Bramble Hill Farm (**Site 21**); several curvilinear anomalies, together with other ambiguous linear anomalies, were identified by geophysical surveys in this area as part of the Minster Way pre-construction investigations (Areas 2 and 2A) (WYG 2012, 12), but it is not clear whether any trenching work was carried out. A subsequent watching brief identified a number of post-medieval drains with a small amount of Romano-British material in their ditch fills (OAN 2017, 68-69) (**Site 20**).

5.24 The western end of Minster Way, between the Lincoln Way roundabout and Shepherd Lane, was also subject to geophysical survey and trial trenching (**Site 22**). A number of geophysical anomalies indicating linear features and potential pits were identified in the western part (Area 3), and subsequent evaluation revealed three undated archaeological ditches thought to be part of a pre-medieval field system (WYG 2013, 12). However, a 'strip, map and record' exercise in this area produced little of archaeological interest (OAN 2017, 72-73).

5.25 Other material relating to the Iron Age/Romano-British period has also been discovered in the study area, away from the relief road excavations. For example, on the north side of Lincoln Way, an archaeological evaluation by York Archaeological Trust in 2016 revealed evidence for four presumed Iron Age burials, two cremations and two crouched burials (**Site 12**). The remains were poorly preserved and were very close to the ground surface, and it was concluded that the burials may have formed part of a wider funery landscape, and that other burials, although poorly preserved, may lie in the vicinity (Reeves 2017). Some Romano-British pottery was also found during an archaeological evaluation at the former Brown's Yard on the southern outskirts of Beverley, on the west side of Victoria Road (Johnson 2000; **Site 13**). Two find spots of Roman material including two brooches are also recorded adjacent to Long Lane (**Sites 40 and 60**). Both finds lie within areas where extensive crop marks representing archaeological settlement or activity are recorded, and they may represent residual artefacts brought to the surface through modern ploughing. A further Roman coin has been found on the south side of Willow Lane (**Site 53**). Subsequent trial excavation around this latter site in advance of residential development did not reveal any archaeological remains (**Site 69**) (Wells & Williams 2017).

Saxon and Early Medieval Periods (c.410 to 1065 AD)

5.26 Relatively little dating to the Saxon or early medieval periods has been found in the study area. Two Anglo-Saxon brooches were found by a metal-detectorist on the north side of Willow Lane near Beverley (**Site 52**). No significant evidence for any structures or material dating to this period was found during the excavations along the line of Minster Way. However, two features resembling small pits or postholes were noted at the south-west end of Area 5 (**Site 29**) (OAN 2017, 59). The largest of these pits, 0.55m diameter, contained charcoal and heavily fragmented calcined bone; it is possible that this represents a cremation deposit, and if so, it could belong to one of several prehistoric and historic periods pre-dating the widespread adoption of Christianity in the early medieval period.

Medieval Period (AD 1066-1540)

5.27 As discussed in Chapter 4 above, the majority of the study area lay in Beverley Parks, a medieval deer park belonging to the archbishops of York (HHER 8446; Dennison 1992, 22-31; Neave 1991, 20; **Site 35**). The first documentary record of the park occurs in 1258, and from the 1260s onwards there are frequent accounts of trespassing and poaching. A survey made in 1388 notes that "400 beasts, counting by the short hundred, can be fed in the park over and above the sustenance of game", and a reference from 1554-55 suggests that it was by then six miles in circumference and contained over 2,200 acres. Although the park was primarily reserved for the archbishop's deer and other game, it also included areas of arable (155 acres in the 1530s), meadow and pasture as well as some woodland. Relict ridge and furrow, now destroyed by housing developments, has been recorded on aerial photographs to the north and west of Shepherd Lane (**Site 23**), and other former ridge and furrow has been recorded at two locations on the east side of Long Lane (**Sites 38 and 47**), as well as the former Brown's Yard site on Victoria Road (**Site 13**) (see figure 4); Historic England's National Mapping Programme also recorded large areas of ridge and furrow in the area of the Lincoln Way housing development. These features sites are consistent with the agricultural use of the park land during the medieval period, and a small number of medieval finds from the area, for example a copper alloy seal matrix found by a metal detectorist north of Black House Farm (**Site 65**) are likely to be associated with night-soiling.

5.28 The presence of the deer park would have ensured there was little development of the area during the medieval period, and few buildings are known to have stood in within the park, apart from the archbishop's hunting lodge near what was later Old Hall Farm, as well as a manor house immediately to the south of the Minster (Hall Garth) and water mills close to the town (Allison 1989a, 271). Not surprisingly, therefore, there were few signs of late medieval or early post-medieval activity in the Minster Way excavations, and what was seen was mostly represented by isolated artefacts and dump or ground-consolidation deposits (OAN 2017, 63-65). The investigations on the north side of Willow Lane did recover evidence for potentially medieval ditches associated with the movement of water from the north side of the park into the Beverley Beck and/or adjacent mills (Fraser 2002; **Site 51**). Access to the park appears to have been via the route now known as Long Lane (**Site 36**), although this name does not appear in documents until the late 17th century (Allison 1989a, 271).

5.29 Beyond the boundaries of the park, medieval and later post-medieval pottery was recovered during a watching brief carried out in 1990 on the east side of Victoria Road during the excavation of some electricity trenches (**Site 16**), and a silver bodkin was found by a metal detectorist near Willow Lane (**Site 50**). The line of the present A164 Beverley-Hessle road (**Site 7**) was one of the major medieval routes leading south from the town and it was in existence by 1411 when it was known as Queensgate (later known as Barracks Road and now Victoria Road) (Allison 1989a, 271).

Post-Medieval Period (AD 1540-onwards)

5.30 As noted in Chapter 4 above, the archiepiscopal deer park passed to the Crown in 1542 and its keepership to Sir Michael Stanhope. In 1548 he built or rebuilt a small hunting lodge south-east of Old Hall Farm, just outside the current study area (Dennison 1992, 33-34; HHER 11481). When the park was surveyed in 1554-54 it was described as being six miles in circumference, and it included a large fenced lawn, 800 acres of pasture, formerly arable, 160 acres of meadow, and carr ground. There were also several coppices (haggs) and springs, as well as mature woodland (Dennison 1992, 22-23; Neave 1991, 20). Using a variety of later documents, Allison has suggested that the park proper may have lain to the west and south-west of the lodge (see below), in what was to become the Bramble Hill and White Hall farm holdings, while the lawn or launde formed part of Old Hall farm; Woodmansey Hagg may have lain between the launde and the Beverley-Hull road, and Langley Hagg, which covered 200 acres in 1559, occupied most of the ground west of Queensgate (Allison 1989a, 276).

5.31 In 1573 Beverley Parks was leased to Michael Warton, and a year later the deer park was disparked. His eldest son, Michael (later Sir Michael) Warton purchased the estate from the Crown in 1628 and it then descended through the family (Allison 1989b, 210). By 1667 a smaller part of the original park, mostly in Bentley township, had been re-emparked and restocked with deer. In 1672, a later Michael Warton had a modest two-hearthed house at Beverley Parks, presumably the Stanhope's former hunting lodge, but in the 1670-80s he built a much grander house called New Lodge, together with outbuildings and walled gardens. A sketch by Samuel Buck in c.1720 shows a seven-bay two-storey house with attics and a hipped roof with three dormer windows, set within a walled enclosure, and a detailed inventory made in September 1688 details the rooms and their impressive furnishings (Hall 1986). The lodge also had a number of outbuildings, such as a service wing, stables, a coach house, granary, barn and two walled gardens. The

main house was described as being 'ruinous' in 1769, and it was demolished sometime after 1775, although the brick-built service wing, converted into the present Grade II Listed Old Hall farmhouse, remains (**Site 5**); architectural details such as an elaborate moulded eaves cornice and part of a rare 17th century timber mullion and transom window attest to the magnificence of the main structure (Pevsner & Neave 1995, 765-766; Neave & Waterson 1988, 14-15). The depictions of the Hall on 18th century maps also suggest a significant structure (see figure 5). Other associated Grade II Listed outbuildings, gatepiers (**Site 6**) and walled gardens (**Site 3**) remain at Old Hall Farm in various states of dilapidation, and a late 17th century brick-built barn was demolished in 2013 (**Sites 4 and 33**) (Dennison 1992, 36-54; Rawson 2013).

5.32 From the late 17th century, the Wartons let much of Beverley Parks out to tenants, and by 1775 the area had been divided into some 96 holdings, two-thirds of which were of less than ten acres, and mainly consisted of closes of meadow or pasture. Fifteen tenants farmed more than 50 acres, of whom ten had farms of more than 100 acres (Allison 1989a, 276). This led to a phase of enclosure and building within the former medieval deer park, although most of the farmhouses mentioned in the 1775 survey have now been demolished or rebuilt - houses which may date from the late 17th century or early 18th century survive at Poplar Farm and Halfway House Farm (Allison 1989a, 274) (see figure 4). In 1775 Beverley Parks became the property of Charles Anderson Pelham of Brocklesby in Lincolnshire, later the first Lord Yarborough. The subsequent division of the Pelham's estate in the early 19th century created further landholdings in the Parks; one of the largest was owned by the Denton family of Beverley, who acquired Hampston Hill Farm, Old Hall Farm and Vinegar Hill Farm. The house at White Hall and its 340 acres were sold in 1805 to Joseph Dickinson, who had been occupying it since c.1780. The majority of the holding (c.250 acres) was then sold in 1842 to Richard Watt, and then in 1918 to William Barrett (Allison 1989a, 274).

5.33 Most of the post-medieval remains excavated along the line of Minster Way relate to the field boundaries and to the systematic drainage and enclosure of the area during the post-medieval period. There were hints that there may have been two phases of post-medieval enclosure within Area 6 to the west of Long Lane (**Site 57**), although the distinct elements of the earliest phase did not form much of a coherent system on their own. Indeed, their form and alignment did not represent a clear break from the much earlier Iron Age enclosure system, while the majority of the later post-medieval features comprised a network of field boundaries aligned, or at right-angles to, north-south. As well as generally containing post-medieval finds and cutting earlier features, the field boundaries were distinguished by their size, but also by their straightness. Although in Area 6 they shared the alignment of the more regular Iron Age and undated enclosures, they differed from those of the earlier features seen in Areas 7 and 9 to the east (**Site 58**). Some of the larger ditches extended for significant distances, for example one in Area 6 was at least 295m long, and was clearly being used to drain the adjacent ground. Where the ditches contained finds, they were mostly of 18th and 19th century date, and one ditch was crossed by a brick and rubble bridge structure of typical 19th century date (OAN 2017, 63-65). Similar elements of the post-medieval enclosure field system were identified in Area 4 to the west of Shepherd Lane (**Site 26**) and to the east of the study area. These comprised several substantial ditches following the alignment of nearby fields, or could be equated with features shown on the historical mapping (OAN 2017, 67-69).

5.34 Transport networks began to be improved from the 18th century. The former medieval route leading south from the town (the present A164 Beverley-Hessle

road; **Site 7**) was made into a turnpike road, with the Beverley-Hessle Turnpike Act being passed in April 1769, largely as a result of pressure from Beverley traders who wanted a direct connection to the Humber and thus Lincolnshire without having to go through Hull. The Act specified that no toll bar was to be erected within half a mile of the limits of Beverley, and that there were to be no more than two bars between Beverley and the Hessle ferry; the Queensgate turnpike house lies just outside the northern edge of the study area. The turnpike trust was discontinued in 1878 (MacMahon 1964, 30-31), but some elements of the associated infrastructure remain, for example a milestone on the east side of Victoria Road (**Site 17**). Shepherd Lane (**Site 25**) is first documented in 1775, providing a link between Victoria Road and Long Lane, although Madeley's 1835 map of the town shows it as having a more direct line towards White Hall than the present course (ERAO). Butt Lane (**Site 54**) dates from 1622 (Allison 1989a, 271). As noted in Chapter 4 above, Long Lane (**Site 36**) probably originated as a medieval route allowing access into the deer park, but the name does not appear in documents until the late 17th century (Allison 1989, 217); it is shown as the only road crossing the park in Jefferys' 1771 map (see figure 5 right).

5.35 The Hull to Scarborough railway (**Site 49**), passing through the east side of the study area, originated as the Bridlington Branch Railway, and was run by the Hull and Selby Railway on 29th June 1845. It was soon taken over by the York and North Midland Railway, who obtained authorisation for a line between Scarborough and Bridlington. The combined lines are regarded as the Scarborough Branch Railway, and it opened in 1846 (Hoole 1974, 55-56).

5.36 The essentially rural nature of the study area has continued to the present day. Existing farms within the area include Old Hall Farm (see **Site 5** above), White Hall (**Site 2**), Holycroft Farm, Black House Farm (**Site 43**) and Bramble Hill Farm (**Site 19**). All, with the exception of Holycroft Farm, are shown on the 1855 Ordnance Survey map (sheet 210), with the usual arrangement of outbuildings and connected ranges characteristic of 18th century farmsteads, although many have since been significantly altered or added to (see figure 8). As noted above, Joseph Dickinson had been occupying White Hall since c.1780, and he probably rebuilt the complex in c.1805 when he acquired the landholding from the Pelham (Yarborough) estate. Woodbine Cottage (**Site 24**), on the south side of Shepherd Lane, is also depicted as a small collection of buildings in 1855, although by 1910 (Ordnance Survey 25" map sheet 210/10) more buildings are shown, and it may be the 41 acre Shepherd Lane Farm which was added to the Bramble Hill holding in 1925 (Allison 1989a, 274).

5.37 Although there was some earlier but limited industrial activity around the edges of the former medieval deer park, the 19th century saw the rapid rise of a number of rural-based industries, particularly along Victoria Road, the south-western entrance into the town, by local entrepreneurs. In 1826 a whiting works (**Site 9**) was established by Beverley merchants Pennock Tigar and Richard Champney near Chalk Villa, which was later operated by the Queensgate Whiting Company who also had a large site near the Beverley Beck (Allison 1989a, 277). Whiting was initially used as a colouring and later as a general purpose filler in paint, rubber, plastics, floor coverings, paper and white bread, and it was produced by drying pieces of chalk, then crushing them with water to produce a milky liquid to feed through settling pits or tanks to remove impurities; the resultant slurry was dried in drying sheds and cut into blocks for transport (Gregory 1994, 60). The 1855 Ordnance Survey map (sheet 210) depicts the whiting mill, drying sheds, chalk pits and lime kilns at the site, while the subsequent 1910 map (sheet 201/12) shows a new chalk pit to the west (see figures 9A, 9B and 9D). The site was operated by

English China Clay in the 1980s, and is still being worked by Imerys cement company, although the area of the original workings and buildings has now been reclaimed.

5.38 Another whiting works (**Site 15**), to the south, was begun in c.1875 by William Chance and James Ingoldby. It was sold in 1895 to Storry, Witty and Company Ltd. of Hull, when it was known as the Queensgate Road Works. The 1910 Ordnance Survey 25" map (sheet 210/16) depicts a complex of sheds on the southern boundary with a chalk pit to the north and Victoria Cottages on the roadside - these were built in 1883 for the quarry workers (**Site 18**) (see figures 9D and 9E). The works was closed in two stages in 1969 and 1970, and the site has since been developed for a Morrisons supermarket, although Victoria Cottages remain as occupied dwellings (Allison 1989a, 277).

5.39 Two former brick works also lie within this western part of the study area. The southern one lies east of Chalk Villa, on the east side of Victoria Road, and is shown on the 1855 Ordnance Survey map (sheet 210) as rows of shallow diggings labelled as a 'Brick Field' (**Site 10**) (see figure 8). A similarly depicted 'Brick Field' lies to the north, in the angle of Queensgate and Butt Lane (**Site 55**). Both were operating in the mid 19th century, but had been closed by 1890 and the sites either redeveloped or reverted back to agriculture (Ordnance Survey 1893 25" map sheet 210/12).

5.40 A small "Isolation Hospital" (**Site 66**) is also shown off the east side of Victoria Road on the Ordnance Survey 25" map of 1910 (sheet 210/12); it is not shown on the earlier 1893 edition (see figure 9B). It is depicted as a small east-west aligned structure, with a long corridor extending to the north to another shorter east-west range, all within an irregular enclosure. It was built for smallpox patients in 1899, and was a temporary wooden building providing six beds; on several occasions, when disease threatened, the building was put into repair. Arrangements were later made for Beverley patients to be admitted to the East Riding and Hull smallpox hospitals and to the Driffield isolation hospital, and from 1930 to the Shipton facility. The Beverley building was sold for removal from the site in 1930 (Allison 1989c, 230).

