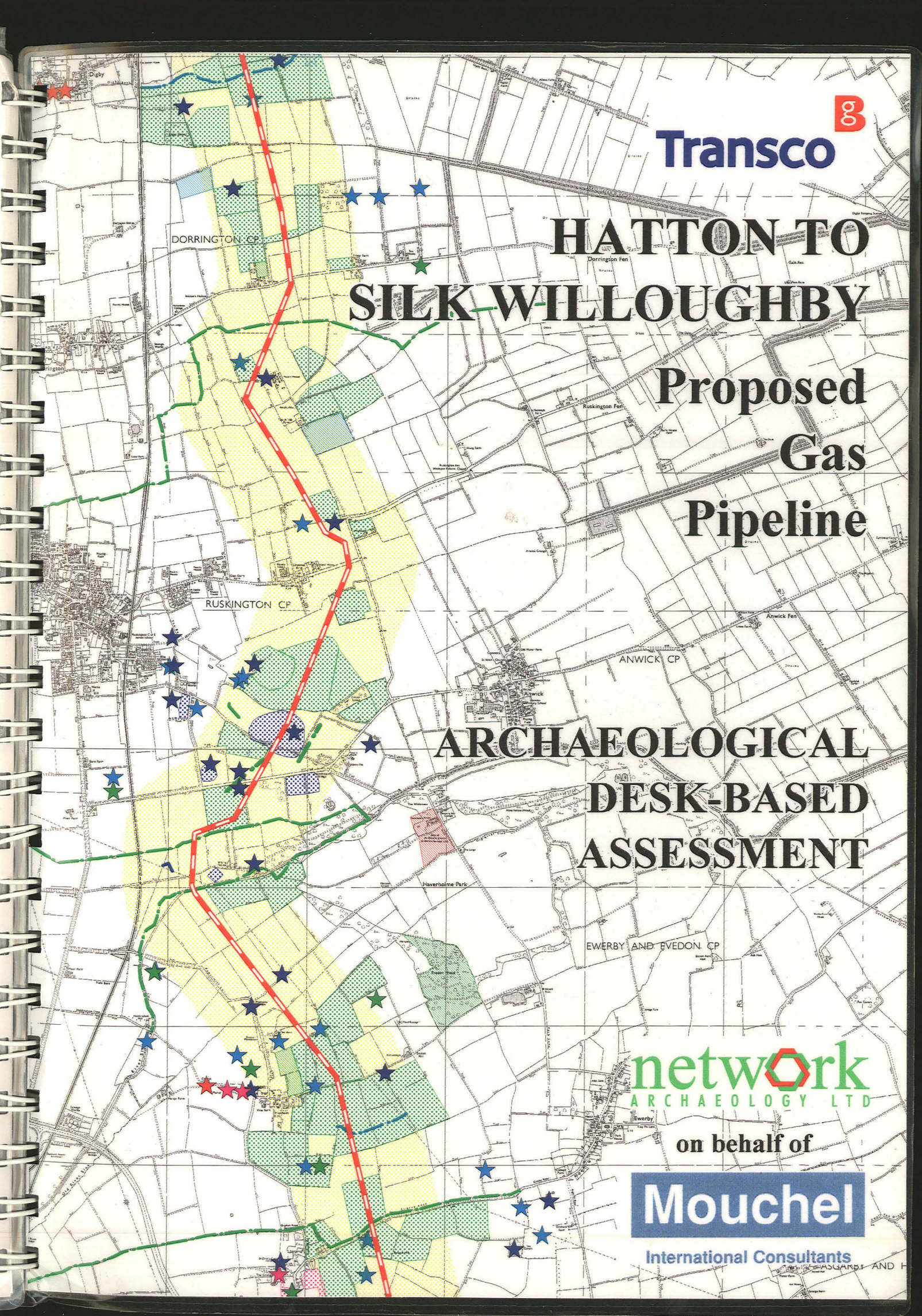

HATTON TO SILK WILLOUGHBY

Proposed Gas Pipeline

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

network ARCHAEOLOGY LTD

on behalf of

Mouchel

International Consultants

HATTON TO SILK WILLOUGHBY

Proposed

High Pressure
Natural Gas Supply Pipeline

ARCHAEOLOGICAL DESK BASED ASSESSMENT

Prepared by

NETWORK ARCHAEOLOGY LTD

for

MOUCHEL CONSULTING LTD

on behalf of

TRANSCO

Report No. 147

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1 SUMMARY

1.1 This Archaeological Desk-Based Assessment deals with the proposed, thirty-nine kilometre, Transco natural gas pipeline between Hatton and Silk Willoughby in Lincolnshire (Figure 1).

1.2 The corridor of interest for the proposed route runs roughly north to south through the central part of the county, its middle section crossing the Witham Valley fenlands. A fairly low density of archaeological remains are known within the Witham Valley and to the north. Far greater numbers of known archaeological remains exist to the south of the valley.

1.3 Few reliably dated prehistoric sites are recorded within the study corridor. It is believed, however, that the large number of unexcavated cropmarks situated to the south of the Witham Valley belong to the prehistoric (and/or Romano-British) periods. When combined with the evidence of numerous isolated prehistoric find spots, this suggests a relatively high level of human exploitation of the area at this time. Although no positively identified prehistoric sites appear to be directly affected by the pipeline, there are at least nine suspected prehistoric cropmarks within half a kilometre of the route; one or more of these may easily be more extensive than the aerial photographs suggest.

1.4 The distribution of known Romano-British sites follows the same pattern as those thought likely to be prehistoric. Whilst no *known* sites and only a handful of find spots are recorded within the Witham Valley fenland and to the north, many of the unexcavated cropmarks south of the Witham Valley are likely to be Romano-British (and/or prehistoric) in date. None of these are directly affected by the pipeline, but at least three potentially Romano-British sites fall within half a kilometre of the route. The pipeline also passes 60m to the east of a scheduled section of the Romano-British watercourse known as Car Dyke (SAM 312) and directly across an unscheduled section of the earthwork to the south of Nocton Wood.

1.5 Only one Saxon site is known within the study corridor. This is a partially excavated inhumation cemetery located approximately 50m to the west of the proposed route near Kirkby la Thorpe. The burials continue immediately east of the excavated area but their full extent is unknown.

1.6 Numerous medieval remains are noted along the full length of the pipeline route. These are mostly earthworks and cropmarks of field systems such as ridge and furrow, the fossilised remains of medieval ploughing. Several Shrunken and Deserted Medieval Villages also exist in close proximity to the proposed route.

1.7 At least sixteen undated cropmarks and cropmark complexes (excluding ridge and furrow) are present within the study corridor. Four are likely to be directly affected by the proposed pipeline route, all of which are potentially significant.

1.7 General Impacts and Recommendations

1.7.1 Despite the small number of *known* archaeological sites directly affected by the currently preferred route, there is considerable potential for the existence of important remains along the pipeline route. This is particularly likely in the southernmost third of the route where the land has been intensively occupied since prehistoric times.

1.7.2 The most cost-effective and proven means of managing this potential risk is to implement a stage of field-based investigation (Stage 3 - see Appendix A):

- reconnaissance survey
- auger survey on areas of alluvium
- fieldwalking survey
- geophysical survey

1.8 Site Specific Impacts and Recommendations

1.8.1 Two hundred and fourty-two archaeological sites have been identified within the study corridor, of which seventy-seven are located directly in the path of the proposed pipeline.

1.8.2 All of the sites have been placed into one of five categories, ranging in significance from Scheduled Ancient Monuments (category A) to single find spots (category E).

1.8.3 There are thirteen main areas of concern (categories B, C and D), where re-routes are recommended:

Category B

- **NMP 12** (Map 2, TF 1339 7175): earthwork remains of Deserted Medieval Village
- **DBA:FZ** (Map 7, TF 1062 4572): a multi-period site including Iron Age ring ditches and an Anglo-Saxon inhumation cemetery
- **DBA:GA** (Map 7, TF 1055 4554): Iron Age settlement remains

Category C

- **DBA:DU** (Map 1, TF 1608 7550): former buildings and yard
- **LSMR 60308** (Map 3, TF 0927 6517): Nocton Hall duck decoy
- **DBA:CT** (Map 3, TF 0906 6357): former building and yard
- **DBA:GF** (Map 4, TF 0960 6000): former building
- **MON 349273** (Map 6, TF 0977 5011): cropmarks of settlement, date unknown
- **MON 1080693** (Map 6, TF 0954 4981): ?prehistoric/Romano-British trackway
- **DBA:DN** (Map 7, TF 1065 4506): cropmark enclosure complex, ?medieval or Romano-British in date
- **DBA:FY** (Map 7, TF 1065 4582): circular cropmark, ?barrow
- **DBA:GH** (Map 7, TF 1042 4474): circular enclosure and pit cropmarks

Category D

- **LSMR 51183** (Map 2, TF 1343 6977): fieldname 'Brick Kiln Close' suggestive of industrial activity

1.8.4 The remaining sites should be re-evaluated at the end of the Stage 3 investigations (Appendix A).

2 INTRODUCTION

2.1 General

2.1.1 In November 1999, Network Archaeology Limited (NAL) was commissioned to carry out an Archaeological Desk-Based Assessment of the proposed Transco *Hatton to Silk Willoughby* natural gas pipeline. This high pressure route, approximately thirty-nine kilometres long, will link Hatton Compressor Station in Lincolnshire (TF 175 763), to the existing Above Ground Installation (AGI) at Silk Willoughby (TF 083 437), 2km south-east of Sleaford, Lincolnshire (Figure 1).

2.1.2 This report will form the basis of the Archaeology and Heritage section of a non-mandatory Environmental Statement undertaken to meet the requirements of *The Public Gas Transporter Pipe-line Works (Assessment of Environmental Effects) Regulations 1996,* which have been in effect since July 1999.

2.1.3 This study forms one stage of what is expected to be a detailed investigative programme of mitigation.

2.2 Context of Pipeline Assessments

2.2.1 Linear developments such as pipelines provide an opportunity to examine a transect across a landscape and the evidence of past human activity preserved within it.

2.2.2 Potentially, pipelines can severely impact upon the archaeological resource. Close co-operation between archaeologist and engineer is essential to ensure that the impact on the archaeological resource is minimised.

2.2.3 The identification of archaeological sites at an early stage allows for forward planning of appropriate mitigation measures, such as route modifications, and site-specific investigations in advance of construction.

2.3 Project Objectives

2.3.1 The purpose of this assessment is to consider the cultural heritage implications of the proposed pipeline, to assist in the selection of an archaeologically least-damaging pipeline route, and to provide a basis for further stages of investigation.

2.3.2 The objectives are to:

- identify and define the extent of known archaeological constraints within and immediately outside the proposed pipeline corridor, and to provide a preliminary assessment of their significance.
- make an informed assessment of the potential for new sites.
- assess the potential for evaluative field survey.
- recommend mitigation measures.

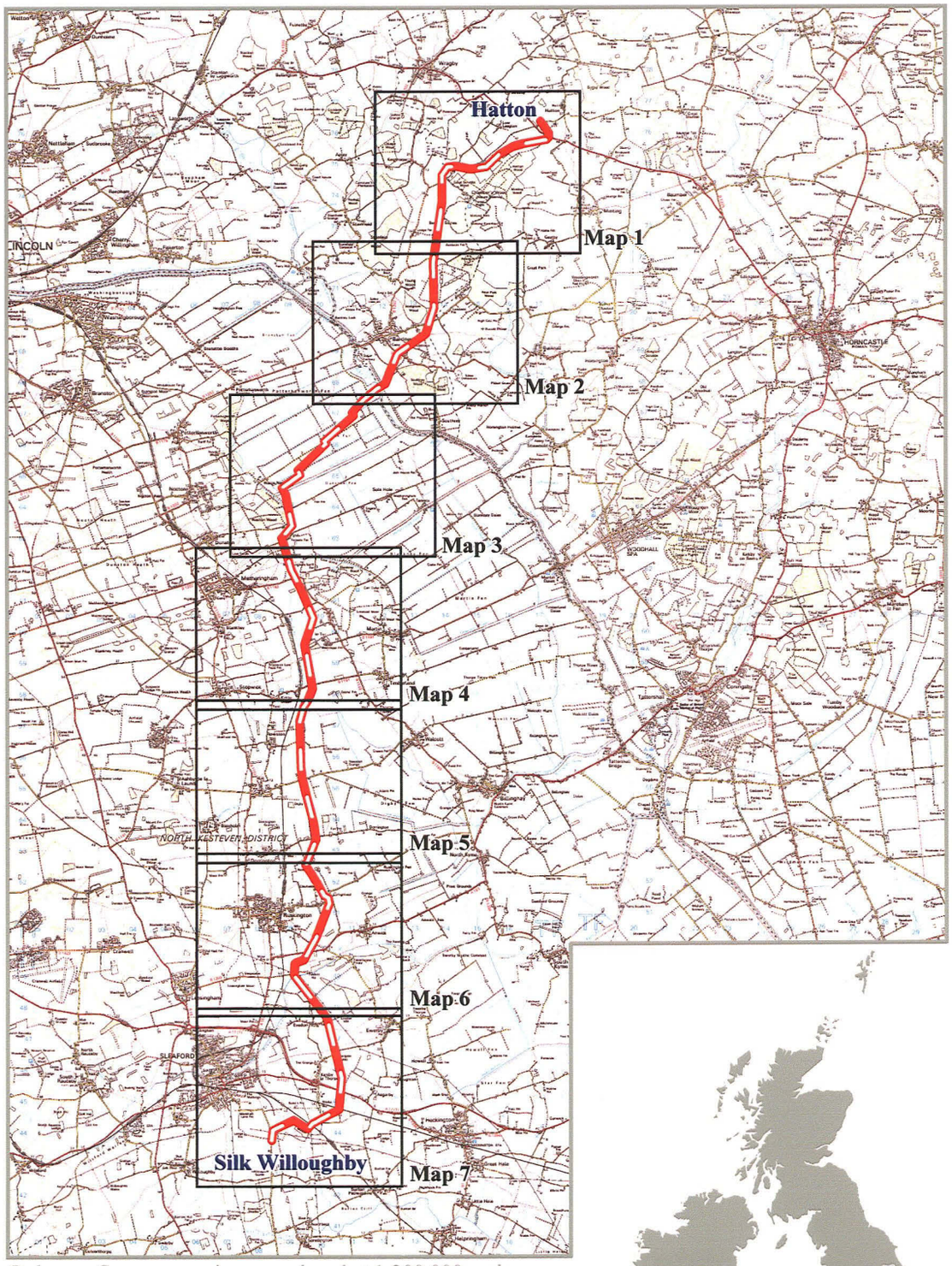


Figure 1: Location of the Pipeline, showing the areas covered by the Constraints Maps

3 METHOD OF ASSESSMENT

3.1 General

This assessment has been conducted according to the Institute of Field Archaeologists *Code of Conduct* (1997) and *Standard and Guidance for Archaeological Desk-based Assessment* (1994).

3.2 Study Corridor

Data collection focused on a 1km-wide study corridor centred on the proposed pipeline route, but also included relevant sites beyond this corridor. Background information for the localities through which the corridor passes was additionally recorded in order to provide a broader archaeological context for the corridor information.

3.3 Data Sources

3.3.1 *English Heritage*:

- County list of Scheduled Ancient Monuments for England (SAMs - legally protected under the Ancient Monument and Archaeological Areas Act 1979)
- The National Monuments Record (NMR) MONARCH database of registered archaeological sites and excavations
- The NMR collection of vertical and oblique photographs

3.3.2 *Lincolnshire County Council Sites and Monuments Records (LSMR):*

- County list of known archaeological sites and finds
- County-based aerial photographs

3.3.3 *Lincolnshire Archives:*

- Enclosure maps
- Tithe maps
- Ordnance Survey maps: 1st and 2nd edition 6" to 1 mile

3.3.4 *Heritage Lincolnshire (North Kesteven archaeological records):*

- District-based list of known archaeological sites, finds and cropmarks

4 DESCRIPTION OF THE PROPOSED PIPELINE ROUTE

4.1 Location and Topography

4.1.1 The proposed route runs for approximately 39km, linking Hatton Compressor Station and Silk Willoughby AGI in Lincolnshire (Figure 1).

4.1.2 The upper third of the pipeline crosses part of the Lincoln Clay Vale: it then passes into the Fenlands of the Witham Valley for its central portion, and finally traverses part of Lincoln Heath for its lower third.

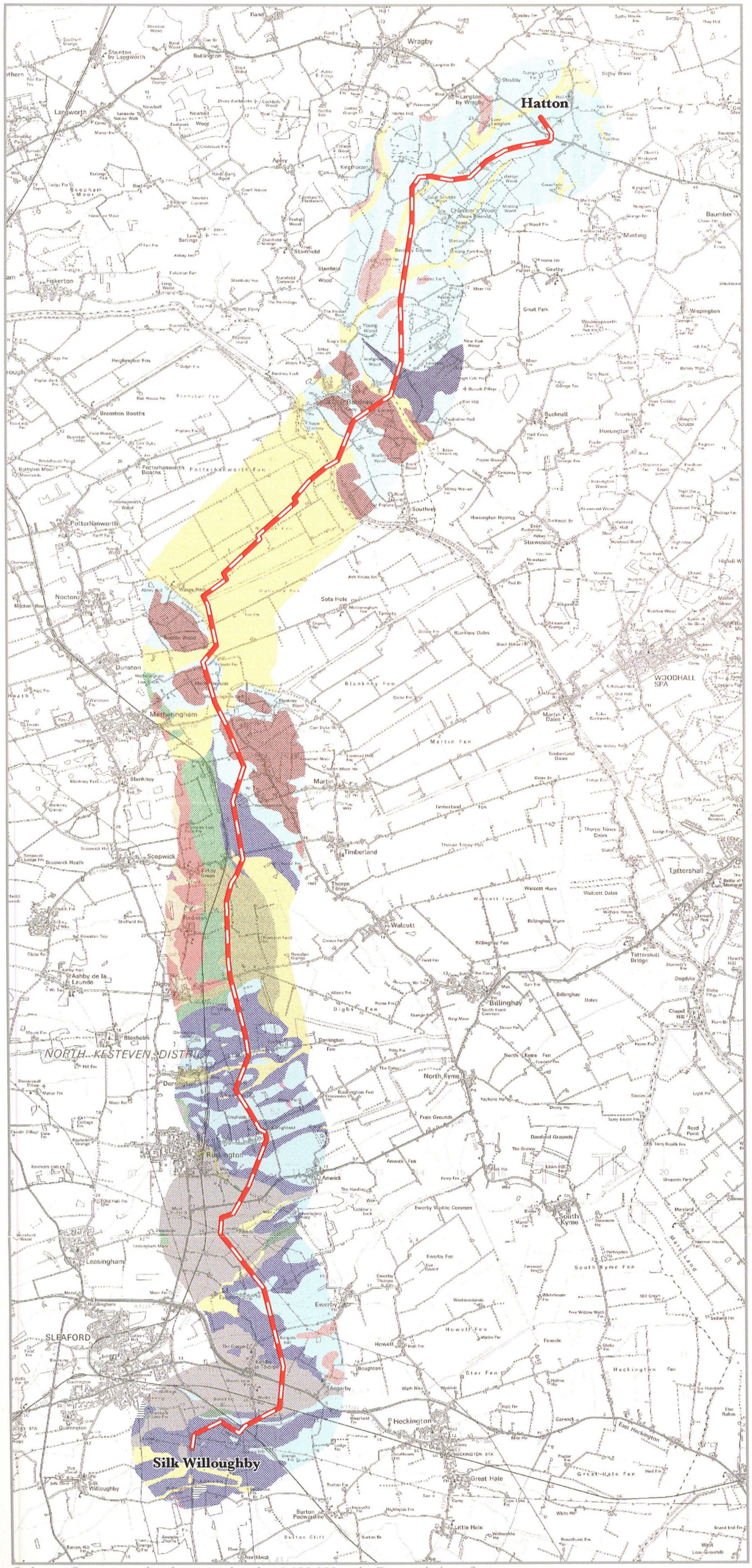
4.1.3 The land along the route is low lying and of low relief, with ground elevations generally ranging from 10-15m Above Ordnance Datum (AOD), although the northern end does reach 20-30m AOD and the Fenlands drop as low as 2m AOD. The northern edge of the Witham Valley floodplain is relatively indistinct, however the southern edge is marked by a more pronounced change of level and is in part defined by a series of woodlands which abut the Car Dyke (Mouchel, 1999).

4.1.4 The solid geology along the route is Upper Jurassic clays and Corallian mudstones (Blisworth and Oxford Clays)(Figure 2). In the northern and southern parts of the route, these clays are overlain in places by a thick mantle of Quaternary drift deposits comprising glacial till (Boulder Clay), pockets of fluvial sands and gravels, and occasional deposits of alluvium. The Witham Fenlands comprise recent marine, estuarine and fluvial sediments over glacial deposits, lying within a basin of Oxford Clay and Kellaway Beds, all overlain by successions of peat and silt deposits (*ibid*).

4.1.5 The Witham Fens, forming one part of the Lincolnshire Fens, were created by the gradual infilling of a lowland basin with a succession of alluvial deposits. Rises in sea-level from prehistoric times led to the obstruction of the natural discharge of the rivers, and caused their waters to back up and overflow. This initiated the many series of complex flooding episodes that eventually filled-in the Fen Basin, and also led to the formation of peat. Many of these early peat deposits were subsequently overlain by marine clays, silts and sands. The sequence of flooding and regression of the Fen areas with salt or fresh water, and the build-up of the Fens in general, remain a very complicated and localised process (Hayes and Lane, 1992, 1).

4.2 Soils and Landuse

4.2.1 The low lying nature of the land in this part of Lincolnshire, and the underlying clay geologies, have generally resulted in fairly heavy soils, naturally prone to waterlogging and agriculturally less manageable than, say, the lands of the Wolds which lie to the north-east. Because of this, however, a long history of drainage has helped to develop the area for arable farming, making it today, one of the more important arable regions in England. The Witham Fenland in particular, extensively drained in the past to prevent flooding, is one of the most fertile agricultural areas in the country. This change to intensive farming has unfortunately produced a gradual lowering of the water table, and an acceleration in the erosion of the peat deposits.



Key

Back-filled quarries

Peat

Blown sand

Alluvium

River Terrace gravels

Fen gravel

Sleaford sands and gravels

Marine and estuarine alluvium

Glacio-fluvial sand and gravel

Boulder clay

Ampthill clay - undifferentiated

Oxford clay

Kellaways sand and gravel

Cornbrash

Blisworth clay

Oolitic limestone

Figure 2:
Surface Geology of the Pipeline Corridor

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 **Palaeolithic** (*c.*250,000 years ago)

5.1.1 Palaeolithic culture flourished during the Pleistocene. It was a period of glaciation interspersed with long periods of slightly warmer climate. Britain was still joined to continental Europe at this time. In periods of intense cold, such as the Last Glaciation (25,000 – 18,000 years ago), populations retreated to the warmer parts of the continent. Palaeolithic people lived a predominantly nomadic lifestyle surviving by hunting and gathering. Even during the glacial periods they made food-gathering forays into the area that is present-day Britain.

