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AN ARCHAEOLOGICAL DESK TOP ASSESSMENT OF LAND IN THE ANCHOLME VALLEY, LINCOLNSHIRE

PRE-CONSTRUCT ARCHAEOLOGY LTD

NO EVENT

NEGATIVE

An Archaeological Desktop Assessment of Land at the Ancholme Valley, Lincolnshire

Central National Grid Reference: TA 0077 0138

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Pre-Construct Archaeology Ltd, October 2003

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1 NON TECHNICAL SUMMARY

1.1.1 The Environment Agency is proposing to create a flood storage area adjacent to the River Ancholme, Lincolnshire. This will involve the construction of two weirs, and water is expected to spill onto the floodplain every two to five years.

1.2 The site is located in an area of archaeological and historical significance particularly for the prehistoric period, due to the survival and extent of the peat in the area. A number of Bronze Age boats have been found in the vicinity of the study site and the area has a high potential for palaeo-environmental material.

1.3 The archaeological potential for the recovery of palaeo-environmental and prehistoric material is high. The archaeological potential for the Roman and medieval periods is moderate and the potential for the Saxon and post-medieval periods is low.

1.4 The proposed flood storage area is likely to preserve rather than destroy the archaeological material located within the peat and alluvium, although the effects of chemicals in the water on buried strata may need to be considered. The main areas of potential damage to archaeological deposits are the proposed weir construction areas and related ground works.

1.5 The study area is currently in use as agricultural land and existing flood defence embankments. It has a long history of drainage and land reclamation.

2 CONCLUSIONS

2.1 The report aimed to identify and characterise the known archaeology of the area indicated, assess the potential impacts of the proposed flood storage option upon the archaeological resource, consider the potential of the area for the recovery of palaeo-environmental evidence and identify the potential impact for unknown resources to exist. It also aimed to determine the suitability of the study area for further prospecting techniques.

2.2 There is a high potential for the recovery of palaeo-environmental material. Previous investigation in the area[1] has already indicated the wealth of material recoverable from the lower peat and alluvium, and research on the Brigg 'raft'[2] revealed a plethora of information on the prehistoric landscape of the Ancholme Valley.

2.3 There is a high potential for recovering prehistoric remains, particularly of Bronze Age date. However, much of the material from this period is at a level of c. 2m below current ground level and therefore the recovery of this material is reliant on the depth and extent of the new weirs during construction. Some material may be located higher in the archaeological sequence or on the surface, such as the flint scatters around Redbourne. Important Bronze Age settlement remains have recently been excavated close to Hibaldstow, directly to the west of the study area[3].

2.4 There is a moderate potential for locating Roman remains. In the Roman era a significant settlement was established at Hibaldstow just to the north west of the study area. Hibaldstow is also directly to the east of Ermine Street, an important Roman road.

2.5 There is a low potential for the recovery of Saxon or Viking remains. Some late Saxon pottery has been found in the area, and the monastery of St Hygbald is located near to Hibaldstow, but there is little other evidence for Saxon or Viking settlement in the area.

2.6 There is a moderate potential for the recovery of medieval remains. During the medieval period, the marsh of the Ancholme Valley began to be drained and farmed. There are a number of religious settlements in the valley, the closest to the study area being Winghale Priory, Newstead Priory and the Priory of St Mary near Redbourne Hayes. A Gilbertine Priory at Tunstall remains unlocated. North and South Kelsey also have the remains of medieval moated manors. Although medieval settlement on the valley bottom was almost non existent, the area would have been a valuable resource for grazing, fishing and transport, and deposits relating to these practices may be identified within the study area.

2.7 There is a low potential for the recovery of post-medieval remains within the study area. The major feature of the post-medieval period is the establishment of the New Ancholme River and the successful drainage of the area. Throughout the post-medieval period, the area was used almost solely for arable farming.

2.8 The proposed scheme involves the creation of a flood storage area adjacent to the River Ancholme and the lowering of the existing flood embankment to create two spillway weirs, allowing floodwater into the storage area when necessary. This will probably happen every two to five years, and the evacuation of the water may take several days to weeks. However, the repeated flooding of the area is likely to be beneficial for the subsurface archaeology, especially that located within the peaty deposits. A consideration of the impact of the chemical content within the water on preserved organic remains may need to be made.

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[1] Van de Noort and Ellis, 1998
[2] McGrail, S. 1981
[3] Allen, M. & Rylatt, J., 2001

2.9 The major impact of the development on the archaeology in the area will be during the construction of the two new weirs, each of which will be 500m in length and will be excavated to an unknown depth. There may also be some impact on the archaeology of the area during the process of lowering the existing flood embankments, the construction of local access to the area and various other landscaping works.

2.10 There will have already have been some impact caused to archaeological deposits in the study area. Flood defences already exist, including embankments, drains and ditches. The drainage of the area, as discussed above, appears to have had a negative impact on the upper peat deposits of the Roman and later periods, although the extent of this impact within the study area is unclear. The construction of the embankments for the New Ancholme River may have led to the stripping of the topsoil in a localised area around the new river, which may have had a negative impact on surface deposits such as flint scatters.

3 INTRODUCTION

3.1 Outline

3.1.1 The Environment Agency, through their consultants Posford Haskoning has commissioned this Desktop Assessment for a large area in the Upper Ancholme Valley (fig. 1). The report has been carried out following guidelines issued by English Heritage[4] and in accordance with the standards specified by the Institute of Field Archaeologists[5] and the Lincolnshire Archaeology Handbook[6].

3.1.2 An archaeological Desktop Assessment is required as part of the planning process. The report aimed to identify and characterise the known archaeology of the area indicated, assess the potential impacts of the proposed flood storage option upon the archaeological resource, consider the potential of the area for the recovery of palaeo-environmental evidence and identify the potential impact for unknown resources to exist. It also aimed to determine the suitability of the study area for further prospecting techniques, such as field walking and geophysical survey. This assessment may be followed by a requirement for further archaeological works, including invasive techniques such as excavation.

3.1.3 The archaeological report was researched and written by Helen Clough, Pre-Construct Archaeology Limited. Simon Savage also carried out additional research. This work included the examination of historical maps and relevant reports and publications and a search of Lincoln County Council Museum and North Lincolnshire Museum Sites and Monuments Record and visits to the local archives. Pre-Construct Archaeology Limited's archives and the British Library were used for research and a visual site assessment was carried out. The aerial photographic records for the area, held at English Heritage's National Monuments Records in Swindon were also reviewed.

3.2 Report Objectives

3.2.1 This report aims to identify and assess such archaeological remains as may be threatened by construction and other works associated with the redevelopment at the site.

3.2.2 The Desktop Assessment usually forms the first stage in the process of archaeological assessment and may, if the quality of the archaeology and the perceived threat warrants it, be followed by further mitigation measures.

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[4] English Heritage, 1992
[5] IFA, 1993
[6] www.lincolnshire.gov.uk/lccconnect/highways/heritage/archaeology/handbook.htm, 1998

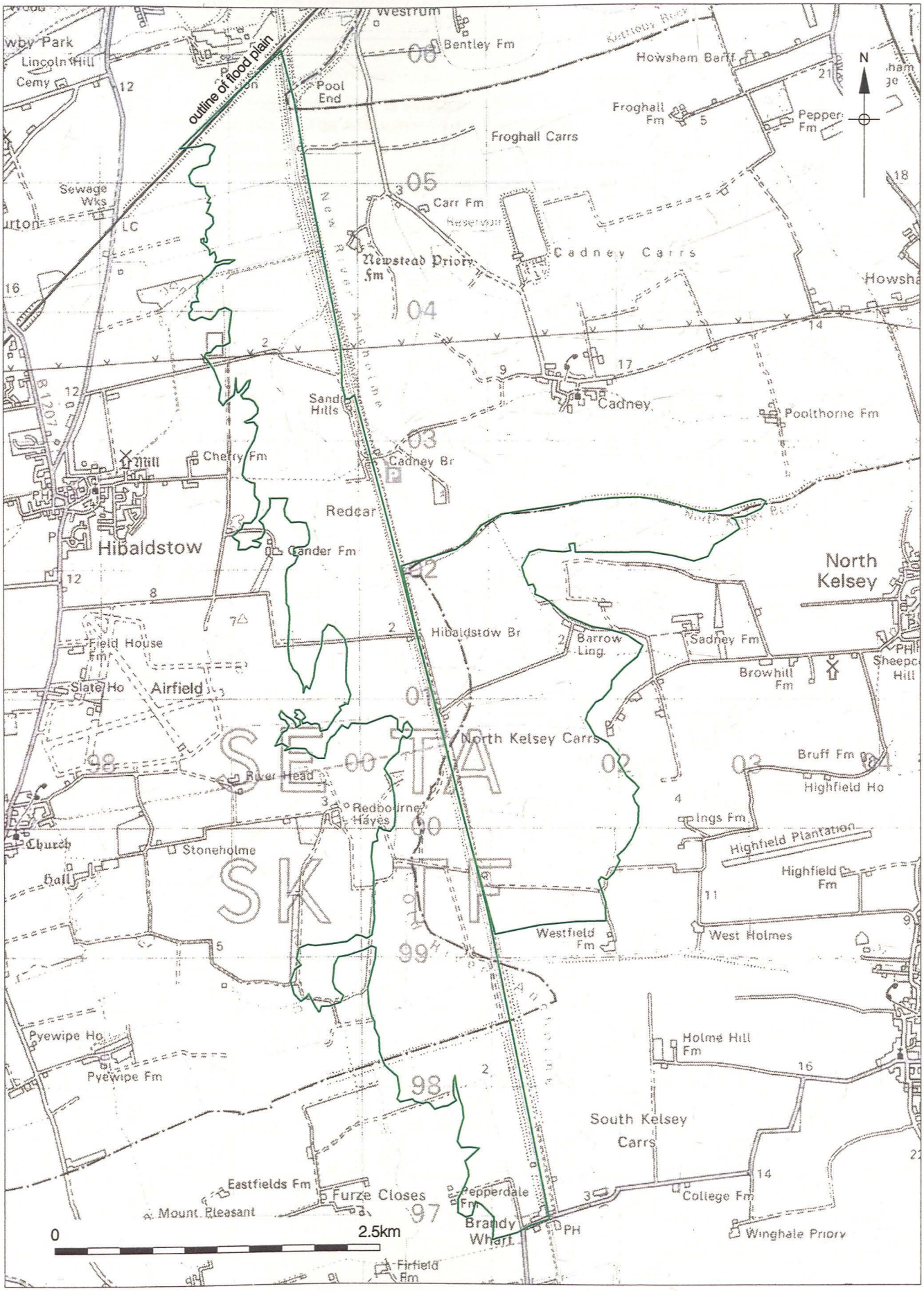

Figure 1
Location of flood plain
1:40,000

4 THE SITE

4.1 The Upper Ancholme Valley is situated in North East Lincolnshire, south east of Scunthorpe (fig.1). The Ancholme River flows into the Humber at South Ferriby. The valley bottom is very flat, with Lincoln Edge rising to the west and the Lincolnshire Wolds to the east. It is currently used mostly for arable farming, and the main market town of the area is at Brigg, directly to the north of the study area.

4.2 The proposed flood relief zone occupies a major part of the Upper Ancholme Valley (fig. 1). The zone is defined by the lowest lying land within the valley floor, much of it at a level of 1-3m OD. The study area is bordered to the north by the east-west railway line and to the south by Brandy Wharf village. The proposed flood relief zone extends 1 km west of the New River Ancholme and a 3km long section extends 2km to the east of the river at North Kelsey Carrs. The proposed development is centred at National Grid Reference TA 0077 0138, and covers a maximum of 450 hectares[7].

4.3 The site has historically been prone to flooding, and has been subjected to drainage procedures since the 13th century. The study area already has a number of flood control measures in place, and the Ancholme River has been straightened and embanked since the 17th century.

5 THE PROPOSED SCHEME

5.1 The objective of the proposed development is to prevent overtopping of the existing defences at Brigg during flood events. It is proposed to have controlled flooding of the upper part of the valley, which is mainly agricultural land, to prevent more serious damage within the urban area of Brigg.

5.2 The proposed scheme includes the excavation of the existing flood banks to the designed weir level of 2.2m OD and inserting two new weirs of 500m length with flexible scour protection (figs. 2 and 3). These works are located directly to the east of the current River Ancholme.

5.3 Other accommodation works include local drainage, highway works and fencing, and erosion protection works for the flood storage area and channel bed which may include concrete block revetment or geotextile reinforcement. Local access to the weirs would also need to be constructed and the strengthening and levelling of all the embankments forming the line of defence would need to be carried out.