5.41 Finally, there is also evidence for military activity in this part of the town. The East Riding Militia acquired a 10 acre site beside Queensgate in 1874 for a new barracks, and the buildings were completed in 1877 at a cost of £52,000. Victoria Barracks (**Site 14**), as it became known, served as the depot of the East Yorkshire Regiment as well as housing the East York Militia; the first design accommodated 18 officers and 320 men. The barracks is shown as being contained within a large square walled enclosure on the west side of Victoria Road on the Ordnance Survey 25" map of 1910 (sheet 210/16), with buildings around all four sides; the enclosure is marked by War Department boundary stones (see figure 9D and 9E). One of the main buildings was the 'keep', which stood on the left side of the entrance and was used as the magazine and armoury. There was also a hospital. The depot continued to train recruits until 1939. During 1941 German bombing demolished the keep and some other structures (information board in Morrisons supermarket). During the Second World War the barracks was extended by the construction of a large hutted camp in the adjoining fields (**Site 62**), which included several firing ranges (see figure 9E). New blocks were built in 1955. After the demise of the regiment in 1958 the barracks was still used for military purposes until 1961, but was later demolished. The site was sold by the Secretary of State for Defence in 1977, and it remained largely unused in 1988 (Allison 1989d, 195). The barracks has now been developed as part of the Morrison's complex, although

some of the boundary wall remains, while the camp to the north is now a housing estate.

Assessment of Importance or Significance

5.42 Using the data gathered by this Archaeological Assessment, an initial assessment of the grade of importance or significance of each identified site or asset within the study area can be made. This assessment is based on professional judgement, and a combination of the Secretary of State for Culture, Media and Sport's criteria for scheduling Ancient Monuments or listing buildings of Special Architectural or Historic Interest, and the four values used by Historic England to assess significance, namely evidential value, aesthetic value, historical value and communal value (English Heritage 2008, 27-32).

5.43 A value or significance grading system can be applied to the identified heritage assets, namely Very High/International, High/National, Medium/Regional, Low/Local, Negligible and Unknown. Further details on how these grades can be generally applied is contained in Appendix 1.

5.44 The value or significance grade given to each of the 69 identified sites or assets within the study area is given below. This shows that the study area contains no assets of High Value, 14 assets of Medium Value, 19 assets of Low Value, and 36 assets of Negligible grade. Those assets excavated as part of the construction of Minster Way are considered to be of Negligible Value, as all archaeological deposits have been excavated and removed from site, and "preserved by record". The same applies to other sites which have been built over although, in the cases of sites which have been demolished and not subsequently developed, it is possible that some deposits may lie below existing ground levels.

Asset	*Name*	*Value*
1	Chalk Villa, Victoria Road (LB II)	Medium
2	White Hall, Shepherd Lane (LB II)	Medium
3	Garden Walls at Low Hall, Shepherd Lane (LB II)	Medium
4	Barn at Low Hall (site of), Shepherd Lane (LB II)	Negligible
5	Old Hall, Shepherd Lane (LB II)	Medium
6	Gate piers at Low Hall Farm, Shepherd Lane (LB II)	Medium
7	Victoria Road/Queensgate (former Beverley-Hessle turnpike)	Low
8	Chalk Villa Lodge, west side of Victoria Road	Low
9	Whiting Works (site of), west side of Victoria Road	Low
10	Brickfield (site of), east side of Victoria Road	Negligible
11	Cropmarks (site of), east side of Victoria Road	Negligible
12	Iron Age burials (excavation), north and east side of Lincoln Way	Negligible
13	Iron age and Roman pottery (excavation), Brown's Yard, west side of Victoria Road	Negligible
14	Victoria Barracks (site of), west side of Victoria Road	Low
15	Queensgate Whiting Works (site of), west side of Victoria Road	Negligible
16	Medieval/Post-medieval pottery (finds), east side of Victoria Road	Negligible
17	Milestone, east side of Victoria Road	Low
18	Victoria Cottages, west side of Victoria Road	Low
19	Bramble Hill Farm and well, east side of Victoria Road	Low
20	Post-medieval drains (excavations), Minster Way (Area 2)	Negligible

21	Prehistoric enclosure (cropmarks), north-east of Bramble Hill Farm	Negligible
22	Pre-medieval field system and ditches (excavations), Minster Way (Area 3)	Negligible
23	Ridge and furrow (site of), north side of Shepherd Lane	Negligible
24	Woodbine Cottage, south side of Shepherd Lane	Low
25	Shepherd Lane	Low
26	Post-medieval field system (excavations), Minster Way (Area 4)	Negligible
27	Cropmarks, north-east of Shepherd Lane	Low
28	Cropmarks and ridge and furrow, north of Minster Way	Low
29	Late Iron Age/Romano-British settlement, industrial activity and field systems (excavations), Minster Way (Area 5)	Negligible
30	Cropmarks, north of White Hall	Medium
31	Cropmarks, south of White Hall	Medium
32	Multi-period cropmark complex, east of Old Hall	Medium
33	Building recording, Old Hall Farm	Negligible
34	Watching brief, Old Hall Farm	Negligible
35	Beverley Parks	Low
36	Long Lane	Low
37	Watching brief, The Bungalow, Long Lane	Negligible
38	Watching brief, West View, Long Lane	Negligible
39	Cropmark complex, west side of Long Lane	Medium
40	Roman brooch (finds), west side of Long Lane	Negligible
41	Cropmark complex, west side of Long Lane	Medium
42	Cropmarks, west side of Long Lane	Low
43	Black House Farm	Low
44	Cropmarks, south of Black House Farm	Medium
45	Cropmarks, east side of Long Lane	Low
46	Cropmarks, east of Black House Farm	Medium
47	Ridge and furrow (site of), east side of Long Lane	Negligible
48	Late Iron Age/Romano-British settlement (excavations), Shepherd Lane	Negligible
49	Hull to Scarborough railway	Low
50	Silver bodkin (find), Willow Lane	Negligible
51	Archaeological investigations, north side of Willow Lane	Negligible
52	Anglo-Saxon brooches (finds), north side of Willow Lane	Negligible
53	Roman coin (find), south side of Willow Lane	Negligible
54	Butt Lane	Low
55	Brickfield (site of), east side of Queensgate	Negligible
56	Archaeological investigations, east side of Queensgate	Negligible
57	Neolithic remains, Bronze Age settlement and burials, Iron Age/Romano-British settlements, industrial activity and field systems (excavations), Minster Way (Area 6)	Negligible
58	Bronze Age/Iron Age field systems (excavation), Minster Way (Areas 7-9)	Negligible
59	Pre-medieval pits (excavations), Minster Way (Area 14)	Negligible
60	Roman brooch (find), west side of Long Lane	Negligible
61	Geophysical survey, east of Victoria Road	Negligible
62	20th century military camp (site of), west of Victoria Road	Negligible
63	Agricultural building (site of), north-east of Shepherd Lane	Negligible
64	Cropmarks, south of Minster Way	Low
65	Medieval copper alloy seal matrix (find), north of Black House Farm	Negligible
66	Isolation Hospital (site of), east side of Victoria Road	Negligible

67	Late Iron Age/Romano-British settlement (geophysical survey), north side of Minster Way	Medium
68	Potential Romano-British enclosure (geophysical survey), north-east of Shepherd Lane	Medium
69	Archaeological investigations, north side of Willow Lane	Negligible

5.45 It should be noted that the above grades have been based on data collected to date, and the value or significance of some sites may be graded higher or lower as or when more information is obtained.

6 THE PROPOSED DEVELOPMENT

Description of the Site and the Proposed Development

6.1 The proposed development site lies on the north side of Shepherd Lane and Minster Way (see figure 2). The total area of the site covers 16.19ha, and it is bounded on the east side by a public footpath and bridleway, with a drainage ditch on its east side. The north-west and west sides are bounded by a thick hedge, with an adjacent ditch, with a housing development and a playing field to its west. The surface of the proposed development site is undulating, but it typically ranges from a ridge at 14m AOD in the centre north-west part of the site to 9m AOD along the eastern boundary. At the time of the site visit (28th August 2018), the field had recently been harvested of its arable crop (see plates 1 and 2).

6.2 The proposed development involves the construction of some 430 houses over the site area of 16.68ha. The development will be undertaken in several phases, with the site being divided into effectively four quarters. Phase 1 (Area 1) lies in the south-west quarter with Phase 2 (Area 2) to the north, on the west side of the main spine road which will run north through the site from a new roundabout on Minster Way (see figure 10). Areas 3 and 4 lie on the east side of the main spine road, and will be developed at a later date. There will also be a large pond or lake at the north end of the eastern side of the site.

The Archaeological Resource of the Proposed Development Site (see figures 11 and 12)

6.3 The majority of the eastern side of the proposed development site contains a number of cropmarks plotted by the Humber HER (**Site 28**). These formerly extended further to the south, but this part has now been bisected by Minster Way. To the north of the road, the cropmarks are depicted as comprising several short intersecting ditches, primarily with north-west to south-east alignments. Some of the longer alignments can be matched with the field boundaries shown on the historic Ordnance Survey mapping (see figure 8), although there is also a potential enclosure divided into two halves. An area of former ridge and furrow lies to the south-east. An isolated small complex of cropmarks also lies to the west (**Site 27**). It is interesting to note that Historic England's National Mapping Programme has only recorded the ridge and furrow within this area. Some of the ridge and furrow, and the former field boundaries, were recorded by the 2018 geophysical survey (Brunning & Trace 2018; see figure 13).

6.4 Details of the results of the 2013-14 archaeological excavations along the line of Minster Way, specifically Area 5 which lies against the southern edge of the proposed development area, have been discussed above (**Site 29**). Figure 7 depicts the results by phase, but figure 12 shows the number and complexity of excavated features, many of which will continue beyond the northern and southern

sides of Minster Way, and are likely to represent some of the cropmarks already recorded in these areas (**Site 28** and **Site 64**).

6.5 The 2018 geophysical survey of the proposed development site identified various features within a 100m wide corridor along the north side of Minster Way (Brunning & Trace 2018; see figure 13). These comprised a possible sub-rectangular enclosure measuring c.70m east-west as well as several linear and curvilinear trends and small pit-like anomalies to its west (**Site 67**). Although their presence and date needs to be confirmed through further site investigation, it is almost certain that they represent a continuation of the Iron Age and Romano-British activity noted in Area 5 to the south. Other strong magnetic responses were located along the north-west boundary of the site comprising ditch-like features and linear trends suggesting a rectilinear enclosure measuring c.32m by 20m; further trends and short ditch lengths can be seen immediately to the south which are likely to be associated (**Site 68**). Once again, this feature may well be Romano-British in date, and further field investigation will be required.

6.6 The majority of the proposed development lies mostly within the former White Hall landholding, with the north-western two fields being a detached part of the Vinegar Hill holding (see figure 4 right). The 1855 Ordnance Survey map (sheet 210) shows a small field barn and enclosure (**Site 63**) on the edge of these two fields with a track from Shepherd Lane leading to it and beyond (see figure 11 top). This is not shown on the 1893 edition, and there are no changes to the field boundaries or general layout of the proposed site by the time of the 1947 edition. The site visit revealed that no above-ground features remain in the area of the barn and enclosure, although there is some disturbance in this general area. No features associated with this site were revealed by the 2018 geophysical survey (see figure 13).

6.7 The site visit also showed that the hedged boundary forming the west and north-west side of the development site lies on the east side of a ditch. Towards the southern end, this flat-bottomed ditch is typically 4.0m wide and is defined by shallow banks on either side, the western bank is also hedged. Further to the north, from a point where the site boundary becomes more sinuous, the ditch becomes deeper with the site boundary being formed by a few pollarded trees on a bank 1.5m high and 3m wide, the ditch being typically 3.0m wide and 1.5m deep, and the western bank 1.0m high. The southern section has the appearance of a holloway, bounded by hedges, but to the north it resembles more of a drainage ditch. It is not the trackway depicted on the Ordnance Survey 1855 map (see figure 8), as this would have lain along the east side of the boundary. The earthwork is therefore probably a combined boundary and drainage ditch, draining north-east towards the larger drainage ditch which lies along the east side of the development site.

6.8 Taking all these factors into account, it is considered that the southern third of the proposed development site has a High archaeological potential, whereas the remainder is of Medium archaeological potential.

Assessment of Development Impact

Impact and Effect Grades

6.9 In general, an assessment of development impact on any heritage asset will depend on the value or significance of that asset combined with the degree or magnitude of potential impact. Details of the value grades applied to the nine

identified assets within the study area were given above, and the magnitude of development impact can also be graded according to whether it is Substantial/Major, Moderate, Slight/Minor, Negligible or No Change. Details of how these grades can be applied in principle is given in Appendix 1, and it should be noted that impacts can be positive as well as negative or adverse. The overall Significance of Effect or impact can then be determined by combining the value/significance of an asset and the magnitude of impact. The way in which this overall effect is calculated is also explained in Appendix 1.

Identified Assets

6.10 All those identified assets lying within the proposed development site will be affected by the new scheme, as well as features within the footprint of the new roundabout on the south side of Minster Way (see figure 11). As noted above, the density and complexity of archaeological features close to Minster Way are likely to reflect those remains previously identified and excavated along the Beverley Southern Relief Road.

6.11 As can be seen from the table below, the proposed residential development will affect six identified assets. Of these, two are considered to be of Medium importance or value, three are of Low importance, and one is of Negligible importance. In most cases, the magnitude of impact is considered to substantial, given the nature of the development (a dense concentration of roads and houses), although for one asset on the south side of Minster Way (Site 64), only a relatively small proportion of the site will be affected by the proposed new roundabout. In terms of the Overall Significance of Effect, there will be two Large negative or adverse effects, two Moderate negative effects, and two Slight negative effects.

Asset no and name	*Value*	*Magnitude of Impact (negative)*	*Overall Significance of Effect (negative)*
27 - Cropmarks, north-east of Shepherd Lane	Low	Substantial	Moderate
28 - Cropmarks and ridge and furrow, north of Minster Way	Low	Substantial	Moderate
63 - Agricultural building (site of), north-east of Shepherd Lane	Negligible	Substantial	Slight
64 - Cropmarks, south of Minster Way	Low	Slight	Slight
67 - Late Iron Age/Romano-British settlement (geophysical survey), north side of Minster Way	Medium	Substantial	Large
68 - Potential Romano-British enclosure (geophysical survey), north-east of Shepherd Lane	Medium	Substantial	Large

Recommended Mitigation Measures

6.12 When a proposed development is permitted in an area of historic landscape or that containing identified archaeological remains (irrespective of their date or complexity), it is expected that some form of archaeological intervention is undertaken, to mitigate the effects of the proposals so that any archaeological remains that might be disturbed or destroyed can be recorded. Such intervention may take place before or during development, and can involve archaeological

excavation, evaluation (usually by trial trenching), or a watching brief (the monitoring of groundworks).

6.13 The first phase of an archaeological evaluation on an otherwise previously undeveloped site would normally involve a geophysical survey. This has been done for this proposed development site, and the results have been discussed above and the unedited geophysical survey report appears as Appendix 2. The next phase of appropriate work would therefore involve trial trenching across the whole site, in order to confirm both the results of the geophysical survey and the archaeological potential of the area. Depending on the timescales allocated for this work, it might also be appropriate to undertake some open area excavation, particularly where the results of the geophysical survey is known or where specific development impacts are known (e.g. along the main access road and within the footprint of the proposed new roundabout). This work is designed to evaluate the extent, character and significance of any archaeological remains within the proposed development site, and to assess the impact of the development on any identified archaeological remains.

6.14 If the evaluation work reveals significant archaeological remains which will be affected by the proposed development, mitigation measures should be explored to ensure their preservation. This preservation may take three forms: physical preservation (retaining the visual amenity and landscape contribution of the site, free from adverse development), in situ preservation (to preserve archaeological remains below development), or preservation by record where destruction is unavoidable (to include full and detailed excavation followed by post-excavation analysis and publication of results). Any future archaeological work on the site, either prior to and/or during development, would be subject to an appropriate specification and, if made a condition of planning approval, a detailed 'Written Scheme of Investigation', which would need to be approved by the Local Planning Authority and their archaeological advisors in advance of any site investigations.