5.1.2 Evidence of the Palaeolithic period in Lincolnshire is extremely rare and only a single find spot is recorded near the study corridor. This consists of a hand axe found near the village of Kirkby Green, approximately 650m north-west of the proposed route (Map 4, TF 05NE B, TF 0896 5801).

5.2 **Mesolithic** (*c.*8,300 BC)

5.2.1 The separation of Britain from the Continent occurred gradually at the end of the last Ice Age. The climate became warmer and wetter encouraging the spread of coniferous forest, small areas of which were cleared using hafted flint axes. By 6,500 BC the pine forests had given way to denser, deciduous woodland. Towards the end of the Mesolithic, new habitats were being formed by the water logging of lowland regions.

5.2.2 Small communities of hunter-gatherers migrated seasonally between different areas exploiting different habitats. Their tools were fashioned from stone, wood or bone. Spears were still used, but bows and arrows were now widespread. In addition, greater reliance was placed on composite tools, particularly small flint blades (microliths) set in wooden shafts.

5.2.3 Evidence of early Mesolithic activity in Lincolnshire is scarce. Very few such sites are known and the majority of evidence for the period comes from flint work. Only one area of activity is known within the study corridor. This consists of a late Mesolithic/early Neolithic flint scatter to the east of Kirkby la Thorpe (Map 7, DBA:FZ, TF 1062 4572) .

5.3 **Neolithic** (*c.*4,500 BC)

5.3.1 The Neolithic period is characterised by the shift from hunting and gathering to a settled, agrarian-based economy. This change is manifested in the archaeological record by the appearance of new artefact types - pottery, querns, sickles and polished stone axes. These began to replace the microliths, spears and digging sticks used throughout the Mesolithic period. Environmental remains support the artefactual evidence, indicating land clearance by fire and axe, the introduction of wheat and

sheep and the domestication of native animals such as cattle and pigs. New types of site emerged, including settlements and large ceremonial monuments.

5.3.2 Settlement evidence is again rare but the distribution of stone axe heads suggests that forest clearance was taking place almost everywhere and that great tracts of land were already opened up and settled by *c.* 2500 BC (May, 1976). A number of axe heads have been recorded within the study corridor at Hatton, Nocton Wood, Blankney, Digby Fen and Evedon.

5.3.3 A further distinguishing feature of the Neolithic is the tradition of multiple burials in massive earthworks called long barrows. The nearest such monument is located approximately 2km to the east of the proposed route, on the edge of Walcott Common.

5.3.4 No Neolithic sites are known within the study corridor, although, as mentioned above, a scatter of late Mesolithic/early Neolithic flints was recorded to the east of Kirkby la Thorpe (Map 7, DBA:FZ, TF 1062 4572) .

5.4 Bronze Age (*c.*2,500 BC)

5.4.1 The Bronze Age was heralded by the introduction of metalworking technology, new types of flint-tool and new styles of pottery design from continental Europe. The settled farming society established in the Neolithic period became increasingly sophisticated. Cereal crops and stock-rearing remained the economic mainstays, whilst trade links forged in the Neolithic continued to develop. Changes in society were reflected in the emergence of new methods of burial, particularly the construction of round barrows as funerary monuments.

5.4.2 During this period, sea-level transgressions were making inroads into eastern Lincolnshire and covering large areas of land with salt marshes and open water. This meant that lowland sites became slowly overwhelmed by marine deposits which settled and gradually formed into peat. It is only by the draining of the Fens and the subsequent drying out and receding of the peat deposits that a large number of sites are coming to light.

5.4.3 These sites almost exclusively consist of barrows, or individual burial mounds, and there is limited evidence for settlements in the fen area. This lack of evidence for occupation sites may be due to a number of factors: firstly, the unstable nature of the floodplains and marshes may have prevented settlement; secondly, settlement evidence may have been destroyed by flooding or the meandering of rivers; and thirdly, sedimentation may have covered the sites and hidden them from view (Brown, 1997, 37-8). However, a flint and pottery scatter suggestive of occupation was discovered on a previous pipeline, approximately 1km to the east of the route, on the edge of Dorrington Fen (NAL Report No. 134, 1999). This highlights the potential for new sites in these areas.

5.4.4 No Bronze Age find spots were recorded to the north of Kirkby Green. South of this point the number of Bronze Age find spots increases but is still quite low. Although a

group of unconfirmed round barrow cropmarks lie on the edge of Metheringham Fen (Map 4, MON 1066592, TF 0849 6234), only one accurately dated occupation site is known within the study corridor. This is the multi-period site situated to the east of Kirkby la Thorpe, where late Neolithic/Bronze Age flint and middle Bronze Age pottery sherds suggest possible settlement (Map 7, DBA:FZ, TF 1062 4572).

5.5 Iron Age (*c.*600 BC)

5.5.1 Iron-working was among the new technologies introduced to Britain from the Continent in this period. Pottery began to be made using a potter's wheel, and Britain's first inscribed coins were minted. Population growth led to competition for land and the development of a more organised and territorial society.

5.5.2 Sea levels continued to rise dramatically up until the beginning of the Iron Age (*c.*500BC), reclaiming a large area of Lincolnshire. This rise would have left parts of Lincolnshire as open sea with low islands, salt marshes and creeks. During the Iron Age, however, until around AD100, the sea-level gradually fell allowing greater access to the land on the coastal areas. It is thought that the Roman Car Dyke may follow the coastline that existed during the later Iron Age (Simmons, 1993). Other areas, such as the Witham Valley, probably continued to be too marshy for extensive development.

5.5.3 Iron Age Lincolnshire was part of a larger tribal territory, peopled by the *Corieltauvi*, stretching from the Humber in the north, to the River Nene in the south. The route of the pipeline takes it into the vicinity of several major Iron Age settlements. The northern half of the route runs between known centres at Lincoln and Horncastle, whilst the south end of the route terminates to the south of Old Sleaford.

5.5.4 Old Sleaford was a particularly important centre during the mid-late Iron Age. The settlement was located next to the River Slea, which may have been navigable at this time, allowing trade links, via the coast, with Mediterranean Europe. Evidence for this late Iron Age trade can be seen in the form of large amounts of imported pottery at Old Sleaford. Other evidence for a thriving settlement is the discovery of 4,354 fragments of coin-pellet moulds and 247 crucible fragments (Elsdon, 1997). This, the largest collection of such material found at present in Iron Age Europe, can only confirm that this was a large and prosperous nucleated settlement and was probably the centre for a larger concentration of settlements in this area. The majority of these settlements would have consisted of small, open sites with no, or very minor, defences.

5.5.5 There are few confirmed Iron Age sites within the study corridor. A number of cropmark complexes and trackways to the south-east of Ruskington have been tentatively placed within the prehistoric/Romano-British periods but have yet to be securely dated. Further cropmarks to the east and south of Kirkby la Thorpe are believed to be prehistoric, probably Iron Age in date, but have not been investigated. Excavations undertaken during the construction of a previous pipeline, however, have established the existence of at least two Iron Age settlements and a possible barrow

site within the study corridor to the east and south of Kirkby la Thorpe (Map 7, DBA:DJ, DBA:FZ, DBA:GA) (NAL Report No. 134, 1999).

5.6 **Romano-British** (AD 43)

5.6.1 The fall in sea-level which had begun in the Iron Age continued into the Romano-British period until approximately AD 375. Up until this time, new tracts of land in Lincolnshire, including the fens, were colonised, although it is unclear how these settlements functioned. Further to the north, away from the fens, there are a large number of sites dating to the Romano-British period. Although the boulder clay here produces fairly heavy soil, there are some stone-built villas and less substantial, but more frequent, rural settlements (Todd, 1991, 82). It is likely that arable and livestock farming would have been common in this region.

5.6.2 The form of the majority of Romano-British rural settlements in Lincolnshire probably changed little from the earlier Iron Age farmsteads. Indeed, the typical Iron Age roundhouse continued to be the dominant building form across much of early Roman rural Britain. The paucity of excavated examples of such sites within Lincolnshire, though, makes it difficult to provide evidence for this continuity.

5.6.3 There is a marked absence of both Roman and Iron Age sites on the Witham Fen east of Lincoln. Again, this could merely reflect the sealing of archaeological remains beneath peat and/or silt, although it has also been suggested that the tendency for the area to flood may have resulted in a genuinely lower density of settlement. By way of contrast, there is much greater evidence for Romano-British settlement on the marine silt fenlands further east. Here, it is believed that the lowering of the sea level from around Iron Age times until about 100 AD, meant that more land was available in the silt fen zone, thereby encouraging Roman settlement.

5.6.4 Road networks had previously been little more than tracks formed by the passage of people and livestock. Roman army engineers built more substantial roads with metalled and cambered surfaces, to expedite the movement of soldiers, food and equipment. Naturally these roads were also exploited as trade and communication routes. Evidence for the Romano-British occupation of Lincolnshire is reflected not only in the settlement sites which exist in different parts of the county, but also in the network of Roman roads which cross it.

5.6.5 The most important road was Ermine Street, which connected London with the North via Lincoln. Another major highway, the Fosse Way, meets Ermine Street just south of Lincoln, whilst a further, King Street, runs south from Lincoln, passing through Bourne and connecting Lincoln with the south. The proposed pipeline route enters the Silk Willoughby AGI immediately east of Mareham Lane, a stretch of King Street running from Bourne to Sleaford, and continuing less clearly northwards towards Washingborough on the river Witham and probably beyond. It is of interest to note that several of the Roman roads appear to have prehistoric origins, for example, Ermine Street, follows the line of the Jurassic Way (May, 1976, 9).

5.6.6 In terms of water communication, of major relevance to the present study are the Rivers Witham and Slea, and in particular, the Romano-British watercourse known as Car Dyke. The Car Dyke, possibly built in the early second century A.D., connects the River Nene east of Peterborough with the Witham two or three miles east of Lincoln, a total length of some 56 miles. Controversy as to its main function revolves around the suggestions of whether the whole length of the monument would have been navigable and so utilised as a canal (Whitwell, 1992) or whether it was merely a means of draining the fenlands (Simmons, 1975). Irrespective of its function, the construction of such an earthwork would have required large teams who would probably have stayed in temporary labour camps during construction, as was the case, for example, with the construction of Hadrian's Wall. (May, 1976, 9).

5.6.7 Apart from a single coin find south of Bardney, there is no recorded evidence of Romano-British activity within the study corridor to the north of Car Dyke. Coin moulds found near to the Dyke, at the southern end of Nocton Wood, suggest the possibility of more extensive activity in this area (Map 3, TF 06SE L, TF 0881 6336). As previously mentioned, there are a number of cropmark complexes to the south-east of Ruskington that have been allocated to the prehistoric/Romano-British periods but which have not yet been securely dated. A number of pottery and coin scatters are also recorded in the area of Evedon and Kirkby la Thorpe, and a group of enclosure cropmarks south of the A17 are believed to date to this period (Map 7, DBA:DN, TF 1065 4506).

5.7 **Anglo-Saxon** (AD 410)

5.7.1 The Anglo-Saxon period dates from the breakdown of Roman rule and Roman institutions in Britain in the fifth century, until the Norman Conquest in 1066 (Adkins, 1998). Archaeologists commonly divide this period into three: early (up to approximately 650), middle (up to approximately 850) and late Saxon.

5.7.2 'Anglo-Saxon' is a convenient label for the whole period, but the first settlers included Saxons, Jutes, Frisians, and Franks as well as the Angles from southern Denmark who settled in East Anglia and northern England. The early settlers were divided into tribal groups, but by the ninth century four kingdoms had been established: Wessex, Mercia, East Anglia and Northumbria (Adkins, 1998). Kesteven, which was part of the territory of the Middle Angles, appears to have been under Mercian lordship throughout the seventh century apart from the short periods when Northumbrians were overlords south of the Humber (Sawyer, 1998).

5.7.3 Isolated Anglo-Saxon sites are rare. This is due largely to the fact that many of their settlements continued into the medieval period and beyond. As pipelines tend to avoid built-up areas this reduces the likelihood of encountering traces of Anglo-Saxon occupation. Only one site is known within the study corridor. This consists of a 7th Century inhumation cemetery to the east of the village of Kirkby la Thorpe (Map 7, DBA:FZ, TF 1062 4572). The full extent of this cemetery is unknown and there is a possibility that it may continue east, into the path of the proposed pipeline.

5.8 **Medieval** (AD 1066)

5.8.1 Lincolnshire, as with the rest of England, experienced a period of expansion and relative prosperity during the 12th and 13th centuries. With a growth in population there was increased demand for land and a resultant increase in clearance and reclamation of the fens and coastal areas. Rural trade and industry was increasingly successful and this in turn encouraged the growth of towns.

5.8.2 The end of the 13th century, however, was to see a reversal of this process, brought about by a combination of factors. Overcrowding, land shortage and climatic deterioration all contributed to a weakening of rural industry which in turn undermined the success of the townships. Foreign wars added to the pressures during the 14th century and the arrival of the Black Death by 1349 significantly reduced the population. Further recurrences of bubonic plague continued sporadically throughout the 15th century, becoming less virulent but continuing to restrict population growth.

5.8.3 The 15th century saw a decline in the arable sector of the agrarian economy as a whole. A smaller population meant a lower demand and farmers no longer needed to cultivate marginal lands. Many villages shrank and some became depopulated. A large-scale conversion to sheep farming led to extensive enclosure of previously open field systems.

5.8.4 Over 235 Deserted Medieval Villages (DMVs) exist in Lincolnshire, with even this thought to be an underestimate (Start, 1995, 52). The majority were deserted from the fourteenth to eighteenth centuries. A number of DMVs and Shrunken Medieval Villages (SMVs) are recorded within the study corridor, including the SMVs of Evedon and Kirkby la Thorpe, and the DMVs of Osgodby and Butyate.

5.8.5 A major feature related to the above and still discernible in the landscape (or identifiable from aerial photographs if now destroyed by modern ploughing), is the ridge and furrow field system. Most of that recorded during the assessment is concentrated in the northern and southern parts of the study corridor, with very little being noted in the Witham Valley. Enclosure appears to have taken place earlier outside these peat fenlands since it was largely voluntary. In contrast, parliamentary enclosure of the Witham Peat Fen took place in the eighteenth and nineteenth centuries. Although ridge and furrow is normally associated with the medieval period (up to around 1500 AD), land could still have been farmed in the same way for some time afterwards, before the effects of enclosure would have created a dramatically altered system of fields. The ridge and furrow recorded during the assessment could, therefore, belong either to the Medieval or the earlier Post-Medieval periods.

5.8.6 The Medieval period also saw the establishment of many religious houses in the county. A considerable number are recorded close to the 1km study corridor; these include those at Bardney (Benedictine order), Tupholme (Premonstratensian order), Nocton (Augustinian order), Walcott (hospital for lepers), Catley (Gilbertine order) and Haverholme (Gilbertine order).

5.8.7 By the 16th century there was great concern at what was happening in the rural areas, but it came too late to prevent wide-scale destruction and dilapidation. By the first

half of the 16th century Lincolnshire had gone from being one of the richest counties in England to one of the least prosperous, the change of fortunes beginning around the middle of the 14th century (Platts, 1985).

5.9 **Post-Medieval** (late 15th - middle 19th century)

5.9.1 The medieval patterns of land-use probably survived until relatively late, with considerable variation from parish to parish. There was a general trend away from the strip cultivation of open fields and increasing large 'closes' were hedged-off. The consolidation of land holdings into separate farms, and the subsequent establishment of the modern pattern of field boundaries in most parishes, had to wait until the passage of an enclosure act through parliament, which generally occurred in the second half of the eighteenth century. Where they are available, the tithe maps for each parish, drawn up in the 1830s and 40s, show most of the existing field boundaries, together with many that have been lost as a result of modern agricultural practices. In some cases, the field divisions shown on the tithe maps reflect the earlier patterns of land holding, with a large number of long, narrow fields occupying the space of a single modern field.

5.9.2 A large variety of buildings survive from this period, in villages, and as isolated halls and farmhouses. For the most part, their sites are still occupied, and they are unlikely to be directly affected by pipeline construction. A number of buildings shown on early maps are no longer present; these are all small and mostly shown without any name or description, suggesting that they are agricultural buildings such as barns or sheds. A post mill is shown on maps of 1757 - 1886 to the south of Bardney, approximately 90m west of the proposed route (Map 2, LSMR 51185). The 1906 OS 25' map shows an empty mound. Cropmarks to the east of Kirkby Green may also represent a post mill (Map 4, MON 898752, TF 0933 5785).

5.9.3 The Witham Fens were subject to major drainage operations in the eighteenth century: between 1777 and 1797 some 25,000 acres of this fenland was drained and enclosed (Robinson, 1995, 72). Much of the regular pattern of field boundaries which can be seen today originated at this time.

5.10 **Modern**

5.10.1 The area today is still largely agricultural and rural in character, and has been comparatively unaffected by the rapid development of industry in the nineteenth and twentieth centuries. However, the increasing need for communication between urban centres led to the growth of road and rail links. Near its southern end, the route crosses two existing railway lines from Sleaford, running east to Boston and south-east to Spalding and Peterborough (Map 7, TF 1060 4475 & 0970 4425). The course of a third branch to Stamford survives only as a farm track running parallel to Mareham Lane (Map 7, DBA:GM). The route crosses another abandoned railway line along the north bank of the Witham (Map 2, DBA:AY, TF 1163 6842). Just beyond the sugar factory at Bardney, a branch to the north served Wragby and Louth.

5.10.2 The development of railway branch lines into farmland was a characteristic feature of the flat, fertile fields of the Lincolnshire fens in the early years of the twentieth century. These agricultural tramways were normally standard gauge lines, but would have been of fairly light construction. They formed an extensive network, typically running alongside drainage dykes, and allowed harvested crops to be loaded direct into railway wagons at the edge of the field. The route crosses the courses of a number of these lines in the drained fenland to the south of the Witham (Map 3, DBA:CY, DBA:DA, DBA:DE & DBA:DI).

5.10.3 Modern techniques of road construction have led to a great demand for the limestone of the Lincoln ridge. These rocks have been used for building materials since Roman times, but the scale of exploitation has increased considerably since the advent of motor traffic. There are active quarries some distance to the west of the route, but an area to the east of Metheringham has evidence of fairly recent workings, in the form of open pits and infilling visible as cropmarks (Map 4, DBA:EP, TF 0930 6156).

5.10.4 The archaeological potential of Second World War sites has recently been recognised. Understandably, military installations from the period are often poorly documented and archaeological evidence can make a considerable contribution to the interpretation of these sites. Because of its geographical location, the area is extremely rich in former airfields; the route crosses one at Bardney (Map 2, LSMR 53847, TF 1393 7113) and passes close to another at Martin. Anti-aircraft searchlight installations are also known in the area (Map 1, MON 1057938, TF 1373 7535). There is a possibility of unrecorded crash sites around the airfields, especially in the fenland areas where debris would have tended to be embedded within the soft peaty ground.

5.11 Undated

5.11.1 The locations of a number of sites have been identified from aerial photographs. In some cases the morphology of these sites provides an indication as to their nature and date. For instance, the components of one site (Map 4, MON 1066592) are circular, ring-ditch like marks, which if correctly interpreted are likely to represent the ploughed out remains of Bronze Age barrows . Many of the marks along the route are linear and are probably old drainage ditches and/or land divisions from the medieval, post-medieval and modern periods. However, most sites found on aerial photographs require further investigation to determine their date.

6 EXPLANATION OF GAZETTEER

6.1 The information gathered during the assessment is summarised for each constraint map (*Appendix D*) as a Gazetteer of Archaeological Sites, in *Appendix C*. This lists all sites of archaeological interest located within, and immediately outside the one kilometre study area.

6.2 Information retrieved from public data sources is listed by SAM, LSMR, NK, NMP, and MON number in the Gazetteer. Previously unrecorded sites found from aerial photographs or from cartographic sources during the course of this desk-based assessment are referred to as DBA sites, identified by a double letter suffix.

7 CRITERIA FOR GRADING SITES

Sites identified during this study were graded on two criteria:

- Importance
- Impact

7.1 Importance

The sites have been placed into one of five categories, A to E, as shown in Table 1 below. Although based on all the collated information, the inclusion of a site in a particular category often involves a degree of subjective judgement. Categories are not fixed and there is every possibility that the classification of a site may change as a result of findings made during later stages of investigation.

	A	B	C	D	E
Description	Legally protected site	Nationally or regionally important site, currently not legally protected	Locally important site and/or site of uncertain character and/or date	Other site	Single find spot, most modern features
Examples	Scheduled Ancient Monuments and Listed Buildings	Burial sites, historic buildings, settlements e.g. villas, Deserted Medieval Villages.	Possible settlements, finds scatters, former buildings, Roman roads, other ancient trackways	Ridge and furrow, unidentified features from aerial photographs	Single find spots of various dates, modern field boundaries, drains & ponds
Mitigation	To be avoided	To be avoided	Avoidance recommended	Avoidance not usually recommended at this stage	Avoidance unlikely to be recommended

Table 1: Site Category Definitions

7.2 Impact

7.2.1 Much of the impact will occur during the construction phase of the proposed pipeline: topsoil stripping, soil storage, movement of heavy machinery, excavation of the pipe trench and easement reinstatement can all have a permanent, damaging effect on the archaeological resource.

7.2.2 The level of impact will vary:

- *Severe (sev):* entire or almost entire destruction of deposits
- *Major (maj):* a high ratio of damage or destruction to deposits
- *Minor (min):* a low ratio of damage to surviving archaeological deposits
- *None (-):* no impact due to distance from the proposed pipeline easement, and/or construction technique
- *Uncertain (Unc):* *e.g.* because the quality and extent of deposits are unknown, or because construction techniques have not yet been decided.

7.2.3 Factors affecting the significance of impact include:

- the proportion of the site or feature affected.
- the integrity of the site or feature; impacts may be reduced if there is pre-existing damage or disturbance of a site.
- the nature, potential and heritage value of a site or feature.

8 RELIABILITY AND POTENTIAL LIMITATIONS OF DATA

8.1 The limitations of an impact assessment of the proposed pipeline include:

- the lack of clarity surrounding the extent of some sites. This makes it difficult to provide a precise assessment of potential impact.
- the possibility that *unknown* sites will be encountered along the route.

The development of mitigation strategies should take these points into consideration.

8.2 Information held by public data sources can normally be assumed to be reliable, but uncertainty can arise in a number of ways:

- The SMR can be limited because it depends on random opportunities for research, fieldwork and discovery.
- Documentary sources are rare before the medieval period, and as documents were not usually compiled for archaeological purposes, they are inherently biased.
- Primary sources, especially older records, often fail to accurately locate sites and are obviously subjective in any interpretation.
- There may be a lack of dating evidence for sites.
- The usefulness of aerial photographs depends upon geology, land use and weather conditions when the photographs were taken. Some types of remains do not produce crop, soil or vegetation marks. Aerial photographs necessarily involve some subjective interpretation of the nature of sites.

