PROPOSED CLAY EXTRACTION, HIGHFIELD HOUSE FARM, WOMERSLEY, NORTH YORKSHIRE

ARCHAEOLOGICAL DESK-TOP SURVEY

January 1997

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ARCHAEOLOGICAL DESK-TOP SURVEY

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1 EXECUTIVE SUMMARY

1.1 An archaeological desk-top survey of an area of 32.5 hectares of land to the east of Highfield House Farm, near Womersley, North Yorkshire, was undertaken by Ed Dennison Archaeological Services (EDAS) in January 1997. The work was commissioned by Plasmor Limited in support of a planning application for clay extraction. This report should be seen as an addition to the existing Environmental Statement produced by R P S Clouston.

1.2 This survey collates all readily available archaeological information from published and unpublished sources, and local databases. A preliminary walkover survey of the whole study area was also carried out, to note the location, nature, extent and condition of any recorded and unrecorded archaeological sites or deposits.

1.3 Six archaeological sites were identified by the survey, three being within the proposed extraction area. These sites, which are all of minor importance, had been identified from historic sources but have since been destroyed by prolonged agricultural activity. However, the albeit limited possibility of there being as yet unrecorded prehistoric sites or features within the extraction areas should not be discounted.

1.4 No specific mitigation measures are proposed for the three destroyed archaeological sites affected by the proposals. In view of the limited potential for further as yet unrecorded sites, the three proposed extraction areas (amounting to some 18.5 hectares in all) will be fieldwalked as and when ground conditions become suitable. Depending on the results, an archaeological "watching brief" may also be carried out during initial topsoil strips.

2 INTRODUCTION

2.1 An archaeological desk-top survey of an area of land adjacent Highfield House Farm, to the east of Womersley, North Yorkshire (NGR SE572183) (see figure 1), was undertaken by Ed Dennison Archaeological Services (EDAS) in January 1997. The work was commissioned by Plasmor Limited in support of a planning application for clay extraction. This report should be seen as an addition to the existing Environmental Statement produced by R P S Clouston (1996).

2.2 The study area (see figure 2) comprises 32.5 hectares to the immediate east of Highfield House. The area is bisected by the Blowell Drain, which marks the division between the parishes of Womersley to the west and Balne to the east. The majority of the land in the study area is in agricultural use, most being improved grassland although there is one field of winter wheat. There are also several areas of woodland and scrub.

2.3 This survey collates all readily available archaeological information from published and unpublished sources, and local databases. An initial field inspection of the whole study area was also carried out, to note the location, nature, extent and condition of any recorded and unrecorded archaeological sites or deposits. Six sites were identified by the survey, their locations being shown on figure 3.

3 INFORMATION SOURCES

3.1 In line with standard archaeological practice, the following sources of information were examined as part of the desk-top survey. It should be noted that the study area is now in the County of North Yorkshire but historically was part of the West Riding of Yorkshire.

County and National archaeological databases

3.2 Both the County Sites and Monuments Record (NYSMR), which is lodged with the Heritage Unit of the North Yorkshire County Council in Northallerton, and the National Archaeological Record (NAR) held by the Royal Commission on the Historical Monuments of England (RCHME) in Swindon was consulted. Information held by the Yorkshire Archaeological Society in Leeds was also collected.

Records of previous archaeological investigations

3.3 To date, there has been no systematic data collation or detailed archaeological recording work carried out in and around the study area. However, the Humber Wetlands Project, undertaken through Hull University and sponsored by English Heritage, have undertaken an archaeological assessment and some fieldwalking in the area (Van de Noort & Davies 1993; pers comm R Van de Noort) while a moated site to the north of Womersley village (Wood Hall) has been under extensive archaeological excavation since 1987. This latter work is being carried out by the Wood Hall Moated Manor Project, part of North Yorkshire County Council and sponsored by National Power; the site work is due to be completed in 1998 with the post-excavation work extending to 2001. There have also been some specific archaeological discoveries in the adjacent parishes to the study area, for example a Romano-British corn drying kiln at Womersley (Buckland & Dolby 1987), a 4th century coin hoard from Criddling Stubbs (Pirie 1968), and a post-medieval lime kiln at Spring Lodge Quarry (Tompson & McIlwaine 1993a); these and other sites are discussed in chapter 4 below.

Printed and manuscript maps

3.4 The North Yorkshire County Record Office (NYCRO) in Northallerton, and the West Yorkshire Archive Service (WYAS) and the John Goodchild Collection (JGC) in Wakefield were consulted for both printed and manuscript maps of the study area. Various editions of the relevant Ordnance Survey maps, at both 6" and 25" scales, were examined, as were any other appropriate maps and documents. The information gathered from these sources is discussed below and the relevant documents are listed in Appendix 1.

Published and unpublished documentary sources

3.5 A number of published and unpublished documentary sources in both local and national collections were consulted for background information and specific data on specialised aspects of the history and archaeology of the study area. These sources are listed in the bibliography and Appendix 1.

Place and field name evidence

3.6 A number of published and documentary sources were consulted for data on specialised aspects of the history and archaeology of the study area, including place and field name evidence; these are detailed in the bibliography.

Aerial photographic evidence

3.7 Vertical aerial photographs held as part of the NYSMR in Northallerton were consulted for archaeological information. No oblique aerial photographs of the study area were held as part of the collection.

Geological and soil surveys

3.8 The relevant geological and soil survey data was examined to obtain background and specific information for the study area. Also of use were the borehole logs resulting from site investigation which were provided by Plasmor Limited.

Preliminary walkover survey

3.9 A preliminary walkover survey of the study area was carried out to determine current land use, to note the location, nature, extent and condition of any recorded and unrecorded archaeological sites, to identify any concentrations of material which might serve as an indication of sub-surface archaeological features, and to assess the potential impact of the proposed development. This survey was carried out on 15 January 1997.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND TO THE STUDY AREA

4.1 Introduction

4.1.1 In order to put the study area into context, it is necessary to consider the wider archaeological background of the region and so reference may be made to sites lying outside the study area. This information has been compiled from a variety of sources which are listed in the bibliography and Appendix 1.

4.2 The nature of the evidence

4.2.1 Evidence for the archaeological heritage comes from a variety of sources, including upstanding monuments and buried deposits, records of excavated sites and artefactual retrieval, historic maps and antiquarian documentation, and place names. Increasingly, archaeological assessments and evaluations, often carried out in advance of development and including methodologies such as fieldwalking, geophysical survey, earthwork survey, and trial excavation, provide information on otherwise "blank" areas.

4.2.2 A great deal of archaeological evidence has also emerged through the identification and recording of cropmarks seen from the air and on aerial photographs. Cropmarks are caused by differential crop growth over buried archaeological features and, while they are likely to indicate the presence of an archaeological site, it should be noted that their formation is affected by many extraneous factors including land use, drainage, geology and climatic conditions. There are extensive cropmark complexes on the Magnesium limestone areas to the west of the study area and extending into the eastern part of West Yorkshire.

4.3 The Prehistoric periods (up to 71 AD)

4.3.1 It is possible that there may have been some palaeolithic (pre-8,500 BC) occupation of the higher land to the west of Womersley and Walden Stubbs but the area to the east, and including the study area, is more low-lying, mostly below 10m AOD; this area is known as the Humberhead Levels. During the Late glacial period, this region was occupied by a large water body called Lake Humber which was created by water being impounded by ice sheets located in the Vale of York and the North Sea basin. After the disappearance of this lake, rivers and streams began to flow across the former lake basin towards the Humber Gap and the region was characterised by a marshy woodland (Van de Noort & Davies 1993, 26-33).