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1910 Ordnance Survey 25" map Yorkshire sheet 210/16, revised 1908

1927 Ordnance Survey 25" map Yorkshire sheet 210/12, revised 1926

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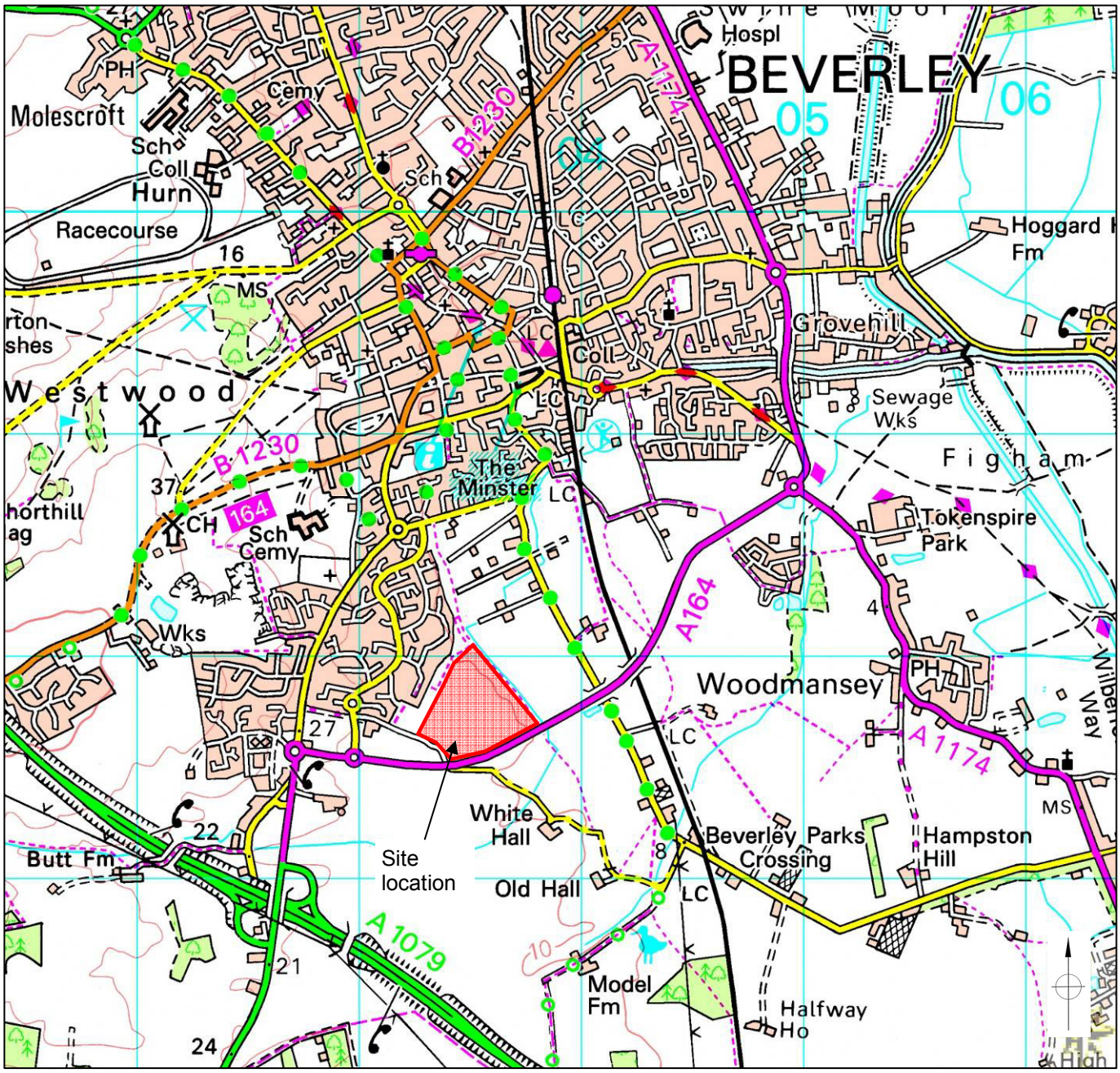

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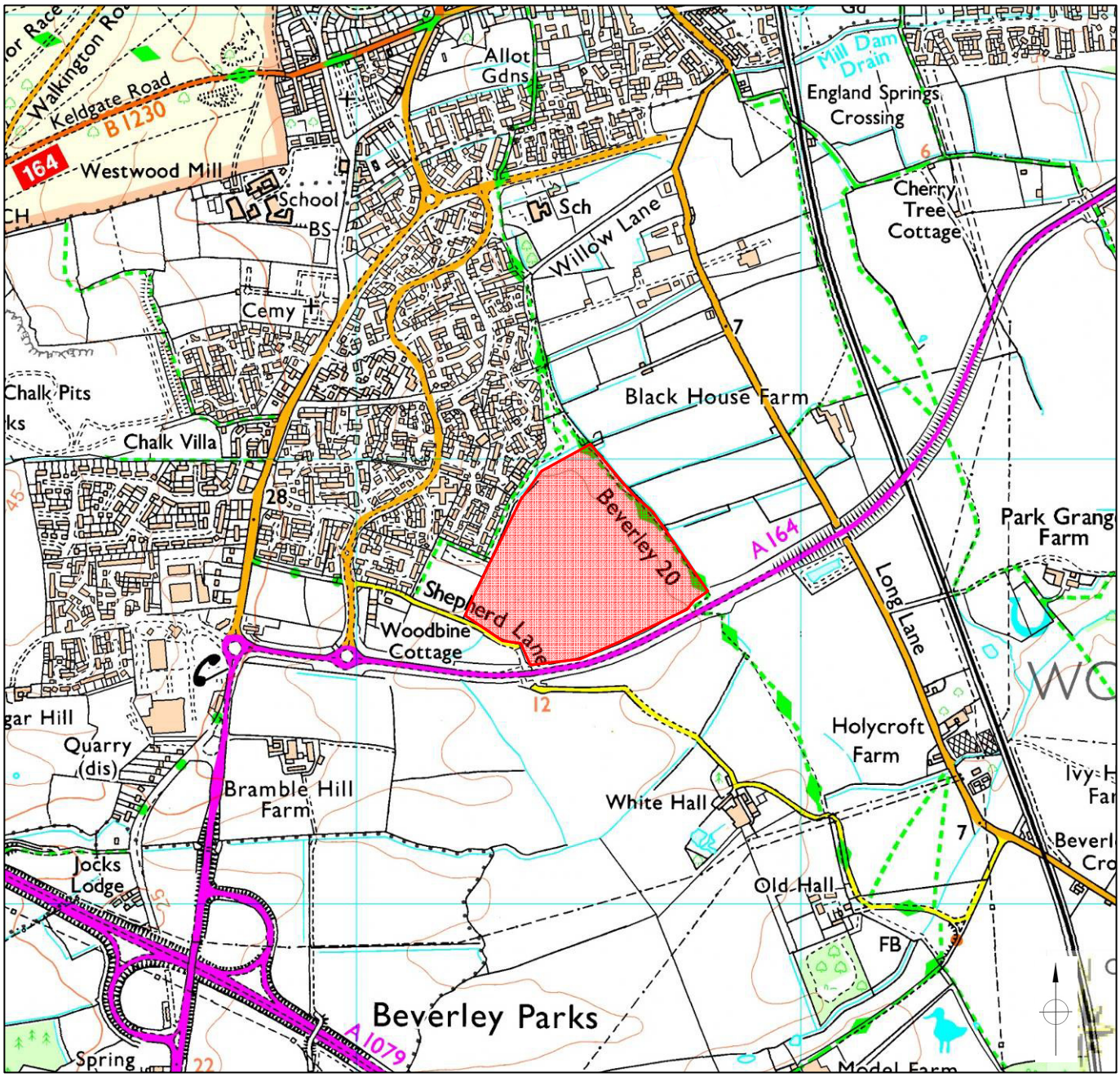
EDAS	FIGURE: 1



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PROJECT: MINSTER WAY, BEVERLEY	
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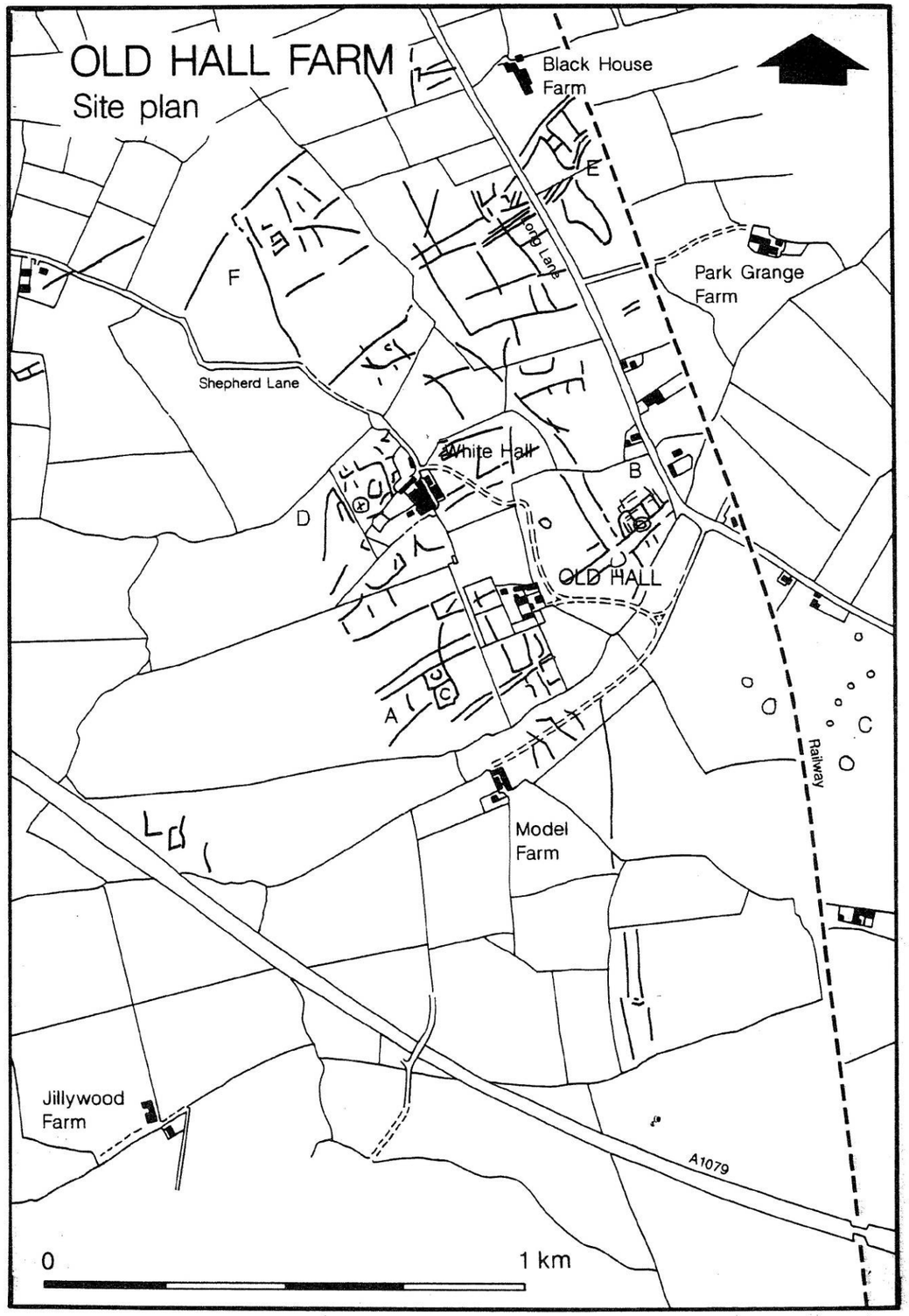

Top: Source: Cropmarks, south-west of Old Hall Farm, taken 20th July 1992 by Ed Dennison (Humber HER).

Bottom: Source: Cropmarks at Paradise Farm (outside study area), taken 29th June 1989by Ed Dennison (Humber HER).

Left: Source: Dennison, E 1992 *An Architectural and Archaeological Survey, Old Hall Farm, Woodmansey,* figure 3 (unpublished Humber Archaeology report).

PROJECT: MINSTER WAY, BEVERLEY	
TITLE: CROPMARKS FROM AERIAL PHOTOS	
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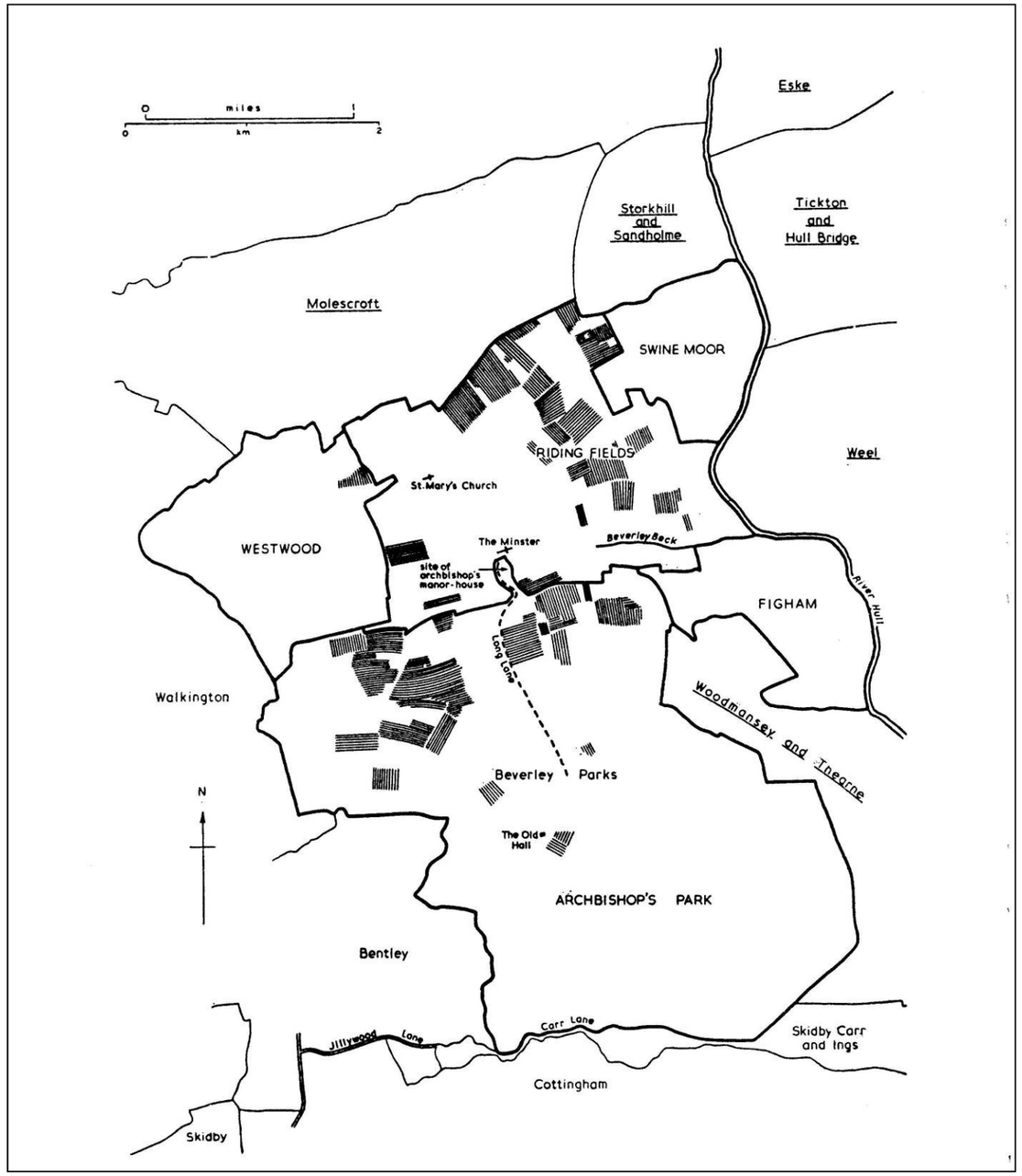
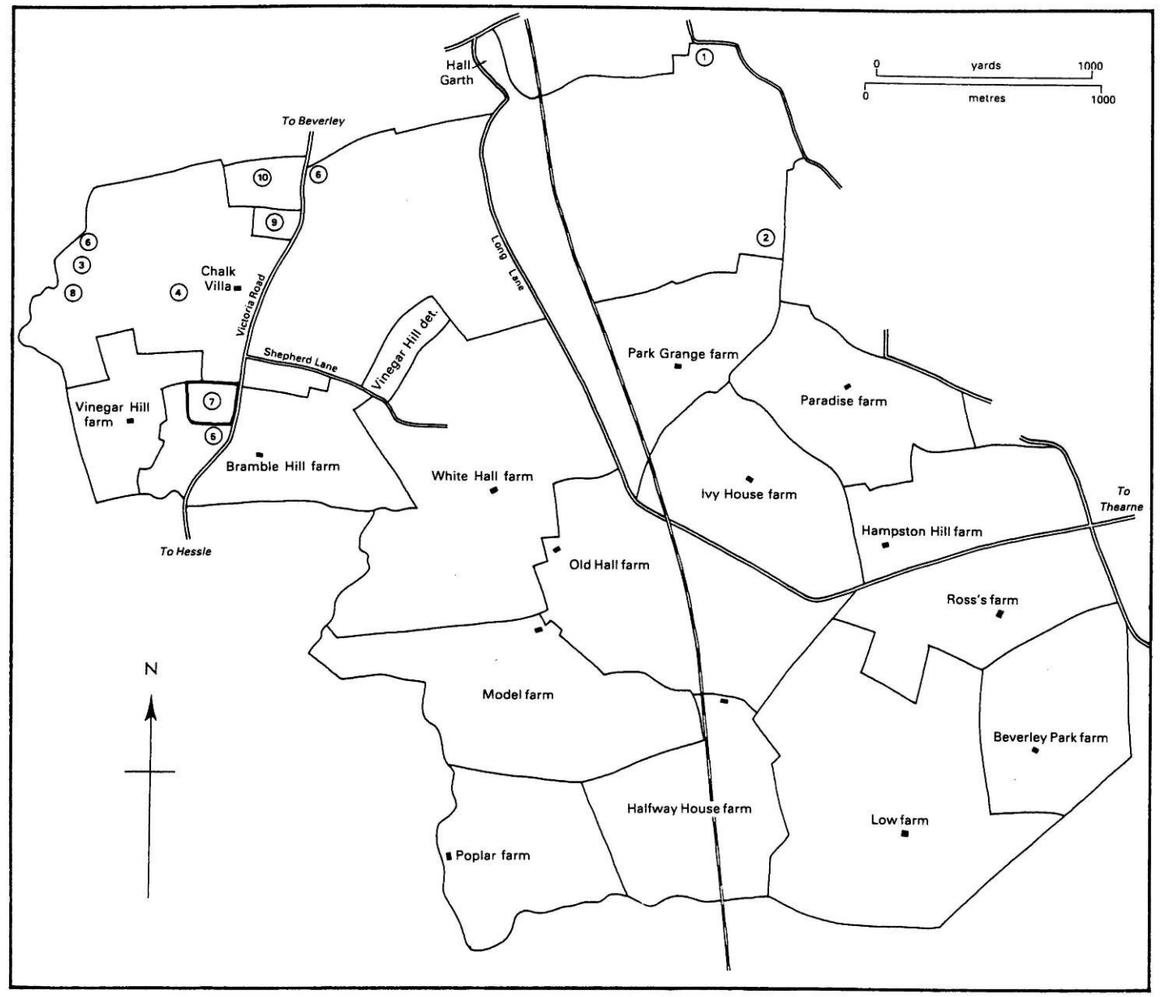