8.3 The gazetteer (*Appendix C*) provides an indication of the reliability of each source of information as regards their location (*L*) and interpretation (*I*). These are graded:

- *High (H)*
- *Medium (M)*
- *Low (L)*

9 ASSESSMENT OF IMPACT & RECOMMENDATIONS

9.1 General Impacts and Recommendations

9.1.1 This desk-based assessment is a summary of the current level of archaeological knowledge where the archaeology happens to coincide with the proposed pipeline corridor. Generally, areas which are apparently blank have never been archaeologically investigated, and therefore have an undetermined archaeological potential.

9.1.2 If the archaeological risk is to be managed in the most cost effective way, a programme of field investigation needs to be initiated along the entire course of the proposed pipeline, where there are areas of completely undetermined potential as well as areas of certain potential as identified by this assessment. This field investigation corresponds to Stage 3 (Field Survey), as outlined in Appendix A.

9.1.3 The Stage 3 field survey may identify previously unknown sites, which if not possible or desirable to avoid, may require investigation by trench evaluation (Appendix A - Stage 4).

9.1.4 If significant positive results are obtained by a Stage 4 evaluation, and it is not possible or desirable to avoid the site, it may be appropriate to excavate the site in advance of construction (Appendix A - Stage 5).

9.1.5 In addition to the proposed pipeline easement, investigation should also cover the proposed sites to be used for associated engineering works, such as pipe storage areas, site compounds, road crossing easements and block valve sites, as these areas become known.

9.1.6 A permanent-presence watching brief will be required during all ground disturbing activities of the construction phase of the project, to record unexpected discoveries, and known sites which did not merit investigation in advance of construction. The main phases of monitoring will be topsoil stripping, trench excavation and the possible opportunistic observation of the pre-construction drainage.

9.2 Site-specific Impacts & Recommendations (see *Appendices C* and *D*)

9.2.1 In an ideal situation, all known archaeological constraints would be avoided. However, this is impracticable, and in the case of linear landscape features such as roads and trackways, impossible. For this reason the known sites have been graded A-E, and the level of impact assessed for each site in order to provide an indication as to the significance of the sites within the study corridor (see section 7). This information is summarised below in Table 2:

Description	Category	Total number of sites in 1km corridor	Total number of sites crossed by proposed easement
Legally protected site	A	1	0
Nationally or regionally important site; currently not legally protected	B	8	2
Locally important site and/or site of uncertain character and/or date	C	66	8
Other site	D	104	53
Single find spot, modern feature	E	63	14
TOTAL		**242**	**77**

Table 2: Sites within the 1km study corridor by category, with those crossed by the proposed easement

9.2.2 The following sections (9.3-9.7) deal in category order with sites that are directly or potentially affected by the proposed pipeline.

9.3 Category A Sites

Only one legally protected site is located within the study corridor: Car Dyke Roman waterway (Map 3, SAM 312). This is not directly affected by the proposed pipeline.

9.4 Category B Sites

Eight nationally or regionally important sites (not legally protected) are located within the study corridor. Two are situated directly in the path of the proposed pipeline (Table 3) and the exact extents of a further two are unknown so they may also be affected (Table 4).

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
Map 2				
NMP 12	EW: remains of settlement	B	TF 1339 7175	Unc
Map 3				
LSMR:60706	Unscheduled portion of Car Dyke	B	TF 0895 6320	Min

Table 3: Summary of impact rating for directly affected category B Sites

NMP 12 (Map 2, TF 1339 7175)
The earthwork remains of the deserted hamlet and monastic grange at Butyate were levelled in 1959 and were under crop in 1964. Butyate appears to have been converted into a monastic grange in the 12th century. The site lies in an area which included abundant managed woodland until this century. After the dissolution it appears as

'Bugget House' or 'Budget', a name that apparently survived with a farm on the site until the early 19th century and its replacement by the present building. Earthworks levelled in 1959 are recorded on aerial photographs. Fieldwalking produced medieval and post-medieval pottery from the areas of earthworks on both sides of the road.
Impact: Uncertain; the easement of the proposed pipeline may cross the eastern edge of the main area of settlement. This area is still listed as containing earthworks. However, it is possible that these earthworks were part of the area levelled in 1959, and that the data was not updated.
Recommendations: A re-route to the east would reduce the risk of encountering significant remains. Otherwise, field reconnaissance survey should confirm the presence or absence of standing earthworks.

LSMR:60706 (Map 3, TF 0895 6320)
The proposed pipeline route crosses the Car Dyke approximately 200m to the south of the scheduled section - SAM 312. The monument as a whole was probably built in the early 2nd century AD, either as a canal or a drainage channel. More extensive discussion can be seen above (5.6.6). The level of preservation of this particular stretch is unknown.
Impact: Minor; as part of a much larger linear feature the percentage of damage caused by the pipeline would be small. However, the importance of this monument is such that any disturbance would be regarded as serious. There is also the possibility that associated remains may exist in close proximity to the monument.
Recommendations: the linear nature of the Car Dyke makes complete avoidance impracticable. It is not, therefore, recommended that the pipeline be re-routed. Instead the programme of field reconnaissance, fieldwalking and geophysical survey should allow a re-evaluation of the potential risks. If feasible it would be preferable to bore beneath the level of the deepest deposits.

Potentially Affected Sites

Reference	Description	Category	National Grid Reference	Impact
Map 7				
DBA:FZ	Anglo-Saxon cemetery and Iron Age ring-ditches	B	TF 1062 4572	Unc
DBA:GA	Iron Age settlement remains	B	TF 1055 4554	Unc

Table 4: Summary of impact rating for potentially affected category B Sites

DBA:FZ (Map 7, TF 1062 4572)
Excavation during the construction of a 1050mm gas pipeline in 1998 revealed a multi-period site dating principally to the late Iron Age and Anglo-Saxon periods, but with additional remains from the late Mesolithic/early Neolithic through to the medieval period. The earliest evidence consists of a scatter of late Mesolithic/early Neolithic worked flints, followed by a larger number of flints and pottery fragments dating from the late Neolithic to middle Bronze Age period. There was then an apparent lull until the mid-late Iron Age when two possible round barrows were constructed. Three possible rectangular barrows may also date to this period. Several

unstratified pieces of Romano-British pottery and metalworking dating to the fourth century AD were recovered from the site and its immediate locale, indicating general activity in the area at this time. Nine inhumation burials, dated by grave goods to the seventh century AD, represent a formal pagan Anglo-Saxon cemetery. Later medieval activity was demonstrated by pottery and furrow remains.
Impact: Uncertain; the eastern limits of this site were not established during its investigation, since it extended beyond the easement. It is possible that the site may reach as far east as the currently proposed route.
Recommendations: A re-route to the east would reduce the likelihood of encountering further cemetery remains, whilst fieldwalking and geophysical survey should identify any potential archaeological risks in the area.

DBA:GA (Map 7, TF 1055 4554)
Excavation during the construction of a 1050mm gas pipeline in 1998 revealed two possible circular structures, a number of boundary ditches and gullies, and several pits. All the dateable evidence suggests occupation in the late Iron Age. Several sherds of middle Bronze Age pottery were also recovered suggesting earlier activity. The site was abandoned during the late Iron Age and sealed by a thin layer of hillwash.
Impact: Uncertain; the western and eastern limits of this site were not established during excavation since it extended beyond the easement.
Recommendations: A re-route to the east would reduce the likelihood of encountering further settlement remains. Fieldwalking and geophysical survey will assist in establishing the presence or absence of remains in this area. As this site was originally located through geophysical survey, one can be reasonably confident of its effectiveness in this locality.

9.5 Category C Sites

Sixty-six category C sites are located within the study corridor, seven of which are directly affected (Table 5) and five of which are potentially affected (Table 6).

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
Map 1				
DBA:DU	former buildings	C	TF 1608 7550	Unc
Map 3				
LSMR 60308	Nocton Hall duck decoy	C	TF 0927 6517	Maj
DBA:CT	former building	C	TF 0906 6357	Unc
Map 4				
DBA:GF	former building	C	TF 0960 6000	Unc
Map 6				
MON 349273	CM: undated settlement complex	C	TF 0977 5011	Maj
Map 7				
DBA:DN	CM: undated ?enclosures	C	TF 1065 4506	Maj
DBA:FY	CM: ?circular enclosure	C	TF 1065 4582	Sev

Table 5: Summary of impact rating for directly affected category C Sites

DBA:DU (Map 1, TF 1608 7550)
The Langton by Wragby Tithe map (1839) shows a substantial building (DBA:CV) approximately sixty metres to the south-east of the pipeline and lists part of the area through which the line passes as "Yard and Garden". The substantial building is not shown on the 1st edition 6" OS map (1885) but a cluster of possible smaller buildings (DBA:DU) and ponds are visible in the former "Yard and Garden". The original date of occupation is unknown.
Impact: Uncertain; as the exact nature of the structures is unknown one cannot be sure how significant the impact of the proposed pipeline will be. It is likely, however, that it will impact upon a substantial percentage of the remains.
Recommendations: a re-route to the north of this area, avoiding further possible complications arising from the proximity of former building DBA:CV, is advised.

LSMR 60308 (Map 3, TF 0927 6517)
Nocton Hall decoy consisted of five pipe traps on a pond of two acres, in an ash wood of fourteen acres. A decoy is marked at this location on the 1824 1st edition 1' OS map but its original construction date is unknown. It is no longer visible on the ground.
Impact: Major; a large percentage of the area will be affected by the proposed route.
Recommendations: a re-route to the north or south of this area would be advisable.

DBA:CT (Map 3, TF 0906 6357)
The Dunston and Metheringham Fens enclosure map of 1792 shows a building situated immediately to the west of the proposed route, adjacent to the scheduled monument of Car Dyke (SAM 312). This is a very simplified map and one cannot be sure of its level of accuracy. There is no additional information as to the exact form, function or date of construction of this building.
Impact: Uncertain; it is highly likely that remains relating to this structure will fall within the proposed easement. As the nature of the site is uncertain, one cannot say how significant the damage would be.
Recommendations: a re-route to the east would both reduce the risk of encountering these remains as well as increasing the margin of safety between it and the Car Dyke.

DBA:GF (Map 4, TF 0960 6000)
Aerial photographs from 1975 show a single building in the corner of this field.
Impact: Uncertain; it is highly likely that remains relating to this structure will fall within the proposed easement. As the nature of the site is uncertain, one cannot say how significant the damage would be.
Recommendations: a re-route of the pipeline further east or west would reduce the risk of encountering these remains.

MON 349273 (Map 6, TF 0977 5011)
Air photographs have revealed cropmarks of an undated settlement complex, including several small enclosures and probable pits, within a possible major defensive boundary. The quality of the air photographs is poor and the area is generally confused with marks caused by background geology and drainage patterns.
Impact: Major; the proposed pipeline route passes directly through the centre of this cropmark complex.

Recommendations: a re-route away from this complex would be strongly advised. However, the large number and close proximity of further category 'C' sites and areas of woodland makes this difficult. If total avoidance is not feasible, the area surveyed by field reconnaissance, fieldwalking and geophysical survey could be extended to form a wider corridor, and an archaeologically least-damaging route established.

DBA:DN (Map 7, TF 1065 4506)
Aerial photographs have revealed a series of enclosure cropmarks between the A17 and the railway line to the south. These have been interpreted as Deserted Medieval Village remains. However, there does not appear to be any corroborative evidence for this date. In fact, enclosure ditches excavated approximately 300m to the west of the proposed route (DBA:DM) had also been ascribed to the medieval period but were found upon excavation to be Romano-British in date.
Impact: Major; the proposed route passes through the centre of at least one enclosure complex which is approximately 100m wide. As not all archaeological features show up clearly as cropmarks there is a high risk of additional features, both within and around the enclosure, being adversely affected.
Recommendations: a re-route away from this complex would be advisable. If total avoidance is not feasible, the area surveyed by field reconnaissance, fieldwalking and geophysical survey could be extended to form a much wider corridor, and an archaeologically least-damaging route established.

DBA:FY (Map 7, TF 1065 4582)
Aerial photographs have revealed a single circular cropmark, approximately 50m in diameter. The quality of the photographs is fair but the cropmark is indistinct. However, given the close proximity of smaller probable barrows less than a 100m to the south (DBA:FZ), this potential feature should be taken seriously. Bronze Age barrows up to 70m in diameter have been recorded in Cambridgeshire and the large size of this cropmark does not rule out a non-secular function.
Impact: Severe; the proposed route would destroy most of this feature.
Recommendations: a re-route away from this cropmark is strongly recommended. If this is not possible, fieldwalking and geophysical survey should take place prior to a re-evaluation of the potential archaeological risks. It is likely that some form of field evaluation (Appendix A - Stage 4) would be required prior to construction.

Potentially Affected Sites

Reference	Description	Category	National Grid Reference	Impact
Map 4				
MON 1066593	EW: pillow mound/boundary bank	C	TF 0915 6218	Unc
Map 6				
MON 1054810	CM: boundary ditches	C	TF 0990 5013	Unc
MON 1080693	CM: trackway, parallel ditches	C	TF 0990 5013	Unc
Map 7				
MON 1044205	CM: ?section of road/headland	C	TF 0840 4447	Unc
DBA:GH	CM: circular enclosure and pits	C	TF 1042 4474	Unc

Table 6: Summary of impact rating for potentially affected category C Sites

MON 1066593 (Map 4, TF 0915 6218)
Poor quality aerial photographs show a single straight earthwork bank, 45m in length, which may be a pillow mound or boundary bank of medieval or post-medieval date.
Impact: Uncertain; Although the centre point of this earthwork lies 90m to the east of the proposed route, the orientation of the structure is uncertain, so one cannot dismiss the possibility that ploughed-out remains exist further west, within the easement.
Recommendations: the field survey should be carried out prior to a re-evaluation of the potential archaeological risks.

MON 1054810 (Map 6, TF 0990 5013)
Poor quality aerial photographs show a potential prehistoric or Roman boundary defined by three ditches with a maximum length of 40m. Its orientation is unknown.
Impact: Uncertain; it is possible that these ditches continue beyond the limits of the cropmarks and cross the path of the proposed route.
Recommendations: this feature lies within a larger complex of settlement cropmarks already discussed above (Category C, MON 349273). As with these features, the area surveyed by field reconnaissance, fieldwalking and geophysical survey could be extended to form a wider corridor, and an archaeologically least-damaging route established.

MON 1080693 (Map 6, TF 0954 4981)
Aerial photographs show a cropmark of a probable trackway defined by a pair of parallel ditches. A possible third ditch is also visible near the centre. The cropmark is 350m long and orientated south-west/north-east. The date is uncertain but it is situated within an area of prehistoric/Romano-British cropmark complexes.
Impact: Uncertain; although the cropmark appears to terminate immediately to the west of the proposed route, it is quite possible that it continues into the path of the proposed pipeline. If this were the case, it would be dissected at a very acute angle and the damage could be extensive.
Recommendations: a re-route away from this feature is recommended. However, it lies within an area of abundant cropmarks, some forming quite extensive complexes. As such re-routing will be difficult. Fieldwalking, field reconnaissance and geophysical survey of a wider block (see Category C, MON 349273), should help establish an archaeologically least-damaging route. If likely remains are unavoidable, it is likely that some form of field evaluation (Appendix A - Stage 4) would be required prior to construction.

MON 1044205 (Map 7, TF 0840 4447)
Poor quality aerial photographs show a possible section of Roman road extending some 565m in length. This continues the line of Mareham Lane northwards from the point where the OS depicts it diverting from a straight course. It may alternatively be a ploughed headland, or could even be both.
Impact: Uncertain; although it is unlikely that the pipeline easement will directly affect the line of the road, there may be associated remains adjacent to it. Any such remains may be adversely affected by the pipeline.
Recommendations: the fieldwalking, field reconnaissance and geophysical surveys should help establish the presence or absence of archaeological remains, and allow a re-evaluation of the potential risks. No re-route is recommended at this stage.

DBA:GH (Map 7, TF 1042 4474)
Aerial photographs show a circular enclosure with internal and external pits. There is no direct dating evidence but its form is characteristic of the prehistoric period.
Impact: Uncertain; the quality of cropmarks in this area varies considerably within short distances. It is therefore possible that the underlying archaeological features continue beyond those visible. With only a short distance (approximately 20-30m) between the proposed pipeline and the cropmarks, there is a high risk of encountering archaeological remains.
Recommendations: a re-route to the east would reduce the risk of encountering archaeological deposits. Otherwise, the fieldwalking, field reconnaissance and geophysical surveys should help establish the presence or absence of archaeological remains, and allow a re-evaluation of the potential risks.

9.6 Category D Sites

One hundred and four category D sites are located within the study corridor, of which fifty-three are directly affected by the proposed pipeline (Table 7):

Reference	Description	Category	National Grid Reference	Impact
Map 1				
LSMR 43749	ridge and furrow	D	TF 1736 7601	Min
NMP 4	AP:ridge and furrow	D	TF 1711 7582	Min
NMP 5	AP:ridge and furrow	D	TF 1679 7558	Min
DBA:AQ	Hatton & Langton by Wragby parish boundary	D	TF 1648 7535	Min
DBA:AR	Bardney & Langton by Wragby parish boundary	D	TF 1442 7420	Min
DBA:DQ	AP:ridge and furrow	D	TF 1758 7587	Min
DBA:DR	AP:ridge and furrow	D	TF 1698 7571	Min
DBA:DV	AP:ridge and furrow	D	TF 1604 7546	Min
DBA:ED	AP:ridge and furrow	D	TF 1383 7400	Min
DBA:EF	AP:ridge and furrow	D	TF 1404 7363	Min
DBA:EH	AP:ridge and furrow	D	TF 1381 7265	Min
Map 2				
LSMR 51137	deserted medieval settlement of Butyate	D	TF 1326 7187	Min
LSMR 51183	fieldname: 'Brick Kiln Close'	D	TF 1343 6977	Unc
LSMR 53847	Bardney disused airfield	D	TF 1393 7113	Min
DBA:EJ	AP:ridge and furrow	D	TF 1378 7021	Min
DBA:EN	AP:ridge and furrow	D	TF 1246 6865	Min
Map 3				
DBA:AW	Dunston & Nocton parish boundary	D	TF 0838 6326	Min
DBA:AX	Metheringham & Dunston parish boundary	D	TF 0824 6318	Min
Map 4				
DBA:AL	AP:ridge and furrow	D	TF 0991 5866	Min
DBA:BB	Metheringham & Blankney parish boundary	D	TF 0939 6166	Min
DBA:BD	Blankney & Martin parish boundary	D	TF 1024 6025	Min
DBA:BF	Martin & Timberland parish boundary	D	TF 1061 5918	Min
DBA:BG	Scopwick & Timberland parish boundary	D	TF 0983 5822	Min
DBA:CR	field name: 'The Hamlet'	D	TF 0961 6038	Unc

Reference	Description	Category	National Grid Reference	Impact
DBA:EQ	AP:ridge and furrow	D	TF 0952 5936	Min
Map 5				
DBA:BH	Rowston & Scopwick parish boundary	D	TF 0906 5725	Min
DBA:BK	AP:ridge and furrow field system	D	TF 0947 5617	Min
DBA:BL	Digby & Rowston parish boundary	D	TF 0948 5586	Min
DBA:BM	ridge and furrow	D	TF 0943 5540	Min
DBA:BO	AP:ridge and furrow	D	TF 0960 5482	Min
DBA:BS	Ruskington and Dorrington parish boundary	D	TF 0921 5252	Min
DBA:ET	AP:ridge and furrow field system	D	TF 0916 5607	Min
DBA:EX	CM:ridge and furrow	D	TF 0920 5482	Min
DBA:FA	CM:ridge and furrow	D	TF 0954 5375	Min
DBA:FC	CM:ridge and furrow	D	TF 0955 5274	Min
Map 6				
DBA:BU	AP:ridge and furrow & field enclosures	D	TF 1029 5102	Min
DBA:BX	ridge and furrow	D	TF 0954 5005	Min
DBA:BZ	AP:ridge and furrow	D	TF 0941 4957	Min
DBA:CA	Ruskington & Leasingham parish boundary	D	TF 0948 4943	Min
DBA:CE	Evedon & Leasingham parish boundary	D	TF 0934 4902	Min
DBA:CH	AP:ridge and furrow	D	TF 1015 4774	Min
DBA:FH	CM:ridge and furrow	D	TF 1011 5175	Min
DBA:FK	AP:ridge and furrow & field enclosures	D	TF 1003 5054	Min
DBA:FP	CM:former ridge and furrow	D	TF 1032 4818	Min
Map 7				
DBA:CG	Evedon & Kirkby la Thorpe parish boundary	D	TF 1003 4657	Min
DBA:DK	AP:ridge and furrow	D	TF 1013 4465	Min
DBA:DO	AP:ridge and furrow	D	TF 1075 4464	Min
DBA:FR	AP:ridge and furrow	D	TF 1030 4730	Min
DBA:FU	CM:ridge and furrow	D	TF 1041 4670	Min
DBA:FX	CM:ridge and furrow	D	TF 1085 4652	Min
DBA:GB	CM:ridge and furrow	D	TF 1061 4559	Min
DBA:GC	CM:ridge and furrow	D	TF 1035 4519	Min
DBA:GM	Disused railway	D	TF 0856 4411	Min

Table 7: Summary of impact rating for affected category D Sites

LSMR 51137 (Map 2, TF 1326 7187)
The earthwork remains of the deserted hamlet and monastic grange at Butyate were levelled in 1959 and were under crop in 1964. Butyate appears to have been converted into a monastic grange in the 12th century. The site lies in an area which included abundant managed woodland until this century. After the dissolution it appears as 'Bugget House' or 'Budget', a name that apparently survived with a farm on the site until the early 19th century and its replacement by the present building. Earthworks levelled in 1959 are recorded on aerial photographs. Fieldwalking produced medieval and post-medieval pottery from the areas of earthworks on both sides of the road. ***Impact: Minor***; the proposed pipeline route will just cross the eastern edge of these remains. The main area of settlement is located further to the south-west (NMP 12). It is unlikely that anything more significant than outlying field system and ridge and furrow remains will be encountered within the easement.

Recommendations: field reconnaissance, fieldwalking and geophysical surveys should allow a re-evaluation of the potential archaeological risks. No re-route is recommended at this stage.

LSMR 51183 (Map 2, TF 1343 6977)
The 1842 tithe map gives this field the name 'Brick Kiln Close'. This suggests it was the probable site of a post-medieval brick kiln.
***Impact: Uncertain*;** the exact nature and location of the possible remains is unknown. However, the small size of the field means that if there are kilns present they are quite likely to be affected.
Recommendations: a re-route would reduce the risk of encountering archaeological remains. Otherwise, the field reconnaissance, fieldwalking and geophysical surveys would provide a more accurate assessment of the potential risks.