4.3.2 It is likely that prehistoric settlement was attracted to the higher limestone uplands to the west and south-west of the study area and although actual occupation sites are rare, there is evidence for some activity. There have been occasional isolated finds of flints around Wentbridge and Kirk Smeaton and a possible Bronze Age (2,000-700

BC) inhumation burial was discovered in 1950 in Little Smeaton quarry. A second inhumation burial was found in 1858 on Womersley Common and a Neolithic (3,500-2,000 BC) axe was found in a pond on the Womersley Estate in 1750.

4.3.3 Within the lower, wetter area of the Humberhead Levels prehistoric sites are generally lacking although there is some evidence for occupation or activity along the sides of the major rivers such as the Went, Aire and Trent; a scatter of potentially Mesolithic (*c.*8,500-2,000 BC) flints have been found near Balne Lodge for example. The excavations at Wood Hall to the north of Womersley village have established there was some late Mesolithic and Neolithic (*c.*5,000-2,000 BC) activity on this slightly elevated site, although this is likely to be more representative of a small, temporary camping site rather than a permanent settlement (pers comm V Metcalf).

4.3.4 The history of prehistoric occupation in the area is therefore one of gradual landscape exploitation. Settlements are generally concentrated on the higher limestone areas to the west of the study area while the area of the Humberhead Levels, which were attractive because of the vegetation, animals and fish present in the marshes, were exploited from small temporary and transient camps often located on small islands or raised areas on the edge of the wetland. The flimsy nature of these sites, together with subsequent land disturbance, often means that little is preserved in the archaeological record; evidence for the presence of these hunter-gatherer communities is usually derived from flints or flint chippings (microliths) recovered from excavation or the surfaces of ploughed fields. However, it should be noted that the Humber Wetlands Project have fieldwalked large areas in the eastern part of Womersley parish as well as in Whitley and Walden Stubbs with generally negative results (pers comm R Van de Noort).

4.4 The Romano-British period (AD 71-*c.*450)

4.4.1 Extensive cropmark complexes, likely to represent Iron Age and Romano-British (700 BC-AD 450) field systems, farmsteads, settlements and trackways, have been identified in some quantity around Kirk Smeaton, Little Smeaton, Criddling Stubbs and Womersley villages. As with the prehistoric settlement, these sites are generally concentrated on the higher Magnesium limestone uplands, although some occur on the lower-lying land, for example to the east of both Criddling Stubbs and Knottingley.

4.4.2 There is some evidence for Roman occupation in Womersley parish. In 1967 a corn drying kiln was discovered on the edge of Womersley Quarry together with two beehive querns (stones used for grinding corn) (Buckland & Dolby 1987), and there have been finds of Romano-British pottery in Womersley park and at Wood Hall (pers comm V Metcalf). A large cropmark complex of ditches, enclosures and a possible settlement has also been identified from aerial

photographs to the east of Bell Lands Wood to the north-east of the village. Other finds from the area include a 4th century hoard of some 3,300 coins from near Criddling Stubbs (Pirie 1968). All the evidence points to the region being a well settled and farmed landscape containing a dispersed pattern of small farms with a mixed farming regime.

4.4.3 On the lower land to the east there is, to date, less evidence for permanent settlement and agriculture. Several Iron Age or Romano-British beehive querns, which are indicative of some form of permanent or semi-permanent occupation, have been found in Balne parish and fieldwalking within the western of the two moats at Walden Stubbs recovered a scatter of Roman pottery (Thomson & McIlwaine 1993b). This, together with the identification of a Romano-British field boundary at Wood Hall, suggests that there was some exploitation and possible reclamation of the marsh land during this period, possibly in response to population pressure in the uplands.

4.5 The Anglo-Saxon period (*c.*450-1066)

4.5.1 Evidence for Anglo-Saxon occupation or activity in the area is, like most other regions, inferred rather than actual. The pattern of place-name elements provides a clue to the distribution of settlement and ethnic groups between the 4th and 9th centuries. The extent of Anglian colonisation can be seen through villages with suffixes such as *-ham* (meaning a village, homestead or manor), *-ton* (farmstead) and *-wic* (village or dairy farm); local examples include Smeaton, which stems from *smio* and *tun* meaning "the smith's farmstead" (Smith 1961, 51) and Norton. Evidence of the wooded marsh at the foot of the limestone escarpment may also be seen in some of the place names ending in *-leah* or *-ley*, which is traditionally considered to mean a clearing or glade in a forest (Gelling 1984, 198-207); examples include Womersley ("Wilmer's forest clearing"), and Walden and Criddling Stubbs ("the tree stumps") (Smith 1961, 54). Balne is likely to stem from the Old English word *bath*, meaning "a stream or pool suitable for bathing", although this name is often applied to a region rather than a specific place (Smith 1961, 14-15).

4.5.2 Archaeological evidence for Anglo-Saxon activity is often more difficult to recover. Many of the existing villages have their origins in this period but their continued development and occupation frequently disturbs the earlier evidence. Nevertheless, by the end of the Anglo-Saxon period the area, in common with much of the surrounding region, was well-settled and the complex pattern of manors, *vills* and parishes that characterise the medieval period was already in existence, held either as extensive ancient lordships or as newer smaller holdings.

4.6 The Medieval and early post-medieval periods (1066-1750)

4.6.1 By AD 1100, a hierarchy of administrative sub-divisions was in place and these lasted until they were replaced by the civil parish system in the 19th century. The West Riding (stemming from the Old Norse *thrithing* meaning "a third part") contained ten wapentakes, each divided into a number of parishes and townships; the former were ecclesiastical units while the latter denoted a unit of civil administration, usually corresponding to a manor or *vill*. The study area falls within the wapentake of Osgoldcross, and is divided between the former township of Womersley within the larger parish of the same name, and Balne which was one of 12 townships comprising the large parish of Snaith; the dividing line is the Blowell Drain which runs generally north-south through the study area. Criddling Stubbs, Walden Stubbs and Little Smeaton were the other separate townships in Womersley parish. The present Balne parish was formed from Snaith in 1855.

4.6.2 The 11th century Domesday Book notes that Womersley was held by Veggi and that the manor contained six carucates (approximately 720 acres or 290 hectares) of taxable land and comprised arable, meadow and woodland pasture; the whole manor covered some three square miles (7.7 square kilometres) (Faull & Stinson 1986, 136). Fourteen villagers and four small holders are also recorded, as well as a priest and a church, all suggesting a sizable village. Balne, on the other hand, was held by Gammall and only four villagers, two small holders and a mill are recorded (Faull & Stinson 1986, 315). The overlordship of these manors, as well as Walden Stubbs, Smeaton and Stapleton amongst others, was held by Ilbert de Lacy (or Laci), a prominent regional Norman land owner who held the Honour of Pontefract.

4.6.3 The history of land ownership throughout the medieval and early post-medieval periods is beyond the scope of this study, although a summary of the manorial history of Womersley has been compiled by Ballard (no date). By 1264 the manor was held by the de Newmarch family, who were probably responsible for the construction of the moated site at Wood Hall. The de Newmarch heiress, Elizabeth, then married John Neville of Althorpe in the early 15th century and in the mid 16th century the manor passed to the Gascoigne family, who owned lands throughout Yorkshire. In the early 17th century the land owners were the Jacksons, who sold the manor to the Harveys, from whom it passed to the 3rd Lord Hawke at the end of the 18th century.