Source: Allison, K J 1976 *The East Riding of Yorkshire Landscape*, p.234.



BEVERLEY PARKS *c.* 1980

1. Site of water mills
2. Site of bleaching yard
3. Former Victoria whiting works
4. Former Queensgate whiting works
5. Site of Queensgate Road whiting works
6. Site of brickworks
7. Site of Victoria barracks
8. Site of waterworks
9. Cemetery
10. Grammar school

Source: Allison, K J 1989a 'Beverley Parks', p.272. In Allison, K J (ed) *A History of the County of York East Riding: volume VI The Borough and Liberties of Beverley*, 271-277.

PROJECT	MINSTER WAY, BEVERLEY
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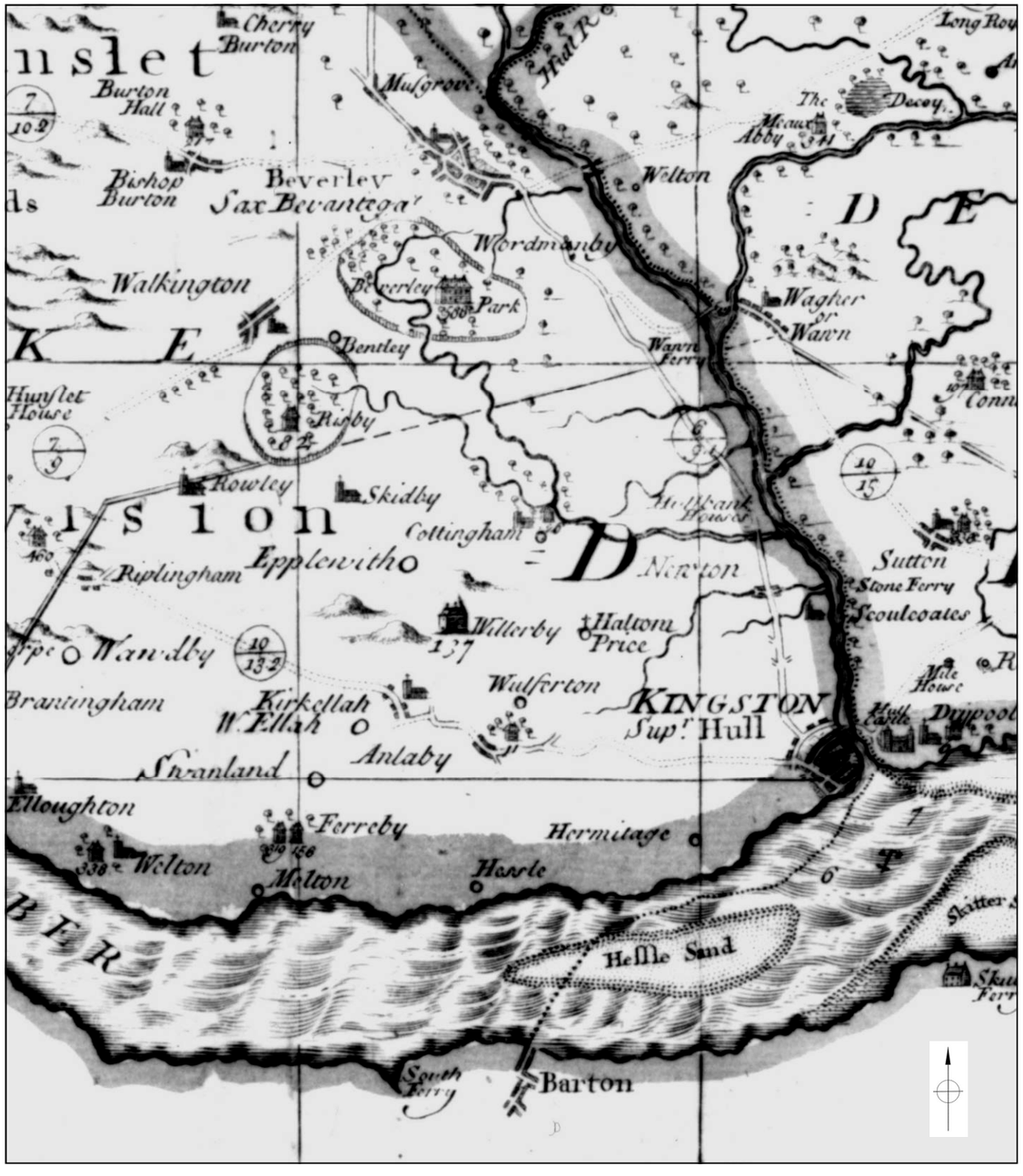
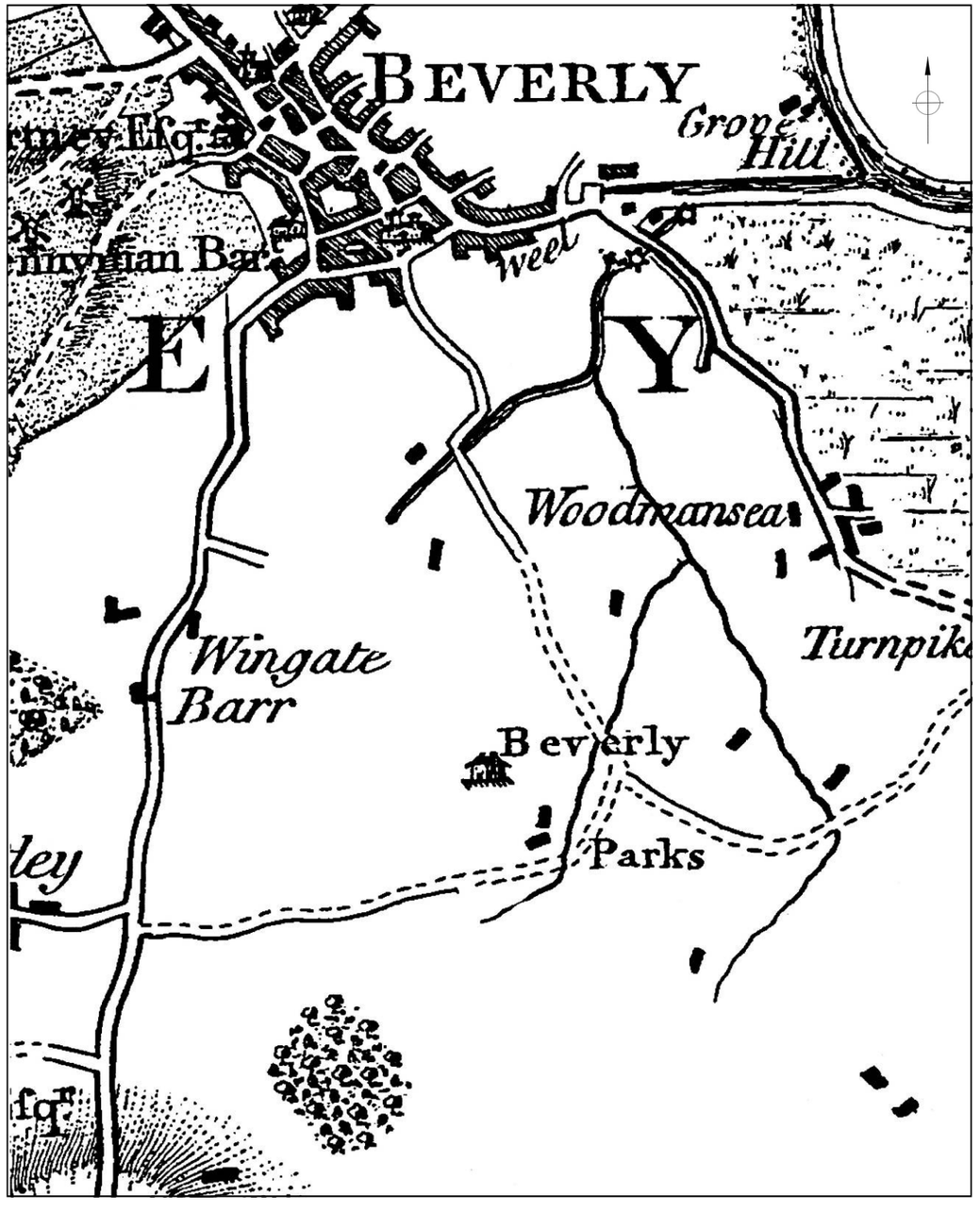


Source: Warburton's 1720 map of Yorkshire.



Source: Jefferys' 1771 map of Yorkshire, plate XIV.

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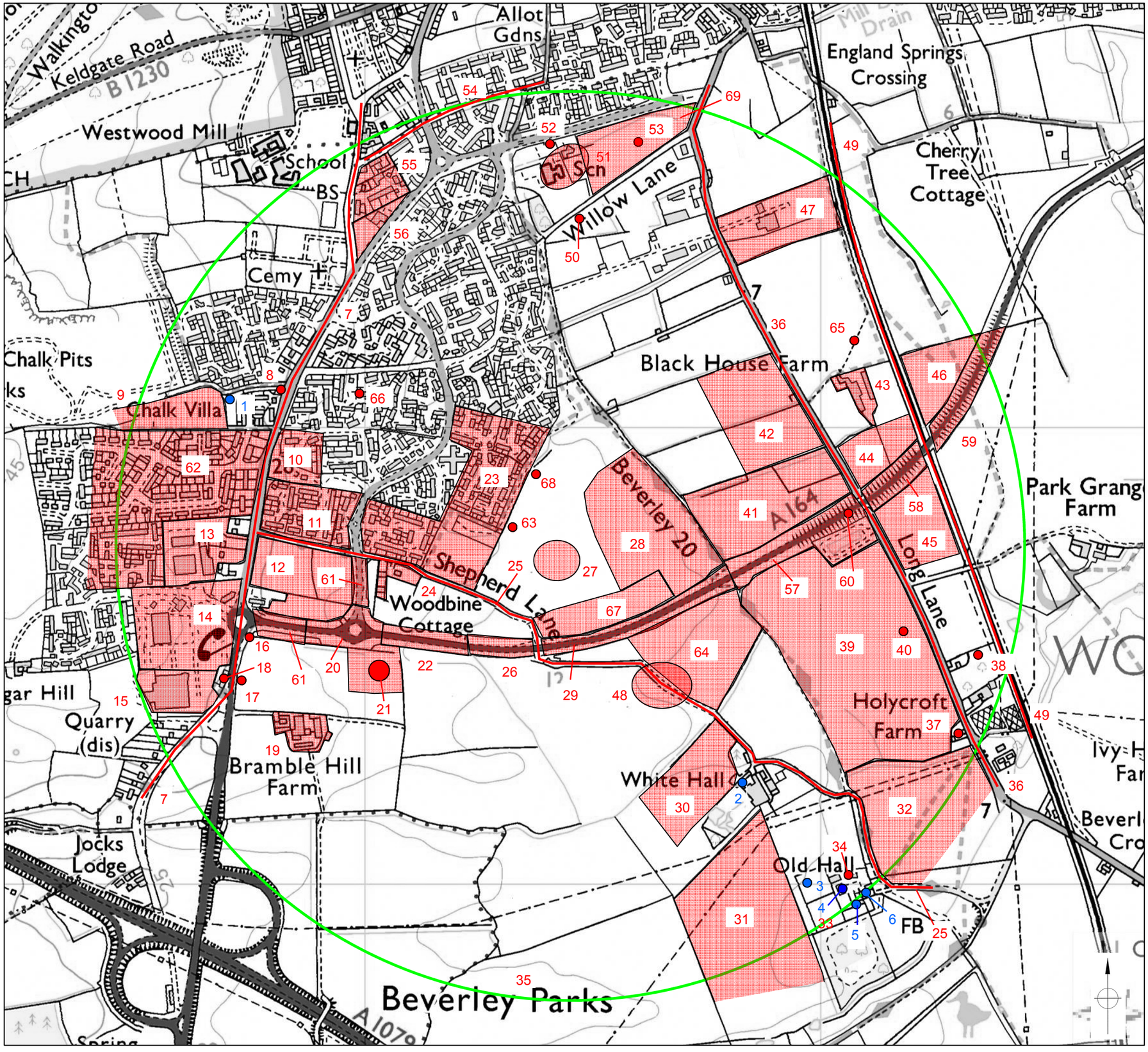

PROJECT: MINSTER WAY, BEVERLEY	
TITLE: IDENTIFIED ASSETS	
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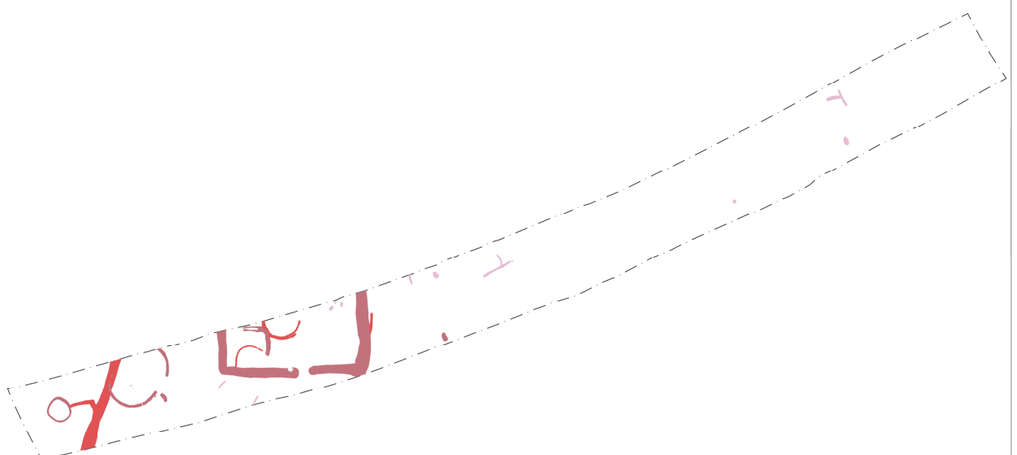
EDAS	FIGURE: 6