LSMR 53847 (Map 2, TF 1393 7113)
Bardney airfield was opened in April 1943. It was closed in 1945 and reopened again in 1959. It was finally closed in 1963. The majority of the former runways are now utilised as roads and hard standing for poultry sheds and storage. The majority of the holding bays situated around the exterior of the ground are now visible only as cropmarks. The airfield itself is situated over an earlier ridge and furrow field system.
***Impact: Minor*;** the proposed pipeline route will pass through the western half of the airfield, crossing one of the main runways and at least one holding bay. It is probable that earlier ridge and furrow remains will be exposed within the open areas.
Recommendations: no re-route is recommended. Providing no significant results are obtained during the field reconnaissance, fieldwalking and geophysical surveys, the area should be monitored as part of the overall construction watching brief.

DBA:CR (Map 4, TF 0961 6038)
The Blankney Enclosure Map of 1799 gives this area the collective name of 'The Hamlet'. This is not a detailed map and no further information is available. There is, however, the possibility that a small settlement or homestead existed in the area, possibly predating the enclosure map.
***Impact: Uncertain*;** the proposed pipeline route will cross the centre of the designated area. As there is no corroborative evidence of occupation or associated activity in the area, the exact impact of the pipeline is unknown.
Recommendations: no re-route is recommended at this stage. Providing no significant results are obtained during the field reconnaissance, fieldwalking and geophysical surveys, the area should be monitored as part of the construction watching brief.

Ridge and Furrow Field Systems
The majority of the category D sites consist of ridge and furrow remains. Most of these have been identified from aerial photographs. The current state of the ridge and furrow's preservation is unknown, but in areas of intensive cultivation, it is likely that the earthworks have been reduced since the photographs were taken.
Impact: Minor; the percentage of visible ridge and furrow remains affected by the pipeline in any one area is small to moderate.
Recommendations: field reconnaissance survey should establish the condition and extent of any surviving ridge and furrow earthworks. It is not usually necessary to

avoid extant ridge and furrow, but where it is crossed, it should be recorded by topographic survey in advance of construction. Careful reinstatement should follow.

Parish Boundaries
Fourteen category D parish boundaries (*i.e.* those not defined by river courses) are crossed by the proposed pipeline. These are historic boundaries which may date from the medieval period or earlier.
Impact: Minor; only a short cross section of each boundary will be affected.
Recommendations: field reconnaissance survey should establish whether these boundaries are represented by extant banks and ditches. If the boundaries also include hedges, they should be assessed according to the five criteria for archaeological and historical importance (The Hedgerow Regulations 1997), which could establish antiquity. It would be appropriate to record a section through any extant, ancient bank and ditch remains. This could be undertaken during a construction watching brief.

9.7 Category E Sites

Sixty-three category E sites are located within the study corridor, of which fourteen are crossed by the current easement (see Table 8).

Reference	Description	Category	National Grid Reference	Impact
Map 1				
DBA:DW	CM: ? former stream course	E	TF 1562 7526	Unc
Map 2				
DBA:AY	Dunston & Bardney parish boundary	E	TF 1163 6842	Min
Map 3				
DBA:AV	AP: geological/alluvial marks	E	TF 1120 6668	Unc
DBA:CY	former tramway	E	TF 0912 6500	Min
DBA:DA	former tramway	E	TF 0920 6400	Min
DBA:DE	former tramway	E	TF 1130 6717	Min
DBA:DI	former tramway	E	TF 1161 6739	Min
Map 4				
DBA:AJ	CM: geological/water related	E	TF 0955 6122	Unc
DBA:AK	? drainage marks	E	TF 0993 6045	Unc
DBA:EP	CM: former quarry	E	TF 0930 6156	Sev
Map 5				
MON 349102	find spot: ? Roman whetstone	E	TF 0933 5649	Min
DBA:EW	CM:former stream bed	E	TF 0940 5482	Unc
DBA:EZ	AP: ? pond	E	TF 0958 5570	Severe
Map 7				
DBA:FS	CM: ? alluvial/geological	E	TF 1041 4723	Unc

Table 8: Summary impact rating for affected category E Sites

Alluvial/Geological/Drainage Marks
A number of cropmarks have been identified from aerial photographs as being either natural in origin or the result of drainage practices.
***Impact: Uncertain*:** although the interpretations are probably correct there is always a chance that they may include archaeological features.
Recommendations: field survey should help to locate and confirm any areas of human activity. Otherwise, careful monitoring during construction should be adequate.

DBA:AY (Map 2, TF 1163 6842)
Dunston and Bardney parish boundary is located along the River Witham, so there will be no archaeological impact on the boundary.

Former Tramways
These tramways facilitated the transport of materials in and out of the fens. They are marked on the 1955 1:10,000 maps but it is not known when they went out of use.
Impact: Minor; these linear features are unavoidable, but the works will cause only relatively minor damage to the remains.
Recommendations: reconnaissance survey should establish whether these tramways are represented by extant banks and trackways. It would be appropriate to record any remains encountered during construction.

DBA:EP (Map 4, TF 0930 6156)
Aerial photographs from 1971 show a large cropmark which has been interpreted as a backfilled quarry pit. Former gravel pits are known to have existed in the adjacent field. The date of these pits is unknown. They are not mentioned on the enclosure maps of the area but appear on the 1907 OS maps. It is likely therefore that they are post-medieval in origin.
Impact: Severe; the proposed pipeline route will cross the centre of the cropmark, almost all of which will fall within the easement.
Recommendations: this is probably not of great archaeological significance and any decision to re-route is likely to be due to engineering rather than archaeological considerations. It would be worth making a brief record if the feature is exposed during the watching brief.

DBA:EZ (Map 5, TF 0958 5570)
Aerial photographs from 1964 and the 6 ''OS map from 1906 appear to show a moderately-sized pond at this point.
Impact: Severe; the proposed pipeline route will cross the pond, almost all of which will fall within the easement.
Recommendations: this is probably not of great archaeological significance and any decision to re-route is likely to be due to engineering rather than archaeological considerations. It would be worth making a brief record if the feature is exposed during the watching brief.

Field Boundaries
Former field boundaries have been plotted from enclosure, tithe and early edition Ordnance Survey maps, as well as from aerial photographs. Approximately eighty-eight known boundaries are crossed by the proposed pipeline.

Impact: Minor; the former boundaries are unavoidable, but the works will cause only minor damage to the potential archaeological remains.
Recommendations: field reconnaissance survey should establish whether these boundaries are represented by extant banks and ditches. It would be appropriate to record a section through any extant, ancient bank and ditch remains. This could be undertaken during a construction watching brief.

STATEMENT OF INDEMNITY

Every effort has been taken in the preparation and submission of this report in order to provide as complete an assessment as possible within the terms of the brief, and all statements and opinions are offered in good faith. Network Archaeology Ltd cannot accept responsibility for errors of fact or opinion resulting from data supplied by any third party, or for any loss or other consequences arising from decisions or actions made upon the basis of facts or opinions expressed in this report and any supplementary papers, howsoever such facts and opinions may have been derived, or as a result of unforeseen and undiscovered sites or artefacts.

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APPENDICES

Appendix A - Explanation of Phased Approach to Mitigation Measures
Appendix B - List of Abbreviations
Appendix C - Gazetteer of Archaeological Sites
Appendix D - Archaeological Constraint Maps

Explanation of Phased Approach to Mitigation

Network Archaeology Ltd recognise seven main phases of work in the archaeological investigation of pipelines.

Stage 1 Feasibility Study
An appraisal of archaeological potential

Stage 2 Desk-based Assessment
A thorough synthesis of available information, as in this report.

Stage 3 Non-intrusive Field Survey

3a Field Reconnaissance Survey (rapid walkover)
This involves a visual inspection of the entire length of the proposed pipeline route in order to record the following:

- location and character of unrecorded earthworks
- the level of preservation of known earthworks (eg. ridge-and-furrow)
- the occurrence of soil and vegetation changes which could indicate the presence of archaeological deposits
- land-use
- topographic variations
- visible geology
- health and safety implications
- the nature and condition of existing field boundaries to be correlated with the results of the hedgerow survey, to determine the antiquity of the boundaries
- project specific requirements

3b Field walking
Field walking involves the systematic recovery of artefacts (pottery, tile, glass, slag, coins *etc.*) from the surface of ploughed fields. This exercise is intended to:

- determine the date and spatial extent of *known* sites on the proposed route which could not be avoided by route modifications.
- determine if any *known* sites lying close to the proposed route extend into it.
- locate, delimit and date previously *unknown* sites, lying in the course of the proposed route.

Field walking needs bare earth, ideally ploughed, harrowed and weathered. Late autumn and winter is the optimum time for this work.

3c Metal Detector Survey
Metal detecting can be carried out on all types of land. Ideally, detectorists with local experience are used. This exercise:

- complements field walking in arable areas.
- provides the only means of obtaining dating evidence in pasture, fen, moss and woodland areas.
- identifies and date sites that may not be archaeologically visible by field walking (eg. metal hoards, fair/trading sites, accompanied burials)

3d Earthwork survey

This work is undertaken to produce a topographic record of extant earthworks. These sites might include *known* earthworks identified by the Desk based Assessment, or previously *unknown* earthworks found during the Field Reconnaissance Survey. The sites may include settlement earthworks or agricultural earthworks (such as, ridge and furrow and lynchets).

Two methods are commonly employed; plane table survey which obtains a hachure survey, or total-station theodolite survey which produces a close contour plot.

3e Auger Survey

The retrieval of sub-surface soil samples can be used to determine the presence or absence, nature, extent and state of preservation of known or potential archaeological deposits. This may be appropriate in areas sealed by peat or alluvium, or on sensitive sites such as earthworks. Areas requiring auger survey can be identified during or shortly after the field reconnaissance and field walking surveys. This information can be crucial for determining areas suitable for geophysical survey.

3f Geophysical Survey

Geophysical survey can be used to:

- determine the character and spatial extent of *known* sites on the proposed route which can not be avoided by route modifications.
- determine if any *known* sites lying close to the proposed route extend into it.
- locate, delimit and determine the character of previously *unknown* sites lying in the course of the proposed route.

There are a number of available techniques, the most appropriate of which are *magnetometry*, *magnetic susceptibility* and *resistivity.*

Magnetometry

This technique detects local variations in the earth's magnetic field, resulting from anthropogenic changes to soil. These variations are often caused by the presence of buried archaeological deposits (eg. ditches, pits, buildings, *etc.*). This survey technique uses hand-held equipment, usually a Geoscan FM 35 Fluxgate Gradiometer.

The instrument can be used to scan large areas before focusing on smaller areas for detailed gridded survey, usually at 1m transect separation. Scanning is often used in tandem with magnetic susceptibility (see below) to identify areas of potential for detailed survey.

Magnetometry is most suited to shallow archaeology up to *c.*1-1.5m below ground level. It can operate in all weathers and is not prone to seasonal effects. In general, boulder clay and alluvium tend to be poorly responsive, whilst other solid geologies and riverine gravels are relatively conducive to magnetometry, although local iron concentrations can sometimes give spurious results. It can also be affected by magnetic fields (eg. pylons). This technique is quick and cost-effective.

Magnetic susceptibility
This technique records variations of magnetic susceptibility within topsoil and subsoil. Enhanced susceptibility is often a sign of past human activity. It differs from magnetic scanning in that it locates areas of *archaeological activity* rather than discrete *features*. Magnetic susceptibility is often used in tandem with magnetic scanning to identify areas of potential for detailed survey.

Resistivity
In this method, an electric current is passed through the ground between a pair of mobile electrodes. The current passes more easily through soil which has a lower resistance (eg. ditch fills), but is impeded by buried walls and road surfaces, which have a higher resistance. Survey involves pushing a pair of electrodes into the ground along transects 1m apart. A Geoscan RM15 resistivity meter with twin electrode configuration is commonly applied. A new attachment called a 'multi-plexer', and a technique called 'resistivity profiling' allows readings to be taken from multiple levels at the same time.

Resistivity is most suited to shallow archaeology up to *c.*1m below ground level. The technique is slower than magnetometry and can be hampered by hard ground; ideally the probes need soft damp soil for good conductivity. Resistivity is affected by seasonal variability of groundwater. Saturated soils or soils with a high saline content are likely to produce poor results. Natural geological variations can also make interpretation difficult. This type of survey can show greater detail than magnetometry.

Pipiline Application
Geophysics should preferably investigate the entire length, sampling an appropriate percentage of the width of the proposed easement.

Geophysical survey methods, magnetometer surveys in particular, have been applied routinely to pipeline evaluations since the mid 1970s. Geophysical survey methods are non-intrusive and can detect and precisely locate buried features for avoidance or subsequent investigation. There are two main options for coverage of the entire pipeline length:

- ***Two stage approach, using unrecorded magnetometer scanning and magnetic susceptibility survey followed by targeted detailed magnetometer survey***. This method is only effective when the ground is responsive enough to produce positive results. This survey strategy requires spontaneous, subjective interpretation as the unrecorded scanning survey progresses. As a consequence, this strategy does not provide a secure basis for eliminating areas that produce negative results from further consideration.

- ***Continuous, detailed, recorded magnetometer survey*** **(15m wide) along the centreline is recommended in preference to the two-stage method.** The reason for this is that only a *recorded* magnetometer survey can provide direct and objective evidence of the presence and character of individual archaeological features.

Stage 4 Field Evaluation

In some cases, where the results of field walking and/or geophysical survey are positive, and it is not possible or desirable to avoid a site, it may be necessary to undertake an evaluation in advance of construction. This might involve:

4a machine-excavated trenches
4b hand-dug test-pits

By using these techniques, it should be possible to confirm the presence or absence of archaeological deposits and to determine their character, extent, date and state of preservation. The choice of technique(s) will depend upon site-specific factors.

It may be desirable to undertake evaluation of certain category B or category C sites with high archaeological potential, even if the geophysical survey has failed to locate significant anomalies. Evaluation work is usually completed well in advance of pipeline construction.

Stage 5 Area Excavation

In occasional cases where the results of evaluation are positive, and it is not possible or desirable to avoid a site, area excavation may be the most appropriate course of action, in order to record a site prior to the construction of the pipeline. Precise excavation strategies for dealing with such archaeological remains will depend on site-specific factors. It is usually preferable to preserve significant archaeological deposits (such as settlements and burials) *in-situ*, by modifying the course of the pipeline.

Stage 6 Watching Brief (during construction)

A permanent-presence watching brief should take place during the construction of the pipeline. As a minimum, this consists of archaeological monitoring of all topsoil stripping and pipeline trench excavations. Archaeological deposits identified are ideally preserved *in situ*, or can be recorded by excavation.

Stage 7 Post-Excavation (Archive, Report and Publication)

A post-excavation programme for dealing with all records of investigated archaeological remains and recovered artefacts usually follows each of the stages outlined above. This includes the collation and cataloguing of all site records, the processing, conservation and cataloguing of artefacts, the production of an archive report, and, where appropriate, the drafting of articles for publication.

Appendix B

List of Abbreviations

LIST OF ABBREVIATIONS

AGI	Above-ground Installation
AOD	Above Ordnance datum
AP	Aerial Photograph
DBA	Site identified during the Desk-Based Assessment by Network Archaeology Ltd (largely from aerial photographs, and old map sources)
LSMR	Lincolnshire Sites and Monuments Record
EH	English Heritage
IFA	Institute of Field Archaeologists
LB	Listed Building
MON	MONARCH data base (National Monuments Records from English Heritage) structures
NGR	National Grid Reference
NK	North Kesteven (archaeology records kept by Heritage Lincolnshire)
NMR	National Monuments Record
OS	Ordnance Survey
SAM	Scheduled Ancient Monument
SMR	Sites and Monuments Record

Appendix C

Gazetteer of Archaeological Sites

Map 1 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
LSMR 40304	LSMR	MON 351472	site of extinct hamlet of Shankeston	Undetermined	C	220	TF 17NE	1676 7646	-	L	L
LSMR 40305	LSMR		findspot: pottery and flint	Medieval/Prehist	E	520	TF 17NE	1660 7670	-	H	H
LSMR 40306	LSMR		findspot: blade end of palstave	Neolithic/IA	E	320	TF 17NE	1715 7539	-	H	H
LSMR 42994	LSMR	NCC 1989	Great Scrubbs Wood ancient woodland	Med/PMed Med	D	210	TF 17SW	1489 7424	-	H	H
LSMR 42997	LSMR	NCC 1989	Hatton Wood, ancient woodland	Med/PMed Med	D	200	TF 17SE	1616 7476	-	H	H
LSMR 43529	LSMR		CM: extraction quarry	Undetermined	D	790	TF 17NE	1815 7570	-	H	H
LSMR 43749	LSMR		ridge and furrow	Medieval	D	0	TF 17NE	1736 7601	Min	H	H
LSMR 43750	LSMR	NMP 7	EW: ploughed out ridge and furrow	Medieval	D	110	TF 17NE	1748 7560	-	H	H
LSMR 43751	LSMR	NA FW1997	findspot: flint flake and scraper	Neolithic/BA	E	50	TF 17NE	1738 7601	-	H	H
LSMR 43752	LSMR	NA FW1997	findspot: flint scraper and flakes	Neolithic/BA	E	250	TF 17NE	1740 7552	-	H	H
LSMR 43753	LSMR	NA FW1997	findspot: flint waste flakes	Neolithic/BA	E	570	TF 17NE	1720 7515	-	H	H
LSMR 43754	LSMR	NA FW1997	findspot: pottery	Roman	E	30	TF 17NE	1740 7599	-	H	H
LSMR 50685	LSMR	NCC 1989	Great South and Demerose ancient woodlands	Post Medieval	D	950	TF 17SW	1221 7302	-	H	H
LSMR 50686	LSMR	NCC 1989	College, Thistle Storr and Glad ancient woods	Post Medieval	D	1500	TF 17NW	1219 7549	-	H	H
LSMR 50690	LSMR	NCC 1989	Ivy Wood ancient woodland	Post Medieval	D	350	TF 17SW	1452 7363	-	H	H
LSMR 51136	LSMR	MON 351586	EW:remains of deserted settlement of Osgodby	Medieval	B	410	TF 17SW	1301 7279	-	H	H
LSMR 51193	LSMR	NMP 1992-6	Kingthorpe settlement	Medieval	B	900	TF 17NW	1292 7504	-	H	H
LSMR 53825	LSMR	AP 1971	SM: rectangular enclosure	Undetermined	C	920	TF 17NW	1310 7510	-	H	H
NMP 1	RCHME	AP PLOT	ridge and furrow	Undetermined	D	550	TF 17NE	1759 7690	-	H	H
NMP 11	RCHME	AP PLOT	marks: field system	Undetermined	D	720	TF 17SW	1308 7485	-	H	H
NMP 2	RCHME	AP PLOT	ridge and furrow	Undetermined	D	710	TF 17NE	1793 7687	-	H	H
NMP 3	RCHME	AP PLOT	EW: ridge and furrow	Undetermined	D	110	TF 17NE	1690 7629	-	H	H
NMP 4	RCHME	AP PLOT	ridge and furrow	Undetermined	D	0	TF 17NE	1711 7582	Min	H	H
NMP 5	RCHME	AP PLOT	ridge and furrow	Undetermined	D	0	TF 17NE	1679 7558	Min	H	H
NMP 6	RCHME	AP PLOT	ridge and furrow	Undetermined	D	840	TF 17NE	1563 7658	-	H	H
NMP 8	RCHME	AP PLOT	ridge and furrow	Undetermiend	D	410	TF 17NE	1752 7527	-	H	H
MON 1057938	RCHME	MORPH LI 549.1	CM: circular banked encls., searchlight battery	Undetermined	C	750	TF 17NW	1375 7557	-	H	M

Map 1 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
MON 1057938	RCHME	MORPH LI 549.1	CM: circular banked encls., gun emplacement	WWII	C	550	TF 17NW	1373 7535	-	H	M
MON 1058742	RCHME	MORPH LI 578.1	ridge and furrow	Undetermined	D	520	TF 17SW	1472 7385	-	H	H
MON 351457	EH		findspot: stone axe	Neolithic	E	440	TF17NE	1770 7552	-	H	H
DBA:AA	AP 1998	MOUCHEL	former railway and purported course	Undetermined	E	640	TF 17SW	1256 7211	-	H	H
DBA:AB	AP 1998	MOUCHEL	EW: ridge and furrow	Undetermined	D	90	TF 17NW	1444 7511	-	H	H
DBA:AF	AP 1955	CSJ 113/130726/P983	ridge and furrow	?Medieval	D	340	TF 17SW	1325 7289	-	H	H
DBA:AQ	T. 1839		Hatton & Langton By Wragby parish boundary	Undetermined	D	0	TF 17NE	1648 7535	Min	H	H
DBA:AR	T. 1842		Bardney & Langton By Wragby parish boundary	Undetermined	D	0	TF 17SW	1442 7420	Min	H	H
DBA:AS	T. 1849		Apley and Langton By Wragby parish boundary	Undetermined	D	100	TF 17NW	1412 7539	-	H	H
DBA:AT	T. 1849		Apley and Bardney parish boundary	Undetermined	D	110	TF 17SW	1369 7457	-	H	H
DBA:AU	T. 1842		Bardney and Stainfield parish boundary	Undetermined	D	450	TF 17SW	1218 7276	-	H	H
DBA:CV	T. 1839		former building	Undetermined	C	60	TF 17NE	1619 7546	-	H	H
DBA:CW	T. 1849		former buildings and gardens	Undetermined	C	120	TF 17SW	1433 7474	-	H	H
DBA:CX	OS 1907		former buildings: 'Brackleigh Farm'	Undetermined	C	70	TF 17SW	1366 7262	-	H	H
DBA:DP	AP 1946	CPE/UK/1680 5247	ridge and furrow (former?)	Undetermined	D	220	TF 17NE	1713 7660	-	H	H
DBA:DQ	AP 1948	CPE/UK/2541 3358	ridge and furrow (former?)	Undetermined	D	20	TF 17NE	1758 7587	Min	H	H
DBA:DR	AP 1946	CPE/UK/1880 3249	ridge and furrow (former?)	Undetermined	D	0	TF 17NE	1698 7571	Min	H	H
DBA:DS	AP 1948	CPE/UK/2541 3358	ridge and furrow (former?)	Undetermined	D	50	TF 17NE	1688 7592	-	H	H
DBA:DT	OS 1901		field name: 'Boundary Holt' and former wood	Undetermined	D	90	TF 17NE	1659 7585	-	H	H
DBA:DU	OS 1901		former buildings	Undetermined	C	5	TF 17NE	1608 7550	Unc	H	H
DBA:DV	AP 1946	CPE/UK/1880	ridge and furrow (former?)	Undetermined	D	0	TF 17NE	1604 7546	Min	H	H
DBA:DW	AP 1973	OS/73030 324	CM: ?former stream course	Undetermined	E	0	TF 17NE	1562 7526	Unc	H	M
DBA:DX	AP 1946	CPE/UK/1880 3248	ridge and furrow (former?)	Undetermined	D	130	TF 17NE	1521 7532	-	H	H
DBA:DY	T. 1839		field name: 'Old Gravel Pit Close'	Undetermined	D	220	TF 17NW	1475 7528	-	H	H
DBA:DZ	6P 1973	OS/73030	CM: circular feature	Undetermined	C	170	TF 17NE	1517 7466	-	H	L
DBA:EA	T. 1839		former building	Undetermined	C	50	TF 17NW	1482 7474	-	H	H
DBA:EB	T.1849		former 'Longers Wood'	Undetermined	E	100	TF 17SW	1370 7491	-	H	H