4.6.4 Elements of the medieval and early post-medieval landscape can still be seen throughout the area. The 1st edition Ordnance Survey maps, published in the 1850s, depict a pattern of field boundaries which fossilise the medieval strips into which the large open fields were divided, for example around Little and Kirk Smeaton. Aerial photographs also reveal cropmark and soilmark evidence for the now

ploughed-out ridge and furrow cultivation earthworks. There are the earthworks of part of the medieval village of Womersley preserved within the park, and the diversion of the main village street around the north-east corner of the park is a prominent local feature. However, the most numerous medieval features are the moated sites which are scattered throughout the low lying areas; there are five within a few miles of the study area, including one recently discovered in Parkshaw Wood. Most of these moats are likely to have originated in the 13th or 14th centuries, and represent the sites of small farmsteads being created out of the former waste land and marsh - in many cases, the moats were dug to assist with drainage rather than being a defensive feature.

4.6.5 The preponderance of moats, scattered farmsteads and the patterns of the field boundaries, drains and tracks in the low-lying area to the east of Womersley suggest that this area may have formed part of a newly reclaimed landscape which first started to be farmed or exploited in a systematic way during the 12th or 13th centuries. Here the tracks have a predominately east-west orientation, and the large and irregular field shapes contrast with the linear, narrow, slightly curving fields fossilising the medieval strips and the more regular straight-sided fields of the 18th and 19th century enclosures such as those on Balne Moor (see figure 1).

4.6.6 Such reclamation work would have been initiated by large local landowners such as perhaps the de Newmarch family. They owned the majority of the land in the area, had the necessary capital for the required improvements such as drainage schemes, and saw a return on their investment through new or increased rents from yeoman farmers or small holders; a document of 1253 drawn up between the de Newmarches and their neighbours records that "the water stopped up in the Balne (an area to the east of Whitley Bridge) shall be carried off in a ditch eight feet wide and four feet deep" - this may refer to the digging of the Blowell Drain (pers comm V Metcalf). Without further, more detailed research it is impossible to determine the full extent of this improvement and reclamation but many of the fields are described as "ancient" in the 18th and 19th century enclosure acts and drains such as the Blowell Drain, the Lake Drain and the Bradley Drain have clearly been dug to take water from this area to the River Went.

4.7 The later post-medieval period (1750 onwards)

4.7.1 This period is characterised by changes in social structure and the increasing sophistication and diversification of, in this area, the rural economy. The process of land enclosure continued on a piecemeal basis until the 1770s, when enclosures began to be regulated by Acts of Parliament. Those areas which were not already enclosed were subsequently taken in and/or regularised, for example in Womersley (in 1805) and Little Smeaton (in 1787). Balne Moor, together with other areas in Heck and Whitley, was enclosed in

1775.

4.7.2 The 1805 Enclosure map and award for Womersley township includes the western part of the study area, and provides the earliest readily available accurate survey of this area. The map and award give details of the field names and their ownership, and shows that many of the fields were "ancient enclosures", ie. already enclosed. The "High Field Lane Road", running from the village eastwards to Highfield House is also described as following "an ancient lane". The importance of keeping the Blowell Drain clear is emphasised in the award which states that it should be "five feet wide at the bottom" and "supported, maintained and kept in repair" by the respective landowners "for all times and for ever hereafter". In terms of ownership, a line of fields immediately to the west of the Blowell Drain were owned by Henry Yarborough but the remainder formed part of the Womersley Estate owned by the Right Honorable Earl Hawke. None of the field names are particularly significant, and all imply that the area was under pasture; one field abutting the drain is called "Duck Pasture", perhaps reflecting the wildfowl living on the drain.

4.7.3 The area underwent further change during the 19th centuries following the development of the road and railway system. The present A19 from Doncaster to Selby via Askern was built as a turnpike road between 1834-35; before this the route was a circuitous one with the only crossing points of the River Aire being at Ferrybridge or by ferry at Snaith. A map of 1830 depicts the intended and subsequently built route passing along the west side of the study area and notes that all the land through which the road was to pass was owned by Lord Hawke and was tenanted by Thomas Harrop who lived at and farmed from Highfield House.

4.7.4 The area is also crossed by two former railway lines. One, the Heck Bridge and Wentbridge Railway, was initiated in 1826 by Charles Dance to transport limestone from his quarries at Wentbridge and Kirk Smeaton to the Knottingley and Goole Canal at Heck (Boyes 1973). A map of 1825 shows the line of the intended railway passing through the study area and land was compulsorily purchased, to a maximum width of 15 feet (4.5 metres). Construction started at either end in 1826 and included the building of a large canal basin at Heck. However the money ran out in 1829 and by 1831, the date at which the railway was required by the Parliamentary Act to have been completed, only six miles of track had been laid and only half the land paid for. Charles Dance then absconded with the remainder of the funds and the project collapsed.

4.7.5 The second railway through the area is that which is depicted as a disused line on the current Ordnance Survey maps, passing to the north of Walden Stubbs and Highfield House on north-east/south-west alignment (see figure 2). This is the Hull, Barnsley and West Riding Railway which was last complete and independent Victorian

railway to have been built (Ingram et al 1972; Barnett et al 1980). It was originally constructed as a mineral line to link the South Yorkshire coalfield with the east coast port of Hull. Work started in 1881 and, despite being the most expensive line ever constructed at an average of £58,000 per mile, it was a profitable venture for some time. A station was planned but never built at Balne Moor and level crossings controlled the Balne Moor and Doncaster Roads, although the latter was later replaced by a bridge. In 1922 the line was amalgamated with the North-East Railway and it was closed to passenger traffic in 1929. The line finally closed in 1953.

4.7.6 Previous clay extraction near the study area can be seen from the former Highfield Brick Works which was located between the Blowell Drain and the Hull, Barnsley and West Riding railway, on the west side of the turnpike road. The complex, which is not shown on any plan before the Ordnance Survey 1853 6" map, was presumably started after the construction of the new turnpike road which would have provided good communication links to, for example, the Aire and Calder Canal. Both the Ordnance Survey 1891 6" and 1902 25" maps depict a "kiln" at the site together with other unnamed buildings surrounded by a network of small pits from the clay was dug. A sale plan of 1930 notes that the works were no longer in operation but that the large pond had been stocked with "bream, perch, pike etc" and that the site included the remains of the kilns and an old pug mill. The buildings have since disappeared but the water-filled pits remain.

5 THE STUDY AREA

5.1 Physical characteristics

5.1.1 The study area, which covers some 32.5 hectares, is located between the A19 Doncaster to Selby Road and West End Lane, centred on NGR SE572183 (see figure 2). Highfield House Farm lies in the south-west corner and the north-west boundary is formed by the former line of the Hull, Barnsley and West Riding Railway. The Blowell Drain runs north-south through the approximate centre of the study area, flowing in a southerly direction. A bridle way also passes east-west through the site.

5.1.2 The whole of the study area lies below 5m AOD and is flat. The solid geology is Sherwood Sandstone overlain by glacio-lacustrine and glacial-fluvial drift. The Soil Survey of England and Wales map (sheet 1 Northern England) shows that the soils are divided between a typical Cambic gley soil (Sessay Association) in the western half of the study area and a pelo-stagnogley soil (Foggathorpe 2 Association) in the east; the former are fine and coarse loamy permeable soils affected by groundwater while the latter are slowly permeable seasonal waterlogged clayey and fine loamy soils. Boreholes across the site show that there is approximately 0.5m of topsoil overlying some 5m of clay deposits.

5.1.3 At the time of the preliminary walkover survey (January 1997) land use within the study area was mostly improved grassland, with one field to the north of Highfield House (OS field 6842) planted with winter wheat. There is a thicket of dense scrub and marshy grassland (OS field 9843) adjacent to the Blowell Drain, and smaller areas of plantation have been planted along the north, east and south sides of a new pond created in the mid 1980s and covering approximately 0.3 hectares in the north-west corner of OS field 3846.