[7] Pers. Comm. Posford Haskoning

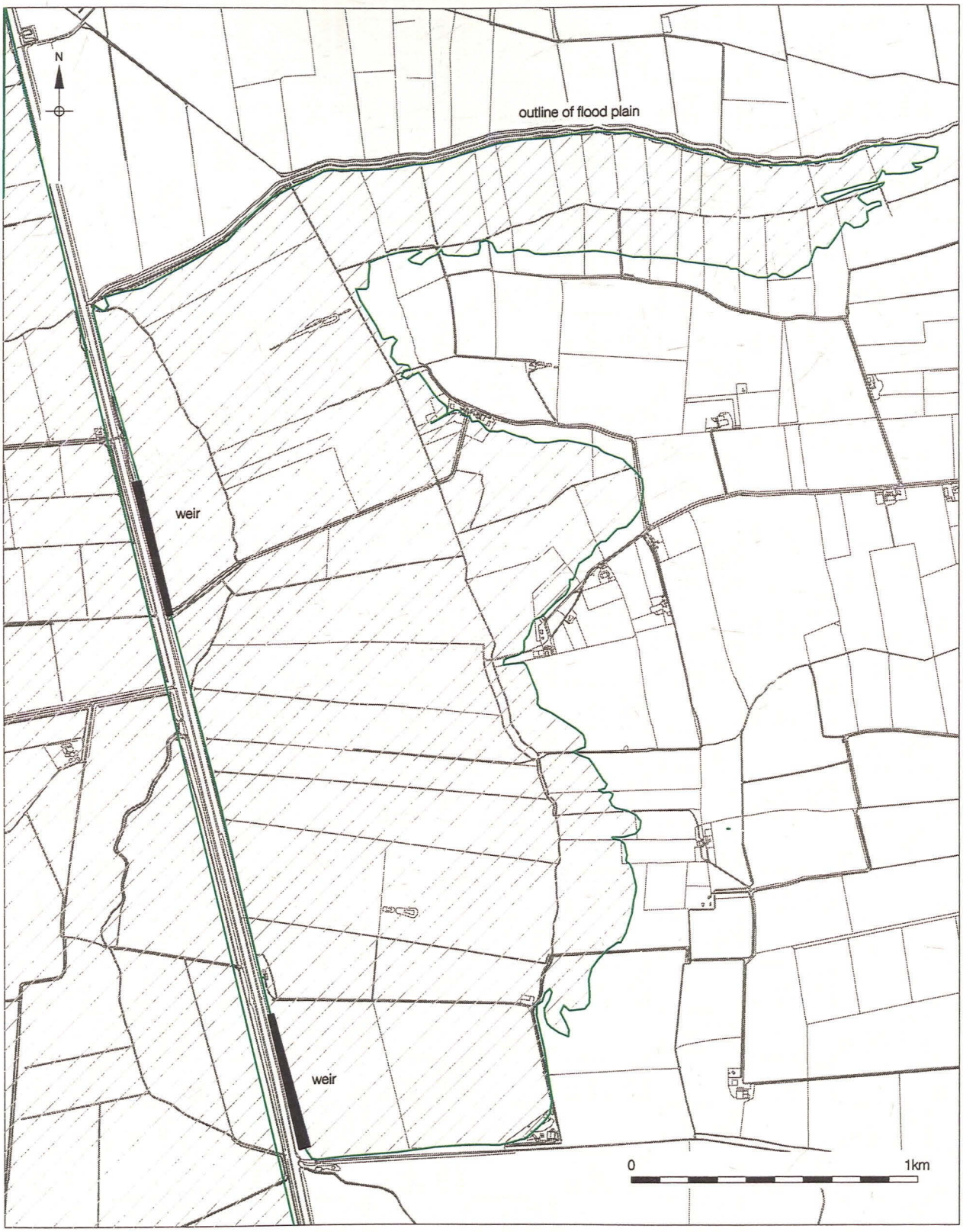

Figure 2
Location of weirs
1:20,000

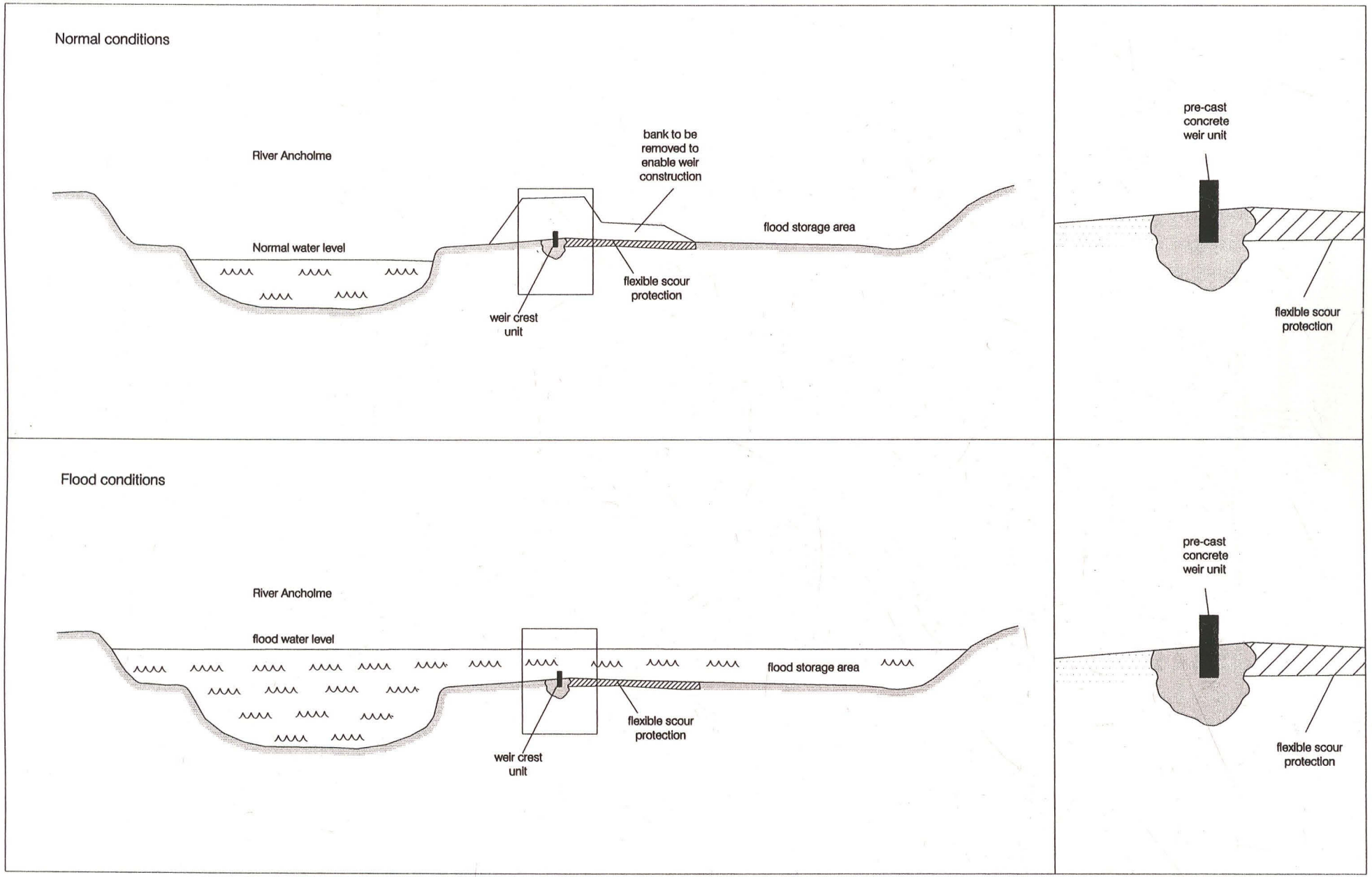

Figure 3
Schematic representation of proposed weirs
Not to scale

6 PLANNING BACKGROUND

6.1 Archaeology in Lincolnshire

6.2 The study aims to satisfy the objectives of Lincolnshire County Council, and North Lincolnshire County Council which recognise the importance of the buried heritage for which they are the custodians. The present consultation draft (amended 1997) of the Lincolnshire County Council Structure Plan below, defines the principal policies which provide a framework for the consideration of development proposals affecting archaeological and heritage features.

Policy 78

Provision will be made to ensure that the character and appearance of the historic built environment is protected and/or enhanced, in particular:

Listed buildings should be protected from demolition, inappropriate alteration or other adverse change to their character or setting.

Conservation areas and their settings should be protected from development damaging to their character

Policy 80

Development adversely affecting an archaeological site of national importance (whether scheduled or not), or its setting will not normally be permitted.

Development affecting an archaeological site of regional or local importance will be considered having regard to its intrinsic importance and the need for the proposed development.

Where development is permitted, satisfactory arrangements for the preservation in situ of archaeology within the development, or (where appropriate) the excavation and recording of the archaeological remains will be required[8].

6.3 With respect to the present Local Plan (May 2003) of the North Lincolnshire County Council, the principal policies relating to archaeological and heritage features are included below:

Archaeology

14.35 Archaeological remains are a finite and non-renewable resource and form an important part of our national heritage, valuable for their own sake and for their role in education and tourism. They contain irreplaceable information about the past and are highly vulnerable to damage and destruction.

14.36 The Secretary of State for Culture, Media and Sport compiles and maintains a Schedule of Ancient Monuments (SAMs) which have statutory protection under the Ancient Monuments and Archaeological Areas Act 1979. These are monuments of national importance and their preservation from the effects of development is extremely important. It is an offence to damage these sites. Consent is required from the Secretary of State before any works are carried out on these sites. Owners of SAMs, or developers, should consult with English Heritage on any proposals prior to applying for the relevant planning permission.

[8] Lincolnshire Archaeology Handbook, www.lincolnshire.gov.uk/lccconnect/highways/heritage/archaeology/handbook.htm, 1998

A copy of the Schedule of Ancient Monuments is retained by the Council and currently contains 38 entries. These represent the scheduled sites known at the time of the plan preparation. Policy HE8 will apply to all Scheduled Ancient Monuments whether or not depicted on the proposal maps. It should be noted that not all nationally important remains meriting preservation will necessarily be scheduled.

14.37 Government advice in PPG16 Archaeology and Planning states that where nationally important archaeological remains, whether scheduled or not, and their settings are affected by development, there should be a presumption in favour of their physical preservation. Local Plans should therefore include policies for the protection, enhancement and preservation of sites of archaeological interest. The prime objective is the preservation of the remains in situ.

14.38 North Lincolnshire Council maintains and continually updates a database of known archaeological sites and finds for the area. This is known as the North Lincolnshire Sites and Monuments Record (SMR) and has been formally adopted by the Council. In addition to the 38 Scheduled Ancient Monuments, North Lincolnshire's SMR has just over 3,000 records of sites of archaeological interest. These include standing monuments, earthworks, findspot locations and sites recorded by aerial photography. Information about many sites is limited because of theis below-ground nature. As well as protecting known archaeological sites, it is important to ensure that new archaeological evidence is not destroyed by development.

HE8-Ancient Monuments

Development proposals which would result in an adverse effect on Scheduled Ancient Monuments and other nationally important monuments, or their settings, will not be permitted.

HE9-Archaeological Evaluation

Where development proposals affect sites of known or suspected archaeological assessment to be submitted prior to the determination of a planning application will be required. Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them.
Sites of known archaeological importance will be protected. When development affecting such sites is acceptable in principle, mitigation of damage must be ensured and the preservation of the remains in situ is a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before and during development.

14.39 In accordance with PPG 16, the planning authority will require sufficient information from applicants to assess the potential impact of their proposals on any archaeological remains and their settings. This will enable informed planning decisions to be taken. In some cases, an archaeological assessment will be required which may comprise a desk based study, or fieldwork including geophysical survey and limited trial trenching. To avoid potential delays in determining planning applications, developers are strongly recommended to include, as part of site feasibility research, an initial investigation to establish whether the site in question is known to contain or likely to contain any archaeological remains. SMR staff check all planning applications against the record in order to determine their potential effect on

Scheduled Monuments or sites of archaeological importance and will advise the planning authority of the appropriate course of action.

14.40 Developers are therefore advised to consult the SMR at an early stage when considering development proposals to discuss the potential archaeological implications. Developers may wish to commission a professional archaeological consultant to undertake this consultation on their behalf. This early liaison allows developers to make financial and timescale provision for any archaeological requirements.

14.41 Where development sites are shown to contain significant archaeological remains which would be adversely affected, the planning authority will need to be satisfied that adequate mitigation measures will be implemented. The preferred option for important archaeological remains is preservation in situ; this may be achieved by modification of proposals where appropriate, for example changes in site layout or redesign of foundation construction.

14.42 Where the preservation of the site in situ is not feasible, evidence will be required to demonstrate that the developer has made appropriate and satisfactory provision for the recording of the remains, in consultation with officers of the SMR who will advise the planning authority. Preservation by record can take place either in advance of or during development and may involve full scale excavation followed by post-excavation analysis and publication of results. Planning conditions or legal agreements will be used to secure this work[9].

6.4 There are three Scheduled Monuments within the study area. These include a monastic fishpond complex at North Kelsey Grange (SMR 50500/SAM 31617), a moated site at South Kelsey Hall, which is believed to be 14th century (SMR 53507/SAM 31618) and a Civil War gun emplacement near South Kelsey Hall (SMR 53511/SAM 31618). There is one Grade I Listed Building at Newstead Priory farmhouse (SMR 2350) and several Grade II Listed Buildings (Appendix 1) within the study area.