Map 1 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:EC	AP 1948	CPE/UK/2541 4357	former farm buildings	Undetermined	C	70	TF 17SW	1385 7437	-	H	H
DBA:ED	AP 1948	CPE/UK/2541	ridge and furrow (former?)	Undetermined	D	0	TF 17SW	1383 7400	Min	H	H
DBA:EF	AP 1948	CPE/UK/2541	ridge and furrow (former?)	Undetermined	D	0	TF 17SW	1404 7363	Min	H	H
DBA:EH	AP 1948	541/185 /445	ridge and furrow (former?)	?Medieval	D	0	TF 17SW	1381 7265	Min	H	H

Map 2 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
LSMR 50276	LSMR		EW: ?former moated site	Medieval	C	780	TF 17SW	1280 7169	-	H	L
LSMR 50680	LSMR	NCC 1989	Southerley and Birch Woods, ancient woodlands	Post Medeival	D	160	TF 16NW	1330 6801	-	H	H
LSMR 50684	LSMR	NCC 1989	Stainfield Wood	Post Medieval	D	1260	TF 17SW	1181 7203	-	H	H
LSMR 50689	LSMR	NCC 1989	Scotgrove ancient woodland	Post Medieval	D	130	TF 17SW	1306 7037	-	H	H
LSMR 51137	LSMR	MON 351591	EW:field system remains of DMV Butyate	Medieval	D	0	TF 17SW	1326 7187	Min	H	H
LSMR 51141	LSMR	OS 1886	site of brickyard	Post Medieval	C	730	TF 17SW	1284 7160	-	H	H
LSMR 51147	LSMR		?site of brickworks at Tile House Beck	Medieval	C	1300	TF 17SW	1227 7143	-	M	H
LSMR 51152	LSMR	MON TF17SW7	?trackway/road	Undetermined	D	1560	TF 17SW	1184 7056	-	H	M
LSMR 51154	LSMR	MON TF16NW1	findspot: dug-out boat	Prehistoric	D	650	TF 16NW	1162 6854	-	H	H
LSMR 51176/7	LSMR	NMP 1992-6	EW: site of former village	Medieval	B	440	TF 16NW	1186 6913	-	H	H
LSMR 51183	LSMR	T. 1842	fieldname: 'Brick Kiln Close'	Post Medieval	D	0	TF 16NW	1343 6977	Unc	H	H
LSMR 51185	LSMR	OS 1757	site of former post mill	Post Medieval	C	90	TF 16NW	1235 6887	-	H	H
LSMR 52594	LSMR		findspot: tile	Roman	E	1590	TF 17SW	1205 7084	-	H	H
LSMR 53844	LSMR	NMP 1992-6	EW: ridge and furrow	Medieval	D	1600	TF 17SW	1170 7057	-	H	H
LSMR 53847	LSMR	NMP 1992-6	Bardney disused airfield	Modern	D	0	TF 17SW	1393 7113	Min	H	H
LSMR 53850	LSMR	OS 1956	EW: former gravel pit	Undetermined	D	430	TF 16NW	1336 6883	-	H	H
NMP 12	RCHME	LSMR 51137	EW: remains of settlement	Medieval	B	5	TF 17SW	1339 7175	Unc	H	H
NMP 15	RCHME		ridge and furrow	?Medieval	D	760	TF 16NW	1153 6902	-	H	H
MON 1058744	RCHME	MORPH LI 580.4	field system: ridge and furrow	Medieval	D	370	TF 17SW	1462 7052	-	H	H
MON 351399	EH		findspot: coin of Constantine I	Roman	E	470	TF 16NW	1200 6900	-	L	H
DBA:AC	AP 1955	CSJ 113/133718/PG88	former buildings	Undetermined	C	130	TF 17SW	1380 7182	-	H	H
DBA:AD	AP 1998	MOUCHEL	former stream meander	Undetermined	E	1260	TF 17SW	1220 7102	-	H	L
DBA:AE	AP 1998	MOUCHEL	EW: ridge and furrow	Undetermined	D	390	TF 16NW	1210 6925	-	H	H
DBA:AY	T. 1842		Duston and Bardney parish boundary	Undetemrined	E	0	TF 16NW	1163 6842	Min	H	H
DBA:DC	OS 1955		former building	Undetermined	C	140	TF 16NW	1158 6737	-	H	H
DBA:DD	OS 1906		former building	Undetermined	C	70	TF 16NW	1150 6739	-	H	H
DBA:EI	AP 1950	541/445	former building	Undetermined	C	100	TF 17SW	1354 7055	-	H	H

Map 2 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:EJ	AP 1950	541/445	ridge and furrow (former?)	?Medieval	D	0	TF 17SW	1378 7021	Min	H	H
DBA:EK	AP 1950	541/445 4231	former building	Undetermined	C	380	TF 16NW	1389 6973	-	H	H
DBA:EL	AP 1950	541/445	former buildings and yard	Undetermined	C	30	TF 16NW	1333 6943	-	H	H
DBA:EM	AP 1950	541/445	former buildings and yards	Undetermined	C	140	TF 16NW	1339 6934	-	H	H
DBA:EN	AP 1950	451/445 3232	ridge and furrow (former?)	Undetermined	D	10	TF 16NW	1246 6865	Min	H	H

Map 3 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
LSMR 60706	LSMR		Car Dyke	Roman	B	0	TF 06SE	0895 6340	Min	H	H
NK 42.20	NK		Nocton Wood: stone walls caught by ploughing	Undetermined	D	350	TF 06SE	0860 6332	-	M	M
SAM 312	LSMR	LSMR60711 MON103493	Car Dyke: scheduled ancient monument	Roman	A	50	TF 06SE	0900 6355	-	H	H
SAM 22750	EH	MON 349405	Nocton Park Priory	Med/Post Med	A	1040	TF 06SE	0773 6477	-	H	H
LSMR 60308	LSMR	OS 1824	Nocton Hall Duck Decoy	Post Medieval	C	0	TF 06NE	0927 6517	Maj	H	H
LSMR 60475	LSMR	MON 892931	findspot: limestone net sinker	Medieval	E	480	TF 16NW	1190 6720	-	H	H
TF 06SE L	LSMR		findspot: coin moulds	Roman	E	180	TF 06SE	0881 6336	-	L	H
TF 16SW AC/D	LSMR	NK 42.18	two dug out boats	Undetermined	D	510	TF 06SE	0990 6490	-	M	H
MON 1043962	EH	MORPH LI 576.1	CM: enclosures	Prehist/Roman	C	1000	TF 16NW	1255 6704	-	H	H
MON 349445	EH	NK 26.16	findspot:polished greenstone axe	Neolithic	E	230	TF 06SE	0865 6325	-	H	H
DBA:AG	AP 1998	MOUCHEL	CM: ?water courses/streams	Undetermined	E	420	TF 06SE	0994 6357	-	H	L
DBA:AH	AP 1998	MOUCHEL	?ring ditch	Undetermined	C	900	TF 16SW	1002 6324	-	H	M
DBA:AV	AP 1971		geological marks: ?water related	Undetermined	E	0	TF 16NW	1120 6668	Min	H	L
DBA:AW	E 1793		Dunston and Nocton parish boundary	Undetermined	D	0	TF 06SE	0838 6326	Min	H	H
DBA:AX	E. 1779		Metheringham & Dunston parish boundary	Undetermined	D	0	TF 06SE	0824 6318	Min	H	H
DBA:AZ	AP 1956		CM: rectangular mark, ?building	Undetermined	C	100	TF 06SE	0874 6272	-	H	M
DBA:CT	E. 1792		former building	Undetermined	C	5	TF 06SE	0906 6357	Unc	H	H
DBA:CU	OS 1907		former buildings	Undetermined	C	220	TF 06SE	0923 6405	-	H	H
DBA:CY	OS 1955		former tramway	Modern	E	0	TF 06NE	0912 6500	Min	H	H
DBA:CZ	OS 1906		former building	Undetermined	C	480	TF 06NE	0864 6514	-	H	H
DBA:DA	OS 1955		former tramway	Modern	E	0	TF 06SE	0920 6400	Min	H	H
DBA:DB	OS 1906		former buildings	Undetermined	C	470	TF 06NE	0983 6649	-	H	H
DBA:DC	OS 1955		former building	Undetermined	C	150	TF 16NW	1158 6737	-	H	H
DBA:DD	OS 1906		former building	Undetermined	C	80	TF 16NW	1150 6739	-	H	H
DBA:DE	OS 1955		former tramway	Modern	E	0	TF 16NW	1130 6717	Min	H	H
DBA:DF	OS 1906		former building	Undetermined	C	60	TF 16NW	1027 6608	-	H	H
DBA:DG	AP 1998	MOUCHEL	EW: ridge and furrow	Undetermined	D	1140	TF 16NW	1323 6706	-	H	H

Map 3 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:DI	OS 1955		former tramway	Modern	E	0	TF 16NW	1161 6739	Min	H	H

Map 4 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
DBA:BC	OS		'Brickyard Farm'	Undetermined	B	840	TF 06SE	0879 6021	-	H	H
DBA:BD	E. 1799		Blankney and Martin parish boundary	Undetermined	D	0	TF 16SW	1024 6025	Min	H	H
DBA:BE	E. 1799		Scopwick and Martin parish boundary	Undetermined	D	250	TF 05NE	0924 5922	-	H	H
DBA:BF	E. 1799		Martin & Timberland parish boundary	Undetermined	D	0	TF 15NW	1061 5918	Min	H	H
DBA:BG	E. 1799		Scopwick & Timberland parish boundary	Undetermined	D	0	TF 05NE	0983 5822	Min	H	H
DBA:CR	E. 1799		fieldnames: 'The Hamlet'	Undetermined	D	0	TF 06SE	0961 6038	Unc	H	H
DBA:CS	OS 1906		former gravel pits	Undetermined	E	110	TF 06SE	0914 6142	-	H	H
DBA:EO	AP 1971	OS/71279	CM: ?ridge and furrow	Undetermined	D	350	TF 06SE	0971 6175	-	H	L
DBA:EP	AP 1971	OS/71279	CM: former quarry	Undetermined	E	0	TF 06SE	0930 6156	Sev	H	H
DBA:EQ	AP 1947	CPE/UK/2009 1250	ridge and furrow (former?)	Undetermined	D	0	TF 05NE	0952 5936	Min	H	H
DBA:ER	AP 1964	543/2843	ridge and furroe (former?)	Undetermined	D	150	TF 05NE	0990 5918	-	H	H
DBA:ES	AP 1966	HSL/UK/66/492 7737	former pond	Undetermined	E	40	TF 05NE	0975 5859	-	H	H
DBA:GF	AP 1975	OS/75305	former building	Undetermined	C	20	TF 05NE	0960 6000	Unc	H	H

Map 5 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
DBA:BS	E.1789		Ruskington & Dorrington parish boundary	Undetermined	D	0	TF 05SE	0975 5306	Min	H	H
NK 50.13	NK		findspot: Romano-Saxon pottery sherd	Undetermined	E	290	TF 05NE	0980 5641	-	M	M
SAM 22637	EH	MON 349183	stone cross	Medieval	A	1360	TF 05SE	0814 5477	-	H	H
SAM 27900	LSMR	LSMR 60124	CM: long barrow	Neolithic	A	2100	TF 15NW	1155 5559	-	H	H
SAM 91127	EH	MON 349243	cross shaft	Saxon	A	1280	TF 05SE	0823 5478	-	M	H
LSMR 60278	LSMR	MON 898751 LB	Manor Farm, moat and garden feature	Post Medieval	A	1220	TF 05NE	0819 5520	-	H	H
LSMR 60309	LSMR	OS 1956	drainage ditches forming encl; ?former decoy	Post Medieval	E	330	TF 05NE	0893 5741	-	H	L
LSMR 60954	LSMR	NA FW1997	findspot: pottery	Medieval	E	1230	TF 15NW	1088 5765	-	H	H
LSMR 60955	LSMR	NA FW1997	findspot: pottery	Roman	E	1230	TF 15NW	1088 5765	-	H	H
TF 05NE	LSMR	NK 22.4	findspot: stone axe	Prehistoric	E	430	TF 05NE	0897 5529	-	L	H
TF 05NE T	LSMR		findspot: coin of Constanine I	Roman	E	360	TF 05NE	0800 5600	-	L	H
TF 05NE X	LSMR		findspot: flint arrowhead	Prehistoric	E	900	TF 15NW	1033 5552	-	L	H
MON 1057721	EH	MORPH LI 881.5	CM: enclosure	Prehist/Roman	C	810	TF 05NE	0859 5534	-	H	H
MON 1057722	EH	MORPH LI 881.6	CM: polygonal enclosure	Prehist/Roman	C	700	TF 05NE	0868 5549	-	H	H
MON 349099	EH	NK 22.9	findspot:barbed and tanged arrowhead	Bronze Age	E	380	TF 05NE	0900 5550	-	H	H
MON 349102	EH	TF 05 NE R	findspot:whetstone	?Roman	E	10	TF 05NE	0933 5649	-	H	H
MON 349126	EH	TF 05NE W, NK 22.2	bronze flat axes	Bronze Age	E	260	TF 05NE	0970 5550	-	M	H
MON 349137	EH	MORPH LI 881.7, NK 50.9	CM: rectangular enclosures	Prehist/Roman	C	580	TF 05NE	0878 5591	-	H	H
MON 349180	EH	LB unknown	St Thomas A Becket's Church	Med/Post Med	A	1430	TF 05SE	0804 5481	-	H	H
MON 349291	EH		well head	Post Medieval	D	1460	TF 05SE	0803 5478	-	H	H
MON 351187	EH		EW: ?moat, ?site of grange	Med/Post Med	C	1230	TF 15NW	1070 5540	-	H	H
MON 351211	EH		findspot:pottery	Roman	E	1390	TF 15NW	1080 5580	-	M	H
MON 351263	EH		pottery scatter	Roman	D	930	TF 15SW	1080 5350	-	H	H
MON 351272	EH		findspot:flint scraper and ?flint knife	Bronze Age	E	490	TF 15SW	1029 5399	-	M	H
MON 351293	EH		findspot: pottery	Roman	E	690	TF 15SW	1050 5399	-	M	H
MON 892920	EH		findspot:polished flint axehead	Neolithic	E	450	TF 15NW	1000 5500	-	L	H
MON 892926	EH		findspot: butt end fragment of stone axe	Neolithic	E	990	TF 15SW	1078 5406	-	H	H

Map 5 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	I
DBA:BH	T. 1841		Rowston and Scopwick parish boundary	Undetermined	D	0	TF 05NE	0906 5725	Min	H	H
DBA:BI	AP 1971	LCC	former farm building	Undetermined	C	320	TF 05NE	0903 5633	-	H	H
DBA:BJ	AP 1971		former farm building	Undetermined	C	380	TF 05NE	0897 5635	-	H	H
DBA:BK	AP 1971	LCC 0946	ridge and furrow field system	Undetermiend	D	0	TF 05NE	0947 5617	Min	H	H
DBA:BL	T. 1841		Digby and Rowston parish boundary	Undetermined	D	0	TF 05NE	0948 5586	Min	H	H
DBA:BM	AP 1971	LCC 0946	fidge and furrow	Undetermined	D	0	TF 05NE	0943 5540	Min	H	H
DBA:BN	AP 1998	MOUCHEL	ridge and furrow	Undetermined	D	160	TF 06NE	0907 5522	-	H	H
DBA:BO	AP 1998	MOUCHEL	ridge and furrow	Undetermined	D	0	TF 05SE	0960 5482	Min	H	H
DBA:BP	AP 1971	LCC 0946	ridge and furrow	Undetermined	D	230	TF 05SE	0995 5487	-	H	H
DBA:BQ	AP 1998	MOUCHEL	ridge and furrow	Undetermined	D	160	TF 05SE	0926 5449	-	H	H
DBA:BR	AP 1971	LCC 0948	ridge and furrow	Undetermined	D	100	TF 05SE	0946 5397	-	H	H
DBA:BT	AP 1971	LCC 0948	ridge and furrow	Undetermined	D	160	TF 05SE	0999 5278	-	H	H
DBA:CM	OS 1906		former buildings	Undetermined	C	60	TF 05SE	0969 5268	-	H	H
DBA:CN	OS 1906		Old Brick Yard	Undetermined	D	130	TF 05SE	0965 5346	-	H	H
DBA:CO	OS 1906		former Fox Covert	Undetermined	E	390	TF 05SE	0917 5408	-	H	H
DBA:CP	OS 1906		former buildings: 'Tallyho! Houses'	Undetermined	C	140	TF 05NE	0921 5572	-	H	H
DBA:CQ	T. 1841		field names: 'Great & Far Sand Fields'	Undetermined	D	20	TF 05NE	0906 5659	-	H	H
DBA:ET	AP 1947	CPE/UK/2009 3462 543/28	ridge and furrow field system	Undetermined	D	0	TF 05NE	0916 5607	Min	H	H
DBA:EU	AP 1947	CPE/UK/2009 2462	former building	Undetermined	C	470	TF 05SE	0908 5464	-	H	H
DBA:EV	AP 1950	541/445 4278	former building	Undetermined	C	230	TF 05SE	0977 5498	-	H	H
DBA:EW	AP 1947	CPE/UK/2009 2462	CM: former stream bed	Undetermined	E	0	TF 05SE	0940 5482	Unc	H	H
DBA:EX	AP 1947	CPE/UK/2009 2462	CM: ridge and furrow	Undetermined	D	150	TF 05SE	0920 5482	-	H	H
DBA:EY	AP 1947	CPE/UK/2041 3099	former building	Undetermined	C	270	TF 05SE	0944 5405	-	H	H
DBA:EZ	AP 1964	543/2843	?pond	Undetermined	E	0	TF 05SE	0958 5470	Sev	H	L
DBA:FA	AP 1947	CPE/UK/2041 3118 543/28	CM: former ridge and furrow	Undetermined	D	0	TF 05SE	0954 5375	Min	H	H
DBA:FB	AP 1964	543/2843	CM: former ridge and furrow	Undetermined	D	250	TF15SW	1021 5350	-	H	H
DBA:FC	AP 1947	CPE/UK/2041 3118	CM: former ridge and furrow	Undetermined	D	0	TF 05SE	0955 5274	Min	H	H

Map 6 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
NK:36.21	NK		cropmark: no details	Undetermined	D	490	TF 04NE	0869 4890	-	L	M
NK:36.31	NK		former mill:fulling mill assoc Haverholme Priory	Medieval	B	475	TF 04NE	0965 4911	-	H	H
NK:52.23	NK		cropmarks: area of enclosures, field system etc	Undetermined	D	210	TF 04NE	0900 4950	-	L	M
SAM 178	LSMR	LSMR60740MON351056	Haverholme Priory	Medieval	A	1080	TF 14NW	1090 4935	-	H	H
LSMR 60292	LSMR		CM: ?hillfort/linear boundary	Undetermined	D	280	TF 04 SE	0943 5030	-	H	M
LSMR 60440	LSMR	NCC 1989	Evedon Wood, ancient woodland	Med/Post Med	D	760	TF 14NW	1097 4830	-	H	H
LSMR 60545	LSMR	NK 28.49	Washdyke Bridge, ford of paving stones	Undetermined	C	140	TF 04NE	0960 4815	-	H	H
LSMR 60827	LSMR	NK 28.48	find scatter: coins, pottery and statuettes	Roman	D	540	TF 04NE	0890 4840	-	M	H
LSMR 60828	LSMR		metal finds: seal and button	Medieval	E	540	TF 04NE	0890 4840	-	H	H
LSMR 60829	LSMR	NK 28.50	findspot: potin coin	Iron Age	E	450	TF 04NE	0949 4779	-	M	H
LSMR 60864	LSMR		findspot: metal seal and buttons	Medieval	E	900	TF 04NE	0885 4789	-	M	H
LSMR 60920	LSMR	NK 52.52	find scatter: pottery and coins	Roman	E	600	TF 05SE	0920 5030	-	M	H
TF 04NE AR	LSMR	NK 52.15	findspot: pottery & building debris	Roman	E	700	TF 04NE	0859 4980	-	M	H
TF 04NE V	LSMR	AP 1957	CM: rectangular enclosure	Undetermined	C	310	TF 04NE	0930 4990	-	H	H
TF 05SE AP	LSMR		findspot: lead shot	Post Medieval	E	400	TF 05SE	0953 5052	-	H	H
TF 05SE X	LSMR		findspot: worked flints	Undetermined	E	920	TF 05SE	0900 5060	-	M	H
TF 05SE Y	LSMR		CM: enclosures	Undetermined	C	920	TF 05SE	0900 5060	-	H	H
TF 14NW H	LSMR	NK 28.5	finds: flint blade and scraper	Mesolithic	D	550	TF 14NW	1050 4820	-	M	H
MON 1049471	EH	MORPH LI , NK 52.36	CM: enclosures	IA/Roman	C	230	TF 04NE	0928 4983	-	H	H
MON 1054808	EH	MORPH LI 871.4	CM: three sides of enclosure	Prehist/Roman	C	980	TF 05SE	0902 5081	-	H	H
MON 1054809	EH	MORPH LI 871.6	CM: sub-circular enclosure; ?round barrow	Prehistoric	C	780	TF 05SE	0902 5036	-	H	H
MON 1054810	EH	MORPH LI 871.10	CM: boundary ditches	Prehist/Roman	C	50	TF 05SE	0990 5013	Unc	H	H
MON 1054811	EH	MORPH LI 871.11	CM: trackway, two ditches	Prehist/Roman	C	180	TF 15SW	1001 5004	-	H	H
MON 1080693	EH	?NK 52.46	CM: trackway, parallel ditches	Undetermined	C	10	TF 04NE	0954 4981	Unc	H	H
MON 1080697	EH		CM: complex of conjoined enclosures	Prehis/Roman	C	580	TF 15SW	1045 5004	-	H	H
MON 348873	EH		find scatter: pottery	Roman	D	630	TF 04NE	0860 4970	-	H	H
MON 349226	EH	MORPH LI 871.7	CM: enclosure	Prehist/Roman	C	620	TF 05SE	0910 5031	-	H	H