5.1.4 Some of the internal boundaries of the study area as depicted on figure 2 have now been removed, OS fields 1724 and 4228, and OS fields 9534 and 8143 having been amalgamated into two larger units. The remaining boundaries are represented by ditches and managed and un-managed hedges. The main ditch through the site, the Blowell Drain, is between 3m and 4m wide and approximately 5m deep while the ditch running east-west alongside the bridle way is approximately 3m wide and 2.5m deep; the other ditches are smaller and generally silted up. Several of the boundaries contain mature oak trees and there are two pollarded willows on the east edge of OS field 4228, the latter representing an earlier form of hedge-line management.

5.2 Preliminary walkover survey

5.2.1 A preliminary walkover survey of the whole of the study area was carried out to determine current land use, to note the location, nature, extent and condition of any recorded and unrecorded archaeological sites, to identify any concentrations of material which might serve as an indication of sub-surface archaeological features, and to assess the potential impact of the proposed development.

5.2.2 This survey was carried out on 15 January 1997, with a further shorter visit on 21 January 1997. Every field within the study area was examined, in most cases by walking across it and/or around the boundaries. The buildings at Highfield House were only cursorily examined and no internal inspections were carried out.

5.3 Archaeological sites

5.3.1 A total of six sites or areas of archaeological interest were recorded in the study area (see figure 3). These are as follows:

Site no	NGR	Site name
1	SE56671832	Farm buildings (site of), north of Highfield House
2	SE56691822	Farm complex, Highfield House
3	SE56801862-SE56991809	Blowell Drain
4	SE56751815	Ridge and furrow (site of), east of Highfield House
5	SE57411854-SE57101808	Course of Heck Bridge and Wentbridge Railway
6	various	Former field boundaries

5.3.2 No sites of prehistoric, Roman or Anglo-Saxon date were identified; all the above are sites of the medieval or post-medieval periods. It should be noted that for sites 3 and 5 the quoted National Grid References mark the edges of the study area and are not the full extent of the monuments. Appendix 1 gives details of the various maps and documents discussed below.

Site 1: Farm buildings (site of), north of Highfield House

5.3.3 The earliest accurate map consulted as part of the desk-top survey, the 1805 Womersley enclosure plan, shows two buildings located to the north of Highfield House, adjoining the east side of a north-south field boundary with formerly divided OS field 6842 into two. The buildings are depicted as two rectangular structures, forming the north and west sides of an enclosed yard; the two buildings are not connected. The field in which the buildings are located is named as "Barn Fold and Stable Close" in the enclosure valuation book.

5.3.4 The buildings are similarly depicted on Greenwood's 1817 plan, on the 1825 plan showing the line of the intended Heck Bridge and Wentbridge Railway and, although at a much smaller scale, on Teesdale's 1828 map of Yorkshire. They are not shown on Jeffrey's 1775 map nor the Ordnance Survey 1853 6" map.

5.3.5 The evidence suggests that the buildings formed part of the Highfield House farm complex and are likely to have built at the same time, presumably in the 18th century, as additional agricultural buildings. They were demolished by 1853 and no trace of them remains within a field of winter wheat.

Site 2: Farm complex, Highfield House

5.3.6 As with site 1, the farm complex at Highfield House is accurately depicted on the 1805 enclosure map, although not apparently shown on Jeffrey's 1775 map. This implies that the farm was built in the second half of the 18th century and presumably represents an attempt to bring one of the outlying areas of the township into cultivation. However, given the possibility that the original reclamation of this area may have taken place in the 12th or 13th centuries (see section 4.6 above), this new farm may either be an extension of this process or a rebuilding of an existing complex. It has been suggested that the house was originally moated (pers comm V Metcalf) but no evidence for this could be seen at the time of the preliminary walkover survey.

5.3.7 The 1805 enclosure map shows a square building on the north side of the farmyard together with a north-south aligned barn to the south-east; the square building probably corresponds to the northern part of the present house while the latter represents a surviving barn. The complex is named as "Homestead" on the 1805 valuation award.

5.3.8 The complex is similarly depicted on Greenwood's 1817 map and on the 1825 Heck Bridge to Wentbridge Railway plan while the 1830 map showing the proposed turnpike road depicts the house as having an L-shaped plan, corresponding to the northern part of the present house. The barn to the south-east is also shown, together with a new structure, another barn also aligned north-south, to the east of the house. At this date the whole complex was occupied by Thomas Harrop and was owned by Lord Hawke as part of the Womersley Estates.

5.3.9 An Ordnance Survey map of 1841, which shows that the turnpike road has now been built, depicts an interesting development. The house is now named as the "Hawke Arms Inn" and a drive or lay-by to the front (west) of the house is shown running from the main road. Although the scale is rather small, the agricultural structures are also shown to have been extended, with the barn to the south-east now forming the east side of a yard enclosed by ranges of farm

buildings on all four sides. This clearly represents a major rebuilding of the complex into a coaching house or inn on the newly created turnpike road, the name reflecting the owner of the Womersley Estate. However, it is not clear whether this development is a conversion from the original agricultural function or a 19th century form of diversification by the owner Thomas Harrop.

5.3.10 The Ordnance Survey 1891 6" and 1906 25" maps show the complex similarly, although now re-named as Highfield House, and the drive from the main road has been replaced by a track running straight to the house. The latter map has a bigger scale and allows the arrangement of the structures to be seen more clearly, for example the original north-south aligned barn on the east side of the yard contains an open-sided engine house on its east side. Finally, a sale plan of 1930 describes the complex in some detail (see Appendix 2) and, although there may have been some embellishment to aid the sale, the complex was clearly an extensive one.

5.3.11 Today the complex comprises three of the historic structures, the main house and two agricultural buildings, with an additional new large barn to the east. It should be noted that none of the buildings were investigated in any detail and the following short descriptions result from a brief external examination. The house is now covered with a grey render and so any external additions or modifications are difficult to identify. However, it is a large imposing structure with a four bay frontage with 16-light sliding sash windows and a hipped slate roof. There are also several adjacent outbuildings and gardens to the front (west), surrounded by a low, partly collapsed, capped stone wall on the west and north sides and brick on the south; the original front entrance and drive has been removed. The 1930 sale description notes that the house was divided into two tenements.

5.3.12 The two remaining historic barns to the south-west of the house represent the north and west ranges of the enclosed yard shown on the Ordnance Survey 1906 25" map. The building to the north is a four bay two storey structure of red brick with a modern corrugated asbestos roof, with access to the first floor hay loft via an external stair at the east end. It was clearly a stable as there are five wooden horse stalls inside complete with feeding troughs and the remains of harnesses still hanging on wall pegs. This structure is first depicted on the 1841 Ordnance Survey map and presumably represents stabling associated with the newly created coaching inn. There is a ruined structure on the east end of the stable which represents the remains of the north part of the east farmyard range.

5.3.13 The western building is a seven bay two storey structure of brick and stone construction, also with a modern corrugated asbestos roof; the southern end contains a carriage entrance and what appears to be a modern garage and is presumably the double trap house mentioned in 1930 (see Appendix 2). There is considerable evidence for additions and alterations within the structure and there are external

stone stairs to the first floor on the east side. This is clearly an older structure and corresponds to part of the original farmstead, this building being depicted on the 1805 enclosure map.