[9] Pers. Comm. Alison Williams, North Lincolnshire Museum

7 GEOLOGY AND TOPOGRAPHY

7.1 The Geological Map for Lincolnshire indicates that the majority of the study site lies within an area of estuarine alluvium, with peaty areas at its southern and eastern extent.

7.2 Overlying the bedrock in this area are more recent deposits of the Quaternary age, mostly of the last Glacial (Devensian) period and subsequent post-Glacial phase. The areas of estuarine alluvium defined above formed during the sea level rise of the Holocene period and can be up to 9m thick. This led to a change in the landscape from incised river valleys to a landscape of alluvium and peat growth[10].

7.3 Much of the study area contains two layers of peat, with a layer of grey clay/alluvium c.1m thick sandwiched between them. The top of the lower peat and the clay/alluvium dates to the Bronze Age/Iron Age transition period, and the upper peat may be Roman in date[11].

7.4 The area has been subjected to drainage schemes since the medieval period, and under Charles II, in 1626, a programme of drainage of the Fens was begun. In the Ancholme Valley, drainage was undertaken by Sir John Manson, a local landowner. After the area relapsed into marsh, Sir John Rennie was appointed in 1801 to create a better system of drainage, which involved the straightening of the river in 1825, when it was also made wider and deeper. By 1844, the river was effectively embanked, and major land reclaimation for farming began.

7.5 The area today is extremely flat, with Lincoln Edge rising to the west and the Lincolnshire Wolds to the east. There are topographic constrictions of the river valley at Brigg and Redbourne. Current ground level in the proposed flood spillover areas is approximately c. 1-3m OD. Small areas of higher ground can be found at Redbourne Hayes, Hibaldstow, and the moated manors of North and South Kelsey. The New River Ancholme is embanked and runs in a straight line north to south down the valley towards the Humber. The Old River Ancholme remains as a shallow meander around the new river.

[10] Ellis. S 1998, pp 9-12 in Van de Noort and Ellis, 1998
[11] Neumann, H 1998, p 77, in Van de Noort and Ellis, 1998

8 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

8.1 Introduction

8.1.1 In order to assess the potential of the archaeology within the areas of redevelopment an examination of all archaeological entries in the Lincolnshire and North East Lincolnshire Sites and Monuments Records has been made (fig. 4, app. 1). This information is supplemented by other archaeological, documentary, and cartographic sources.

8.1.2 The intention of the SMR search is to locate known archaeological sites and to predict and extrapolate the likely archaeological conditions within the development areas from finds made nearby. This latter analysis is important, as many entries onto the SMR result from chance discoveries and are at best a small and unrepresentative sample of the total buried heritage.

8.1.3 An intensive programme of archaeological field survey took place from 1996-1997[12] in four map areas of the Ancholme Valley, one of which, at Redbourne, is within the current study area. The field survey included field walking and environmental core sampling. Although the field survey has provided extremely useful information for this report, the SMR results have been affected by the results of the field survey, and therefore the higher concentration of finds from the Redbourne area does not necessarily reflect the true distribution of the archaeology of the study area (fig. 5). Conversely, these results illustrate the wealth of archaeological material as yet unidentified within this area.

8.1.4 A search has also been carried out of the Aerial Photographs held at English Heritage's National Monuments Record at Swindon. The area has been extensively surveyed by the Aerial Photographic team and many cropmarks are recorded in the area of the Ancholme Valley, the results of which are included within this study (fig. 6, Appendix 1).

8.1.5 Future archaeological investigation within the proposed study area and/or further research may result in a significant change to the baseline data, which then in turn, may greatly affect the archaeological potential of the proposed development site.

8.2 Palaeo-Environmental

8.2.1 Heike Neumann has carried out much palaeo-environmental work within the study area[13], and the results are summarised below.

8.2.2 The earliest date for the lower peat development in the Ancholme Valley is 5320-4860 cal BC, at a level of –4.59 to –4.62m OD, within the palaeochannel of the River Ancholme. It is likely that the palaeo-Ancholme stayed in its early Holocene channel throughout its existence. By 4000 cal BC (early Neolithic), the water table was higher, and the peat formation spread to the valley bottom. This peat formation continued to c. 1500 cal BC (Bronze Age), by which time the mire vegetation had changed from a fen carr to a reed swamp.

8.2.3 The pollen evidence shows that the Ancholme Valley was heavily wooded, with clearance evidence from Brigg dating to 2580-2330 cal BC. The area became a saltmarsh in the Bronze Age/Iron Age transitional period, which in turn led to the formation of a layer of clay.

8.2.4 A layer of peat formed over the clay during the Roman period, and may be linked with a rise in sea level following a drier episode. The grey clay sediments overlying the

[12] Van de Noort and Ellis, 1998
[13] Neumann, H, 1998, pp75-101 in Van de Noort and Ellis, 1998

upper peat show a change to freshwater formation, probably from increased runoff from the newly deforested slopes of the valley. All three layers provide extremely good preservation of palaeo-environmental material.

8.3 Prehistoric

8.3.1 The Palaeolithic period is represented in the study area by a single unretouched flint flake from St Mary's Priory (SMR 14718). A larger number of Neolithic finds are recorded, including a polished greenstone axe from Redbourne (SMR 2389), a small polished stone axe from Hibaldstow airfield (SMR 17876) and five flint axes from North Kelsey. During the field survey of Redbourne[14] a large number of flint finds and scatters were added to the SMR records and these have all been dated to the Early Neolithic–Bronze Age.

8.3.2 Excavations at Hopfield, Hibaldstow (fig. 6, no. 100), revealed a series of blades and blade like flakes characteristic of later Mesolithic or early Neolithic flint working in the area, although this was interpreted as debitage from a small mobile unit rather than evidence of settlement. The excavations also revealed a pair of ring ditches dating to the late Bronze Age and the settlement was interpreted as the home of an extended family. Environmental evidence indicated the presence of a mixed farming economy with some evidence of woodland clearance. The settlement was located at 5.5m OD on a slight rise, to the south east of the modern day settlement of Hibaldstow[15].

8.3.3 At Broughton, to the north west of the study site, eight barrows are recorded. These have now been ploughed completely flat, but were excavated by Joseph Moore in 1850 and described by Arthur Trollope in 1851. Before excavation some ploughing had taken place, but the mounds were still extant to a height of 0.7-1.5m high and 20-30m in diameter. They were dated by their pottery to the later Neolithic or early Bronze Age[16]. Barrows of the Bronze Age appear to be concentrated along the eastern flank of the Limestone ridge and the Ancholme and Witham river valleys on the higher ground, possibly for visual impact or maybe to define boundaries[17].

8.3.4 In 1888 a 'raft' of Bronze Age/Iron Age transition date was found 1.5 km north west of Brigg, to the north of the study site, during clay digging for brickmaking. It was only partially lifted at the time, and was re-excavated in 1973. It was found within the grey clay and dated to 823-789 cal BC. Palaeo-environmental evidence from below the raft indicated that the area was covered by reed swamp at this time[18]. The 'raft' was flat and rectangular in construction and was probably used as a ferry, with a paddle or pole. It may have operated from the estuarine channel possibly from a pier or jetty, as yet not located. It was deposited at a time when the local sea level was at a maximum[19]. The raft was located 1.8m below present ground surface[20].

8.3.5 Evidence for a crude trackway dated to the later Bronze Age was found close to the 'raft' in 1884 and 1933[21], but this remains largely undocumented[22].

8.3.6 A dugout canoe was found 500m from the 'raft' in 1886, but unfortunately it was destroyed during a museum fire in 1942. The canoe measured 14.78m in length was 5.50m wide and has tentatively been dated to the 9th century BC but may be earlier[23].

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[14] Van de Noort and Ellis, 1998
[15] Allen, M. & Rylatt, J. 2001, p. 14
[16] May, J., 1976, p. 73
[17] Membery, S. 2003, p.3 www.le.ac.uk/archaeology/east_midlands_research_framework.htm
[18] Lillie, M. 1998, p. 77 in Van de Noort and Ellis, 1998
[19] Ellis, S. & Crowther, D. 1990, p. 119
[20] McGrail, S. 1981, p. 12
[21] Van de Noort, R., Fenwick, H. and Head, R. 1998, p. 126, in Van de Noort and Ellis, 1998
[22] Membery, S. 2003, p.5 www.le.ac.uk/archaeology/east_midlands_research_framework.htm
[23] Ellis, S. & Crowther, D. 1990, p. 116

8.3.7 In total, at least thirty dugout canoes have been recovered from the peat and alluvium in the Welland, Nene, Trent and Ancholme Valleys, the example from Brigg being the largest[24]. These finds illustrate the potential of the peat and clay layers to contain important prehistoric material.

8.3.8 A bog body was found at Asby Moor near Brigg, and recorded in the minutes of the Spalding Gentlemen's Society in 1724. It was described as the skeleton and skin of a man found upright with a sketch of a double looped axe of Late Bronze Age date[25].

8.3.9 Ancholme derives from the Celtic '*Oncel*' meaning marshy river. There are no other recorded Iron Age finds from the study area except three ditch sections recorded at Winghale Priory (SMR 53496) during gravel extraction. Pottery found here dated to the Iron Age and Romano-British periods. The Iron Age settlements of Lincolnshire tend to be spaced 15-20 miles apart, on the higher ground of the limestone uplands, and are therefore likely to be located outside the study area[26].

8.3.10 At Fiskerton in the Witham Valley, a very similar area to the Ancholme Valley, two Iron Age log boats were recently found, along with a large number of ritual artefacts. The Witham River is a major focus of ritual activity, especially at Fiskerton where the Barlings Eau and the Witham converge. Material recovered from the site included an extremely well preserved log boat, found wedged into a wooden causeway. The boat was perfectly preserved and had never been used. It was dated to 457-321 BC. The other log boat found was in a much poorer condition, having been exposed in the 19th century, and was dated to the late Iron Age or early Roman period. Both were located within a layer of peat 2m thick. The causeway was exposed for 600m and was very well preserved. Other finds included 7 La Tène swords, 59 bone spear points, 8 iron spears, one with a complete shaft, 7 axes, saws, scabbard and shield fittings[27].

8.4 Roman

8.4.1 The Roman road Ermine Street passes to the west of the study site and there was a Roman settlement at Hibaldstow. Occupation here began in the late first century and continued until the fourth century with no evidence of previous Iron Age settlement. Excavation by B. Whitwell here in the 1990's suggests that there may have been tile production in the vicinity, and some evidence for iron smelting, and that the settlement extends south along Ermine Street[28]. Within the upper peat at Redbourne, a trackway was recorded by Atkinson in 1884, 'an ancient road carried on oak piles'[29]. This may have been part of the Roman link road from Ermine Street to Caistor[30], which could include Station Road in North Kelsey and which probably crosses the Ancholme between Hibaldstow and North Kelsey, within the study area.

8.4.2 There are Roman villas at Worlaby and Horkstow to the north of the study site, located on the higher ground. Roman pottery has been found at the site of Winghale Priory and at North Kelsey (SMR 53540). Linear and curvilinear ditches visible on an aerial photograph at Redbourne may be Romano-British.

8.5 Saxon and Viking

8.5.1 Around the start of the 7th century, the smaller tribal groups of the area joined together to form the kingdom of Lindsay. Lindsay was a disputed kingdom and changed hands between Mercia and Northumbria a number of times before coming under Mercian

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[24] May, J., 1976, p. 116
[25] Van de Noort, R., Fenwick, H. and Head, R. 1998, p. 127, in Van de Noort and Ellis, 1998
[26] Membery, S. 2003, p.6 www.le.ac.uk/archaeology/east_midlands_research_framework.htm
[27] Pers. Comm. Jim Rylatt, PCA Lincoln
[28] Whitwell, B., 1995, p. 98
[29] Chapman, Head, Fenwick, Neumann & Van De Noort, 1998, p. 213 in Van de Noort and Ellis, 1998
[30] Van de Noort, R., Fenwick, H. and Head, R. 1998, p. 127, in Van de Noort and Ellis, 1998

control after the Battle of the Trent, 679[31]. The Ancholme Valley functioned as a major administrative boundary, dividing Wapentakes, Archdeaconries and the North and West Ridings of Lindsey[32].

8.5.2 The Saxon period is under-represented within the study area, but there are a few references of note. The foot of a cruciform brooch was found north east of Redbourne Hayes (SMR 17880), and pottery from Thornton Road, South Kelsey is of 10th-12th century date (SMR 53508). During a watching brief at Silver Street in Waddingham, 8th-10th century pottery was recovered (SMR 50799).

8.5.3 The possible site of the Anglo Saxon monastery of St Hygbald is located near Hibaldstow (SMR 15915). Bede tells us of 'a certain holy and abstemious man named Hygbald, who was abbot in the province of Lindsay', and in the list of Saints' resting places, Higebold's remains are recorded at Cecesege on the River Oncel [Ancholme]. Presumably Cecesage is in the vicinity of Hibaldstow[33].