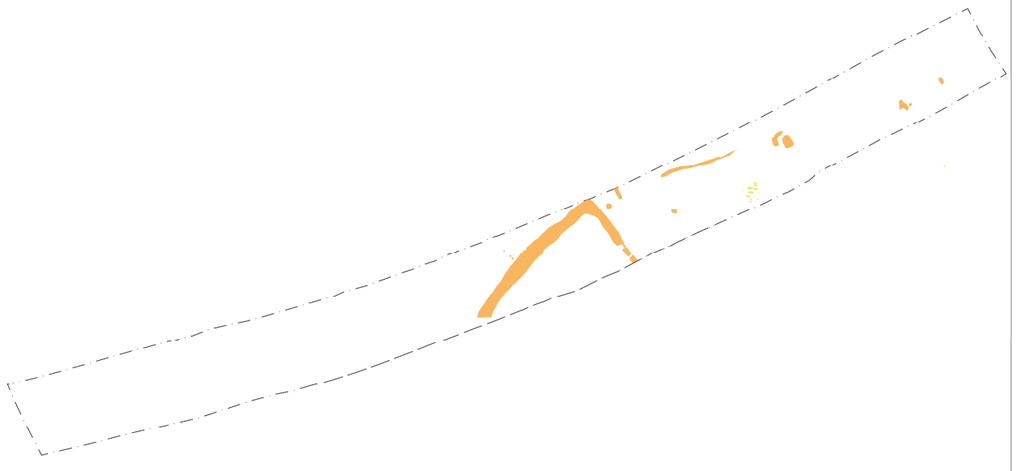
A: Period 1, phases 1 & 2 - late Iron Age



Phase plan for Period 1, Phases 1 and 2: Late Iron Age

Figure 13 | N | Phase 1 | Phase 2 | Unphased late Iron age features | NOT TO SCALE | AOC Archaeology Group

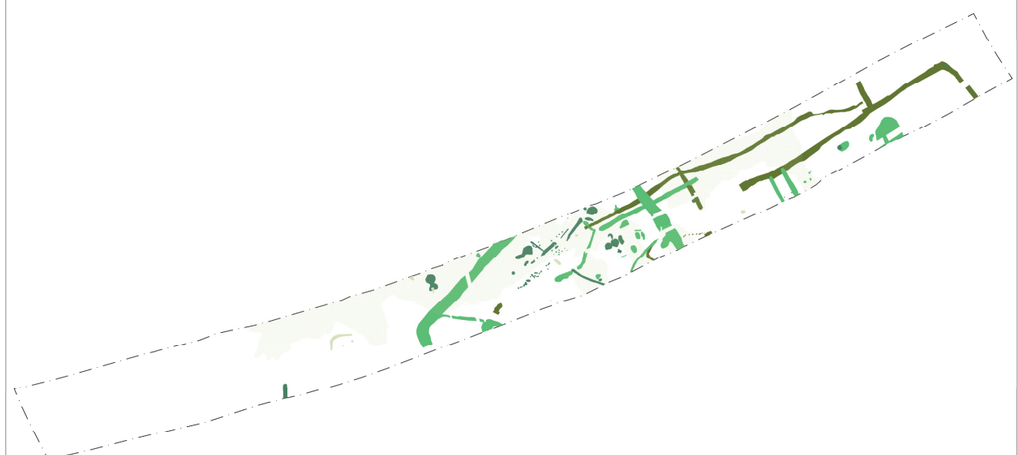
B: Period 2, phase 3 - 2nd to early 3rd centuries AD



Phase plan for Period 2, Phase 3: 2nd and early 3rd centuries AD

Figure 14 | N | Phase 3 | Phase 3/4 | NOT TO SCALE | AOC Archaeology Group

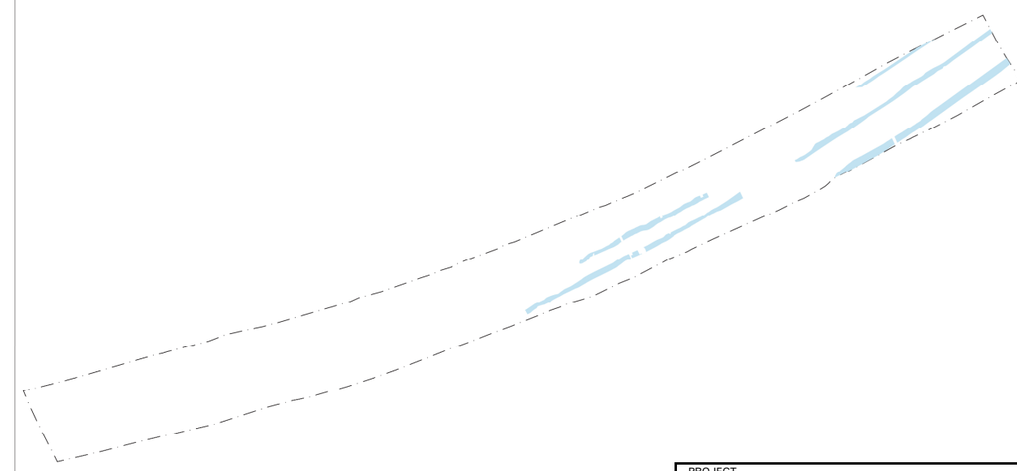
C: Period 2, phases 4, 5 & 6 - late 3rd and 4th centuries AD



Phase plan for Period 2, Phases 4, 4/5, 5 and 6: late 3rd and 4th centuries AD

Figure 15 | N | Phase 4 | Phase 4/5 | Phase 5 | Phase 6 | Unphased Roman features | NOT TO SCALE | AOC Archaeology Group

D: Period 4, phase 8 - medieval

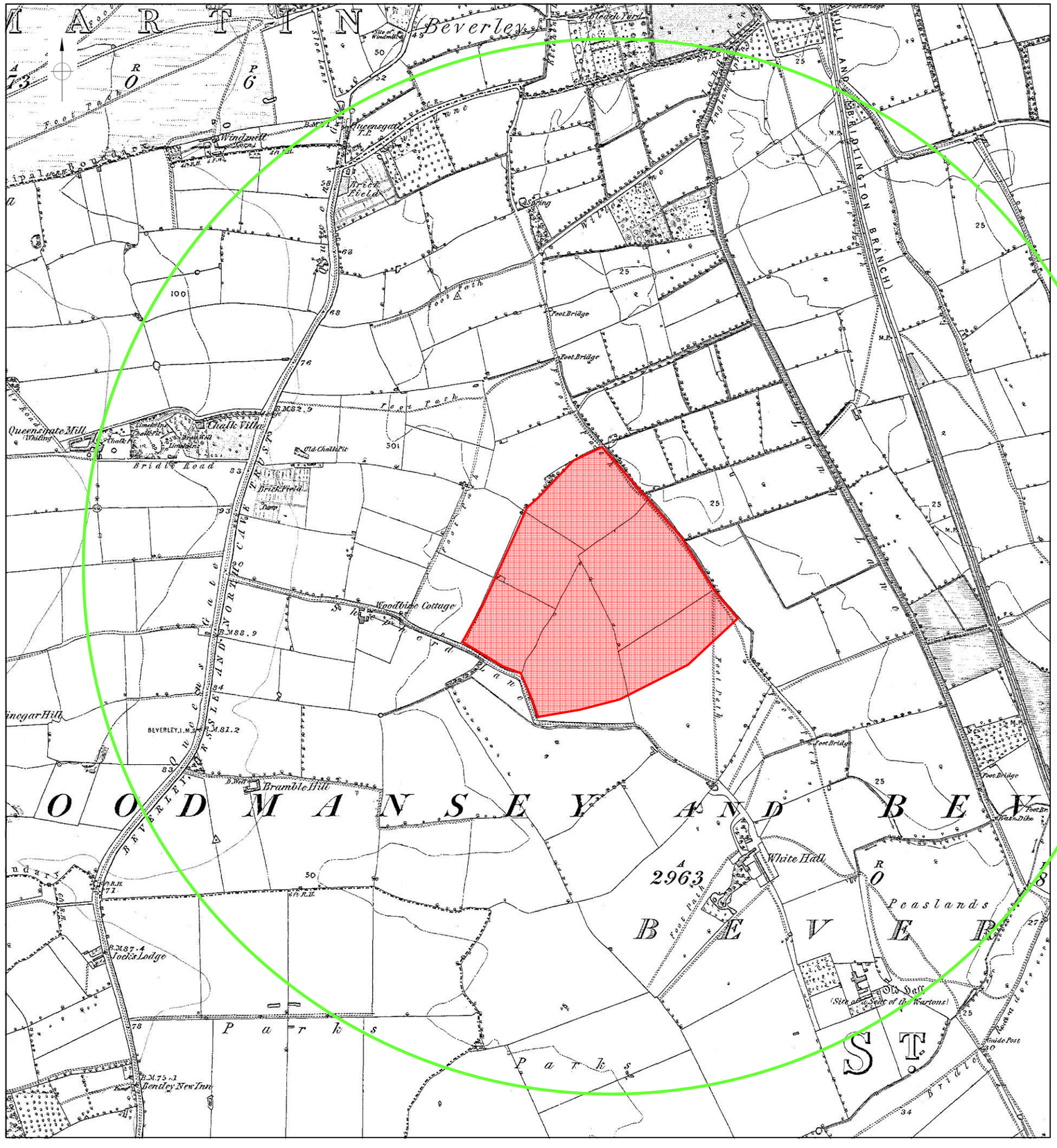


Phase plan for Period 4, Phase 8: medieval

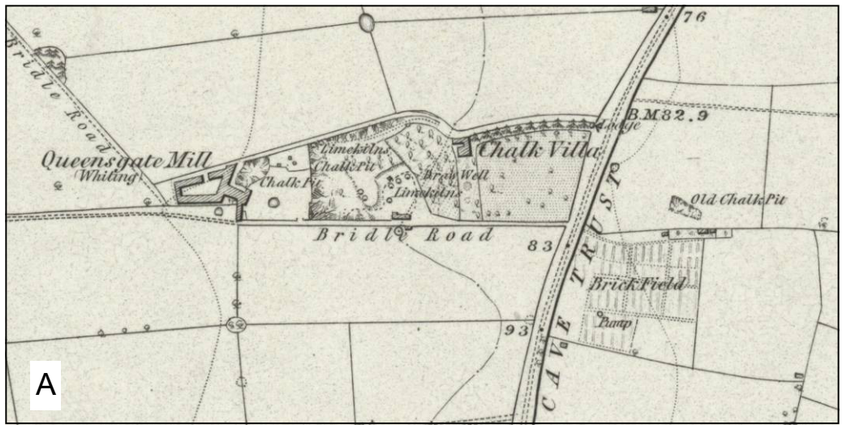
Figure 17 | N | Phase 8

PROJECT	MINSTER WAY, BEVERLEY
TITLE	AREA 5 EXCAVATED FEATURES (SITE 29) PHASES 1 TO 3
SCALE: NTS	DATE: OCT 2018
EDAS	FIGURE: 7

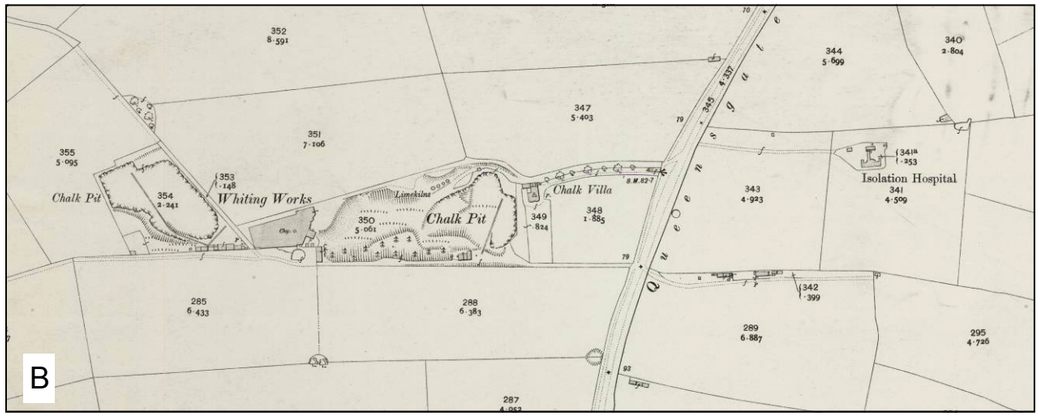
Source: AOC Archaeology Group 2015 *Beverley Southern Relief Road (Area 5), East Riding of Yorkshire: Archaeological Excavation Report,* figures 13-15 & 17 (unpublished AOC report) (reproduced with permission).



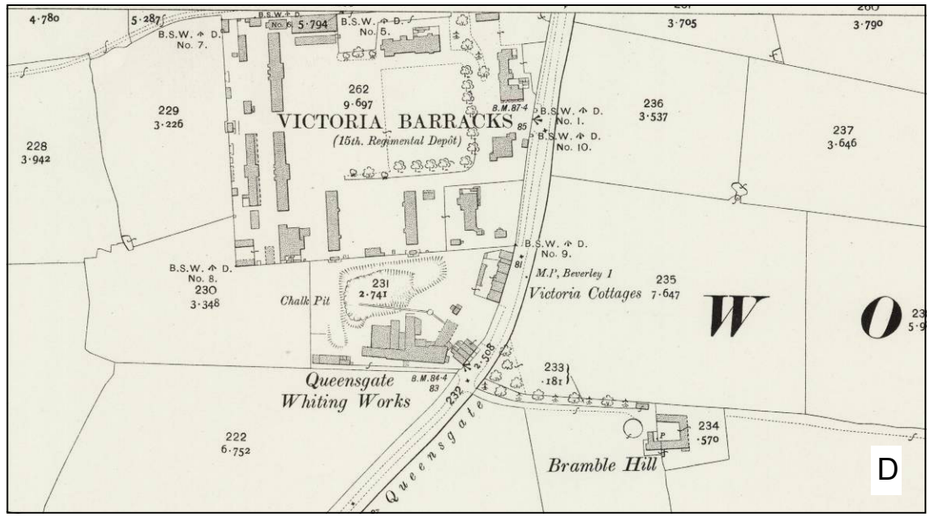
PROJECT	MINSTER WAY, BEVERLEY
TITLE	1855 ORDNANCE SURVEY MAP
SCALE: NTS	DATE: OCT 2018
EDAS	FIGURE: 8



A: Whiting Works (Site 9), Chalk Villa (Site 1), Chalk Villa Lodge (Site 8) and brickfield (Site 10) as shown on 1855 Ordnance Survey 6" map Yorkshire sheet 210.

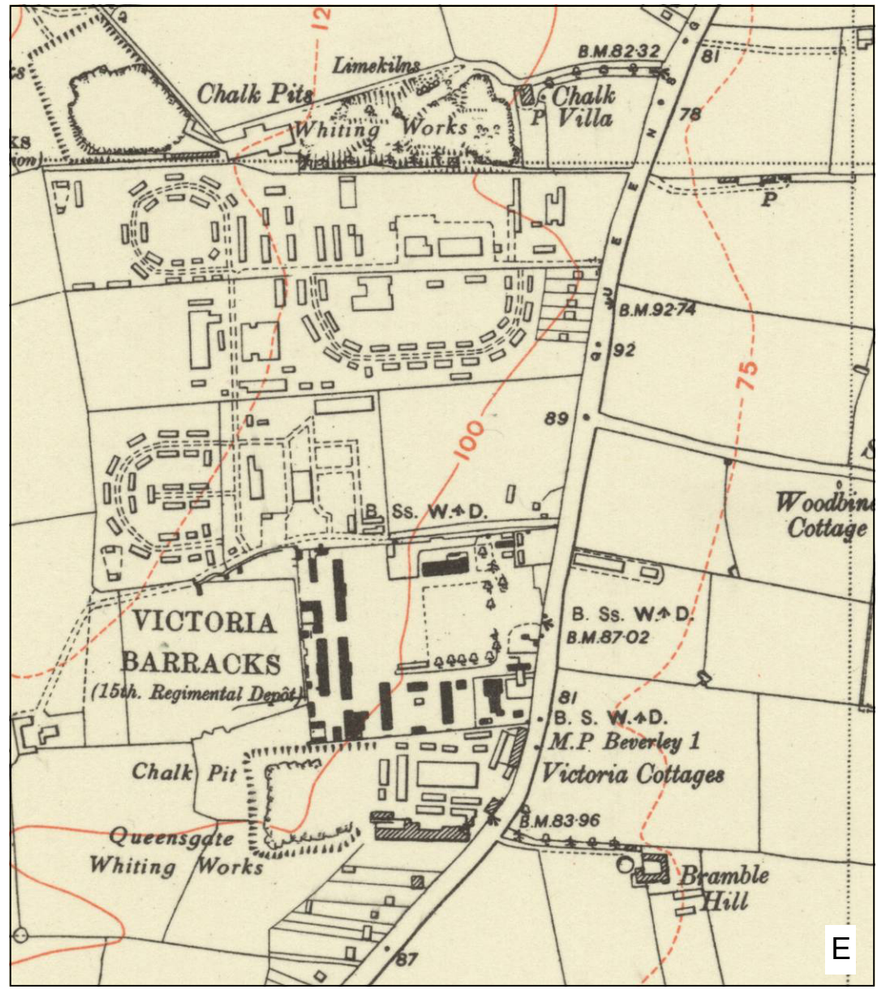


B: Whiting Works (Site 9), Chalk Villa (Site 1), Chalk Villa Lodge (Site 8) and Isolation Hospital (Site 66) as shown on 1910 Ordnance Survey 25" map Yorkshire sheet 210/12.