Site 3: Blowell Drain

5.3.14 The Blowell Drain passes along a section of the northern boundary of the study area and then turns south through the approximate centre of the area before joining with the Lake Drain and eventually running into the River Went. It is shown although not always named on all of the historic maps consulted as part of the project and it marks the boundary between the modern parish and ancient townships of Womersley and Balne.

5.3.15 The drain still acts as a major drainage feature of the area and is an impressive earthwork, between 3m and 4m wide and approximately 5m deep. It is regularly maintained and provides a valuable ecological and wildlife habitat (Clouston 1996, 37-39). A weir has been recently added to the drain, to allow water to flow into the newly created pond in the north-west corner of OS field 3846. The east-west bridle way which passes through the study area crosses the drain in the south-west corner of OS field 3846 but the present culvert is of a modern concrete construction and no trace of any earlier structure remains.

5.3.16 The drain is likely to form part of the original water control system of the area created to drain the former wetland and marshes to the east of Womersley village. As noted above in section 4.6 above, it is possible that the drain has its origins in the 12th or 13th centuries; it is significant that the drain has a sinuous alignment which contrasts with the straight boundaries and ditches of the 18th and 19th century enclosures (a section to the north has been straightened and is called the "New Blowell Drain"). The fact that the drain acts as the boundary of the townships may even suggest that it has earlier origins.

Site 4: Ridge and furrow (site of), east of Highfield House

5.3.17 Vertical aerial photographs taken in 1971 show soil marks of former ridge and furrow earthworks in the field to the east of Highfield House. The ridges runs east-west and lie within a field which has since been amalgamated with one immediately to the west (OS field 7100); only a small part of the former ridge and furrow earthworks lie within the study area. The area was improved grassland at the time of the preliminary walkover survey and no earthworks were visible in the field.

Site 5: Course of the Heck Bridge and Wentbridge Railway

5.3.18 As noted in chapter 4 above, the Heck Bridge and Wentbridge Railway was initiated in 1826 by Charles Dance to transport

limestone from his quarries at Wentbridge and Kirk Smeaton to the Knottingley and Goole Canal at Heck (Boyes 1973). A map of 1825 shows the line of the intended railway passing through the study area on a general north-east/south-west alignment and records the names of the owners and tenants; those fields to the north of the east-west bridle way were owned by the Earl of Mexborough and farmed by Thomas Turner while those to south and to the west of the Blowell Drain were owned by Lord Hawke and farmed by Thomas Harrop.

5.3.19 A strip of land 15 feet (4.5 metres) wide was purchased for the construction of the railway but it is unclear from the published account how much was actually built before the scheme collapsed in 1831. The whole route is depicted on Teesdale's 1828 map but no evidence for the railway can be seen in the study area, either through stone scatters or earthworks, and there are no signs of any bridges or abutments in the side of the field drains; a bridge which carries the bridle way across a drain in the approximate centre of the study area, and which is on the approximate line of the railway, may mark an original crossing point but the bridge is of modern concrete construction and no earlier structure remains. No evidence for the alignment was seen on the aerial photographs consulted as part of the project. Two possibilities arise: either all surface evidence for the railway has been destroyed in the study area by subsequent agricultural activity or it is possible that construction never got this far; the latter appears more likely.

Site 5: Former field boundaries

5.3.20 A combination of the 18th and 19th century maps consulted as part of the survey (see Appendix 1) shows that the study area was originally composed of 16 fields as compared to the present six; the lines of the former field boundaries are shown on figure 3. None of these former boundaries, some of which may have been ditched, now survive in the field, even as slight earthworks. In all cases, they must have been infilled and/or flattened by subsequent agricultural activity.

5.4 Initial assessment of value

5.4.1 Using a combination of all the data sources, an initial assessment of the importance of each identified site or area within the study area can be made, based on a combination of the criteria used by the Secretary of State in the designation of scheduled ancient monuments and by English Heritage in their Monuments Protection Programme. At this stage, a four tier grading system of National, Regional, District, and Local Importance can be applied. Sites which have been destroyed or severely disturbed, and for which no above surface features remain, are afforded no grade.

5.4.2 In terms of importance, the following grades can be assigned to the sites recorded in the study area:

National

None

Regional

None

District

Site 3 Blowell Drain

Local

Site 2 Farm complex, Highfield House

No grade

Site 1 Farm buildings (site of), north of Highfield House
Site 4 Ridge and furrow (site of), east of Highfield House
Site 5 Course of Heck Bridge and Wentbridge Railway
Site 6 Former field boundaries

5.5 Unidentified sites

5.5.1 During the medieval period, the study area is likely to have been given over to agriculture, with some areas of un-cultivatable marsh or wet land. Additional sites of this and the later post-medieval period unidentified by this survey are therefore unlikely.

5.5.2 Recent research suggests that the distribution of prehistoric sites in the area of the former Lake Humber tends to correspond with slightly elevated land and/or areas adjacent to major river systems. One field to the south of Highfield House (OS field 7100) has been recently fieldwalked by the Humber Wetlands Project with no results (pers comm R Van de Noort). The possibility of prehistoric activity within the study area appears therefore to be unlikely but it cannot be totally discounted. Unfortunately, at the time of the preliminary walkover survey (January 1997), the majority of the fields within the study area were improved grassland and no surface features or artefact scatters could be identified.

6 ASSESSMENT OF THE EFFECTS OF THE PROPOSALS

6.1 Introduction

6.1.1 For archaeological sites and monuments, the main impacts arising from mineral developments may be summarised as:

- possible disturbance and/or destruction of archaeological deposits from works associated with the proposals, including restoration and landscaping works;
- possible demolition or loss of parts of buildings or other structures;
- severance from other linked features such as field systems, agricultural complexes and landscapes;
- changes in the original landscape.

6.2 Summary of proposals

6.2.1 The proposals as currently envisaged involve the phased extraction of clay from three areas (see figure 4) followed by progressive, phased restoration of the resulting voids to form ponds for recreational coarse and game fishing. Ancillary developments include the formation of a new access road from the A19 into the site and the construction of a transfer station in Area 2 immediately to the east of Highfield House.

6.2.2 Clay is proposed to be extracted from approximately 18.5 hectares in the centre of the study area over a period of some 18 years. The subsequent landscaping, which will take place progressively as workings move from one area to another, will also be confined to this 18.5 hectare area. Extraction area 1, to the west of the Blowell Drain, comprises a total area of some 5.82 hectares which will be worked in a series of strips from east to west over years 1 to 8 of the development. Area 3 covers 5.01 hectares on the north side of the east-west bridle way which will be worked in a series of strips from west to east over years 9 to 11. Area 4, on the south side of the east-west bridle way and east of the Blowell Drain, covers 7.39 hectares which will be worked also as a series of strips over years 12 to 17. In all cases, only some five hectares will be stripped and worked at any one time.

6.3 Impact of development

6.3.1 Within the proposed development area, six sites of archaeological interest have been identified. The impact of development on each can be summarised as follows:

Site no	Site name	Grade of site	Impact of proposals
1	Farm buildings (site of), north of Highfield House)	No grade	Site lies outside extraction area: no impact
2	Farm complex, Highfield House	Local	Site lies outside extraction area: no impact
3	Blowell Drain	District	Site lies within general development area but is unaffected by proposals: no impact
4	Ridge and furrow (site of), east of Highfield House	No grade	Part of site lies within Area 2 but site already ploughed out and no above-surface features remain: no impact
5	Course of Heck Bridge and Wentbridge Railway	No grade	Part of site crosses Areas 3 and 4 but site already ploughed out and no above-surface features remain: no impact
6	Former field boundaries	No grade	Part of site crosses Areas 1, 3 and 4 but boundaries already ploughed out and no above-surface features remain: no impact

6.3.2 It can therefore be seen that only three of the identified archaeological sites will be affected by the proposals, and in each case the site is afforded a "no grade" classification of importance as no above surface remains could be identified at the time of the preliminary walkover.