8.5.4 The first documented Viking attack on Lincolnshire was in 841, and increased raiding followed until the overwintering of the Great Viking Army at Torksey in 872-3, creating political instability in the region until the mid 10th century[34]. However, no Viking sites or artefacts have yet been identified in the Upper Ancholme Valley.

8.6 Medieval

8.6.1 The settlement pattern in the medieval period in this area was characterised by a large number of nucleated villages. The village settlement was concentrated along the spring line of the Wolds escarpment and the dipslope of Lincoln Edge. The riverside itself was not extensively settled, which was probably due to regular flooding of the Old River Ancholme. The area during the medieval period was not a rich one, and by the 1340's, the smaller documented tax payments would appear to reflect the inhabitants of the Ancholme Valley's poverty. The concentration of small hamlets and villages on marginal agricultural land meant that settlements had no space to grow, despite the larger numbers of people to sustain[35]. The lowland areas were used predominantly for grazing, with the grain producing areas sited along the limestone cliff and uplands[36].

8.6.2 More widespread flooding from the 13th century led to depopulation of some of the villages and the loss of farmland[37]. The river crossings were confined to Brigg and Horkstow, further north of the study area. Drainage of the valley took place under Edward I in 1288, and in 1294 attempts were made to straighten the course of the Ancholme to allow cargo boats through to the Humber. Dredging of the river began as early as 1312, and drainage of the area was a problem throughout the medieval period[38]. The medieval religious houses of the area were probably beneficial in maintaining effective drainage, up until the Dissolution.

8.6.3 Brigg, to the north of the study area, was a deliberately developed 'new town' of the 12th and 13th centuries, at the corner of four parishes. It was a focus for the region due to its location on the main route from Lincoln to the Humber Ferry. It was also located at a natural narrowing of the river valley and had a large corn market during the medieval period.

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[31] Albone, J. p. 2 www.le.ac.uk/archaeology/east_midlands_research_framework.htm
[32] Van de Noort, R., Fenwick, H. and Head, R. 1998, p 129, in Van de Noort and Ellis, 1998
[33] Sawyer, P., 1998, p. 64
[34] Albone, J. p. 2 www.le.ac.uk/archaeology/east_midlands_research_framework.htm
[35] Platts, 1985, p. 159
[36] ibid, p. 108
[37] Van de Noort, R., Fenwick, H. and Head, R. 1998, p 129, in Van de Noort and Ellis, 1998
[38] Neumann, H. 1998, p 76, in Van de Noort and Ellis, 1998

8.6.4 Cropmark evidence visible mostly from aerial photographic survey, indicates a large amount of medieval ridge and furrow plough markings within the study area and its vicinity. This evidence can be used to mark areas of agricultural activity during the medieval period.

8.6.5 A number of monastic sites have been noted within the study area. The site of the Gilbertine Priory of St Mary, believed to have been built before 1164, is located in the vicinity of Redbourne Hayes (SMR 2374). In the Parish of Cadney, on the east side of the Ancholme, is Newstead Priory, just to the north of the study site. It was founded by Henry II in 1173, and at the Dissolution the land was given to Robert Heneage[39]. It was endowed with the island of Ruckholme, on which it is located, and with other lands in Cadney and Hardwick. King John added land at Housham[40]. Preserved in the current Grade I listed farmhouse is a 12th/13th century undercroft which probably belonged to the original Priory[41] (SMR2350), but the rest of the site has suffered badly from ploughing. The site is linked to the west side of the Ancholme by a causeway and may have had facilities for transport or trade on the river.

8.6.6 North Kelsey, to the east of the study area, is documented as a large village from 1086 onwards and includes two medieval manors, Northall and Easthall (which may be located near to the current Easthall Farm). A large amount of 13th and 14th century pottery has been found in the area, including Torksey wares and Lincoln wares. At North Kelsey Grange, to the south of North Kelsey village, a group of fishponds and small tanks may mark the location of an early 13th century Grange of the Gilbertine Priory of North Ormsby. The fishponds have an unusual and complex system of water management and may include a fish breeding tank site (SMR 50500, Scheduled Ancient Monument 31617). The Grange was built over earlier ridge and furrow system. There are also rectangular enclosures seen as crop marks to the north of the Grange.

8.6.7 South Kelsey, to the south of the study area, was a large rural settlement during the medieval and later period. Trial trenching carried out in the area revealed enclosures of the later medieval period and pottery dating to the 10th-15th centuries (SMR 53508). High status imported pottery may be connected to South Kelsey moated manor. This site is located at a level of 22m OD, on a rise of boulder clay (SMR 53507). Winghale Priory originally owned the land, but in 1321 it passed to the Ayscough family of Stalingborough who altered the site and rebuilt many of the buildings[42]. By 1591, it extended to almost three acres and comprised the manor house, moat, garden, orchard and a courtyard.

8.6.8 To the south west of South Kelsey is the Priory of Winghale, (SMR 50266) established before 1086 as an alien Benedictine priory cell of St Martin at Sées. It is named in the Domesday survey as the '*ecclesia* of Wingeham'. By the 13th century, the Priory owned one carucate of land in South Kelsey, the advowson of the church there and the pensions of other churches in the area. The Priory was taken into the king's hands in the 14th century and was given to Trinity College, Cambridge by 1461. Inhumations without grave goods have been discovered on the site since the 19th century, during gravel extraction south of the current farm. Six skulls have also been found north of the current farm[43]. The site is now marked only by a fishpond complex, and the Priory buildings are believed to be located beneath the current farmhouse[44].

8.6.9 At Redbourne, the remains of a possible small castle are located next to the church (SMR 2377). A hall and great fishpond are located to the south east of Redbourne.

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[39] Rennie, 1845, p. 5
[40] Exley, C.L., 1934, p. 348
[41] Van de Noort, R., Fenwick, H. and Head, R. 1998, p 140, in Van de Noort and Ellis, 1998
[42] Everson, Taylor & Dunn, 1991, p. 170
[43] Everson, Taylor & Dunn, 1991, p. 170
[44] ibid.

8.7 Post-Medieval

8.7.1 Under Charles II, in 1626, a programme of drainage of the Fens was begun, and in the Ancholme Valley, drainage was undertaken by Sir John Manson, a local landowner[45]. By the spring of 1639, Manson had drained the area in return for 5827 acres of land[46]. However, by 1769, the area was relapsing back into swamp, and new Commissioners were appointed to build a sluice at Ferriby and to straighten and improve the Ancholme. A canal was constructed from the Ancholme to Caistor, in 1793, which included five locks, most of which are still complete (SMR 52709). The second phase of drainage was completed but proved to be ineffective, leaving the land unsuitable for tillage and still prone to flooding. There does not appear to have been a system of wet or dry 'warping' as took place in the neighbouring lower Trent valley.

8.7.2 Sir John Rennie was appointed in 1801 to create a better system of drainage, which involved the straightening of the river in 1825, when it was also made wider and deeper. By 1844, the river was effectively embanked, and major land reclamation for farming began. This period also signified the beginning of clay digging for bricks especially at Brigg, which subsequently revealed the archaeological deposits contained within the clay.

8.7.3 The Ancholme was dredged in the 1930's which allowed the fields to dry out more quickly, and industrial water pumping began at Brigg. These measures reduced the water table considerably, leading to the drying out of the upper peaty layer.

8.7.4 Other post medieval features in the area include a late Georgian complex of buildings at Brandy Wharf, including a wharf, slipway, warehouse, road bridge and inn. At South Kelsey, the moated manor remained in the hands of the Ayscough family until the end of the 17th century. During the Civil War Royalists attacked the house, as it was occupied by Sir Edward Ayscough, a leading Parliamentarian. A 17th century Civil War gun emplacement (SMR 53511) dates to this period. At the end of the 17th century the house passed to the Thornagh family. At the beginning of the 19th century, the house was demolished and replaced by the present farmhouse.

8.7.5 At the end of the 18th century, much of the land in the area was enclosed (figs. 7,8,9,10), creating many of the field systems and boundaries still in use today. Settlement became sparser, characterised by small farmsteads and villages, a pattern of rural depopulation that continues through until the present.

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[45] Beckett, J., 1988, p. 125
[46] Rennie, J., 1845, p. 5

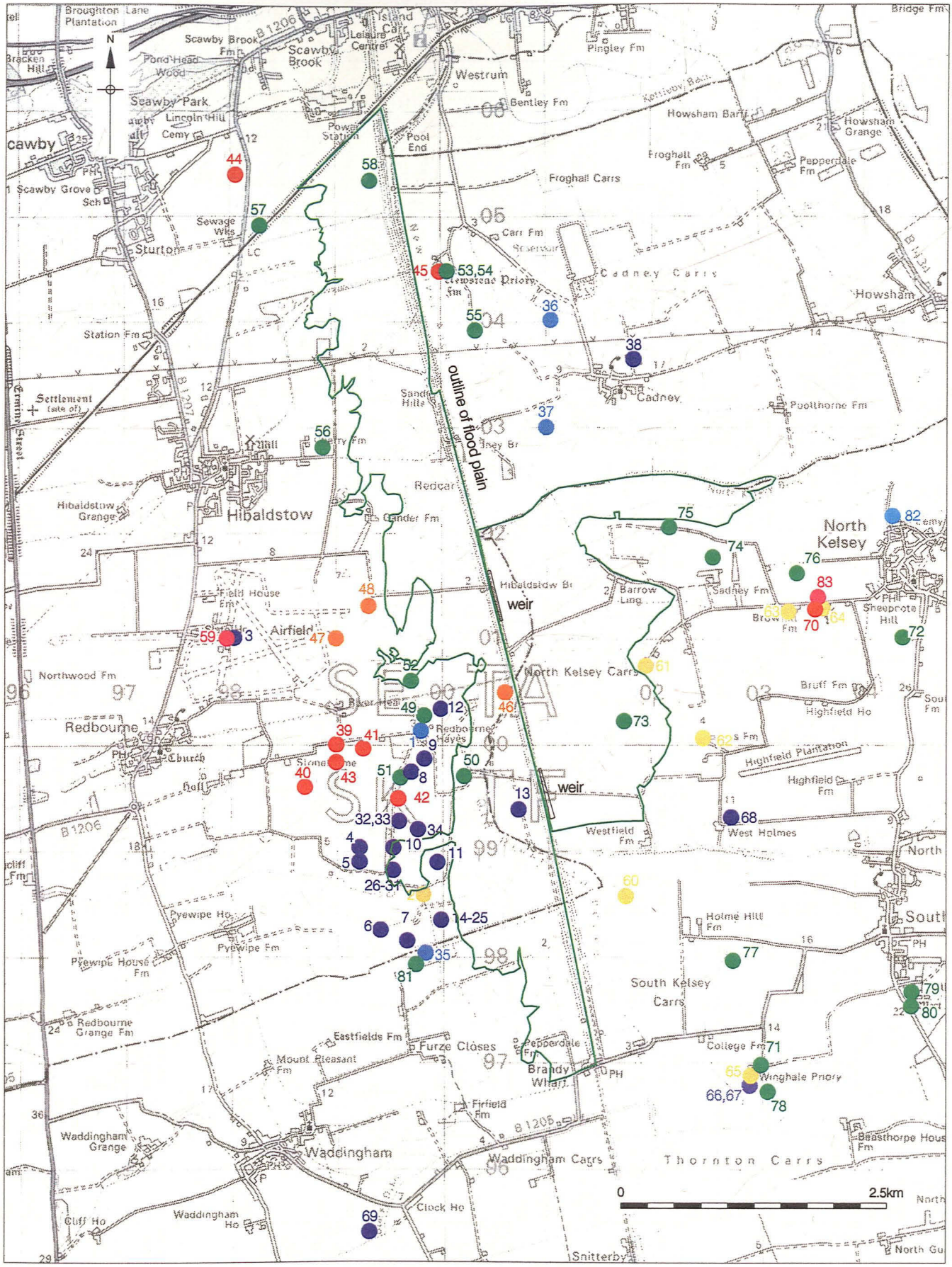
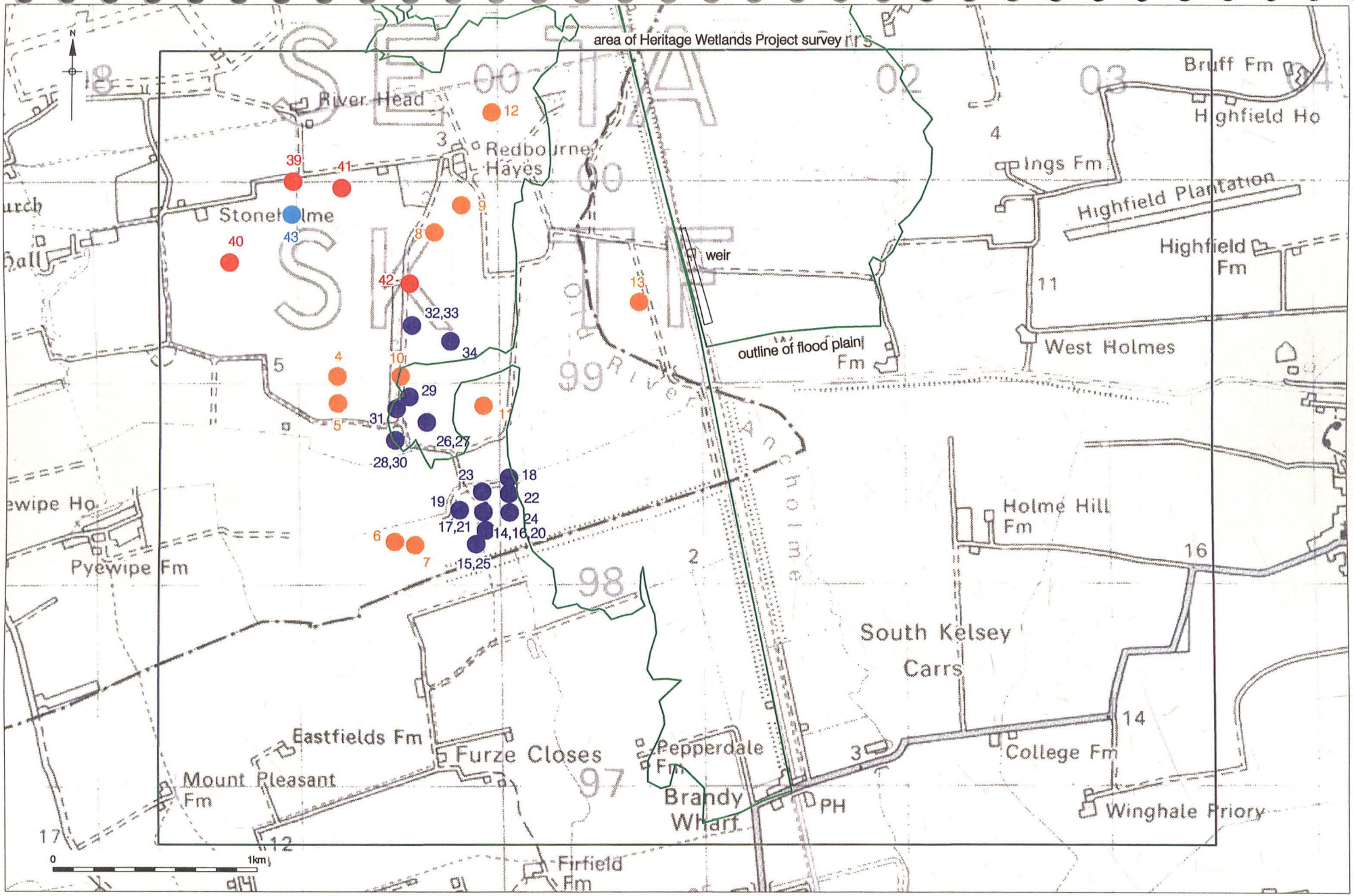