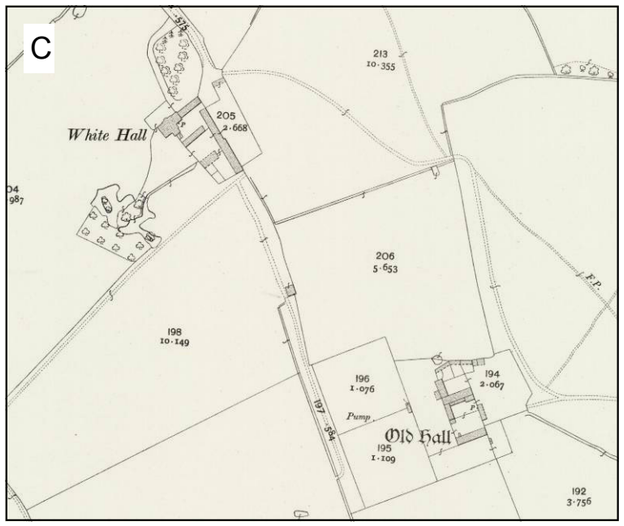


D: Queensgate Whiting Works (Site 15), Victoria Barracks (Site 14), Victoria Cottages (Site 18), milepost (Site 17) and Bramble Hill farm (Site 19), as shown on 1910 Ordnance Survey 25" map Yorkshire sheet 210/16.

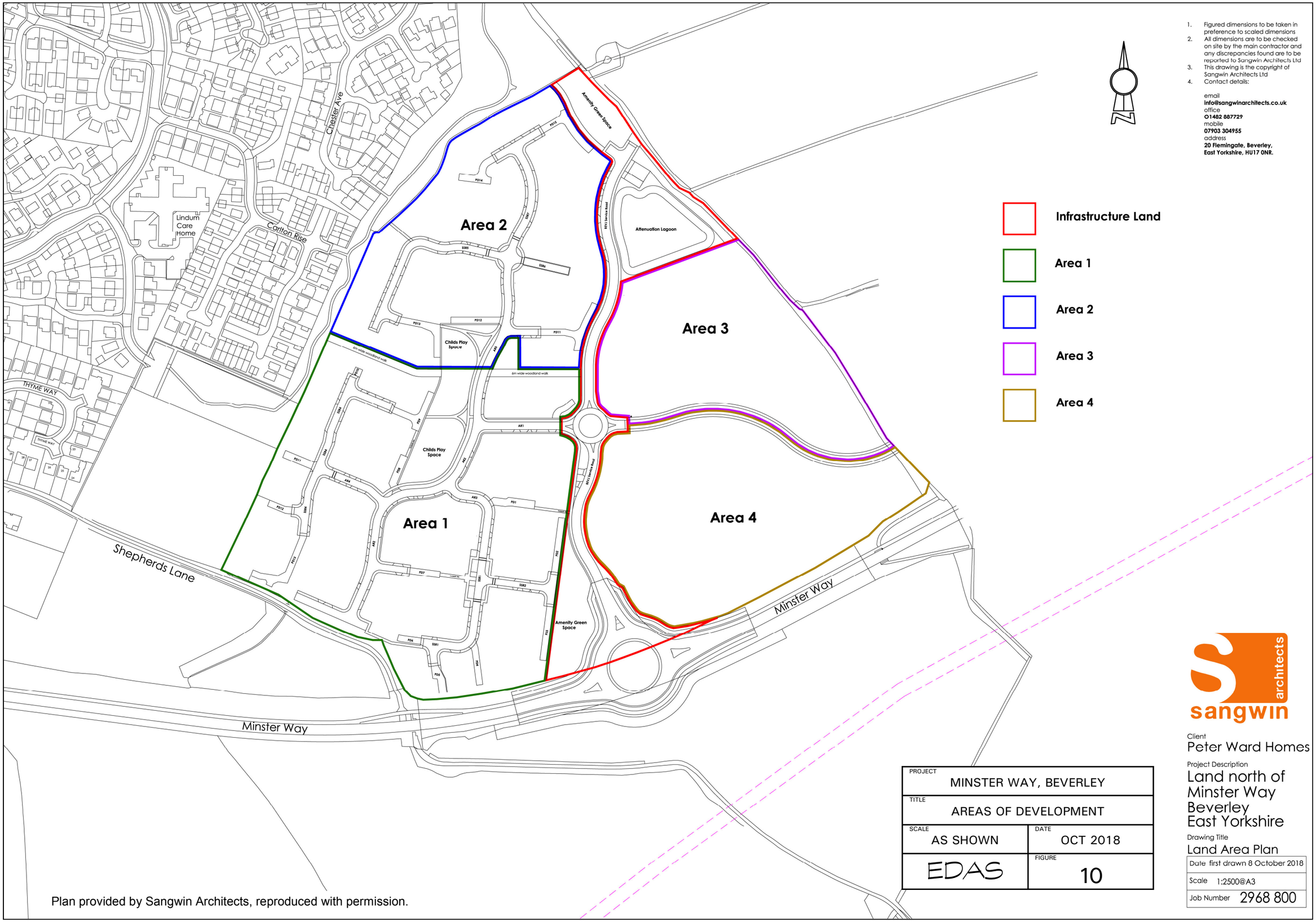
E: Queensgate Whiting Works (Site 15), Victoria Barracks (Site 14), Victoria Cottages (Site 18), milepost (Site 17), Whiting Works (Site 9), Chalk Villa (Site 1), Chalk Villa Lodge (Site 8), military camp (Site 62), and Bramble Hill farm (Site 15), as shown on 1947 Ordnance Survey 6" map Yorkshire sheet 210SE.



C: White Hall farm (Site 2) and Old Hall farm (Sites 3 to 6) as shown on 1910 Ordnance Survey 25" map Yorkshire sheet 210/12.



PROJECT: MINSTER WAY, BEVERLEY	
TITLE: HISTORIC ORDNANCE SURVEY MAPS	
SCALE: NTS	DATE: OCT 2018
EDAS	FIGURE: 9



Infrastructure Land

Area 1

Area 2

Area 3

Area 4

1. Figured dimensions to be taken in preference to scaled dimensions
2. All dimensions are to be checked on site by the main contractor and any discrepancies found are to be reported to Sangwin Architects Ltd
3. This drawing is the copyright of Sangwin Architects Ltd
4. Contact details:

email
info@sangwinarchitects.co.uk
office
01482 887729
mobile
07903 304955
address
**20 Flemingate, Beverley,
East Yorkshire, HU17 0NR.**

Plan provided by Sangwin Architects, reproduced with permission.

PROJECT	MINSTER WAY, BEVERLEY
TITLE	AREAS OF DEVELOPMENT
SCALE: AS SHOWN	DATE: OCT 2018
EDAS	FIGURE: 10

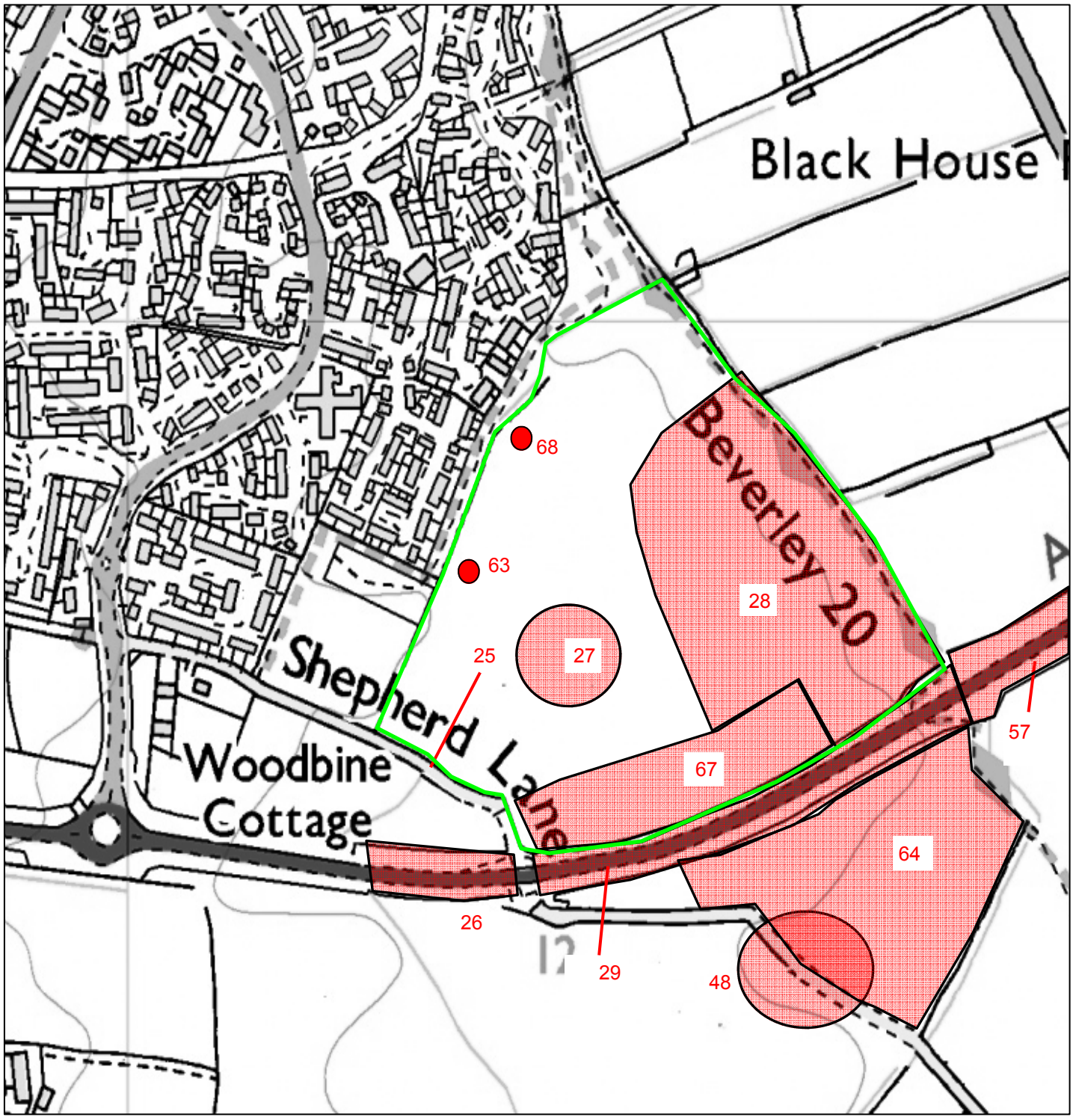
sangwin architects

Client
Peter Ward Homes

Project Description
Land north of
Minster Way
Beverley
East Yorkshire

Drawing Title
Land Area Plan

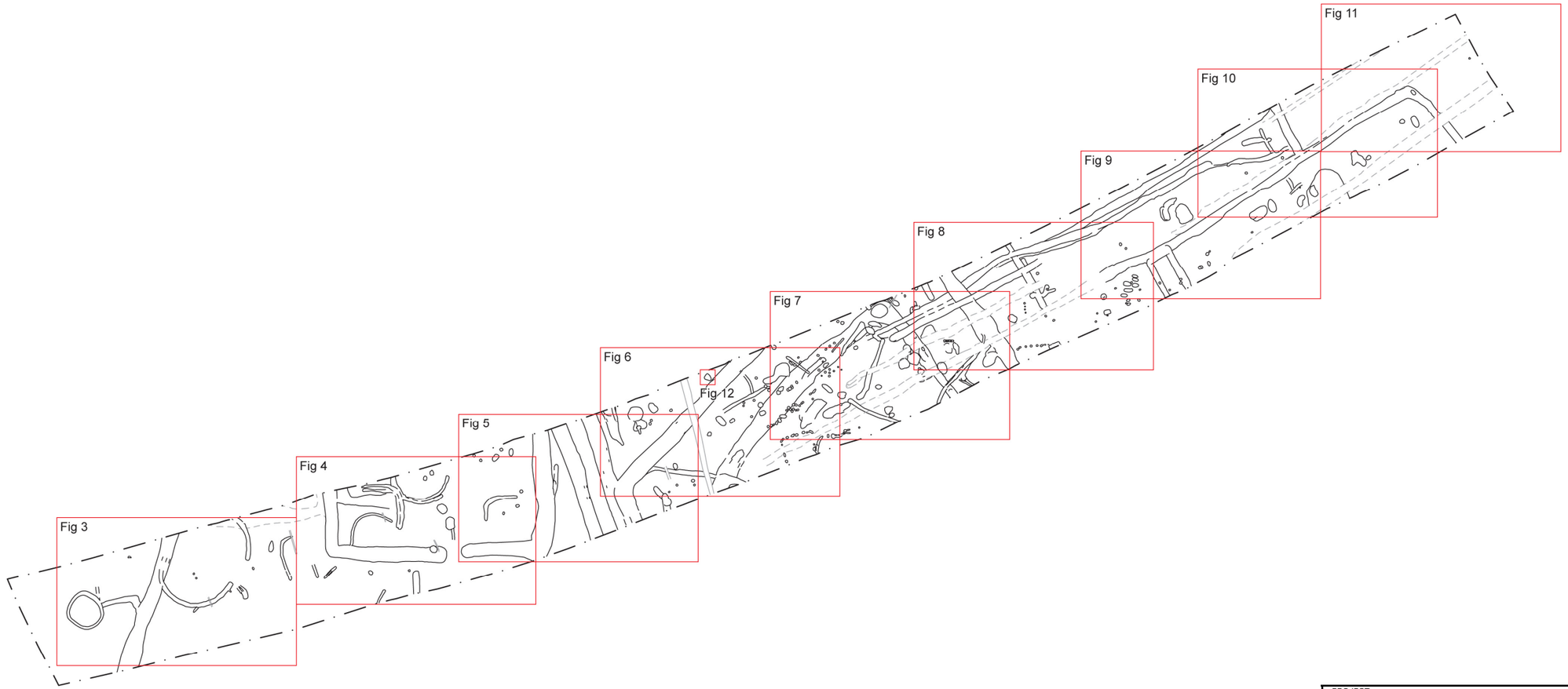
Date	first drawn 8 October 2018
Scale	1:2500@A3
Job Number	2968 800



Development Site

Identified Assets

PROJECT: MINSTER WAY, BEVERLEY	
TITLE: IDENTIFIED ASSETS	
SCALE: NTS	DATE: OCT 2018
EDAS	FIGURE: 11



Source: AOC Archaeology Group 2015 *Beverley Southern Relief Road (Area 5), East Riding of Yorkshire: Archaeological Excavation Report,* figure 2 (unpublished AOC report) (reproduced with permission).

PROJECT	MINSTER WAY, BEVERLEY
TITLE	EXCAVATED FEATURES IN AREA 5 (SITE 29)
SCALE: AS SHOWN	DATE: OCT 2018
EDAS	FIGURE: 12

Overall site plan showing distribution of Figures 3-11

Figure 2	N		0 25m 1:750 at A3	AOC Archaeology Group

PROJECT ID: 8408_MWB18	
	SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY
	LINEAR TREND	ARCHAEOLOGY

SECTOR 1
SEE FIGS 4-6

SECTOR 2
SEE FIGS 7-9

SECTOR 3
SEE FIGS 10-12

P3 A1 A1 A1 A1 A1 P2 A1 P2 A1 P1 P1 P1

438000
437800
437600
503200
503400
503600

PROJECT	
MINSTER WAY, BEVERLEY	
TITLE	
GEOPHYSICAL INTERPRETATION	
SCALE: AS SHOWN	DATE: OCT 2018
EDAS	FIGURE: 13

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 100m

Fig. 3. Overall interpretation of magnetometer data (1:2500 @ A3)

Plate 1: Typical view across proposed development site,
looking north-east from near Minster Way/Shepherd Lane junction.