7 MITIGATION MEASURES

7.1 Introduction

7.1.1 For archaeological sites, possible mitigation measures can be described as:

- locate any disturbance away from archaeological remains and their settings;
- undertake appropriate recording works and other investigations in advance of construction;
- undertake appropriate recording works and other investigations during construction.

Such measures depend on the importance of the site and in practice a combination of measures is often used.

7.2 Mitigation measures

7.2.1 Given the impact of the proposals on the three identified archaeological sites, which are all of a "no grade" classification of importance, no site specific mitigation measures are proposed.

7.2.2 However, as noted in section 5.5 above, the possibility of there being as yet undetected prehistoric features or deposits within the proposed extraction areas cannot be discounted. In these cases, it is usual to undertake some form of archaeological assessment or evaluation to determine whether remains are present; here such assessment work would typically involve fieldwalking and/or geophysical survey, followed by targeted trial trenching and/or test pitting, with further more detailed excavation should the results of the assessment be significant, followed by appropriate post-excavation assessment, analysis and publication.

7.2.3 In brief, fieldwalking involves the systematic search for concentrations of artefacts visible on the surface of the ground which can provide clues to the location of buried remains; this work is often divided into initial fieldwalking, an initial identification exercise where areas are walked along parallel lines spaced 10m apart, and detailed fieldwalking, where areas are divided into 10m squares and artefacts are collected by square to produce a detailed distribution map. Geophysical survey detects and maps buried archaeological features or structures by measuring variations in the magnetic or resistance properties of the soil. The advantages of these techniques for assessment work is that they are relatively quick and cost-effective methods of investigating large areas, and they are non-intrusive.

7.2.4 At present (January 1997) land use within the three extraction areas is improved grassland which does not lend itself to archaeological fieldwalking. Geophysical survey is another possibility but this technique does not tend to identify the small-scale features characteristic of the temporary, transient prehistoric sites which might be expected, and any results would be affected by the land drainage which has taken place in some areas.

7.2.5 However, the three extraction areas are likely to be ploughed in advance of development and in this case initial fieldwalking will be undertaken within the three proposed extraction areas (approximately 18.5 hectares in all) as and when it is appropriate. Any results thus obtained would be discussed with the appropriate authorities and further work such as detailed fieldwalking or trial trenching would be carried out if required. In all cases, each fieldwork phase would be accompanied by assessment, analysis and reporting, and any finds or archives would, with the permission of the landowner, be deposited with an appropriate museum.

7.2.6 If it transpires that the land does not become available for initial fieldwalking in advance of development, the requirement for an archaeological "watching brief" during the initial topsoil strip (with appropriate on-site recording should any features be uncovered) will be discussed with the appropriate authorities. Such work would enable any remains associated with the presumed destroyed sites (sites 4, 5 and 6) to be recovered but it should be noted that, due to the nature of the development and the method of working, any watching brief would be limited to a small area of approximately five hectares at any one time.