Map 6 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source	
										L	I
MON 349240	EH	NK 52.12	findspot: worked flint	Undetermined	E	420	TF 05SE	0949 5050	-	M	H
MON 349273	EH	MORPH LI 871.8/9, ?NK 5	CM: settlement complex; enclosures, ?pits, defens	Undetermined	C	0	TF 05SE	0977 5011	Maj	H	H
MON 892642	EH	NK 28.3	findspot: bronze axe	Bronze Age	E	150	TF 04NE	0980 4789	-	H	H
DBA:BU	AP 1971	LCC	ridge and furrow and field enclosures	Undetermined	D	0	TF 15SW	1029 5102	Min	H	H
DBA:BV	AP 1971	LCC 1052	?ridge and furrow	Undetermined	D	300	TF 15SW	1036 5049	-	H	M
DBA:BW	AP 1971	LCC 0951	CM: ?field enclosures & ridge and furrow	Undetermined	D	80	TF 05SE	0974 5058	-	H	M
DBA:BX	AP 1971	LCC 0951	ridge and furrow	Undetermined	D	20	TF 04NE	0954 5005	Min	H	H
DBA:BY	AP 1971	LCC 0951	CM: enclosure	Undetermined	C	160	TF 04NE	0950 4984	-	H	M
DBA:BZ	AP 1971	LCC 0953	ridge and furrow	Undetermined	D	0	TF 04NE	0941 4957	Min	H	H
DBA:CA	E. 1779		Ruskington and Leasingham parish boundary	Undetermined	D	0	TF 04NE	0948 4943	Min	H	H
DBA:CB	AP 1971	CU CJ V16	CM: ?enclosure	Undetermined	C	90	TF 04NE	0933 4908	-	H	L
DBA:CC	AP 1975	LCC 0953	CM: ditch, ?enclosure	Undetermined	C	120	TF 04NE	0900 4917	-	H	L
DBA:CD	AP 1971	CU CJV 16	ridge and furrow	Undetermined	D	40	TF 04NE	0962 4901	-	H	H
DBA:CE	T. 1845		Evedon and Leasingham parish boundary	Undetermined	D	0	TF 04NE	0934 4902	Min	H	H
DBA:CH	AP 1971	LCC 0953	ridge and furrow	Undetermined	D	0	TF 14NW	1015 4774	Min	H	H
DBA:CL	OS 1906		former buildings: 'The Poplars'	Undetermined	C	60	TF 04NE	0950 4972	-	H	H
DBA:DH	OS 1906		site of Hillside Farm	Undetermined	C	360	TF 05SE	0961 5062	-	H	H
DBA:FD	OS 1906		former pond	Undetermined	E	110	TF 05SE	0950 5279	-	H	H
DBA:FF	OS 1906		former parkland	Undetermined	E	200	TF 15SW	1013 5228	-	H	H
DBA:FG	AP 1964		ridge and furrow	Undetermined	D	260	TF 15SW	1021 5253	-	H	H
DBA:FH	AP 1975	OS/75305	CM: former ridge and furrow	Undetermined	D	0	TF 15SW	1011 5175	Min	H	H
DBA:FI	OS 1906		former pond	Undetermined	E	90	TF 05SE	0995 5163	-	H	H
DBA:FJ	AP 1964	543/2843	CM: former ridge and furrow	Undetermined	D	50	TF 15SW	1038 5159	-	H	H
DBA:FK	AP 1975	OS/75305	ridge and furrow and field enclosures	Undetermined	D	0	TF 15SW	1003 5054	Min	H	H
DBA:FL	AP 1975	OS/75305	CM: ?enclsoures/field system	Undetermined	C	160	TF 04NE	0996 4975	-	H	M
DBA:FM	T.1845		former buildings	Undetermined	C	330	TF 04NE	0961 4918	-	H	H
DBA:FN	AP 1950	541/445	former buildings	Undetermined	C	60	TF 04NE	0982 4838	-	H	H

Map 6 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:FO	OS 1906		pond	Undetermined	E	100	TF 14NW	1009 4799	-	H	H
DBA:FP	AP 1973	OS/73119	CM: former ridge and furrow	Undetermined	D	0	TF 14NW	1032 4818	Min	H	H
DBA:GG	OS 1906		former building	Undetermined	C	70	TF 15SW	1018 5164	-	H	H

Map 7 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:GM	0S		disused railway	Modern	D	0	TF 04SE	0856 4411	Min	H	H
LSMR 60290	LSMR	AP 1980	CM: linear boundary ditch, double ditch	? Prehistoric	C	290	TF 14NW	1110 4549	-	H	H
LSMR 60291	LSMR	AP 1980	CM: linear boundary, double ditch	? Prehistoric	C	430	TF 14NW	1110 4541	-	H	H
LSMR 60345	LSMR		EW:remains of Asgarby village and field system	Medieval	B	550	TF 14NW	1143 4534	-	H	H
LSMR 60346	LSMR	AP 1992	EW: ridge and furrow & crofts	Medieval	D	730	TF 04NE	0970 4590	-	H	H
LSMR 60409	LSMR	MON TF04NE5	findspot: sculptural fragments from church	E Medieval	E	640	TF 04NE	0990 4609	-	H	H
LSMR 60569	LSMR	excavation	former gravel quarry and ditches	Roman	C	750	TF 04NE	0986 4526	-	H	H
LSMR 60570	LSMR		findspot: pottery	E Medieval	E	750	TF 04NE	0986 4526	-	H	H
LSMR 60571	LSMR		Laythorpe settlement	Medieval	B	540	TF 04NE	0990 4525	-	H	H
LSMR 60583	LSMR	wathcing brief	finds sugesting settlement	Iron Age	C	2000	TF 04NE	0774 4595	-	H	M
LSMR 60585	LSMR	CLAU EXCAV	ditch and pottery	Saxon	D	2000	TF 04NE	0776 4595	-	H	H
LSMR 60596	LSMR		water tower	Post Medieval	B	580	TF 04NE	0954 4753	-	H	H
LSMR 60626	LSMR		find scatter, coins, pottery	Roman	D	400	TF 14NW	1109 4556	-	H	H
LSMR 60691	LSMR	watching brief	remnant ridge and furrow in sub surface deposits	Medieval	D	430	TF 04SE	0849 4457	-	H	H
LSMR 60694	LSMR		former stone church	Saxon	C	2000	TF 04NE	0759 4590	-	H	H
LSMR 60747	LSMR		Beacon Hill stone	Medieval	D	240	TF 14NW	1010 4700	-	H	H
LSMR 60831	LSMR		findspot: metal axe head and spearhead	Bronze Age	D	430	TF 04NE	0960 4770	-	M	H
LSMR 60938	LSMR		EW:ridge and furrow	Medieval	D	850	TF 14SW	1154 4471	-	H	H
LSMR 61003	LSMR	NA FW1997	findspot: pottery	Medieval	E	860	TF 14NW	1128 4697	-	H	H
LSMR 61007	LSMR	NA FW1997	findspot: pottery	Roman	E	170	TF 14NW	1045 4543	-	H	H
LSMR 61008	LSMR	NA FW1997	findspot: pottery	Medieval	E	150	TF 14NW	1048 4542	-	H	H
LSMR 61021	LSMR	NA FW1997	findspot: pottery	Medieval	E	260	TF 14SW	1027 4487	-	H	H
LSMR 61022	LSMR	NA FW1997	findspot: pottery	Med/Post Med	E	170	TF 04SE	0975 4450	-	H	H
LSMR 61025	LSMR	NA FW1997	findspot: pottery	Roman	E	110	TF 04SE	0859 4385	-	H	H
LSMR 61026	LSMR	NA FW1997	findspot: pottery	Medieval	E	70	TF 04SE	0853 4375	-	H	H
TF 04NE B	LSMR		findspot: decorated pottery	Bronze Age	E	700	TF 04NE	0990 4589	-	M	H
TF 04NE B	LSMR		findspot: decorated pottery	Bronze Age	E	700	TF 04NE	0990 4589	-	M	H

Map 7 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	I
TF 04NE BB	LSMR		St Mary's Church	Medieval	B	720	TF 04NE	0928 4758	-	H	H
TF 04NE BC	LSMR		'Manor House'	Post Medieval	B	650	TF 04NE	0943 4755	-	H	H
TF 04NE BX	LSMR		findspot: pottery	Roman	E	700	TF 04NE	0990 4589	-	M	H
TF 04NE CH	LSMR		findspot: follis of Maximin I	Roman	E	540	TF 04NE	0990 4500	-	M	H
TF 04NE CL	LSMR		cross fragments	Saxon	D	650	TF 04NE	0990 4609	-	H	H
TF 04NE CM	LSMR		site of chapel	Medieval	C	600	TF 04NE	0985 4504	-	H	H
TF 04NE CN	LSMR		The Grange or Kirkby La Thorpe Hall	Undetermined	B	710	TF 04NE	0981 4621	-	H	H
TF 04NE CO	LSMR		site of St Peter's Church	Medieval	C	680	TF 04NE	0982 4631	-	H	H
TF 04NE CR	LSMR		CM: shrunken village	Medieval	B	430	TF 14NW	1012 4602	-	H	H
TF 04SE G	LSMR		ancient meeting place on Kirkby Mount	Undetermined	E	170	TF 04SE	0940 4400	-	H	M
TF 14NW B	LSMR		findspot: pottery & coin	?IA/RB	E	1150	TF 14NW	1170 4650	-	L	H
TF 14NW J	LSMR		findspot: decorated pottery	Iron Age	E	1050	TF 14NW	1155 4670	-	H	H
MON 1044204	EH	MORPH LI 843.8	CM: ring ditch, ?round barrow	Prehistoric	C	920	TF 04SE	0806 4490	-	H	M
MON 1044205	EH	MORPH LI 843.9	CM: ?section of road/ploughed headland	Roman/Med	C	130	TF 04SE	0840 4447	Unc	H	H
MON 1044206	EH	MORPH LI 843.10	CM: field boundaries	Undetermined	E	440	TF 04SE	0959 4485	-	H	H
MON 1049483	EH		CM:settlement	Medieval	C	510	TF 04NE	0960 4755	-	H	H
MON 1049484	EH	MORPH LI 852.5	CM: rectilinear enclosure	Prehist/Roman	C	880	TF 04NE	0913 4527	-	H	H
MON 348861	EH		findspot: coins	Roman	E	600	TF 04NE	0900 4500	-	L	H
MON 348864	EH		findspot: iron shears	E Medieval	E	600	TF 04NE	0900 4500	-	L	H
MON 351059	EH	TF 14NW A	findspot: stamped mortar rim	Roman	E	140	TF 14NW	1006 4757	-	H	H
MON 351068	EH		EW: ?ornamental pond, and building remains	?Medieval	C	1260	TF 14NW	1174 4675	-	H	H
MON 351071	EH	LB unknown	St Andrew's Church	Med/Post Med	A	950	TF 14NW	1162 4538	-	H	H
MON 351128	EH	TF 04NE A	findspot: partly polished flint axe	Neolithic	E	800	TF 14SW	1144 4497	-	H	H
MON 892502	EH		pottery scatter & coin, ?settlement site	IA?Roman	C	930	TF 14NW	1150 4639	-	H	H
MON 892502	EH		findspot:greenstone axe	Neolithic	E	340	TF 14NW	1000 4700	-	L	H
DBA:CF	AP 1971		ridge and furrow	Undetermined	D	80	TF 14NW	1027 4612	-	H	H
DBA:CG	T. 1851		Evedon and Kirkby La Thorpe parish boundry	Undetermined	D	0	TF 14NW	1003 4657	Min	H	H

Map 7 Lincolnshire

Reference	Source	Cross References	Description	Period	Category	Distance from centre-line (m)	Quarter Sheet	National Grid Reference	Impact	Reliability of Source L	Reliability of Source I
DBA:CI	T. 1851		former building	Undetermined	C	380	TF 04NE	0995 4391	-	H	H
DBA:CJ	T. 1851		fieldnames: 1st, 2nd & far Mill Hill	Undetermined	D	310	TF 14SW	1108 4490	-	H	H
DBA:CK	T. 1845		field names: 'Flax Yard'	Undetermined	D	100	TF 04NE	0987 4767	-	H	H
DBA:DJ	AP	Site 22 NA FS	CM: enclosures & pits	Iron Age	C	80	TF 14SW	1016 4470	-	H	H
DBA:DK	AP 1973	OS/68041 110	ridge and furrow	Undetermined	D	0	TF 14SW	1013 4465	Min	H	H
DBA:DL	AP		CM: ditches & pits	Undetermined	C	120	TF 14SW	1002 4469	-	H	H
DBA:DM	AP		CM: ?enclosures, and ditches	Roman	C	230	TF 14NW	1029 4516	-	H	M
DBA:DN	AP	RCHME	CM: ?enclosures	Undetermined	C	0	TF 14NW	1065 4506	Maj	H	M
DBA:DO	AP 1998	MOUCHEL	ridge and furrow	Undetermined	D	0	TF 14SW	1075 4464	Min	H	H
DBA:FQ	AP 1950	541/568 4109	former building and yard	Undetermined	C	330	TF 14NW	1056 4767	-	H	H
DBA:FR	AP 1950	541/568 4109	ridge and furrow (former?)	Undetermined	D	0	TF 14NW	1030 4730	Min	H	H
DBA:FS	AP 1950	541/568 4109	CM: ?alluvial/geological	Undetermined	E	0	TF 14NW	1041 4723	Unc	H	L
DBA:FT	OS 1906		former pond	Undetermined	E	30	TF 14NW	1044 4646	-	H	H
DBA:FU	AP 1973	OS/73119	CM: former ridge and furrow	Undetermined	D	0	TF 14NW	1041 4670	Min	H	H
DBA:FV	AP 1947	CPE/UK/2073 3019	EW:ridge and furrow (former?)	Undetermined	D	230	TF 14NW	1011 4646	-	H	H
DBA:FW	AP 1947	CPE/UK/2073 3079	?former pond	Undetermined	E	100	TF 14NW	1043 4621	-	H	L
DBA:FX	AP 1950	541/568 4109	CM: former ridge and furrow	Undetermined	D	0	TF 14NW	1085 4652	Min	H	H
DBA:FY	AP 1973	OS/73119	CM: ?circular enclosure	Undetermined	C	0	TF 14NW	1065 4582	Sev	H	M
DBA:FZ	NA HS	pipeline Site 18	cemetery and ring ditches	IA/Saxon	B	30	TF 14NW	1062 4572	Unc	H	H
DBA:GA	NA HS	pipeline Site 19	settlement remains	Iron Age	B	80	TF 14NW	1055 4554	Unc	H	H
DBA:GB	AP 1950	541/568 OS/83010	CM: former ridge and furrow	Undetermined	D	0	TF 14NW	1061 4559	Min	H	H
DBA:GC	AP 1950	541/568 OS/83010	CM: former ridge and furrow	Undetermined	D	0	TF 14NW	1035 4519	Min	H	H
DBA:GD	T. 1851		former building	Undetermined	C	360	TF 04SE	0904 4476	-	H	H
DBA:GE	AP 1947	CPE/UK/2073	ridge and furrow	Undetermined	D	260	TF 04SE	0942 4376	-	H	H
DBA:GH	AP		CM: circular enclosure and pits	Undetermined	C	30	TF 14SW	1042 4474	Unc	H	H
DBA:NP	AP 1998	MOUCHEL	ridge and furrow	Undetermined	D	580	TF 14NW	1134 4478	-	H	H

Appendix D

Archaeological Constraint Maps

ADDENDUM

Proposed Re-routes March 2000

Proposed Re-routes

Hatton to Silk Willoughby
High Pressure Natural Gas Supply Pipeline

Prepared by

NETWORK ARCHAEOLOGY LTD

for

MOUCHEL CONSULTING LTD

March 2000

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1 SUMMARY

1.1.1 This Addendum deals with two proposed re-routes; re-route 'A' across the Witham Valley and re-route 'B' to the west of Kirkby la Thorpe (Map A and Map B respectively).

1.1.2 A low density of *known* archaeological remains lie within the Witham Valley. Far greater numbers of *known* archaeological remains are identified in the vicinity of Kirkby la Thorpe.

1.2 General Impacts and Recommendations

1.2.1 As well as the small number of *known* archaeological sites affected by the re-routes, there is considerable potential for the existence of significant *unknown* remains. This is particularly likely along re-route 'B' where the land has been intensively occupied since prehistoric times.

1.3 Site Specific Impacts and Recommendations

1.3.1 Twenty-two sites have been identified within the study corridor of re-route A, of which ten are located directly in the path of the proposed pipeline. Thirty-five sites have been identified within the study corridor of re-route B, of which nine are located directly in the path of the proposed pipeline.

1.3.2 All of the sites have been placed into one of five categories, ranging in significance from Scheduled Ancient Monuments (category A) to single find spots (category E).

1.3.3 **Re-route A**: There are five main areas of concern (category C), where re-routes are recommended:

Category C

- **DBA:NR** (Map A, TF 1187 6620): former buildings
- **DBA:OJ** (Map A, TF 1106 6497): former buildings
- **DBA:OK** (Map A, TF 1067 6478):former small buildings
- **DBA:OL** (Map A, TF 1049 6468): former small buildings
- **DBA:OM** (Map A, TF 1030 6459): former buildings/barns

There are five areas (category D-E), whose potential should be re-evaluated at the end of the Stage 3 investigations (field reconnaissance, fieldwalking and geophysical survey).

1.3.4 **Re-route B**: There are two main areas of concern (category C), where re-routes are recommended:

Category C

- **DBA:OW** (Map B, TF 0940 4643): cropmark, undated rectilinear enclosure complex
- **DBA:OV** (Map B, TF 0899 4501): cropmark, undated ? settlement complex

There are seven areas (category D), whose potential should be re-evaluated at the end of the Stage 3 investigations (field reconnaissance, fieldwalking and geophysical survey).

1.3.5 Sites which at this stage do not appear to be cut by the proposed route, but lie close enough to have the potential to be affected, should be re-evaluated at the end of the Stage 3 investigations.

2 INTRODUCTION

2.1 General

2.1.1 In March 2000, Network Archaeology Limited (NAL) was commissioned to carry out additional Archaeological Desk-Based Assessments of two proposed re-routes along the *Hatton to Silk Willoughby* natural gas pipeline; Re-route 'A' across the Witham Valley and Re-route 'B' to the west of the village of Kirkby la Thorpe. (Maps (A) & (B)).

2.1.2 Re-route 'A' runs roughly north-east to south-west across the Witham Valley fenlands.

2.1.3 Re-route 'B' runs from the south-eastern edge of the village of Evedon, passing to the west of Kirkby la Thorpe.

2.1.4 Each re-route will be discussed separately.

3 METHOD OF ASSESSMENT

3.1 The same method of assessment was used in the production of this addendum as in the main report (see Section 3, pg. 5).

RE-ROUTE 'A'

4 DESCRIPTION OF THE PROPOSED PIPELINE RE-ROUTE

4.1 Location and Topography

4.1.1 The proposed re-route runs for approximately 5.8km across the Fenlands of the Witham Valley (Map A).

4.1.2 The land along the re-route is low lying and of low relief, with ground elevations dropping to 2m AOD.

4.1.3 The Witham Fenlands comprise recent marine, estuarine and fluvial sediments over glacial deposits, lying within a basin of Oxford Clay and Kellaway Beds, all overlain by successions of peat and silt deposits (*ibid.*) (see Figure 2 , main report).

4.2 Soils and Landuse

4.2.1 The Witham Fenland was extensively drained in the past to prevent flooding and is now one of the most fertile agricultural areas in the country. This change to intensive farming has unfortunately produced a gradual lowering of the water table, and an acceleration in the erosion of the peat deposits.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

A general background to each period can be found within the main report (Section 5, pg. 7-14).

5.1 Palaeolithic - Iron Age (*c.*250,000 - *c.*600BC)

5.1.1 No firmly dated evidence for the prehistoric period has been found within this study corridor.

5.2 Romano-British (AD 43)

5.2.1 The southern limit of the new study corridor just clips the edge of Car Dyke (Scheduled Monument 312). The Car Dyke, possibly built in the early second century AD., connects the River Nene east of Peterborough with the Witham two or three miles east of Lincoln, a total length of some 56 miles. Controversy as to its main function revolves around the suggestions of whether the whole length of the monument would have been navigable and so utilised as a canal (Whitwell, 1992) or whether it was merely a means of draining the fenlands (Simmons, 1975). Irrespective of its function, the construction of such an earthwork would have required large teams who would probably have stayed in temporary labour camps during construction, as was the case, for example, with the construction of Hadrian's Wall (May, 1976, 9).

5.3 **Anglo-Saxon** (AD 410)

5.3.1 No known Anglo-Saxon activity has been recorded within this area.

5.4 **Medieval** (AD 1066)

5.4.1 Although it is likely that this area was farmed during the medieval period there is no known surviving archaeology to substantiate this.

5.4.2 A medieval limestone net sinker, LSMR 60475, found near the River Witham, indicates use of this water course for fishing.

5.5 **Post-Medieval/Modern** (late 15th - present day)

5.5.1 A variety of buildings survive from this period. Often their sites are still occupied, and they are unlikely to be directly affected by pipeline construction. However, a number of buildings shown on early maps are no longer present; these are mostly small with no name or description, suggesting agricultural buildings such as barns or sheds. This particular area has an especially high number of such buildings, the majority having disappeared over the last century (DBA:NR, DBA:NQ, DBA:OI, DBA:NS, DBA:OJ, DBA:OK, DBA:NW, DBA:OL, DBA:OM, DBA:OO, DBA:CT).

5.5.2 The Witham Fens were subject to major drainage operations in the eighteenth century: between 1777 and 1797 some 25,000 acres of this fenland was drained and enclosed (Robinson, 1995, 72). Much of the regular pattern of field boundaries which can be seen today originated at this time.

5.5.3 The re-route crosses a number of agricultural tramways (DBA:CY, DBA:DA, DBA:DE & DBA:DI).

5.5.4 There is a possibility of unrecorded crash sites around airfields, especially in the fenland areas where debris would have tended to be embedded within the soft peaty ground.

5.6 **Undated**

5.6.1 A number of features have been identified from aerial photographs. Most of the marks are linear and are probably old drainage ditches and/or land divisions from the medieval, post-medieval and modern periods. Numerous 'dendritic' cropmarks are clearly the result of past alluvial activity (DBA:AV, DBA:AG).

6 EXPLANATION OF GAZETTEER / CRITERIA FOR GRADING SITES / RELIABILITY AND POTENTIAL LIMITATIONS OF DATA

A full explanation of all these subjects can be found within the main report (Sections 6-8, pg. 15-18).

7. ASSESSMENT OF IMPACTS AND RECOMMENDATIONS

7.1 SITE-SPECIFIC IMPACTS & RECOMMENDATIONS

7.1.1 In an ideal situation, all known archaeological constraints would be avoided. However, this is impracticable, and for this reason the known sites have been graded A-E, and the level of impact assessed for each site in order to provide an indication as to the significance of the sites within the proposed re-route study corridor. This information is summarised below in Table 1A:

Description	Category	Total number of sites in 1km corridor	Total number of sites crossed by proposed easement
Legally protected site	A	1	0
Nationally or regionally important site; currently not legally protected	B	0	0
Locally important site and/or site of uncertain character and/or date	C	11	5
Other site	D	3	2
Single find spot, modern feature	E	7	3
TOTAL		22	10

Table 1A: Sites within the 1km study corridor of re-route 'A' by category, with those crossed by the proposed easement

7.1.2 The following sections (7.2-7.6) deal in category order with sites that are directly or potentially affected by the proposed pipeline.

7.2 Category A Sites

Only one legally protected site is located within the study corridor: Car Dyke Roman waterway (SAM 312). This is not directly affected by the proposed pipeline.

7.3 Category B Sites

No category B sites exist within the new study corridor.