Plate 2: View across east side of development area, looking north-east.

APPENDIX 1
METHODOLOGY FOR IMPACT ASSESSMENTS ON HERITAGE ASSETS

APPENDIX 1: METHODOLOGY FOR IMPACT ASSESSMENTS ON HERITAGE ASSETS

Based on Highways Agency's 2007 Design Manual for Roads and Bridges volume 11, Section 3 Part 2 (HA 208/07), and in accordance with advice contained in the 2018 revised National Planning Policy Framework, and the previous Planning Policy Statement 5 (Planning for the Historic Environment).

Assessing Value or Significance of Heritage Assets

Value	*Examples*
Very High (International)	World Heritage Sites, Scheduled Monuments of exceptional quality, or assets of acknowledged international importance or can contribute to international research objectives. Other buildings and built heritage of exceptional quality and recognised international importance. Historic landscapes and townscapes of international value or sensitivity, whether designated or not, or extremely well preserved historic landscapes and townscapes with exceptional coherence, integrity, time-depth, or other critical factor(s).
High (National)	Scheduled Monuments, or undesignated archaeological assets of national quality and importance, or than can contribute significantly to national research objectives. Grade I and II* Listed Buildings, other built heritage assets that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in their listing grade. Conservation Areas containing very important buildings or with very strong character and integrity, undesignated structures of clear national importance. Grade I and II* Registered Parks and Gardens, Registered Battlefields and designated or non-designated historic landscapes and townscapes of outstanding interest, quality and importance, or well preserved historic landscapes which exhibit considerable coherence, integrity time-depth or other critical factor(s).
Medium (Regional)	Undesignated archaeological assets of regional quality and importance that contribute to regional research objectives. Grade II Listed Buildings, historic unlisted buildings that can be shown to have exceptional qualities in their fabric or historical associations. Conservation Areas containing buildings that contribute significantly to its historic character. Historic townscapes or built-up areas with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures). Designated special landscapes, undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value, and averagely well preserved historic landscapes with reasonable coherence, integrity, time-depth or other critical factor(s). Assets that form an important resource within the community, for educational or recreational purposes.
Low (Local)	Undesignated archaeological assets of local importance, assets compromised by poor preservation and/or poor survival of contextual associations, or assets of limited value but with potential to contribute to local research objectives. Locally listed buildings, historic (unlisted) buildings of modest quality in their fabric or historical association. Historic landscapes or built-up areas of limited historic integrity in their buildings or built settings (including street furniture and other structures). Robust undesignated historic landscapes, historic landscapes with importance to local interest groups, historical landscapes whose value is limited by poor preservation and/or poor survival of contextual associations. Assets that form a resource within the community with occasional utilisation for educational or recreational purposes.
Negligible	Archaeological assets with very little or no surviving interest. Buildings of no architectural or historical note. Landscapes and townscapes that are badly fragmented and the contextual associations are severely compromised or have little or no historical interest.

Unknown	The importance of the asset has not been determined. Buildings with some hidden (i.e. inaccessible) potential for historic significance.

Assessing Magnitude of Impact (Negative or Positive)

Magnitude of Impact	*Typical Criteria Descriptors*
Substantial (Major)	*Negative:* Impacts will damage or destroy cultural heritage assets; result in the loss of the asset and/or its quality and integrity; causes severe damage to key characteristic features or elements; almost complete loss of setting and/or context of the asset. The asset's integrity or setting is almost wholly destroyed or is severely compromised, such that the resource can no longer be appreciated or understood. *Positive:* The proposals would remove or successfully mitigate existing damaging and discordant impacts on assets; allow for the restoration or enhancement of characteristic features; allow the substantial re-establishment of the integrity, understanding and setting for an area or group of features; halt rapid degradation and/or erosion of the heritage resource, safeguarding substantial elements of the heritage resource.
Moderate	*Negative:* Substantial impact on the asset, but only partially affecting the integrity; partial loss of, or damage to, key characteristics, features or elements; substantially intrusive into the setting and/or would adversely impact on the context of the asset; loss of the asset for community appreciation. The assets integrity or setting is damaged but not destroyed so understanding and appreciation is compromised. *Positive:* Benefit to, or restoration of, key characteristics, features or elements; improvement of asset quality; degradation of the asset would be halted; the setting and/or context of the asset would be enhanced and understanding and appreciation is substantially improved; the asset would be bought into community use.
Slight (Minor)	*Negative:* Some measurable change in assets quality or vulnerability with minor loss of, or alteration to, one (or maybe more) key characteristics, features or elements; change to the setting would not be overly intrusive or overly diminish the context; community use or understanding would be reduced. The assets integrity or setting is damaged but understanding and appreciation would only be diminished not compromised. *Positive:* Minor benefit to, or partial restoration of, one (maybe more) key characteristics, features or elements; some beneficial impact on asset or a stabilisation of negative impacts; slight improvements to the context or setting of the site; community use or understanding and appreciation would be enhanced.
Negligible	*Negative:* Very minor loss or detrimental alteration to one or more characteristics, features or elements; minor changes to the setting or context of the site. *Positive:* Very minor benefit to, or positive addition of, one or more characteristics, features or elements; minor changes to the setting or context of the site.
No change	No discernible change in baseline conditions.

Identifying Significance of Effect (Negative or Positive)

	Magnitude of Impact				
Value of Asset	*Substantial*	*Moderate*	*Slight*	*Negligible*	*No change*
Very High	Very Large	Large/ Very Large	Moderate/Large	Slight	Neutral
High	Large/ Very Large	Moderate/Large	Moderate/Slight	Slight	Neutral
Medium	Moderate/Large	Moderate	Slight	Slight/Neutral	Neutral
Low	Moderate/Slight	Slight	Neutral/Slight	Slight/Neutral	Neutral
Negligible	Slight	Neutral/Slight	Neutral/Slight	Neutral	Neutral

APPENDIX 2
ARCHAEOLOGICAL SERVICES WYAS 2018 GEOPHYSICAL SURVEY REPORT

WYAS Archaeological Services

Land at Minster Way

Beverley

East Yorkshire

Geophysical Survey

Report no. 3193
August 2018

Client: Peter Ward Homes Ltd.

West Yorkshire Joint Services

Land at Minster Way
Beverley,
East Yorkshire

Geophysical Survey

Summary

A geophysical (magnetometer) survey, was undertaken on approximately 16 hectares of land located to the north of Minster Way, Beverley, East Yorkshire. Responses that have been interpreted as archaeology and possible archaeology have been detected in the survey area such as enclosures, linear and curvi-linear trends. Agricultural trends can be seen throughout the survey area in the form of modern ploughing and former field boundaries. Geological anomalies have also been recorded. Therefore, based on the results and interpretation of the data, the archaeological potential is considered to be high to medium.

WYAS
Archaeological
Services

Report Information

Client:	Peter Ward Homes Ltd
Address:	Annie Reed Road, Beverley, East Yorkshire, HU17 0LF
Report Type:	Geophysical Survey
Location:	Beverley
County:	North Yorkshire
Grid Reference:	TA 03515 37760
Period(s) of activity:	Prehistoric
Report Number:	3193
Project Number:	8408
Site Code:	MWB18
OASIS ID:	archaeol1-329555
Date of fieldwork:	August 2018
Date of report:	September 2018
Project Management:	Emma Brunning BSc MCIfA
Fieldwork:	Chris Sykes BSc MSc MCIfA
	Alastair Trace BSc MSc
	Claire Stephens BA
	Michael Offley BA
Report:	Emma Brunning & Alastair Trace
Illustrations:	Emma Brunning
Research:	Emma Brunning

Authorisation for distribution: ----------

Nepshaw Lane South, Morley, Leeds LS27 7JQ
Telephone: 0113 535 0163
Email: admin@aswyas.com

Contents

List of Figures

1 Introduction

Archaeological Services WYAS (ASWYAS) were commissioned by the Ed Dennison Archaeological Services Ltd on behalf of Peter Ward Homes Ltd (the Client), to undertake a geophysical (magnetometer) survey on land north of Minster Way, Beverley, East Yorkshire. Guidance contained within the National Planning Policy Framework (MHCLG 2018) was followed, in line with current best practice (CIfA 2014; David *et al*. 2008). The survey was carried out between the 27th and the 31st August 2018 to provide additional information on the archaeological resource of the Proposed Development Area (PDA).

Site location, topography and land-use

The survey area is approximately centered on National Grid Reference TA 03515 37760 and located to the south of Beverley (Fig. 1). The proposed geophysical area is approximately 16 hectares comprising of one field used for arable cultivation.

The site area is bounded to the south by (Beverley Southern Relief Road), to the west by Shepherd Lane, to the north by residential housing and to the east by further arable fields. The site lies at approximately 12m above Ordnance Datum (aOD) across the whole survey area.

Soils and geology

The underlying bedrock comprises Flamborough Chalk Formation overlain by superficial deposits of Devensian Till (BGS 2018). The overlying soils are classified in the Holderness association, described as slow permeable seasonally waterlogged (SSEW 1983).

2 Archaeological Background

A desk-based assessment for the proposed Beverley Southern Relief Road was undertaken in 2011 (WYG 2011, which included a 1km study area. This document contains a detailed analysis of the archaeological and historical background of the area. No archaeological features were identified within the PDA, apart from some unclassified cropmarks. An Archaeological Assessment for the proposed development, being prepared at the same time as the geophysical survey took place, identified unclassified cropmarks in the centre and eastern part of the PDA, as well as a small 19th century field barn and enclosure identified from the first edition Ordnance Survey (OS) map in the approximate centre of the north-west boundary of the PDA (Dennison 2018).

The first edition (OS) map shows the development site as undeveloped land sub-divided into several fields. Later OS maps show little change to the development site although Beverley is shown as gradually expanding.

An archaeological investigation was undertaken along the southern boundary of the PDA, prior to the construction of the Beverley Southern Relief Road (Minster Way). This

investigation comprised of a 38.7 hectares geophysical survey, undertaken by Stratascan (Graham 2008), and targeted archaeological excavation by AOC archaeology.

The geophysics identified a number of positive and negative anomalies of archaeological origin. Most important of which were two curvilinear enclosures, and a notable rectilinear feature. Several additional linear anomalies were identified thought to represent cut features such as ditches and bank features.

The excavation undertaken by AOC archaeology (AOC 2015) identified a complex sequence of occupational activity at the site spanning the late Iron Age to the medieval period. A small late Iron Age settlement site, represented by three roundhouse ring gullies and a boundary ditch, were recorded. These were superseded by a large rectilinear enclosure and two additional ring gullies, the latter thought to represent ancillary enclosures rather than dwellings. It is suggested that the rectilinear enclosure would have contained a roundhouse but that this lay beyond the limit of excavation.

A phase of activity datable to the early Roman period was also identified (2nd and early 3rd centuries AD). During the late Roman period (late 3rd and 4th centuries AD) a rectilinear field system was established on the western part of the site and the central part of the site became of focus of activity. Numerous pits and small gullies were excavated in this area, and there is evidence for at least two posthole structures.

3 Aims and Methodology

The aims and objectives of the programme of geophysical survey were to gather sufficient information to establish the presence/absence, character and extent, of any archaeological remains within the specific area to inform an assessment of the archaeological potential of the site. To achieve this aim, a magnetometer survey covering all amenable parts of the PDA was undertaken (see Fig. 2).

The general objectives of the geophysical survey were:

- to provide information about the nature and possible interpretation of any magnetic anomalies identified;
- to therefore determine the presence/absence and extent of any buried archaeological features; and
- to prepare a report summarising the results of the survey.

Magnetometer survey

The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble R6 model). The survey was undertaken using Bartington Grad601 magnetic gradiometers. These were employed taking readings at 0.25m intervals on zig-zag traverses 1.0m apart within 30m by 30m grids, so that 3600 readings were recorded in each grid. These readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation. Geoplot 3 (Geoscan Research) software was used to process and present the data. Further details are given in Appendix 1. The data was collected across the known and identified ridge and furrow, different for each field. As such grid north was adjusted for each field appropriately.

Reporting

A general site location plan, incorporating the 1:50000 Ordnance Survey (OS) mapping, is shown in Figure 1. Figure 2 displays processed magnetometer data at a scale of 1:2500 with Figure 3 displaying an overall interpretation at the same scale. The processed and minimally processed data, together with an interpretation of the survey results are presented in Figures 4 to 12 inclusive at a scale of 1:1250.

Technical information on the equipment used, data processing and survey methodologies are given in Appendix 1. Technical information on locating the survey area is provided in Appendix 2. Appendix 3 describes the composition and location of the archive. Appendix 4 will include an OASIS form.

The survey methodology, report and any recommendations comply with guidelines outlined by English Heritage (David *et al.* 2008) and by the Chartered Institute for Archaeologists (CIfA 2014).

The figures in this report have been produced following analysis of the data in processed formats and over a range of different display levels. All figures are presented to most suitably display and interpret the data from this site based on the experience and knowledge of Archaeological Services staff.

4 Results and Discussion (see Figures 4 to 12)

Ferrous anomalies

Ferrous anomalies, as individual 'spikes', or as large discrete areas are typically caused by ferrous (magnetic) material, either on the ground surface or in the plough-soil. Little importance is normally given to such anomalies, unless there is any supporting evidence for an archaeological interpretation, as modern ferrous debris or material is common on rural sites, often being present as a consequence of manuring or tipping/infilling.

Geological anomalies

Anomalies associated with a likely geological or pedological origin have been recorded throughout and are seen to have caused a 'speckling' like effect within the data. It is thought that the responses have been detected because of the variation in the composition and depth of the soils and deposits of superficial material in which they derive.

These responses are concentrated to the eastern and southern sections of the survey area and are similar to the anomalies detected by the previous geophysical survey along the Beverley Southern Relief Road (Graham 2008). It is highly likely that some of these responses will have masked any archaeology.

Agricultural anomalies

Former field boundaries have been identified throughout the survey area, those marked on the interpretation diagram as **A1** correspond to the 1855-1913 Ordnance Survey 6 inch mapping. The former boundaries show on the old mapping until 1961 (NLS 2018).

Other linear trends have also been recorded as former field boundaries but do not show on the old mapping, it is possible that these either predate any available mapping or are associated with other agricultural origins.

The thin and tightly packed agricultural anomalies across the site are indicative of modern agricultural practice, rather than ridge and furrow, which generally are wider spaced and broader in magnetic signature.

Possible archaeological anomalies

A number of linear and curvi-linear trends have been detected which are likely to be of archaeological interest. However, the magnetic signature from these anomalies is relatively weak and therefore any interpretation is cautious.

Anomalies (**P1**) along the southern limits of the dataset consist of linear and curvi-linear trends and small pit-like responses. In view of the archaeological features excavated to the immediate south, these anomalies may be an extension of the prehistoric settlement.

A negative response (**P2**) appears to form a large rectilinear anomaly, measuring approximately 70m along its east to west axis. One possible interpretation is that foundation remains are *in situ* although this is pure speculation and due to the amount of geological responses within this area the same interpretation for this anomaly cannot be dismissed.

Anomalies (**P3**) along the northern limits have also been interpreted as of a possible archaeological interest although they do not form any patterns and again, a geological origin is also likely.

Archaeological anomalies

Strong magnetic responses have been located in the northwest of the dataset comprising ditch-like features and linear trends suggesting a rectilinear enclosure measuring approximately 32m by 20m. Further trends and short ditch length can be seen immediately to the south which are likely to be associated. A ditch can also be seen running from the southeastern corner of the enclosure running on a northwest to southeast alignment before the response lessens in magnetic strength and is shown as a possible archaeological trend. Mapping from 1855 records a field boundary in the approximate position of this mapping, and the archaeological potential may reflect late nineteenth century agriculture.

5 Conclusions

The magnetic survey has detected anomalies of an archaeological origin in the form of an enclosure, further ditches and linear trends. A number of possible archaeological anomalies have also been recorded which may form ring ditches, enclosures, pits and linear trends.

Old field boundaries which correspond to former mapping can be seen along with modern ploughing trends. Geological responses have been recorded throughout which has made the interpretation on a whole difficult.

Based on the geophysical survey the archaeological potential is deemed to be high to medium.