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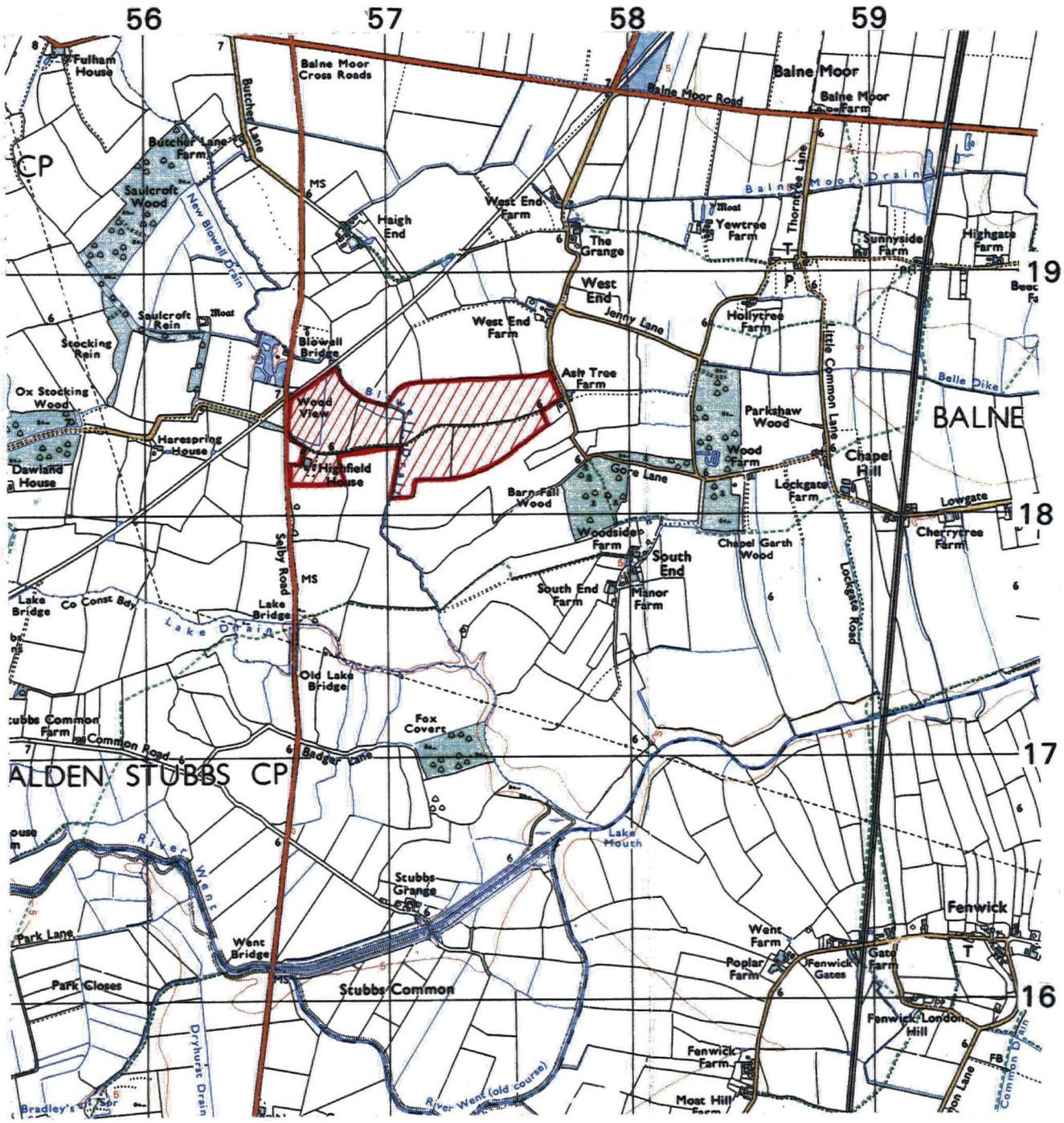
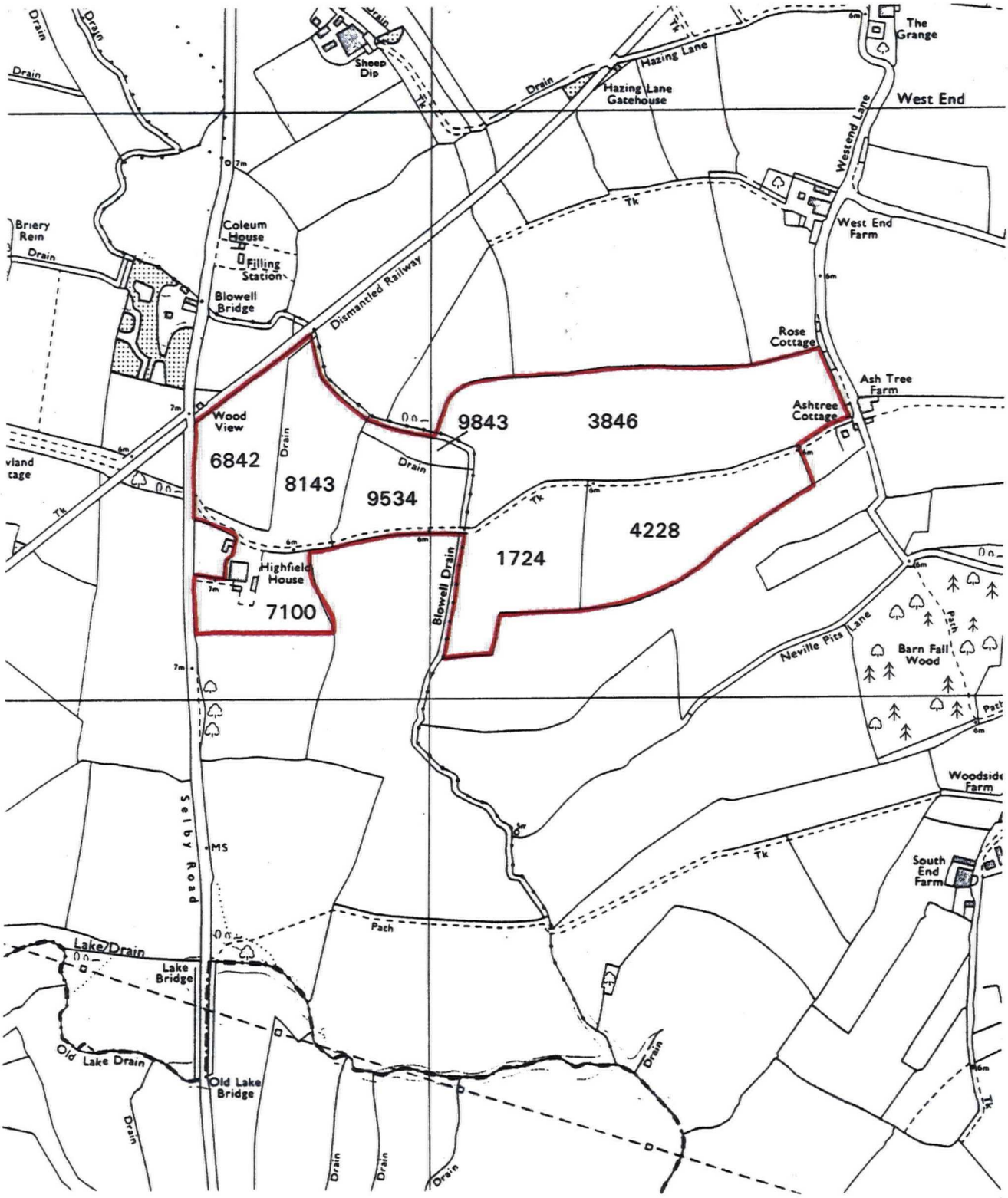
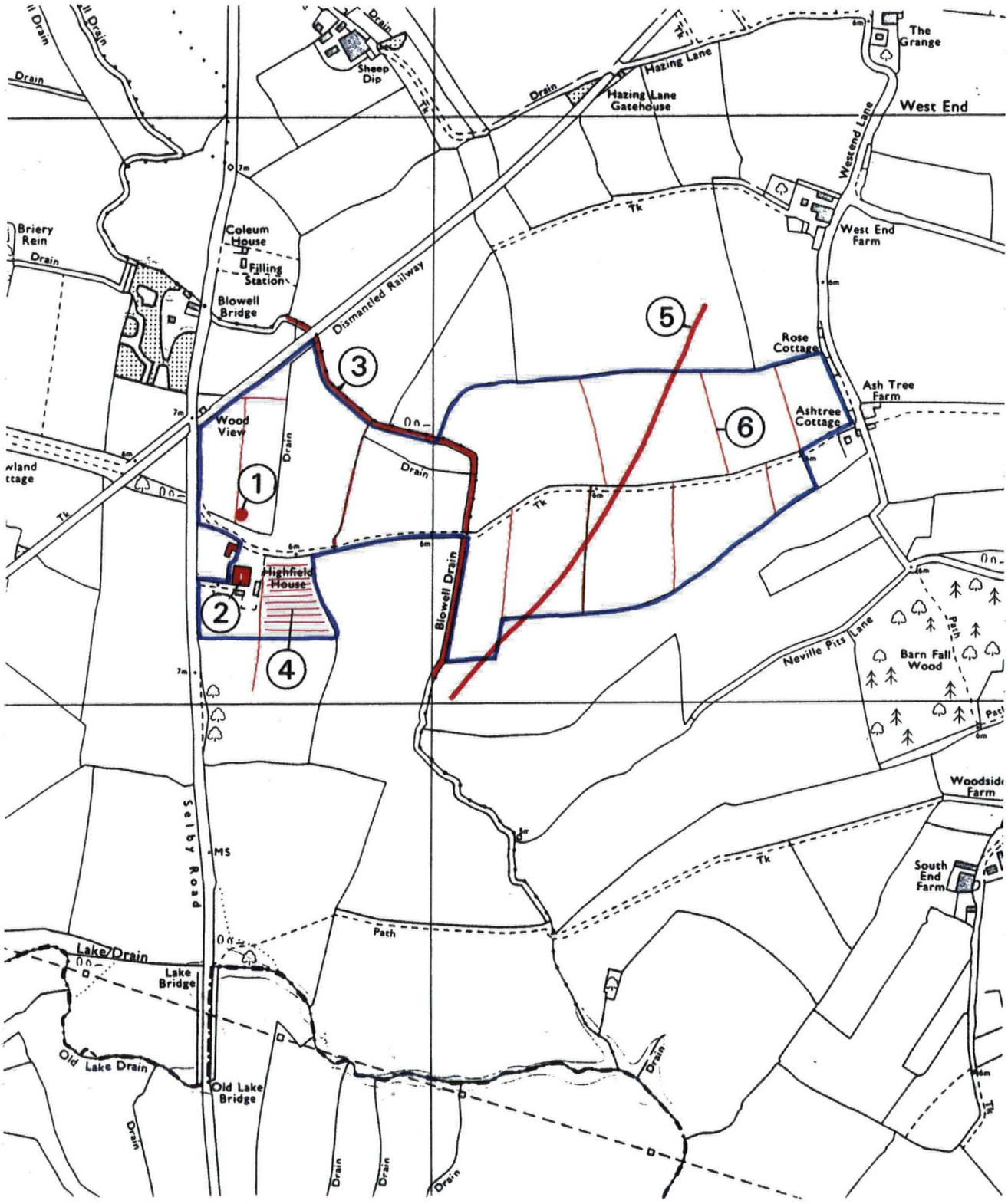