7.4 Category C Sites

Eleven category C sites are located within the study corridor, five of which are directly affected by the proposed re-route (Table 2A).

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:NR	former buildings	C	TF 1187 6620	Maj
DBA:OJ	former buildings	C	TF 1106 6497	Unc
DBA:OK	former small buildings	C	TF 1067 6478	Unc
DBA:OL	former small buildings	C	TF 1049 6468	Unc
DBA:OM	former buildings/barns	C	TF 1030 6459	Unc

Table 2A: Summary of impact rating for directly affected category C Sites

DBA:NR (Map A, TF 1187 6620)
OS maps from 1907 show a group of large, barn-like, buildings clustered around the bend in the track. These were probably post-medieval in date.
Impact: Major; a large percentage of the area will be affected by the proposed route.
Recommendations: a re-route to east would avoid encountering both these remains and those of former tramway DBA:CY.

DBA:OJ (TF 1106 6497), **DBA:OK** (TF 1067 6478), **DBA:OL** (TF 1049 6468), **DBA:OM** (TF 1030 6459)
All these former buildings are situated along the northern edge of Dunston Fen Lane and were identified from aerial photographs taken in 1947. There is no record of any of them on earlier OS maps and they are, therefore, likely to be associated with the former tramway, DBA:DA, which runs alongside Dunston Fen Lane. It is likely that they were abandoned when the adjacent tramway, DBA:DA, went out of use in the second half of the 20th century.
Impact: Uncertain; as the exact nature of the structures is unknown one cannot be sure how significant the impact of the proposed pipeline will be. It is likely, however, that it will impact upon a substantial percentage of the remains.
Recommendations: increasing the distance between the pipeline and the road along this stretch would significantly reduce the risk of encountering both building and tramway remains.

7.5 Category D Sites

Three category D sites are located within the new study corridor, of which two are directly affected by the proposed re-route (Table 3A):

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:AW	Dunston & Nocton parish boundary	D	TF 0838 6326	Min
DBA:AX	Metheringham & Dunston parish boundary	D	TF 0824 6318	Min

Table 3A: Summary of impact rating for affected category D Sites

DBA:AW & DBA:AX (Map A, TF 0838 6326 & TF 0824 6318)
These two category D parish boundaries (*i.e.* those not defined by river courses) are crossed by the proposed re-route. They are historic boundaries which may date from the medieval period or earlier.
Impact: Minor; only a short cross section of each boundary will be affected.
Recommendations: field reconnaissance survey should establish whether these boundaries are represented by extant banks and ditches. It would be appropriate to record a section through these features. This could be undertaken during a construction watching brief.

7.6 Category E Sites

Seven category E sites are located within the new study corridor, of which three are crossed by the current easement (see Table 4A).

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:AV	AP: geological/alluvial marks	E	TF 1120 6668	Unc
DBA:CY	former tramway	E	TF 0912 6500	Min
DBA:DA	former tramway	E	TF 0920 6400	Min

Table 4A: Summary impact rating for affected category E Sites

DBA:AV (Map A, TF 1120 6668)
A large area of 'dendritic' cropmarks in this area are believed to represent ancient alluvial channels.
***Impact: Minor*:** the pipeline will only affect a very small proportion of these deposits.
Recommendations: careful monitoring of the area during construction should be carried out.

DBA:CY & DBA:DA (Map A, TF 0912 6500 & TF 0920 6400)
These tramways facilitated the transport of materials in and out of the fens. They are marked on the 1955 1:10,000 maps but it is not known when exactly they went out of use.
Impact: Minor; these linear features are unavoidable, but the works will cause only relatively minor damage to the remains.

Recommendations: reconnaissance survey should establish whether these tramways are represented by extant banks and trackways. It would be appropriate to record any remains encountered during construction.

Field Boundaries

Former field boundaries have been plotted from early edition Ordnance Survey maps and aerial photographs. Sixteen known boundaries are crossed by the proposed re-route.

Impact: Minor; the former boundaries are unavoidable, but the works will cause only minor damage to the potential archaeological remains.

Recommendations: field reconnaissance survey should establish whether these boundaries are represented by extant banks and ditches. It would be appropriate to record a section through these features during the construction watching brief.

RE-ROUTE 'B'

4 DESCRIPTION OF THE PROPOSED PIPELINE RE-ROUTE

4.1 Location and Topography

4.1.1 The proposed re-route runs for approximately 3.8km, from south-east of the village of Evedon, passing to the west of Kirkby la Thorpe (Map B).

4.1.2 The land along the re-route is low lying and of low relief, with ground elevations in the area of 10m AOD.

4.1.3 The solid geology along the re-route consists of Oxford Clays. This is overlain by boulder clay and Sleaford sands and gravels (see Figure 2 of the main report).

4.2 Soils and Landuse

4.2.1 The low lying nature of the land in this part of Lincolnshire, and the underlying clay geologies, have generally resulted in fairly heavy soils. Drainage, however, has helped make this area highly suitable for arable farming.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

A general background to each period can be found within the main report (Section 5, pg. 7-14)

5.1 Palaeolithic - Mesolithic (*c.*250,000 - 8,300 BC)

5.1.1 No evidence from the Palaeolithic or Mesolithic period is *known* within this corridor.

5.2 Neolithic (*c.*4,500 BC)

5.2.1 A single greenstone axe is recorded to the north of Kirkby la Thorpe (MON 892502).

5.3 Bronze Age (*c.*2,500 BC)

5.3.1 No evidence from the Bronze Age period is *known* within this corridor. A single Bronze Age cremation urn is recorded as having come from the parish of Kirkby la Thorpe, but its exact point of origin is unknown (MON 348858).

5.4 Iron Age (*c.*600 BC)

5.4.1 Extensive cropmarks to the south-west of Kirkby la Thorpe are believed to be either prehistoric or Roman in date, but have yet to be investigated (MON 1049485 & MON 1049484). These appear to represent settlement activity.

5.5 **Romano-British** (AD 43)

5.5.1 As mentioned above, extensive cropmarks to the south-west of Kirkby la Thorpe are believed to be either prehistoric or Roman in date, but have yet to be investigated (MON 1049485 & MON 1049484).

5.5.2 A number of linear cropmarks, probably roads or trackways, may also be prehistoric/Roman in date (DBA:OS & MON 1044205).

5.6 **Anglo-Saxon** (AD 410)

5.6.1 A standing stone, known locally as Beacon Hill Stone, is situated approximately half way between Evedon and Kirkby la Thorpe (LSMR 60747). This is set at the highest point of Evedon parish and was probably the wappentake meeting place for the district in AD900-1065.

5.6.2 An unknown number of Anglo-Saxon artefacts were collected during the construction of a gas pipeline in 1981, to the west of Kirkby la Thorpe (NK34.3). The types of find were suggestive of a cemetery site, although no human remains are recorded.

5.7 **Medieval** (AD 1066)

5.7.1 Both Evedon and Kirkby la Thorpe are Shrunken Medieval Villages.

5.7.2 A major feature related to the above and still discernible in the landscape (or identifiable from aerial photographs if now destroyed by modern ploughing), is the ridge and furrow field system (DBA:CH, DBA:FR, DBA:FU, DBA:OQ, DBA:FV, LSMR 60346, DBA:OF, LSMR 60691). Ridge and furrow is normally associated with the medieval period (up to around 1500 AD) however, traditions did pass on in to later periods. The ridge and furrow recorded during the assessment could, therefore, belong either to the Medieval or the earlier Post-Medieval periods.

5.8 **Post-Medieval** (late 15th - middle 19th century)

5.8.1 A large variety of buildings survive from this period, in villages, and as isolated halls and farmhouses. For the most part, their sites are still occupied, and therefore unlikely to be directly affected by pipeline construction. A number of buildings shown on early maps are no longer present; these are all small and mostly shown without a name or description, suggesting they are agricultural buildings such as barns or sheds (DBA:GD & DBA:OT).

5.9 **Modern**

5.9.1 The re-route crosses two existing railway lines from Sleaford, running east to Boston and south-east to Spalding and Peterborough. The course of a third branch to Stamford survives only as a farm track running parallel to Mareham Lane (DBA:GM).

5.10 Undated

5.10.1 Many undated cropmarks are probably old drainage ditches and/or land divisions from the medieval, post-medieval and modern periods. Two clusters of rectilinear enclosures, DBA:OW and DBA:OV, may, however, represent more substantial settlement remains, probably of medieval or earlier date.

6 EXPLANATION OF GAZETTEER / CRITERIA FOR GRADING SITES / RELIABILITY AND POTENTIAL LIMITATIONS OF DATA

A full explanation of all these subjects can be found within the main report (Sections 6-8, pg. 15-18).

7 ASSESSMENT OF IMPACTS AND RECOMMENDATIONS

7.1 SITE-SPECIFIC IMPACTS & RECOMMENDATIONS

7.1.1 In an ideal situation, all known archaeological constraints would be avoided. However, this is impracticable and not always necessary, therefore all known sites have been graded from A-E, with the level of impact assessed in order to provide an indication of significance. This information is summarised below in Table 1B:

Description	Category	Total number of sites in 1km corridor	Total number of sites crossed by proposed easement
Legally protected site	A	0	0
Nationally or regionally important site; currently not legally protected	B	1	0
Locally important site and/or site of uncertain character and/or date	C	9	2
Other site	D	16	7
Single find spot, modern feature	E	9	0
TOTAL		35	9

Table 1B: Sites within the 1km study corridor of re-route 'B' by category, with those crossed by the proposed easement

7.1.2 The following sections (7.2-7.6) deal in category order with sites that are directly or potentially affected by the proposed pipeline.

7.2 Category A Sites

No legally protected sites exist within this study corridor.

7.3 Category B Sites

One regionally important site (not legally protected) is located within the study corridor. This will not be affected by the pipeline (Map B: TF 04NECN, The Grange).

7.4 Category C Sites

Nine Category C sites are located within the study corridor, two of which are directly affected (Table 2B) and two of which is potentially affected (Table 3B).

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:OW	CM: undated rectilinear enclosure complex	C	TF 0940 4643	Maj
DBA:OV	CM: undated ? settlement complex	C	TF 0899 4501	Maj

Table 2B: Summary of impact rating for directly affected category C Sites

DBA:OW (Map B, TF 0940 4643)
Lincoln County Council aerial photographs (1971) show an indistinct cluster of small rectilinear enclosure cropmarks to the north-west of Kirkby la Thorpe. No date is known but similarly sized cropmarks can be seen immediately to the west of the site of St Peter's church (TF 04NECO). The latter are thought to represent remains of medieval croft boundaries and a similar interpretation could therefore be hypothesised for DBA:OW.
Impact: Major; although the exact nature of the enclosures is unknown it is likely that the pipeline will impact upon a substantial percentage of the remains.
Recommendations: A re-route to the north-west is advisable. However, if this is done there is still the potential risk of encountering Saxon remains (NK34.3). Stage 3 surveys, (field reconnaissance, field walking and geophysics) should target this area at the earliest opportunity.

DBA:OV (Map B, TF 0899 4501)
Aerial photographs held at Swindon show a number of rectilinear enclosures and possible trackway cropmarks to the north-west of Bone's Farm (indeed the name of this farm is interesting in itself). Although undated there is a high possibility that this is a continuation of the extensive settlement cropmark complex to the north-west, MON 1049485, which is believed to be prehistoric/Roman in date.
Impact: Major; although the exact nature of the cropmark complex is unknown it is likely that the pipeline will impact upon a substantial percentage of the remains.
Recommendations: A re-route is advisable but as this may not be possible due to engineering constraints it is recommended that a Stage 3 assessment (field reconnaissance, field walking and geophysical survey) is undertaken at the earliest opportunity.

Potentially Affected Sites

Reference	Description	Category	National Grid Reference	Impact
NK34.3	Artefact scatter suggestive of Anglo-Saxon cemetery	C	TF 0910 4610	Unc
MON 1049484	CM: ?IA/Rom ? settlement complex	C	TF 0913 4527	Unc

Table 3B: Summary of impact rating for potentially affected category C Sites

NK34.3 (Map B, TF 0910 4610)
An unknown quantity of Anglo-Saxon artefacts were recovered from this area during the construction of a gas pipeline in 1981. The assemblage was suggestive of a cemetery site, although no bodies were sited. This record, however, is incomplete and the possibility of a burial site cannot be ruled out.
Impact: Uncertain; with no exact location and few details it is not possible to be certain what impact the pipeline will have. However, it is clear that Anglo-Saxon activity is apparent in the area.
Recommendations: Stage 3 field survey (field reconnaissance, field walking and geophysical survey) should be carried out at the earliest opportunity.

MON 1049484 (Map B, TF 0913 4527)
Aerial photographs show cropmarks consisting of rectilinear enclosures and a possible hut circle. Although they have yet to be investigated, they are believed to be associated with Iron Age/Romano-British settlement activity.
Impact: Uncertain; the enclosure lies very close to the proposed easement and may therefore clip it or associated features.
Recommendations: a slight re-route to the west is advised with Stage 3 investigations (field reconnaissance, field walking and geophysical survey) to be undertaken at the earliest opportunity.

7.5 Category D Sites

Sixteen category D sites are located within the re-route study corridor, of which seven are directly affected by the proposed pipeline (Table 4B) and one is potentially affected (Table 5B):

Directly Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:CH	AP:ridge and furrow	D	TF 1015 4774	Min
DBA:FR	AP:ridge and furrow	D	TF 1030 4730	Min
DBA:OQ	AP/?EW:ridge and furrow	D	TF 0957 4679	Min
DBA:CG	Evedon & Kirkby la Thorpe parish boundary	D	TF 1003 4657	Min
DBA:OS	AP: ? former trackway	D	TF 0858 4576	Min
DBA:OF	AP:ridge and furrow	D	TF 0944 4554	Min
DBA:GM	former railway	D	TF 0856 4411	Min

Table 4B: Summary of impact rating for directly affected category D Sites

DBA:OS (Map B, TF 0858 4576)
Aerial photographs appear to show a linear cropmark running WNW-ESE, to the south of the present-day A17 road. This cropmark is cut by the proposed re-route at its eastern end. It is not possible to be sure whether this cropmark represents the remains of a former trackway/road or an earlier field boundary. As it does not appear to be aligned with the existing field system, the former appears more probable. It is highly likely, therefore, to continue beyond its visible limits, being cut by the pipeline roughly at right angles. Although undated there is, given the high density of suspected Iron Age and Roman remains in the area, a good chance that this too may be early in date.
Impact: Minor; the proposed pipeline route will affect only a small percentage of the feature.
Recommendations: as a linear feature it is unlikely that a re-route would be of any benefit. Instead a Stage 3 geophysical survey would hopefully pinpoint the exact location of this feature and further evaluation work may clarify its date and function to make any further mitigation possible.

DBA:GM (Map B, TF 0856 4411)
Current OS maps show a disused railway at the southern end of the re-route.
Impact: Minor; the proposed pipeline route will affect only a small percentage of the feature.
Recommendations: any significant remains should be recorded as part of the construction watching brief.

Ridge and Furrow Field Systems
The majority of the category D sites consist of ridge and furrow remains (see Table 4B). Most of these have been identified from aerial photographs. The current state of the ridge and furrow's preservation is unknown, but in areas of intensive cultivation, it is likely that the earthworks have been reduced since the photographs were taken.
Impact: Minor; the percentage of visible ridge and furrow remains affected by the pipeline in any one area is small to moderate.
Recommendations: field reconnaissance survey should establish the condition and extent of any surviving ridge and furrow earthworks. It is not usually necessary to avoid extant ridge and furrow, but where it is crossed, it should be recorded by topographic survey in advance of construction. Careful reinstatement should follow.

Parish Boundary
One category D parish boundary (*i.e.* one not defined by a river course) is crossed by the proposed re-route (DBA:CG). This historic boundary could have its origins in the medieval period or even earlier.
Impact: Minor; only a short cross section of the boundary will be affected.
Recommendations: field reconnaissance survey should establish whether this boundary is represented by an extant bank and ditches. If the boundary also includes a hedge, it should be assessed according to the five criteria for archaeological and historical importance (The Hedgerow Regulations 1997), which could establish antiquity. It would be appropriate to record a section through any extant, ancient bank and ditch remains. This could be undertaken during a construction watching brief.

Potentially Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:OE	Tithe Map: former trackway	D	TF 0937 4601	Unc

Table 5B: Summary of impact rating for potentially affected category D Sites

DBA:OE (Map B, TF 0937 4601)
The Kirkby la Thorpe Tithe Map of 1851 shows an established trackway running parallel with the proposed re-route, at a distance of approximately 30-40m to the east. Although the Tithe Map appears fairly accurate it cannot be relied on to pinpoint the exact position of the trackway. It is, therefore, possible that the proposed easement will clip this feature. Its exact date of origin is not known and it may be early in date.
Impact: Uncertain; *if* the easement does clip this feature it will affect a large percentage of the remains and therefore have a significant impact.
Recommendations: Stage 3 field surveys (geophysical and field reconnaissance) should hopefully confirm the presence or absence of this feature within the easement. A slight re-route to the west would reduce the likelihood of encountering this feature but would also increase the probability of uncovering Anglo-Saxon remains associated with NK34.3.

7.6 Category E Sites

Nine category E sites, mostly extinct pond sites, are located within the study corridor. Only one feature may be potentially affected by the proposed re-route (Table 6B).

Potentially Affected Sites

Reference	Description	Category	National Grid Reference	Impact
DBA:FS	CM: ? alluvial/geological	E	TF 1041 4723	Unc

Table 6B: Summary of impact rating for potentially affected category E Sites

Alluvial/Geological/Drainage Marks
A sinuous cropmark, DBA:FS, has been highlighted from aerial photographs. It is, at present, believed to be natural in origin.
Impact: Uncertain: although this interpretation is probably correct ,there is always a chance that there may be an archaeological dimension.
Recommendations: field survey should help to locate and confirm any areas of human activity. Otherwise, careful monitoring during construction should be adequate.

Field Boundaries
Former field boundaries have been plotted from tithe and early edition Ordnance Survey maps, as well as from aerial photographs. Nine known former boundaries are crossed by the proposed re-route.

Impact: Minor; the former boundaries are unavoidable, but the works will cause only minor damage to the potential archaeological remains.
Recommendations: field reconnaissance survey should establish whether these boundaries are represented by extant banks and ditches. It would be appropriate to record a section through these features. This could be undertaken during a construction watching brief.

8. GAZETTEER (Maps A & B - for additional references see main report)

REFERENCE	SOURCE	CROSSREFS	DESCRIPTION	EASTINGS	NORTHINGS	DATE	CAT.	QUARTER SHEET	DISTANCE	RLOCATION	RINTERPRET
DBA:NQ	OS 1956		former buildings	512034	365494	Undetermined	C	TF 16NW	0.5	H	H
DBA:NR	OS 1907		former buildings	511879	366209	Undetermined	C	TF 16NW	0	H	H
DBA:NS	OS 1907		former building	511524	365185	Undetermined	C	TF 16SW	0.5	H	H
DBA:NV	OS 1956		former tramway	510872	364877	Modern	E	TF 16SW	0	H	H
DBA:NW	OS 1907/56		former buildings and barn	510637	364688	Undetermined	C	TF 16SW	0.5	H	H
DBA:NX	OS 1906		former pond	509067	346117	Undetermined	E	TF 04NE	0.5	H	H
DBA:NY	OS 1906		former pond	509165	346117	Undetermined	E	TF 04NE	0.5	H	H
DBA:NZ	T. 1851		field name 'Gravel Pit Close'	508871	345918	Undetermined	D	TF 04NE	0.5	H	H
DBA:OA	T. 1851		former pond	508998	345852	Undetermined	E	TF 04NE	0.5	H	H
DBA:OB	T. 1851		former building	508668	345938	Undetermined	C	TF 04NE	0.5	H	H
DBA:OC	T. 1851		former building	508701	346052	Undetermined	C	TF 04NE	0.5	H	H
DBA:OD	OS 1906		former pond	509752	347043	Undetermined	E	TF 14NW	0.5	H	H
DBA:OE	T.1851		former track/road	509368	346012	Undetermined	D	TF 04NE	0.5	H	H
DBA:OF	AP 1971		CM: ridge and furrow	509440	345544	Undetermined	D	TF 04NE	0	H	H
DBA:OH	T. 1851		former pond	509234	344947	Undetermined	E	TF 04NE	0.5	H	H
DBA:OI	AP 1946	3G/TUD/UK/197 5543	former buildings	511916	365357	Undetermined	C	TF 16NW	0.5	H	H
DBA:OJ	AP 1947	CPE/UK/2009 4295	former buildings	511064	364975	Undetermined	C	TF 16SW	0.5	H	H
DBA:OK	AP 1947	CPE/UK/2009 4295	former small buildings	510670	364787	Undetermined	C	TF 16SW	0.5	H	H
DBA:OL	AP 1947	CPE/UK/2009 4295	former small buildings	510496	364689	Undetermined	C	TF 16SW	0.5	H	H
DBA:OM	AP 1947	CPE/UK/2009 4295	former buildings/barns	510305	364591	Undetermined	C	TF 16SW	0.5	H	H
DBA:ON	AP 1966	OS/66/126 125	CM: former stream course	510062	364595	Undetermined	E	TF 16SW	0.5	H	H
DBA:OO	AP 1947	CPE/UK/2009 4296	former barns	509916	363982	Undetermined	C	TF 06SE	0.5	H	H
DBA:OP	AP 1947	CPE/UK/2009 2295	pond	509462	363133	Undetermined	E	TF 06SE	0.5	H	H
DBA:OQ	AP 1947/1966	CPE/UK/2073 3076	EW: ridge and furrow	509570	346794	Undetermined	D	TF 04NE	0	H	H
DBA:OR	AP 1974	OS/74/77 060	CM: former pond	509466	345838	Undetermined	E	TF 04NE	0.5	H	H
DBA:OS	AP 1974	OS/74/77 059	CM: former track/road	508582	345761	Undetermined	D	TF 04NE	0.5	H	M
DBA:OT	AP 1947/1966	HSL/UK/66/492 7706	former buildings	508721	344740	Undetermined	C	TF 04SE	0.5	H	H
DBA:OU	AP 1968	OS/68041 095	former building	508630	343828	Undetermined	C	TF 04SE	0.5	H	H
DBA:OV	AP 1996	TF 0944/4 oblique	CM: ?enclosures, tracks	508985	345013	? Preh/Roman	C	TF 04NE	0	H	M
DBA:OW	AP 1971		rectilinear enclosures	509410	346430	Undetermined	C	TF 04NE	0	H	M
LI:852.7.1	EH		CM:? road	508420	345620	? Roman	C	TF 04NE	1	H	M
MON:1049485	EH		CM:enclosures, roads	508520	345370	? Preh/Roman	C	TF04NE	0.5	H	M
MON:1049485	EH		CM:enclosure	508750	345540	? Preh/Roman	C	TF04NE	0.5	H	M
MON:1049485	EH		CM:enclosure	508820	345650	? Preh/Roman	C	TF04NE	0.5	H	M
MON:1049491	EH	LI.852.7	CM: road	508420	345160	? Roman	C	TF 04NE	1	H	M
NK:34.30	NK 1981		artefact assemblage	509100	346100	Anglo-Saxon	C	TF 04NE	0.5	M	M
NK:34.41	NK		ditch	508380	344710	Roman	D	TF 04SE	0.5	H	H

Hatton to Silk Willoughby

Archaeological Constraints

MAP 1

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

Hatton to Silk Willoughby

Archaeological Constraints

Re-route B

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

Proposed pipeline corridor

Proposed pipeline re-route February
Proposed pipeline route

- Category A Site
- Category B Site
- Category C Site
- Category D Site
- Category E Site
- Site with uncertain provenance

Known extent of archaeological site or find (coloured according to category)

Known extent of archaeological site discovered by aerial photography (coloured according to category)

Area of potential surrounding archaeological site

Extent of linear feature (e.g. railway, road, parish bou (coloured according to category)

Extent of field boundaries from cartographic sources

Data Sources:

SAM	Scheduled Ancient Monument (EH)
LSMR	Lincolnshire Sites & Monuments Recor
NMP	National Mapping Programme
MON	Monarch Database
TF 14NE AD	Lincolnshire card index records
DBA	Desk Based Assessment

Abbreviations

CM	Crop Mark
VM	Vegetation Mark
SM	Soil Mark
AP	Aerial Photograph
EW	Earthwork
OS	Ordnance Survey
T.	Tithe
R & F	Ridge & Furrow

Scale 1:10

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Hatton to Silk Willoughby

Archaeological Constraints

MAP 1

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

LANGTON BY WRAGBY CP

HATTON CP

MINTING CP

375000 N

373000 N

513000 E

515000 E

517000 E

Newark
516100, 375330
G.R.