Figure 4
SMR Locations
1:50,000



- early Neolithic to Bronze Age flint findspots
- early Neolithic to Bronze Age flint scatters
- Roman pot sherds
- Roman ditches

Figure 5
SMR Locations within Heritage Wetlands project survey
1:25,000

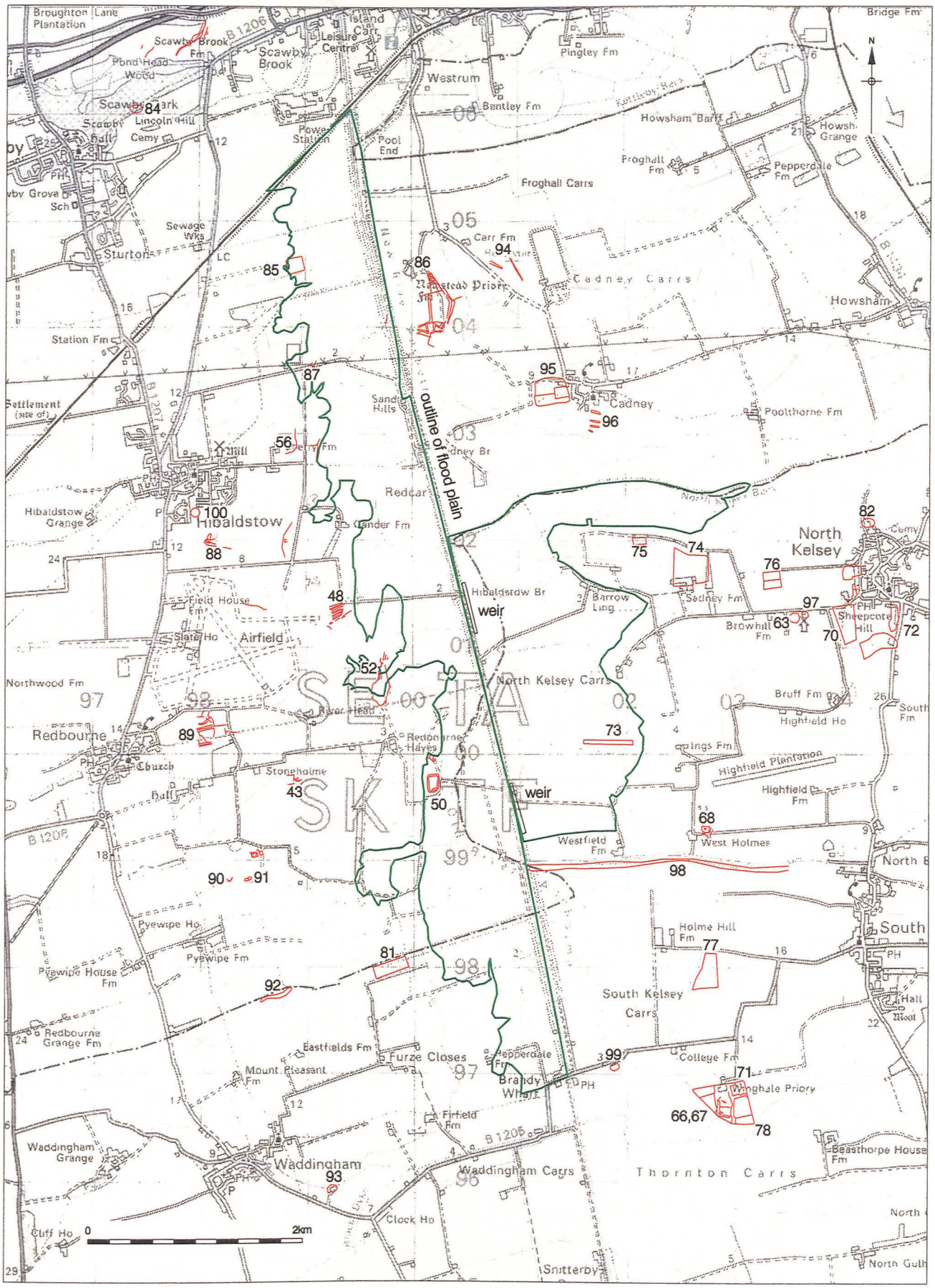


Figure 6
Cropmark Locations
1:50,000

Figure 7
1771 Enclosure Map of Scawby
1:25,000

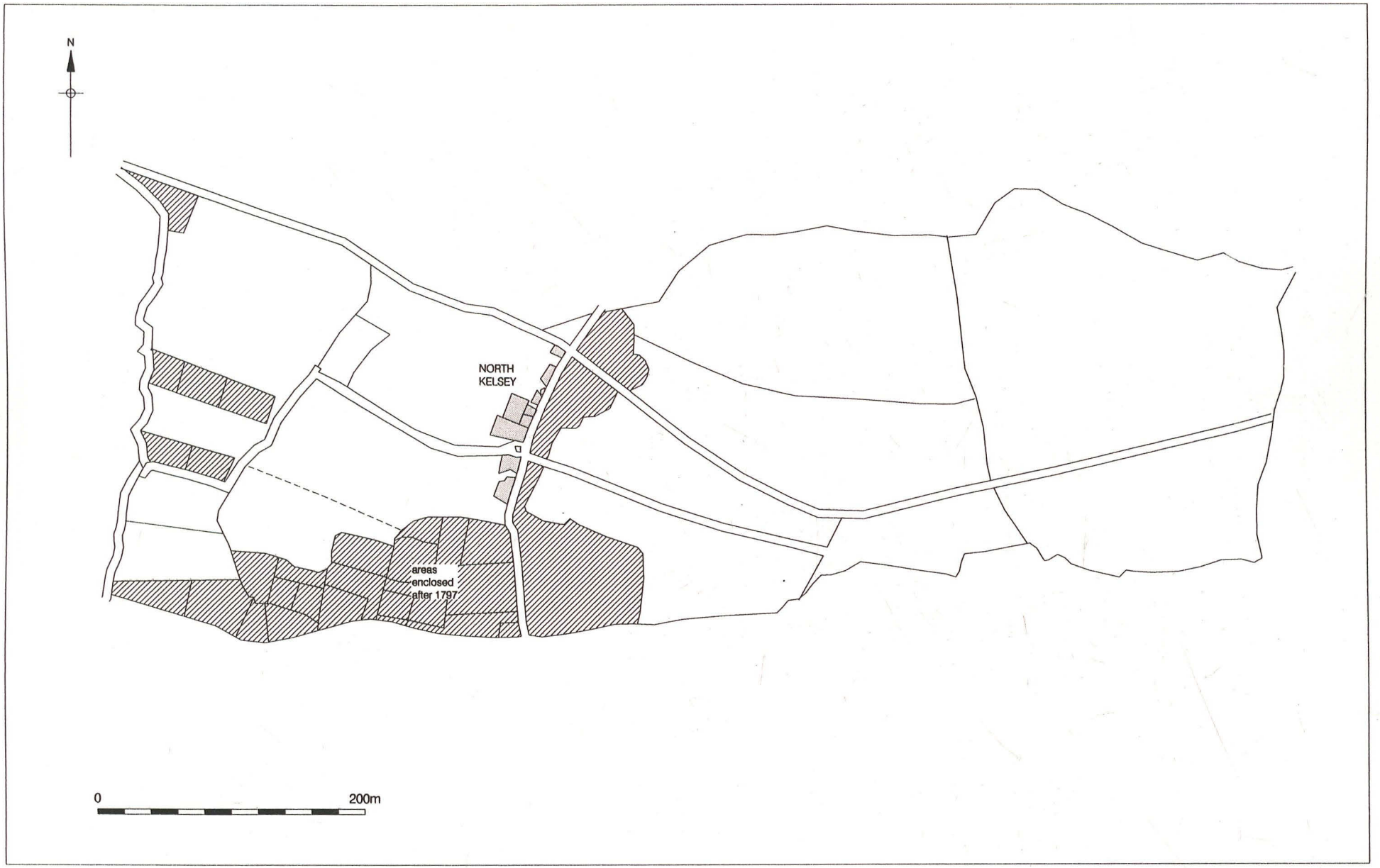


Figure 8
1779 Enclosure Map of North Kelsey
1:4000

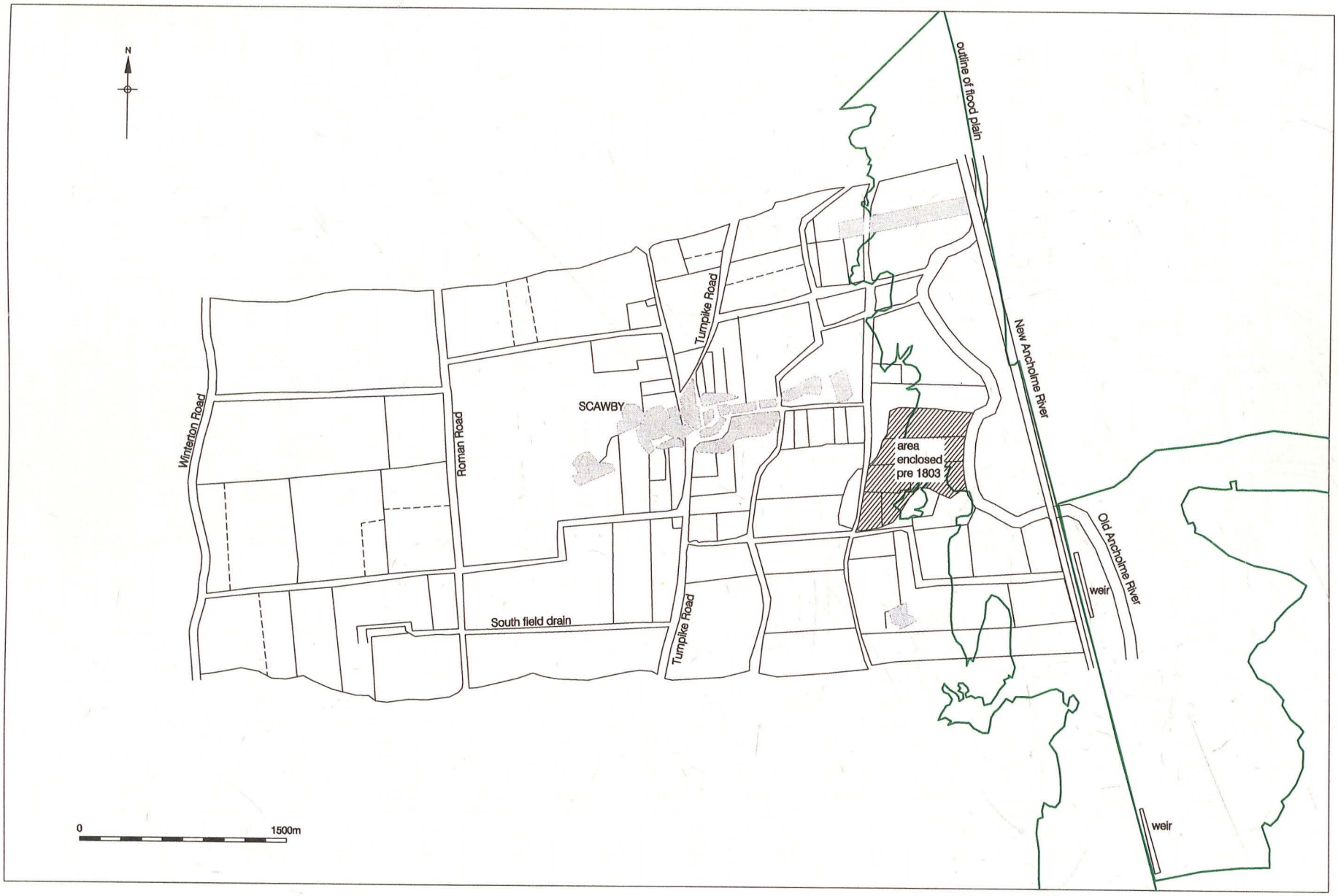


Figure 9
1803 Enclosure Map of Hibaldstow
1:25,000

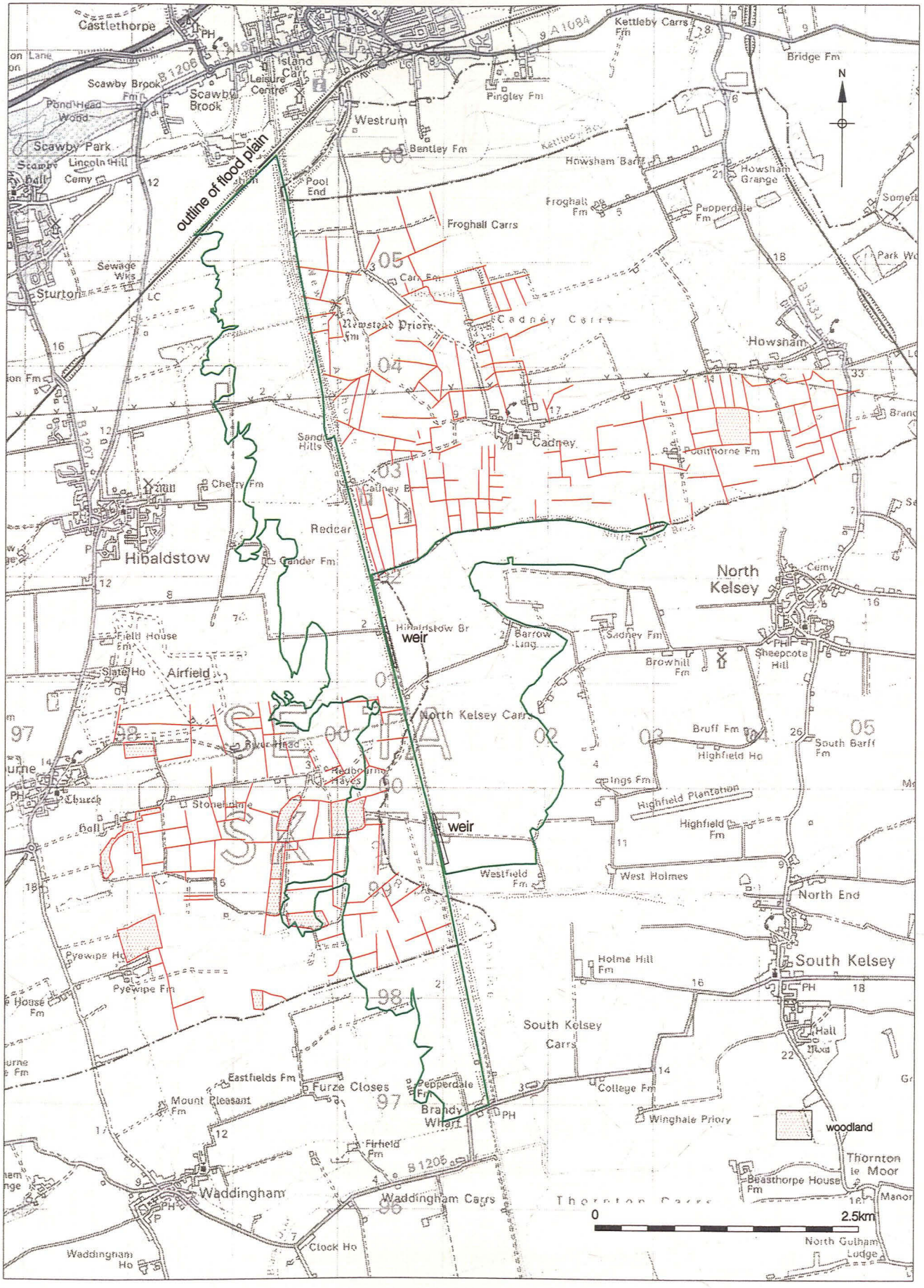


Figure 10
1841-44 Tithe field boundaries
1:50,000

9 ARCHAEOLOGICAL POTENTIAL

9.1 General

9.1.1 The archaeological deposits of the area are likely to be encountered only in areas where ground penetration works are to take place, in particular during the construction of the new weirs. These areas hold the highest archaeological potential for prehistoric and palaeo-environmental material preserved within the lower peat and alluvium over it. The repeated flooding of the flood relief zone is likely to have a more beneficial effect on the buried archaeological deposits, potential chemical interference notwithstanding.

9.2 Palaeo-Environmental

9.2.1 During the early stages of the lower peat formation c. 4000 cal BC onwards, fluctuating water levels led to the peat becoming desiccated, resulting in poor pollen and macrofossil preservation. However, during the mire expansion at the end of the Bronze Age, increased waterlogging resulted in good preservation potential, shown by a well preserved trackway and various boat finds from the area.

9.2.2 The grey clay layer of the Bronze Age/ Iron Age transition period has shown poor pollen preservation but good preservation of remains such as wood, plant microfossils, diatoms and beetles.

9.2.3 The upper peat contained a well preserved Roman timber roadway at Redbourne, excavated in the 19th century. However, much of the upper peat has suffered desiccation, wastage and homogenisation by tillage[47].

9.2.4 The potential for recovering palaeo-environmental material from the lower peaty deposits is high, but it is unknown if the proposed scheme will penetrate into the ground to this extent (c. 2m below current ground level). The grey clays have a moderate potential for preservation of material, as does the upper peat, which is the deposit most likely to be affected by the construction of the weirs. Therefore, the palaeo-environmental potential for this period is **moderate-high,** depending on weir construction depth.

9.3 Prehistoric

9.3.1 A wealth of prehistoric material has been recovered in the vicinity of the study area, particularly of Bronze Age date. The 'raft', dugout canoe and trackway at Brigg, to the north of the study site, all indicate good survival of material from this period, within the lower peat and alluvium. The large number of early Neolithic-Bronze Age flint scatters recovered during the field survey of Redbourne indicate the high potential for recovery of more material of this date from the study area at current ground level, and illustrate the value of field walking in this area. There has been little development within the study area since the deposition of prehistoric material, and it has been shown at Brigg that the material can be very well preserved within the relatively undisturbed lower peat and alluvium, at 1-2m below current ground level. Evidence from Hopfield, Hibaldstow illustrates that Bronze Age settlement took place directly outside the study area, and the evidence from the Witham Valley shows how important Iron Age material can survive in similar conditions to those found in the Ancholme Valley. Therefore, the archaeological potential for this period is **high,** although this again depends on the weir construction depth.

9.4 Roman

9.4.1 There was a Roman settlement at Hibaldstow and the site is directly to the east of Ermine Street, an important Roman road. A possible Roman trackway was identified

[47] Neumann, H, 1998, pp75-101 in Van de Noort and Ellis, 1998

at Redbourne within the upper peat which may be part of a link road from Ermine Street to Caistor. There is some potential for uncovering more of this structure during the proposed development. Recent palaeo-environmental work[48] indicates that the upper peat has been heavily damaged by drainage of the area and ploughing, which may limit the survival of this type of material. Also, Roman settlement patterns in the area seem to indicate that monuments such as villas are restricted to the higher ground and villages cluster along Ermine Street. There is **moderate** potential for locating Roman remains.