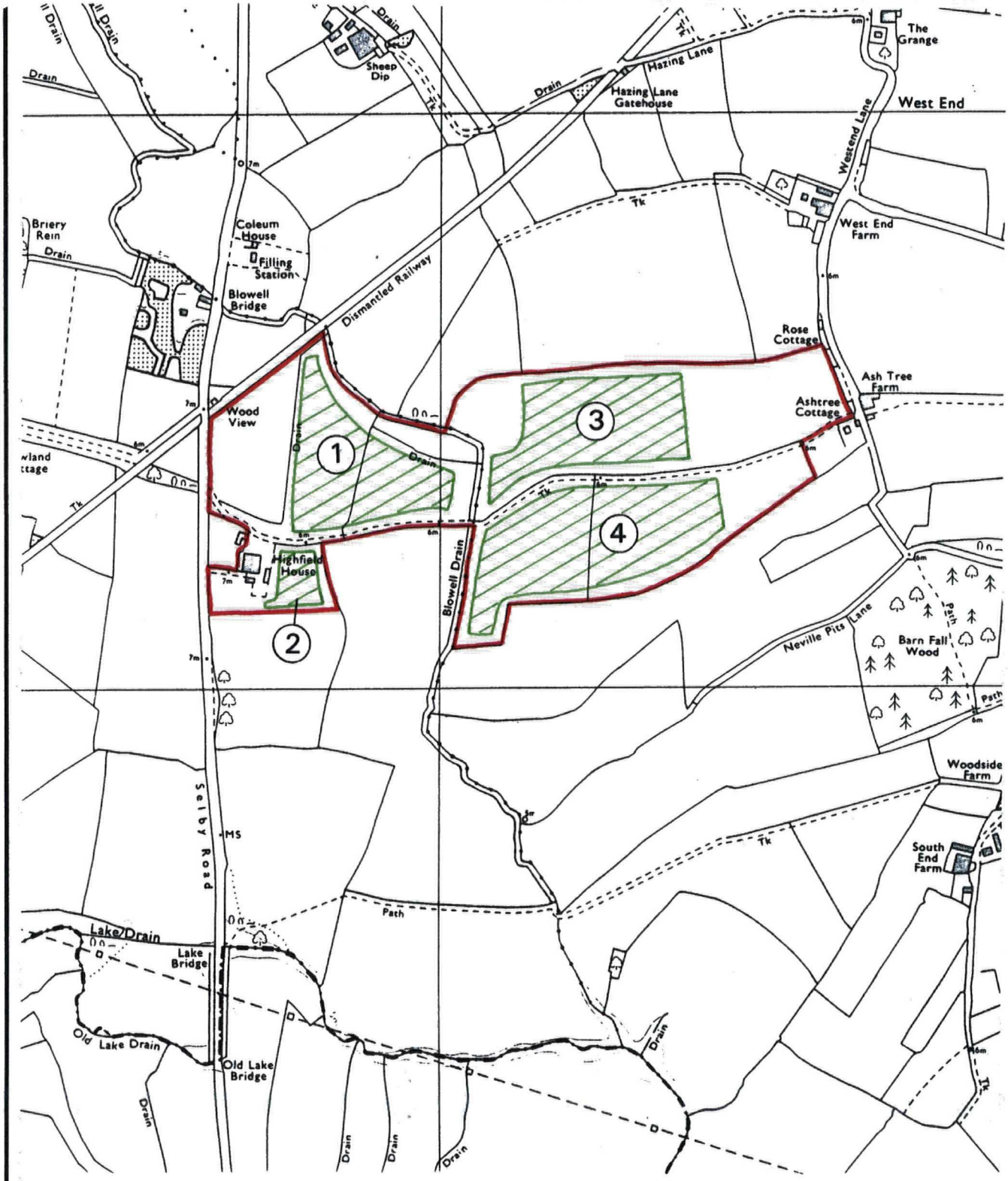
KEY	SCALE	PROJECT	
STUDY AREA	1:25,000	HIGHFIELD HOUSE FARM	EDAS
	DATE: JAN 1997	TITLE: GENERAL LOCATION PLAN	FIGURE: 1



KEY	SCALE	PROJECT	EDAS
STUDY AREA	1:10,000	HIGHFIELD HOUSE FARM	
7100 OS FIELD NOS	DATE JAN 1997	TITLE STUDY AREA	FIGURE 2



KEY	SCALE	PROJECT	EDAS
STUDY AREA (5) SITE NUMBERS	1:10,000	HIGHFIELD HOUSE FARM	
	DATE JAN 1997	TITLE ARCHAEOLOGICAL SITES	FIGURE 3



KEY 4 EXTRACTION AREAS	SCALE 1:10,000	PROJECT HIGHFIELD HOUSE FARM	EDAS
	DATE JAN 1997	TITLE EXTRACTION AREAS	FIGURE 4

APPENDIX 1: LIST OF SOURCES CONSULTED

1. Map and plans

Note: only those maps and plans relevant to this survey are listed, it is not intended to be an exhaustive list of maps and plans of each parish or township. Abbreviations are as follows:

NYCRO	North Yorkshire County Record Office, Northallerton
WYAS	West Yorkshire Archives Service, Wakefield
JCG	John Goodchild collection, Wakefield

a) General maps of Yorkshire

1775 Jeffrey's map of Yorkshire (WYAS)

1787 Tuke's map of Yorkshire (WYAS)

1817 Greenwood's map of Yorkshire (JG)

1828 Teesdale's map of Yorkshire (WYAS C559/86)

b) Estate, enclosure and other maps

1775	Heck enclosure map (Balne Moor)	WYAS B10
1805	A map of the Township of Womersley in the West Riding of County of Yorkshire drawn by Robert Lamb (enclosure map)	NYCRO MIC 604 WYAS C366
1825	Plan of an Intended Railway from the Navigable Canal at or near Heck to Wentbridge in the West Riding of Yorkshire by E Taylor	WYAS 1825/1
1830	Plan of the line of the Intended Turnpike Road proposed to be made from Doncaster to Selby by way of Askern in the West Riding of Yorkshire	WYAS QE20/2/166
1930	Plan of the Womersley Estate in the parishes of Womersley, Whitley, Balne, Norton ... belonging to the Right Hon. The Earl of Rosse	JCG

c) Ordnance Survey maps

1841 1" map sheet 87
1853 6" map sheet 251
1891 6" map sheet 251SW
1904 6" map sheet 251SW
1906 25" map sheet 251(9)

2. Other documents and information

1805	Enclosure award	NYCRO MIC 604 WYAS C366
1805	Enclosure valuation book	WYAS C366

Information from National Archaeological Record, RCHME
Information from Sites and Monuments Record, North Yorkshire County Council
Information from the Wood Hall Moated Manor Project (Ms V Metcalf)
Information from Humber Wetlands Project, University of Hull (Mr R Van de Noort)

3. Vertical aerial photographs

Meridian Air Maps Limited
03.05.71 Run 65, frame 137
03.05.71 Run 66, frame 176

Hunting Surveys Limited
HSL.UK.71-204
27.10.71 Run 59, 9549

APPENDIX 2: DETAILS OF HIGHFIELD HOUSE FARM FROM 1930 SALE PLAN

All forms part of Lot 46

Highfield House

Substantially built brick and stone and stucco rendered structure with slated roof standing nicely back from the main road, and conveniently planned so as to facilitate occupation in two tenements ... three siting rooms, store room with fireplace, two kitchens, back kitchen with sink, scullery, dairy, seven bedrooms in all, closet and ashpit outside.

Farm buildings

Cake etc store, Blacksmiths shop, 4-stall stable (now used for calves) and 3-stall stable (now used as a loose place), fowl house, meal house with boiler, double trap house with two large lofts over, gin race, loose place for calves, 2 bay barn with chaff place and granary over, on one side 2 bay covered yard with cow house for eight, loose place for calves etc, 3 bay open shed, and two other loose places, 5-stall stable with loft over, bull box outside yard, well and pump. There is a walled rick yard and two pigsties with runs and a five bay Dutch barn.