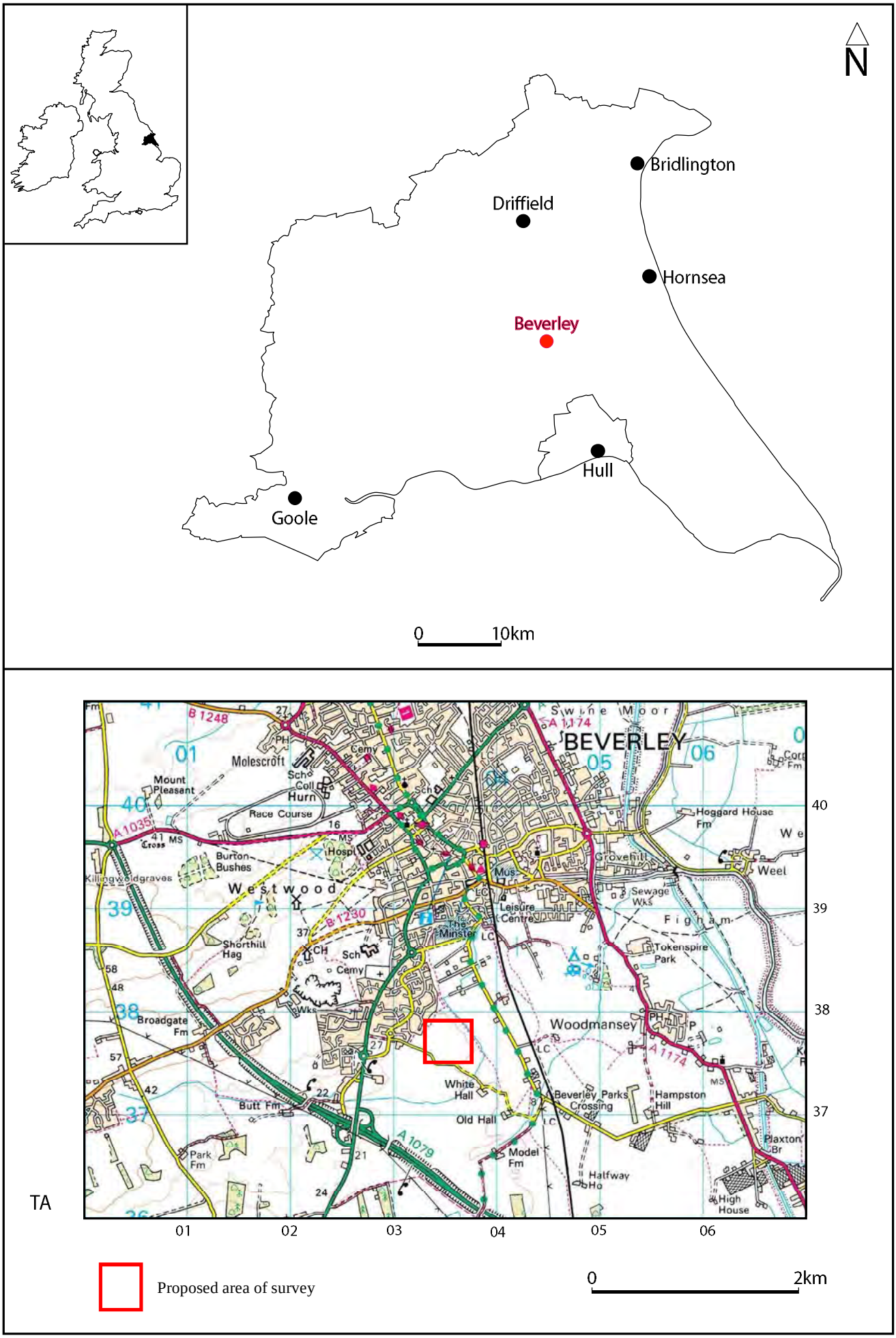


Fig. 1. Site location

PROJECT ID: 8408_MWB18	
	SURVEY BOUNDARY
	SECTOR BOUNDARY

N

SECTOR 1
SEE FIGS 4-6

SECTOR 3
SEE FIGS 10-12

SECTOR 2
SEE FIGS 7-9

438000

437800

437600

2.0

-1.0

nT

5032 00

5034 00

5036 00

5038 00

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Tel: 0113 535 0163

0 100m

Fig. 2. Location of survey area showing greyscale magnetometer data (1:2500 @ A3)

PROJECT ID: 8408_MWB18	
	SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY
	LINEAR TREND	ARCHAEOLOGY

N

SECTOR 1
SEE FIGS 4-6

SECTOR 2
SEE FIGS 7-9

SECTOR 3
SEE FIGS 10-12

P3
A1
P2
P1

438000
437800
437600

503200
503400
503600
503800

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0 100m

Fig. 3. Overall interpretation of magnetometer data (1:2500 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

2.0

-1.0

nT

438000

437800

503400

503600

0 50m

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Fig. 4. Processed greyscale magnetometer data: Sector 1 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

438000

20.0 nT/cm

437800

5034 00

5036 00

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Fig. 5. XY trace plot of minimally processed magnetometer data: Sector 1 (1:1250 @ A3)

0 50m

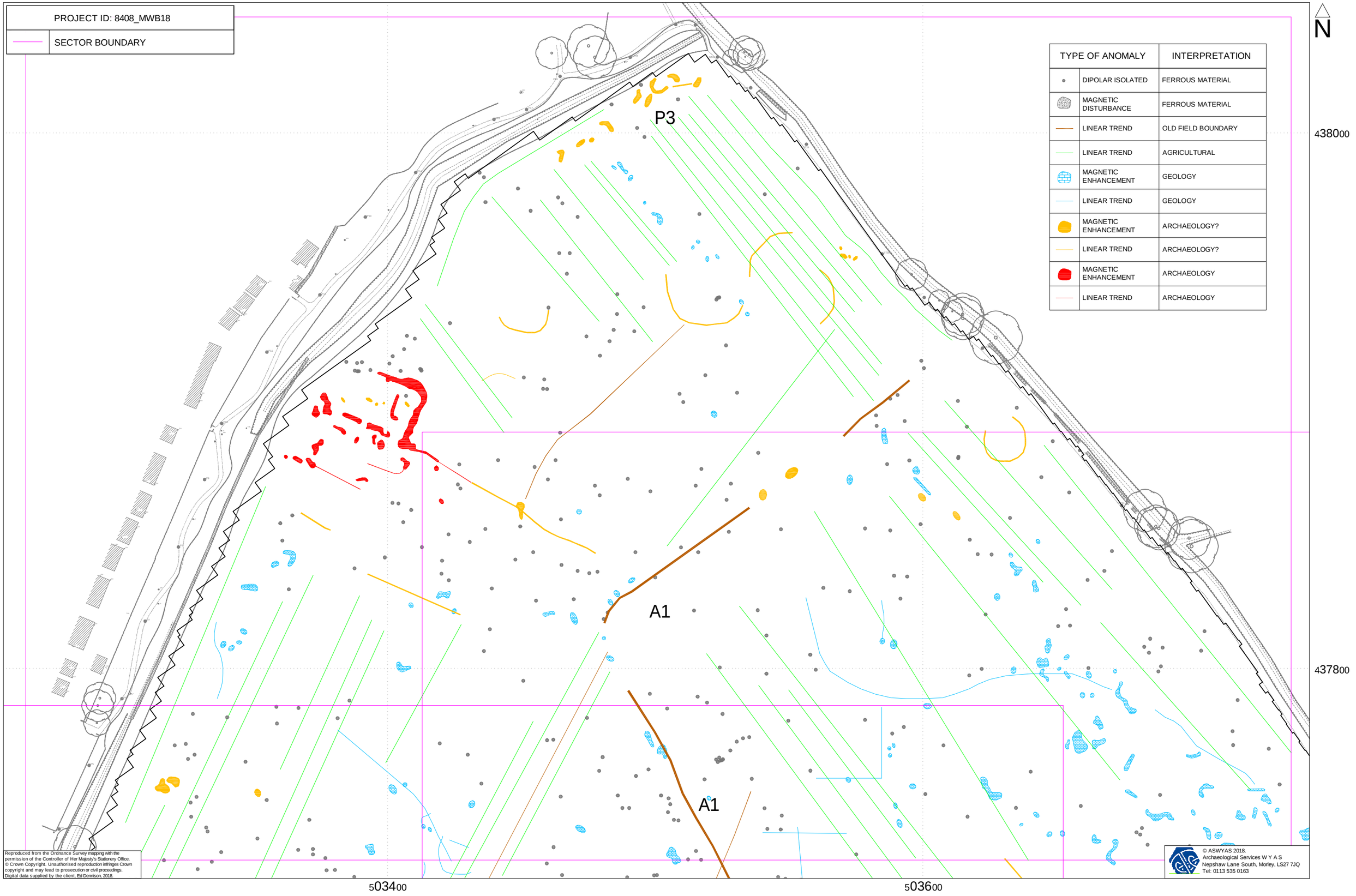

Fig. 6. Interpretation of magnetometer data: Sector 1 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

2.0

-1.0

nT

438000

5034 00

5036 00

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0 50m

Fig. 7. Processed greyscale magnetometer data: Sector 2 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

4380 00

20.0 nT/cm

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5034 00

5036 00

0 50m

Fig. 8. XY trace plot of minimally processed magnetometer data: Sector 2 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

A1

A1

A1

A1

P2

P2

P1

P1

P1

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	LINEAR TREND	ARCHAEOLOGY?

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438000

503400

503600

0 50m

Fig. 9. Interpretation of magnetometer data: Sector 2 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

437800

437600

2.0

-1.0

nT

5036 00

5038 00

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Tel: 0113 535 0163

0 50m

Fig. 10. Processed greyscale magnetometer data: Sector 3 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

437800

437600

5036 00

5038 00

20.0 nT/cm

0 50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 11. XY trace plot of minimally processed magnetometer data: Sector 3 (1:1250 @ A3)

PROJECT ID: 8408_MWB18

SECTOR BOUNDARY

N

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	LINEAR TREND	ARCHAEOLOGY?

A1

A1

A1

A1

A1

A1

P2

P2

P1

P1

437800

437600

503600

503800

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0 50m

Fig. 12. Interpretation of magnetometer data: Sector 3 (1:1250 @ A3)

Appendix 1: Magnetic survey - technical information

Magnetic Susceptibility and Soil Magnetism

Iron makes up about 6% of the Earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haemetite. These minerals have a weak, measurable magnetic property termed magnetic susceptibility. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms. Areas of human occupation or settlement can then be identified by measuring the magnetic susceptibility of the topsoil because of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently comes to fill features, such as ditches or pits, localised isolated and linear magnetic anomalies can result whose presence can be detected by a magnetometer (fluxgate gradiometer).

In general, it is the contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of topsoils, subsoils and rocks into which these features have been cut, which causes the most recognisable responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or the bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background soil levels. Discrete feature, such as pits, can also be detected. The magnetic susceptibility of a soil can also be enhanced by the application of heat and the fermentation and bacterial effects associated with rubbish decomposition. The area of enhancement is usually quite large, mainly due to the tendency of discard areas to extend beyond the limit of the occupation site itself, and spreading by the plough.

Types of Magnetic Anomaly

In the majority of instances anomalies are termed 'positive'. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as 'negative' anomalies that, conversely, means that the response is negative relative to the mean magnetic background.

Where it is not possible to give a probable cause of an observed anomaly a '?' is appended.

It should be noted that anomalies interpreted as modern in origin might be caused by features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the feature causing the anomaly.

The types of response mentioned above can be divided into five main categories that are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes)

These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance

These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Linear trend

This is usually a weak or broad linear anomaly of unknown cause or date. These anomalies are often caused by agricultural activity, either ploughing or land drains being a common cause.

Areas of magnetic enhancement/positive isolated anomalies

Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an increased response on two or three successive traverses. In neither instance is there the intense dipolar response characteristic exhibited by an area of magnetic disturbance or of an 'iron spike' anomaly (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post-holes or by kilns. They can also be caused by pedological variations or by natural infilled features on certain geologies. Ferrous material in the subsoil can also give a similar response. It can often therefore be very difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear anomalies

Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing trends, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

Methodology: Gradiometer Survey

The main method of using the fluxgate gradiometer for commercial evaluations is referred to as ***detailed survey*** and requires the surveyor to walk at an even pace carrying the instrument within a grid system. A sample trigger automatically takes readings at predetermined points, typically at 0.25m intervals, on traverses 1m apart. These readings are stored in the memory of the instrument and are later dumped to computer for processing and interpretation.

During this survey a Bartington Grad601 magnetic gradiometer was used taking readings on the 0.1nT range, at 0.25m intervals on zig-zag traverses 0.5m apart within 30m by 30m square grids. The instrument was checked for electronic and mechanical drift at a common point and calibrated as necessary. The drift from zero was not logged.

The gradiometer data have been presented in this report in processed greyscale format. The data in the greyscale images have been interpolated and selectively filtered to remove the effects of drift in instrument calibration and other artificial data constructs and to maximise the clarity and interpretability of the archaeological anomalies.

Appendix 2: Survey location information

An initial survey station was established using a Trimble VRS differential Global Positioning System (Trimble R6 model). The data was geo-referenced using the geo-referenced survey station with a Trimble RTK differential Global Positioning System (Trimble R6 model). The accuracy of this equipment is better than 0.01m. The survey grids were then super-imposed onto a base map provided by the client to produce the displayed block locations. However, it should be noted that Ordnance Survey positional accuracy for digital map data has an error of 0.5m for urban and floodplain areas, 1.0m for rural areas and 2.5m for mountain and moorland areas. This potential error must be considered if co-ordinates are measured off hard copies of the mapping rather than using the digital co-ordinates.

Archaeological Services WYAS cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party.

Appendix 3: Geophysical archive

The geophysical archive comprises:-

- an archive disk containing compressed (WinZip 8) files of the raw data, report text (Microsoft Word 2000), and graphics files (Adobe Illustrator CS2 and AutoCAD 2008) files; and
- a full copy of the report.

At present the archive is held by Archaeological Services WYAS although it is anticipated that it may eventually be lodged with the Archaeology Data Service (ADS). Brief details may also be forwarded for inclusion on the English Heritage Geophysical Survey Database after the contents of the report are deemed to be in the public domain (i.e. available for consultation in the East Yorkshire Historic Environment Record).

Appendix 4: Oasis form

OASIS DATA COLLECTION FORM: England

OASIS ID: archaeol11-329555

Project details

Project name	Minster Way, Beverley
Short description of the project	A geophysical (magnetometer) survey, was undertaken on approximately 16 hectares of land located to the north of Minster Way, Beverley, East Yorkshire. Responses that have been interpreted as archaeology and possible archaeology have been detected in the survey area such as enclosures, linear and curvi-linear trends. Agricultural trends can be seen throughout the survey area in the form of modern ploughing and former field boundaries. Geological anomalies have also been recorded. Therefore, based on the results and interpretation of the data, the archaeological potential is considered to be high to medium.
Project dates	Start: 27-08-2018 End: 31-08-2018
Previous/future work	Yes / Not known
Any associated project reference codes	8408 - Sitecode
Type of project	Field evaluation
Monument type	NONE None
Significant Finds	ENCLOSURE Late Prehistoric
Methods & techniques	"Geophysical Survey"
Development type	Housing estate
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded
Solid geology	CHALK (INCLUDING RED CHALK)
Drift geology (other)	seasonally waterlogged soils
Techniques	Magnetometry

Project location

Country	England
Site location	

	EAST RIDING OF YORKSHIRE EAST RIDING OF YORKSHIRE BEVERLEY Minster Way, Beverley
Study area	16 Hectares
Site coordinates	TA 0351 3776 53.825567428899 -0.427243768525 53 49 32 N 000 25 38 W Point
Height OD / Depth	Min: 12m Max: 12m

Project creators

Name of Organisation	Archaeological Services WYAS
Project brief originator	Ed Dennison Archaeological Services Ltd
Project design originator	Ed Dennison Archaelogical Services Ltd
Project director/manager	E. Brunning
Project supervisor	C. Sykes

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Ed Dennison Archaeological Services Ltd.
Digital Contents	"Survey"
Digital Media available	"Geophysics","Survey","Text"
Paper Archive Exists?	No

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Land at Minster Way, Beverley, East Yorkshire
Author(s)/Editor(s)	Brunning, E
Author(s)/Editor(s)	Trace, A
Date	2018
Issuer or publisher	ASWYAS
Place of issue or publication	Leeds
Description	A4 report with A3 figures

Entered by	Emma Brunning (emma.brunning@aswyas.com)
Entered on	27 September 2018

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