9.5 Saxon and Viking

9.5.1 Some late Saxon pottery has been found in the area, and the monastery of St Hygbald is located near to Hibaldstow. The marshy nature of the area during this period may mean that settlement was limited to the higher ground, outside the study area. No evidence for Viking material has been found in the area. There is therefore **low** potential for the recovery of Saxon and Viking remains.

9.6 Medieval

9.6.1 During the medieval period, the marsh of the Ancholme Valley began to be drained and farmed, but settlement was still concentrated along the lines of the higher ground, or on islands such as Redbourne Hayes. There are a number of religious settlements in the valley, the closest to the study area being Winghale Priory, Newstead Priory and the Priory of St Mary near Redbourne Hayes. A Gilbertine Priory at Tunstall remains unlocated. North and South Kelsey also have the remains of medieval moated manors, located on the higher ground overlooking the valley. The religious houses may have been responsible for co-ordinating drainage in the area and evidence for this may be found within the study area, close to the Old Ancholme River. There is **moderate** potential for the recovery of medieval remains within the study area.

9.7 Post-medieval

9.7.1 Settlement patterns established in the medieval period did not change radically in the post-medieval period, and indeed some settlements may have become reduced in size. The major feature of the post-medieval period is the establishment of the New Ancholme River and the successful drainage of the area. This drainage is probably responsible for the drying out of the upper peat noted in palaeo-environmental studies[49]. Therefore, the main potential for post-medieval deposits relates to the drainage of the area and the associated works. There is **low** potential for the recovery of post-medieval remains within the study area.

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[48] Van de Noort and Ellis, 1998
[49] Van de Noort and Ellis, 1998

10 IMPACTS ON BURIED ARCHAEOLOGICAL DEPOSITS

10.1 Previous Land Use

10.1.1 The study site area has been deforested since the Early Bronze Age when small scale agriculture began in the area and has been used as farmland ever since. The agricultural land in the Ancholme Valley is of a lower quality than that of the lower Trent Valley, which has seen more intensive settlement throughout its history. During the medieval period, the area was sparsely populated by farms and small hamlets, but the valley floor remained unoccupied, largely due to continued flooding for a few months each year. These flood events led to the deposition of sediments protecting the archaeology below. As early as the 13th century, the River Ancholme was being diverted, with major modifications to its course in 1637. The current course was completed in 1844, when the river finally became effectively embanked[50]. The area is currently occupied with post-Enclosure farmsteads and small hamlets, and has several drainage schemes in operation. Data from the 1990's showed that 76% of the land in the valley was being tilled[51].

10.1.2 The lower peat is not believed to have been adversely affected by modern drainage and the marine clays are also well preserved[52]. However, the upper peat is badly degraded and heavily ploughed. Drainage of the land and the removal of moisture leads to the collapse and shrinkage of the deposits. If the sediment is then ploughed, the peat can blow away[53]. There is also evidence for quarrying and clay digging in the 19th century in the area for brick and tile making, although these are not currently documented within the study site.

10.1.3 The straightening and embanking of the New Ancholme in the 19th century probably had a localised impact on the land around it. This was a major engineering project and as such was heavily intrusive on the previous landscape. The landscaping and embanking of the river probably involved removal of the topsoil immediately to the east and west of the new course, which may have led to the truncation of archaeological deposits. The proximity of the proposed weirs to the New Ancholme may mean that any archaeological material in these areas has already been disturbed during the initial embanking of the river. However, deeper deposits of the prehistoric period may survive.

10.2 Impact of Proposed Development

10.2.1 As shown above, the majority of the proposed development, namely the flood storage area, will have very little impact on the archaeological record and may indeed, serve to preserve it. However, if the incoming water is polluted with industrial, agricultural or domestic effluent, this can have an adverse effect on the preservation of organic remains[54]. At Branston Island, investigations of this site, which was subject to frequent flooding events, illustrated a high level of survival of the buried deposits. This demonstrates that in this situation, repeated flooding was not detrimental to the archaeology. The incoming floodwaters will, over a length of time, have the same effect as the medieval 'warping' causing a build up of sediments sealing the layers below. Over a sustained flooding period of two years, this can produce up to a metre of deposits[55]. Whilst beneficial for farming, too much weight of deposits may crush or compress underlying waterlogged deposits[56]. The construction of the weirs and

[50] Neumann, H. 1998, p 76 in Van de Noort and Ellis, 1998
[51] Middleton, R. 1998, p. 19 in Van de Noort and Ellis, 1998
[52] Van de Noort and Ellis, 1998
[53] Coles, J., 1984, p. 26
[54] Walker, P., 2000, p. 9
[55] Oldham, J., 1864, p. 33
[56] Coles, J., 1984, p. 29

various other related works will have a localised impact on the early archaeology, which has the potential to be very rich, especially in the lower layers of clay and peat. The excavation depth for the construction of the weirs is currently unavailable, but it is likely to substantially penetrate the upper peat and clay.

10.2.2 Any removal of topsoil in the vicinity is likely to have a detrimental effect on deposits exposed through ploughing. The field walking survey in Redbourne highlighted the wealth of archaeological material visible at current ground level, in particular flint objects and scatters of the Neolithic-Bronze Age. The existence of these finds implies that underlying stratified deposits may lie close to the surface and are being truncated by agricultural activity. Regular flooding of the area may also be detrimental to this surface archaeology. Incursions into the area by heavy plant and various other groundworks may also prove hazardous to the archaeology present in the area.

10.2.3 The proposed weirs will each be 500m in length, providing an opportunity to observe the condition of the peats and alluviums beneath the surface during construction. There may also be an opportunity for further palaeo-environmental work even if no archaeology is encountered.

10.3 Ground Soil Contamination

10.3.1 A ground soil contamination survey was not available.

11 MITIGATION

11.1 Where archaeological features, as identified by the DeskTop Assessment, are likely to be encountered, strategies should be developed to deal with them. These may include preservation *in situ*, by limiting the development impact on archaeological deposits by redesigning the structures, or 'preservation by record'. If the latter is the favoured, archaeological trial excavations to assess the nature, depth, level of survival etc. may be conducted. This would usually involve the archaeological excavation and recording of one or more trenches, usually not exceeding 10% of the area to be developed.

11.2 Planning Policy Guidance: Archaeology and Planning (PPG 16) issued by the Department of the Environment in November 1990 states that, where preliminary research suggests survival of important archaeological remains;

"it is reasonable for the planning authority to request the prospective developer to arrange for an archaeological field evaluation to be carried out before any decision on the planning application is taken. This sort of evaluation is quite distinct from full archaeological excavation. It is normally a rapid and inexpensive operation, involving ground survey and small scale trial trenching, but it should be carried out by a professionally qualified archaeological organisation or archaeologist. Evaluations of this kind help to define the character and extent of the archaeological remains that exist in the area of a proposed development, and thus indicate the weight which ought to be attached to their preservation. They also provide information useful for identifying potential options for minimising or avoiding damage. On this basis, an informed and reasonable planning decision can be taken."

It continues,

"Local planning authorities can reasonably expect developers to provide this information as part of their application for sites where there is good reason to believe there are remains of archaeological importance. If developers are not prepared to do so, the planning authority may wish to consider whether it is appropriate to direct the applicant to supply further information under the provisions of Article 4 of the Town and Country Planning (Applications) Regulations 1988".

11.3 Field evaluations should provide information of sufficient quality and detail that reasoned and informed decisions may be made with regard to the preservation, or not, of buried archaeological material, and therefore facilitate the compilation of sympathetic foundation designs.

11.4 The objective of field evaluations are, as defined by English Heritage:

To determine, as far as is reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed redevelopment. An adequate representative sample of all areas where archaeological remains are potentially threatened should be studied, and attention should be given to sites and remains of all periods (inclusive evidence of past environments).

Where applicable, the evaluation should also determine the relationship of any above ground structures to the surviving archaeological deposits below ground. Where such a relationship is demonstrable, the evaluation should encompass the character, condition, significance, and quality of the above ground remains on the same basis as those below.

The evaluation should also seek to clarify the nature and extent of existing disturbance and intrusions (such as basements) and hence the degree of survival of buried archaeological deposits and structures of archaeological significance.

11.5 Field evaluations may include, where applicable, non-invasive techniques such as ground penetrating radar. Specialist advice should be sought before commission to determine the suitability of individual locations. The study area could be particularly appropriate for field walking surveys. As demonstrated by the Redbourne investigations, this non-invasive technique can reveal impressive results and give a new insight into the archaeology of the region.

11.6 Field evaluations may proceed in phased stages, dovetailing with the main development programme.

11.7 If it is not possible to reconcile the preservation in situ of archaeological remains with the needs of the construction design, it may be necessary for further and more extensive archaeological excavations to be undertaken.

11.8 Non-archaeological constraints on fieldwork will include health and safety. On this site, archaeological trenches are likely to be deep. If deep intrusive features are present, suitable measures must be taken to support the trench edges. All other statutory regulations must be observed and a Method Statement should be obtained from the archaeological organisation appointed by the developer for this phase of works.

11.9 The necessity, or not, for a tertiary phase of works, that is open area excavation, may be dependent on the results of the Field Evaluation.

11.10 The results of a Field Evaluation may lead to a redesign or realignment of the proposed structure, further trial or survey work or open area archaeological excavations.

11.11 As stated above, details of the foundation type are not at present known. Construction techniques, including associated groundworks, will probably cause localised impact to any surviving archaeological deposits.

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Appendix 1

North Lincolnshire SMR Results (Figs. 4 & 5)

HWP-Heritage Wetlands Project

Plan Ref.	SMR no.	Grid ref.	Description	Listed	Parish
1	14718	SE 998 002	Unretouched flint flake (Palaeolithic), St. Mary's Priory		Redbourne
2	2389	SK 998 986	Polished greenstone axe (Neolithic), Group VI		Redbourne
3	17876	SE 98 01	Small polished stone axe, exact findspot unknown, Hibaldstow Airfield		Hibaldstow
4	19371	SK 9922 9904	Flint Findspot (E. neo – B/A)	HWP	Redbourne
5	19371	SK 9922 9891	Flint Findspot (E. neo – B/A)	HWP	Redbourne
6	19372	SK 9951 9824	Flint Findspot (E. neo – B/A)	HWP	Redbourne
7	19372	SK 9956 9822	Flint Findspot (E. neo – B/A)	HWP	Redbourne
8	19373	SK 9970 9975	Flint Findspot (E. neo – B/A)	HWP	Redbourne
9	19373	SK 9983 9988	Flint Findspot (E. neo – B/A)	HWP	Redbourne
10	19374	SK 9953 9904	Flint Findspot (E. neo – B/A)	HWP	Redbourne
11	19376	SK 9995 9890	Flint Findspot (E. neo – B/A)	HWP	Redbourne
12	19377	SE 9998 0034	Flint Findspot (E. neo – B/A)	HWP	Redbourne
13	19378	TF 0071 9940	Flint Findspot (E. neo – B/A)	HWP	Redbourne
14	19417	SK 9992 9840	Flint Scatter (E. neo – B/A)	HWP	Redbourne
15	19417	SK 9995 9828	Flint Scatter (E. neo – B/A)	HWP	Redbourne
16	19417	SK 9995 9841	Flint Scatter (E. neo – B/A)	HWP	Redbourne
17	19417	SK 9991 9822	Flint Scatter (E. neo – B/A)	HWP	Redbourne
18	19417	TF 0007 9851	Flint Scatter (E. neo – B/A)	HWP	Redbourne
19	19417	SK 9986 9839	Flint Scatter (E. neo – B/A)	HWP	Redbourne
20	19417	SK 9995 9841	Flint Scatter (E. neo – B/A)	HWP	Redbourne
21	19417	SK 9991 9822	Flint Scatter (E. neo – B/A)	HWP	Redbourne
22	19417	TF 0007 9849	Flint Scatter (E. neo – B/A)	HWP	Redbourne
23	19417	SK 9993 9847	Flint Scatter (E. neo – B/A)	HWP	Redbourne
24	19417	TF 0007 9837	Flint Scatter (E. neo – B/A)	HWP	Redbourne
25	19417	SK 9995 9828	Flint Scatter (E. neo – B/A)	HWP	Redbourne
26	19418	SK 9962 9882	Flint Scatter (E. neo – B/A)	HWP	Redbourne
27	19418	SK 9961 9886	Flint Scatter (E. neo – B/A)	HWP	Redbourne
28	19418	SK 9951 9876	Flint Scatter (E. neo – B/A)	HWP	Redbourne
29	19418	SK 9959 9888	Flint Scatter (E. neo – B/A)	HWP	Redbourne
30	19418	SK 9951 9876	Flint Scatter (E. neo – B/A)	HWP	Redbourne
31	19418	SK 9954 9888	Flint Scatter (E. neo – B/A)	HWP	Redbourne
32	19419	SK 9959 9929	Flint Scatter (E. neo – B/A)	HWP	Redbourne
33	19419	SK 9959 9929	Flint Scatter (E. neo – B/A)	HWP	Redbourne
34	19419	SK 9977 9921	Flint Scatter (E. neo – B/A)	HWP	Redbourne
35	2386	SK 9982 9804	Small type IV looped and socketed bronze spearhead		Redbourne
36	2351	TA 01 04	One or more Bronze Age socketed axes (plain, ribbed or both), findspot unknown		Cadney
37	1853	TA 01 03	Urned cremation, date and findspot unknown		Cadney
38	2349	TA 0182 0363	Site of inhumation barrow, undated		Cadney
39	18633	SE 99 00	Possible site of timber causeway or trackway, possibly R-B		Redbourne

40	19369	SK 9870 9960	Roman Sherd	HWP	Redbourne
41	19370	SK 9925 9996	Roman Sherd	HWP	Redbourne
42	19375	SK 9958 9950	Roman Sherds	HWP	Redbourne
43	19420	SK 9900 9984	Linear and curvilinear ditches visible on AP, possibly R-B	HWP	Redbourne
44	2416	SE 9805 0535	Fragment of a ground stone axe (volcanic lava) found with R-B pottery and iron slag		Scawby
45	11667	Marginal	Bronze coin of Faustina Junior, Newstead Priory Farm		Cadney
46	17880	TA 006 005	Foot of Anglian cruciform brooch, NE of Redbourne Hayes		Redbourne
47	15915	SE 99 01	Possible site of A-S monastery of St. Hygbald		Hibaldstow
48	10741	SE 993 013	Cropmark enclosure possibly connected with 15915 (local name of field 'Iblings')		Hibaldstow
49	2374	SE 9982 0023	Site of the Gilbertine Priory of St. Mary (pre 1164), Redbourne Hayes		Redbourne
50	2377	TF 002 997	Possible moated site, now ploughed out: may be associated with 2374		Redbourne
51	2951	SK 996 997	Possible moated site		Redbourne
52	2977	SE 997 006	Enclosure N of 2374, with possible trackway to N		Redbourne
	2350	TA 0000 0445	Newstead Priory farmhouse and screen wall: 12th/13th century undercroft, 15th/16th century 1st floor	LB I	Cadney
53	4322	TA 0000 0445	Site of Newstead Priory (founded 1171); remains disputed as chapter house or refectory; associated earthworks		Cadney
54	4636	Marginal	Site of hospital of St. Mary, associated with the priory poorhouse		Cadney
55	2344	TA 003 039	Building debris, possibly from priory, 500m SE of Priory Farm		Cadney
56	7212	SE 989 028	Area of cropmarks and soilmarks visible on AP, undated		Hibaldstow
57	17832	SE 9827 0488	Undated ditch observed during pipeline works		Scawby
58	2402	SE 993 053	R-B and medieval pottery found on the line of an apparent causeway		Scawby
	9271	TA 0010 0286	Cadney Bridge, rebuilt 1882 using earlier 19th century abutments	LB II	Cadney
	9272	TA 0002 0454	Early 19th century threshing barn re-using medieval masonry, 25m N of 2350	LB II	Cadney
	9273	TA 0000 0445	Early 19th century cart shed/granary re-using medieval masonry, 60m ENE of 2350	LB II	Cadney
	9281	TA 0045 0150	Hibaldstow Bridge, built 1889, probably re-using mid-19th century abutments	LB II	Hibaldstow
59	11653	SE 980 010	Hibaldstow Airfield: fighter base,		Hibaldstow

			operational from 1941, closed 1945		

Lincolnshire SMR Results (Figs. 4 &5)

Plan Ref.	SMR no.	Grid ref.	Description	Listed	Parish
60	53504	TF 0173 9858	Small unpolished Neolithic stone axe		South Kelsey
61	53538	TA 0192 0071	Neolithic polished flint axe, Carr Farm		North Kelsey
62	53534	TA 0246 0005	Group VIII Neolithic axe with pointed butt		North Kelsey
63	53537	TA 0325 0125	Group VI Neolithic polished stone axe		North Kelsey
64	53542	TA 0355 0130	Two Neolithic polished stone axes		North Kelsey
65	53503	TF 0290 9690	Small looped and socketed bronze axe with three stone axes, early Neolithic to late Bronze Age		South Kelsey
66	53496	TF 0290 9680	Three Iron Age ditch sections found during gravel extraction at Winghale Priory		South Kelsey
67	53495	TF 0290 9680	Iron Age and R-B pottery, animal bone and slag found in 53496		South Kelsey
68	53577	TF 027 49931	Cropmarks probably representing a later prehistoric enclosure and hut circle		North Kelsey
69	53895	SK 9932 9542	Cropmarks possibly representing a later prehistoric trackway		Waddingham
70	53540	TA 0355 0130	Scatter of Roman pottery		North Kelsey
71	50266	TF 0300 9700	Site of Winghale Priory: earthworks in poor condition apart from a fishpond complex; frequent finds of human bone.		South Kelsey
72	50500	TA 0435 0103	Monastic fishpond complex at North Kelsey Grange	SM 31617	North Kelsey
73	53550	TA 0172 0022	Ridge and furrow, probably late medieval		North Kelsey
74	53551	TA 0256 0177	Ridge and furrow, probably late medieval		North Kelsey
75	53552	TA 0213 0206	Ridge and furrow, probably late medieval		North Kelsey
76	53554	TA 0333 0163	Ridge and furrow, probably late medieval		North Kelsey
77	53509	TF 0276 9796	Medieval ridge and furrow		South Kelsey
78	53510	TF 0307 9675	Probable late medieval field system		South Kelsey
79	53507	TF 0443 9766	South Kelsey Hall moated site, believed early 14th century	SM 31618	South Kelsey
80	53511	TF 0441 9754	Civil War gun emplacement	SM	South Kelsey

			near South Kelsey Hall	31618	
81	53896	SK 9976 9798	Ridge and furrow, probably late medieval		Waddingham
	50816	TF 0145 9700	Brandy Wharf, a late Georgian complex of Wharf, slipway, warehouse and inn. See below	LB II	Waddingham
	491.009	See above	Old Tollgate Bridge, Brandy Wharf	LB II	Waddingham
	491.010	See above	Warehouse, Brandy Wharf	LB II	Waddingham
82	53544	TA 0425 0215	Possible site of pottery kiln, undated		North Kelsey
83	53541	TA 0355 0130	Scatter of post-medieval pottery		North Kelsey

Cropmarks (Fig. 6)

Plan Ref.	SMR Number	Description
84	2421	Flints
85		Enclosure, recorded by RCHME
86	2345	Round Barrow, Newstead Priory
87	15183	Cropmark enclosure
88	2361	Cropmark enclosure
89	4670	Cropmark from aerial photograph
90	19441	Enclosure
91	10764	Cropmark enclosure
92	53894	Linear enclosure cropmarks
93	50778	Circular enclosure-barrow?
94		Ridge and furrow
95		Double rectangular enclosure
96		Ridge and furrow
97	53543	Circular enclosure
98	52709	Drainage channel?
99	150779	Circular enclosure
100		Hopfield, Hibaldstow, excavation

Appendix 2-Site Photographs

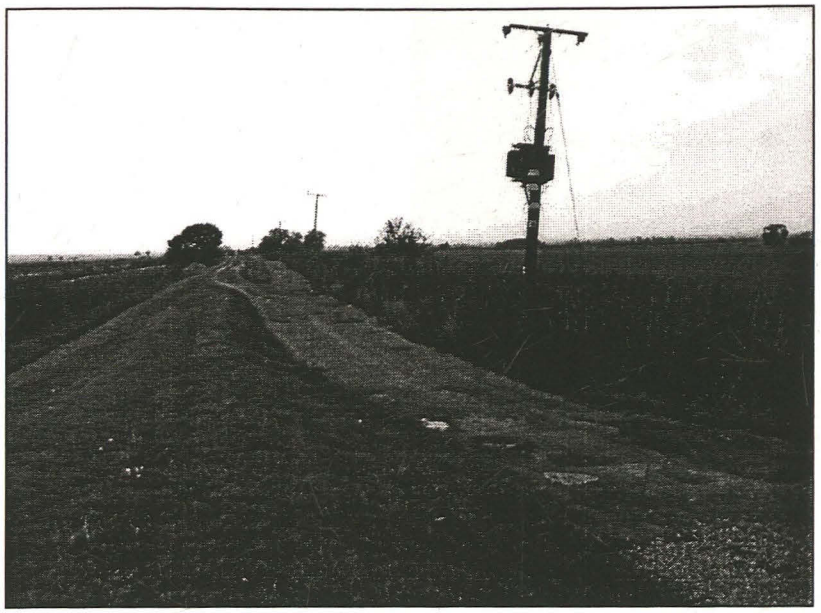

Plate 1 (left): General view of the northern weir site, looking north.

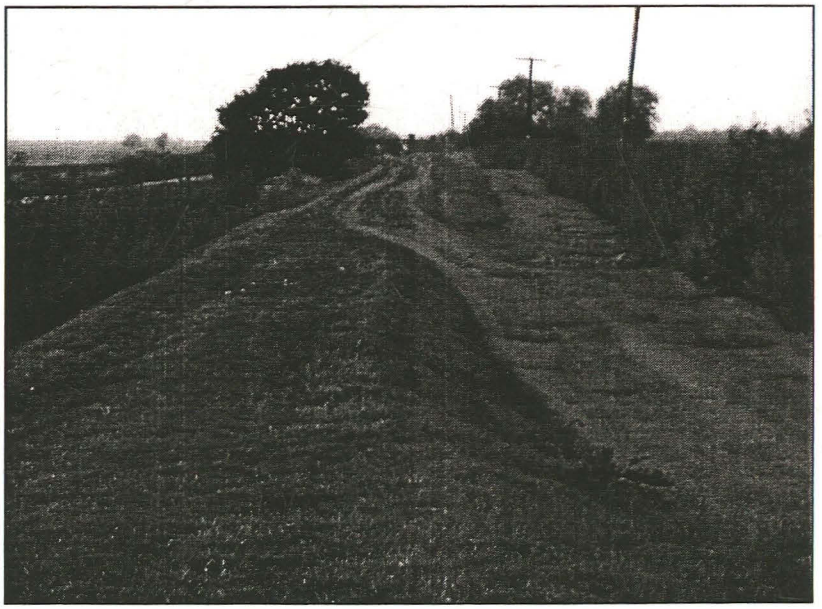

Plate 2 (right): The northern weir site, looking north, with Hibaldstow Bridge in the background.

Plate 3 (left): Distant view of the northern weir site, looking North.

Plate 4 (right): General view of the southern weir site, looking north.

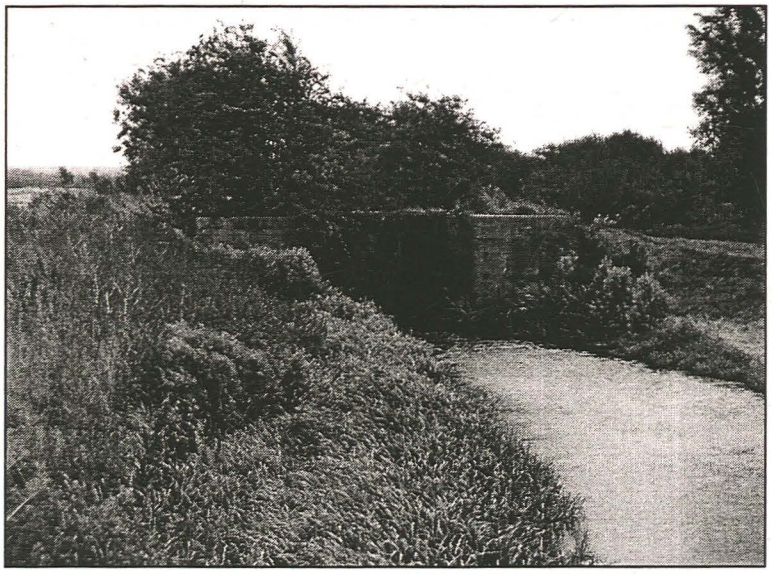

Plate 5 (left): view of the Caistor canal showing the westernmost lock, seen from the footbridge at the confluence of the canal and the New River Ancholme, looking east.

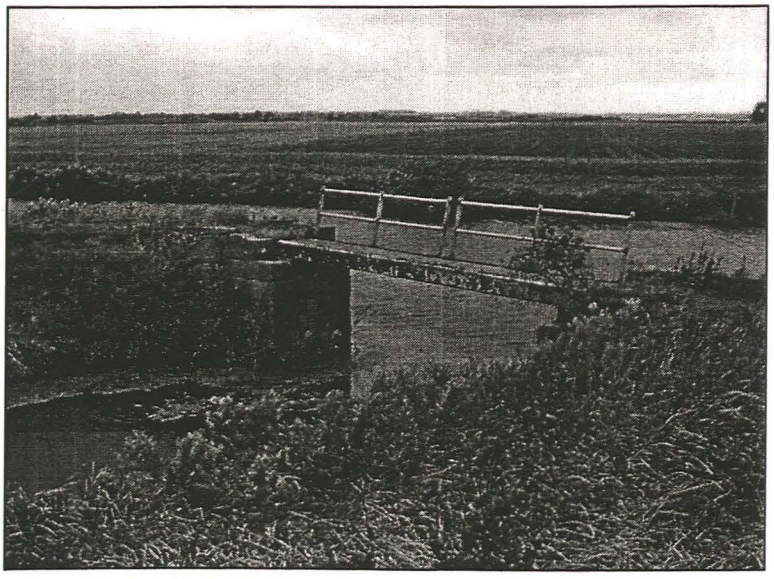

Plate 6 (right): The confluence of the Caistor canal (foreground) and the New River Ancholme, in the vicinity of the south end of the southern weir, looking WSW.

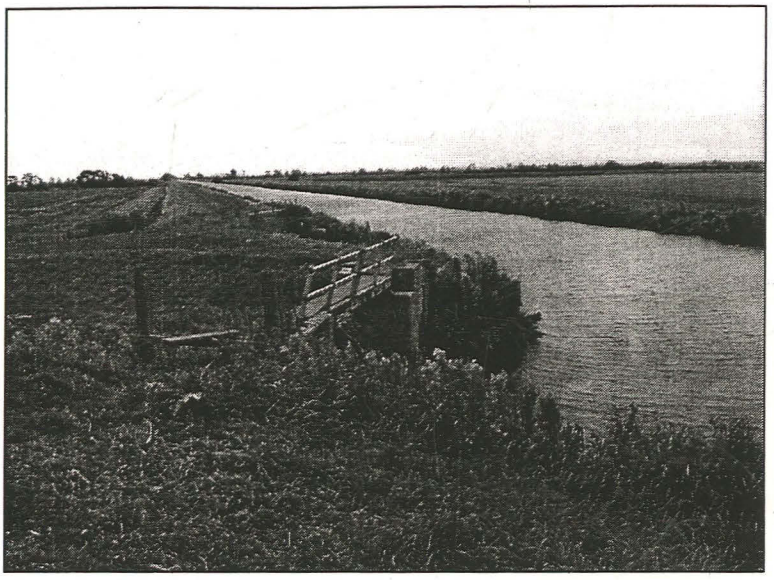

Plate 7 (right): General view of the New River Ancholme taken from the south end of the southern weir site, looking south.

Plate 8 (left): General view of the Caistor canal taken from the vicinity of the southern weir site, looking east.

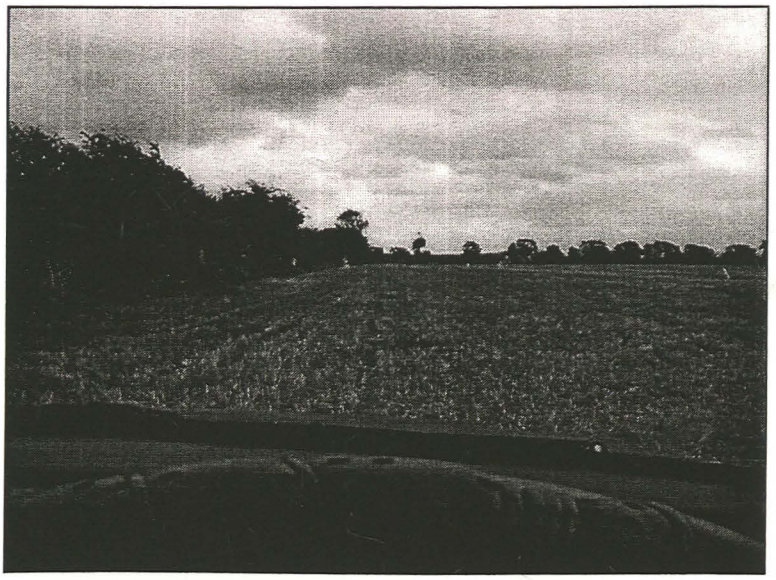

Plate 9 (right): Access to the southern weir site, is somewhat limited.