Proposed pipeline corridor

Proposed pipeline route

Category A Site

Category B Site

Category C Site

Category D Site

Category E Site

Site with uncertain provenance

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T.	Tithe
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Scale 1:10 0

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Hatton to Silk Willoughby

Archaeological Constraints

MAP 2

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

370000 N

368000 N

510000 E

513000 E

515000 E

BARDNEY CP

Bardney

Bardney Common

Southrey Wood

Stainfield Wood

New Park Wood

Austacre Wood

Knowles Wood

Bardney Nature Reserve

DBA:AA FORMER RAILWAY & PURPORTED COURSE

DBA:AB BARDNEY & STAINFIELD PARISH BOUNDARY

DBA:AY BARDNEY & DUNSTON PARISH BOUNDARY

DBA:AD FORMER STREAM MEANDER

DBA:AE EW: R & F

DBA:AC FORMER BUILDINGS

DBA:EG R & F (FORMER?)

DBA:EH FORMER BUILDING

DBA:EJ R & F (FORMER?)

DBA:EK FORMER BUILDING

DBA:EL FORMER BUILDINGS & YARDS

DBA:EM FORMER BUILDINGS & YARDS

DBA:EN R & F (FORMER?)

DBA:DE FORMER TRAMWAY

DBA:DF FORMER TRAMWAY

DBA:DD FORMER BUILDING

DBA:DC FORMER BUILDING

LSMR 50684 ANCIENT WOODLAND

LSMR 50276 FORMER MOATED SITE

LSMR 51141 SITE OF BRICKYARD

LSMR 51147 SITE OF BRICKWORKS

LSMR 53847 DISUSED AIRFIELD

LSMR 52594 TILE

LSMR 53843 EW: ENCLOSURE & RABBIT WARRENS

SAM 286 KINGS HILL

SAM 22619 BARDNEY ABBEY

LSMR 53844 EW: R & F

LSMR 51152 TRACKWAY/ROAD

LSMR 50699 ANCIENT WOODLAND

LSMR 51183 'BRICK KILN CLOSE'

LSMR 51176/7 EW: SITE OF FORMER VILLAGE

LSMR 51185 SITE OF FORMER POST MILL

LSMR 53850 FORMER GRAVEL PIT

LSMR 51154 DUG-OUT BOAT

LSMR 50680 ANCIENT WOODLANDS

LSMR 43630 TUPHOLME ABBEY

MON 1058744 FIELD SYSTEM: R & F

MON 351399 COIN

NMP 12 EW: REMAINS OF SETTLEMENT

NMP 15 R & F

Proposed pipeline corridor

Proposed pipeline route

- Category A Site
- Category B Site
- Category C Site
- Category D Site
- Category E Site
- Site with uncertain provenance

Known extent of archaeological site or find (coloured according to category)

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T.	Tithe
R & F	Ridge & Furrow

Scale 1:10

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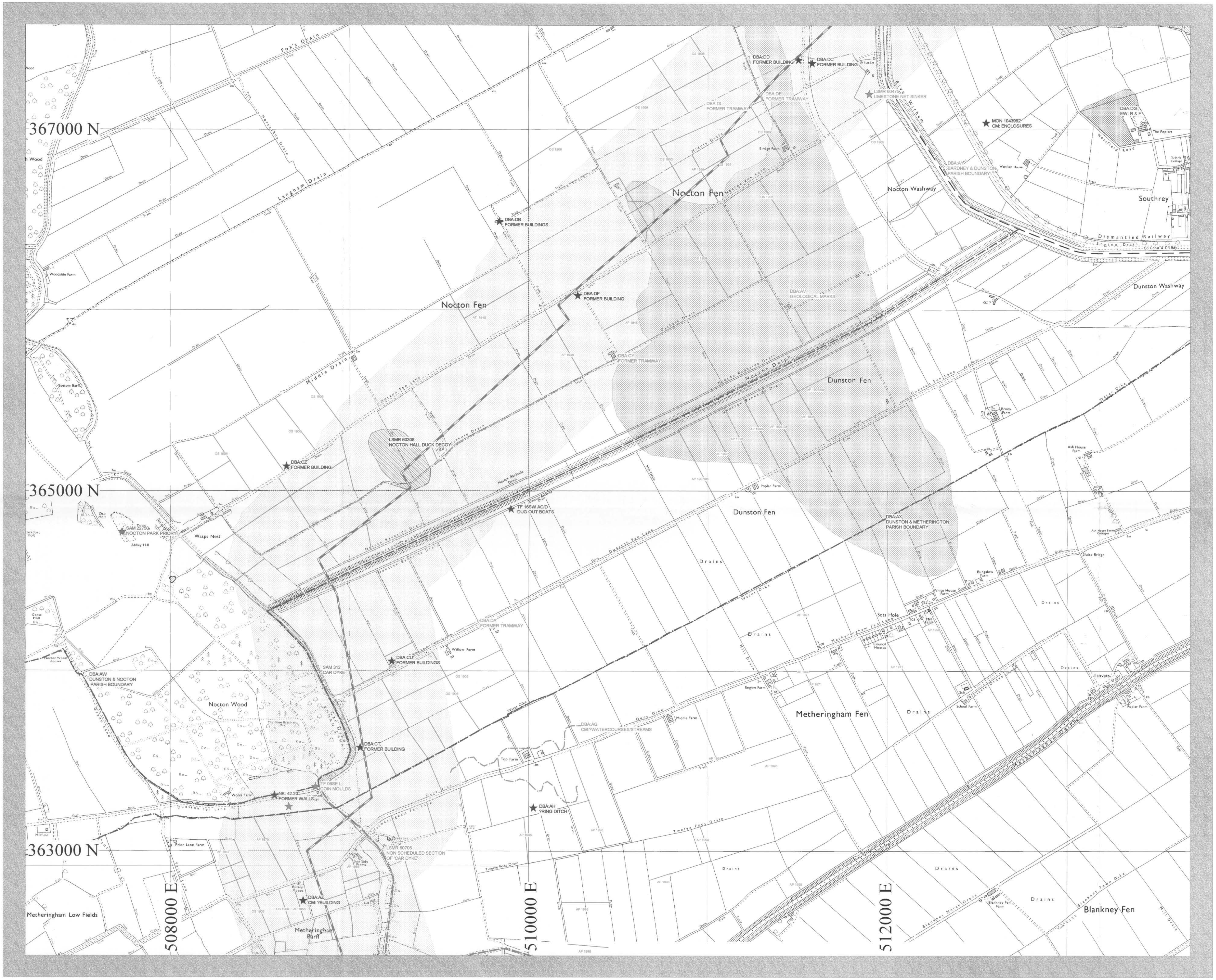
367000 N
365000 N
363000 N
508000 E
510000 E
512000 E
Nocton Fen
Dunston Fen
Metheringham Fen
Blankney Fen
Nocton Wood
Southrey
Nocton Washway
Dunston Washway
Metheringham Low Fields
Metheringham Barff
Wasps Nest
Sots Hole
Tanvats
DBA:DD FORMER BUILDING
DBA:DC FORMER BUILDING
DBA:DE FORMER TRAMWAY
DBA:DI FORMER TRAMWAY
LSMR 60475 LIMESTONE NET SINKER
MON 1043962 CM: ENCLOSURES
DBA:DG EW: R & F
DBA:AY BARDNEY & DUNSTON PARISH BOUNDARY
DBA:DB FORMER BUILDINGS
DBA:DF FORMER BUILDING
DBA:AV GEOLOGICAL MARKS
DBA:CY FORMER TRAMWAY
LSMR 60308 NOCTON HALL DUCK DECOY
DBA:CZ FORMER BUILDING
TF 16SW AC/D DUG OUT BOATS
SAM 22750 NOCTON PARK PRIORY
DBA:AX DUNSTON & METHERINGTON PARISH BOUNDARY
DBA:DA FORMER TRAMWAY
DBA:CU FORMER BUILDINGS
SAM 312 CAR DYKE
DBA:AW DUNSTON & NOCTON PARISH BOUNDARY
DBA:CT FORMER BUILDING
DBA:AG CM ?WATERCOURSES/STREAMS
NK: 42.20 FORMER WALLS
DBA:AH ?RING DITCH
LSMR 60706 NON SCHEDULED SECTION OF 'CAR DYKE'
DBA:AZ CM: ?BUILDING
Dismantled Railway
Langham Drain
Middle Drain
Nocton Delph
Twelve Foot Drain
Dunston Fen Lane
Metheringham Delph

Hatton to Silk Willoughby

Archaeological Constraints

MAP 3

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

- Proposed pipeline corridor
- Proposed pipeline route
- ★ Category A Site
- ★ Category B Site
- ★ Category C Site
- ★ Category D Site
- ★ Category E Site
- ☆ Site with uncertain provenance
- Known extent of archaeological site or find (coloured according to category)
- Known extent of archaeological site discovered by aerial photography (coloured according to category)
- Area of potential surrounding archaeological site
- Extent of linear feature (e.g. railway, road, parish bo (coloured according to category)
- Extent of field boundaries from cartographic sources

Data Sources:

SAM	Scheduled Ancient Monument (EH)
LSMR	Lincolnshire Sites & Monuments Reco
NMP	National Mapping Programme
MON	Monarch Database
TF 14NE AD	Lincolnshire card index records
DBA	Desk Based Assessment

Abbreviations

CM	Crop Mark
VM	Vegetation Mark
SM	Soil Mark
AP	Aerial Photograph
EW	Earthwork
OS	Ordnance Survey
T	Tithe
R & F	Ridge & Furrow

Scale 1:10

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Hatton to Silk Willoughby

Archaeological Constraints

MAP 7

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

Proposed pipeline corridor

Proposed pipeline route

★ Category A Site

★ Category B Site

★ Category C Site

★ Category D Site

★ Category E Site

☆ Site with uncertain provenance

Known extent of archaeological site or find (coloured according to category)

Known extent of archaeological site discovered by aerial photography (coloured according to category)

Area of potential surrounding archaeological site

Extent of linear feature (e.g. railway, road, parish (coloured according to category)

Extent of field boundaries from cartographic sou

Data Sources:

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SM	Soil Mark
AP	Aerial Photograph
EW	Earthwork
OS	Ordnance Survey
T.	Tithe
R & F	Ridge & Furrow

Scale

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Hatton to Silk Willoughby

Archaeological Constraints

MAP 5

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

Proposed pipeline corridor

Proposed pipeline route

- ★ Category A Site
- ★ Category B Site
- ★ Category C Site
- ★ Category D Site
- ★ Category E Site
- ☆ Site with uncertain provenance

Known extent of archaeological site or find (coloured according to category)

Known extent of archaeological site discovered by aerial photography (coloured according to category)

Area of potential surrounding archaeological site

Extent of linear feature (e.g. railway, road, parish bo (coloured according to category)

Extent of field boundaries from cartographic sources

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AP	Aerial Photograph
EW	Earthwork
OS	Ordnance Survey
T.	Tithe
R & F	Ridge & Furrow

Scale 1:1

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Dorrington
Ruskington Fen
352000 N
350000 N
348000 N
507000 E
509000 E
511000 E
RUSKINGTON CP
Ruskington
ANWICK
Anwick
Haverholme Park
Leasingham Moor
ASINGHAM CP
EWERBY AND E
DBA:FD FORMER POND
DBA:FC CM: FORMER R & F
DBA:CM FORMER BUILDINGS
DBA:BS RUSKINGTON & DORRINGTON PARISH BOUNDARY
DBA:FH CM: FORMER R & F
DBA:GG FORMER BUILDING
DBA:BU R & F & FIELD ENCLOSURES
MON 1054808 CM: ENCLOSURE
TF 05SE Y CM: ENCLOSURES
DBA:DH SITE OF HILLSIDE FARM
DBA:FK R & F & FIELD ENCLOSURES
MON 1054809 CM: ?ROUND BARROW
MON 349273 CM:SETTLEMENT COMPLEX
MON 1054810 CM: BOUNDARY DITCHES
MON 1080697 CM: ENCLOSURES
MON 1054810 CM: TRACKWAY
DBA:BY CM: ENCLOSURE
DBA:CL FORMER BUILDINGS
MON 348873 POTTERY
NK: 52.23 AREA OF ENCLOSURES
DBA:CA RUSKINGTON & LEASINGHAM PARISH BOUNDARY
DBA:CE EVEDON & LEASINGHAM PARISH BOUNDARY
SAM 119 HAVERHOLME PRIORY
DBA:FM FORMER BUILDINGS
NK: 36.31 FORMER FULLING MILL
DBA:CB CM: ?ENCLOSURE
NK: 36.21 CROP MARK
LSMR 60440 ANCIENT WOOD
DBA:FN FORMER BUILDINGS
DBA:FP CM: FORMER R & F
TF 14NW H FLINTS
LSMR 60545 WASHDYKE BRIDGE FORD OF PAVING STONES
LSMR 60827 POTTERY, COINS & STATUETTES
LSMR 60864 METAL FINDS
MON 892642 BRONZE AXE
LSMR 60829 COIN

Hatton to Silk Willoughby

Archaeological Constraints

MAP 6

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco
MARCH 2000

Proposed pipeline corridor
Proposed pipeline route
Category A Site
Category B Site
Category C Site
Category D Site
Category E Site
Site with uncertain provenance
Known extent of archaeological site or find (coloured according to category)
Known extent of archaeological site discovered by aerial photography (coloured according to category)
Area of potential surrounding archaeological site
Extent of linear feature (e.g. railway, road, parish bo… (coloured according to category)
Extent of field boundaries from cartographic sources

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T	Tithe
R & F	Ridge & Furrow

Scale 1:1…

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Hatton to Silk Willoughby

Archaeological Constraints

MAP 4

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

362000 N

360000 N

358000 N

507000 E

509000 E

512000 E

METHERINGHAM CP

BLANKNEY CP

COPWICK CP

Metheringham

Blankney

Scopwick

Martin

Timberland

Blankney Barff

Linwood Moor

Martin Moor

Metheringham Low Fields

Kirkby Green

MON 1066592 CM: RINGDITCHES ?ROUND BARROWS

LSMR 60744 SOCKETED AXE

MON 1066592 CM: RINGDITCH, ?ROUND BARROW

MON 1066593 EW: PILLOW MOUND BOUNDARY BANK

LSMR 60706 NON SCHEDULED SECTION OF 'CAR DYKE'

SAM 313 'CAR DYKE'

SAM 314 'CAR DYKE'

DBA:AI CM: ?GEOLOGICAL FEATURES

DBA:BA CM: GEOLOGICAL

DBA:EO CM: ?R & F

Metheringham MON 1066591 CM: ENCLOSURE

NMP 18 RECTILINEAR MARK ?FIELD ENCLOSURE

MON 1066600 CM: ENCLOSURE

DBA:EP CM: FORMER QUARRY

DBA:CS FORMER GRAVEL PITS

DBA:BB BLANKNEY & METHERINGTON PARISH BOUNDARY

LSMR 60764 POTTERY & COINS

MON 1066603 CM: ENCLOSURE

MON 1066602 CM: ?SETTLEMENT

MON 1066601 CURVILINEAR MARKS: ?ENCLOSURES

DBA:AJ CM: GEOLOGICAL/ WATER RELATED

DBA:CR THE HAMLET

DBA:AK ?DRAINAGE MARKS

NK: 10.6 STONE AXE FRAGMENT

NK: 10.7 POLISHED GREENSTONE AXE

AP 1998 GOLF COURSE

AP 1998 AREA OF RESERVOIR

MON 349442 POLISHED AXE

DBA:BC BLANKNEY & MARTIN PARISH BOUNDARY

TF 06SE R COIN

BRICKYARD FARM

DBA:GF FORMER BUILDING

LSMR 60953 POTTERY

DBA:EQ ?R & F (FORMER?)

DBA:ER ?R & F (FORMER?)

DBA:BE SCOPWICK & MARTIN PARISH BOUNDARY

DBA:AL ?R & F

DBA:BF MARTIN & TIMBERLAND PARISH BOUNDARY

DBA:AO CURVILINEAR MARKS: ?ENCLOSURES

DBA:ES FORMER POND

DBA:AM DOUBLE CONCENTRIC CIRCULAR MARKS ?RINGDITCH/ENCLOSURE

DBA:AN CIRCULAR MARKS: ?RINGDITCHES/ENCLOSURES

DBA:BG SCOPWICK & TIMBERLAND PARISH BOUNDARY

TF 05NE R HAND AXE

MON 898752 CM: ?FORMER POST MILL

MON 349105 STONE HAMMER/MACEHEAD

LSMR 60954 POTTERY

LSMR 60955 POTTERY

Proposed pipeline corridor

Proposed pipeline route

Category A Site

Category B Site

Category C Site

Category D Site

Category E Site

Site with uncertain provenance

Known extent of archaeological site or find (coloured according to category)

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Area of potential surrounding archaeological site

Extent of linear feature (e.g. railway, road, parish b (coloured according to category)

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Scale 1:

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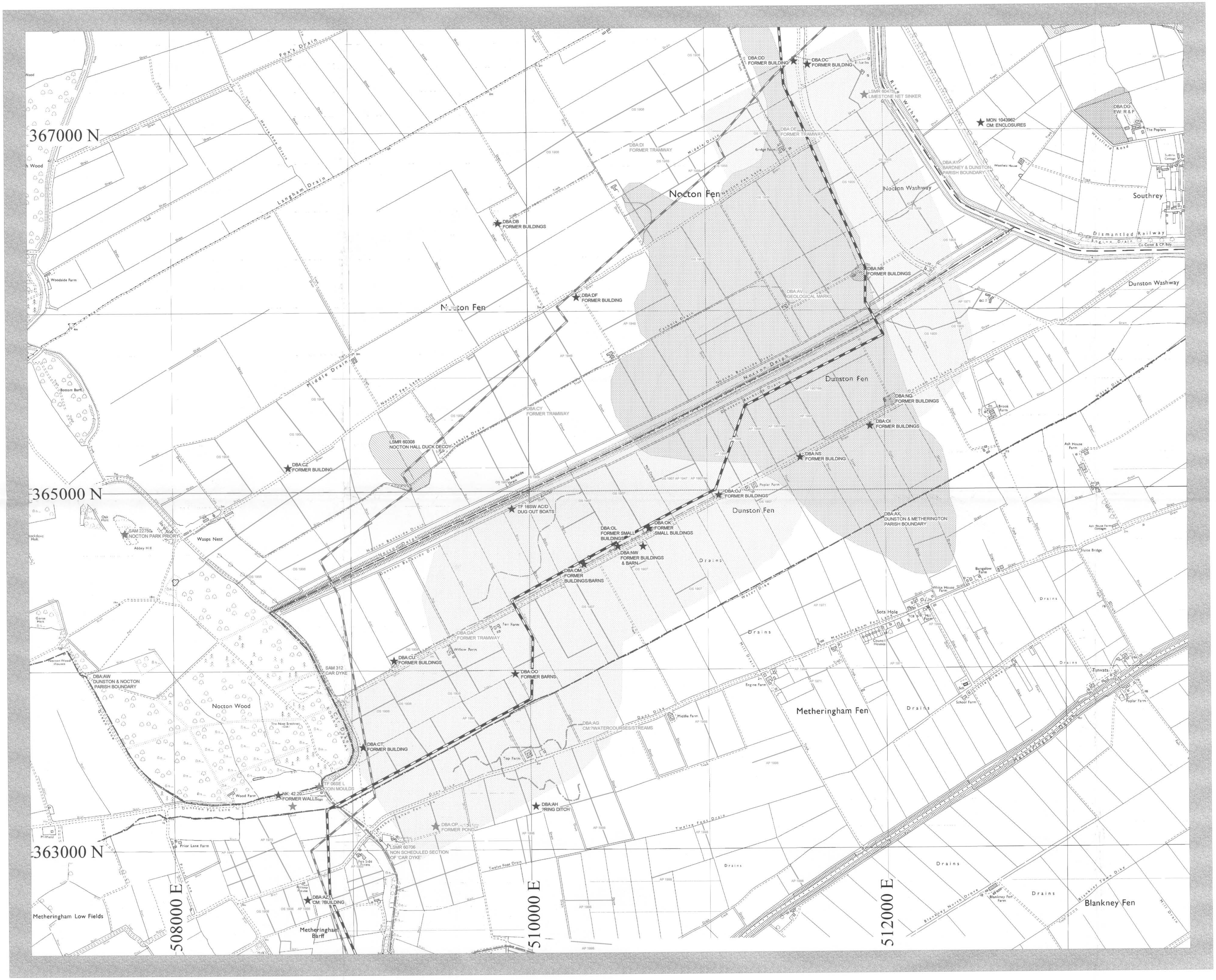
367000 N
365000 N
363000 N
508000 E
510000 E
512000 E
Nocton Fen
Dunston Fen
Metheringham Fen
Blankney Fen
Nocton Wood
Nocton Washway
Dunston Washway
Southrey
Wasps Nest
Metheringham Low Fields
Metheringham Barff
DBA:DD FORMER BUILDING
DBA:DC FORMER BUILDING
LSMR 60470 LIMESTONE NET SINKER
MON 1043962 CM: ENCLOSURES
DBA:DG EW: R&F
DBA:DE FORMER TRAMWAY
DBA:DI FORMER TRAMWAY
DBA:AY BARDNEY & DUNSTON PARISH BOUNDARY
DBA:DB FORMER BUILDINGS
DBA:NR FORMER BUILDINGS
DBA:DF FORMER BUILDING
DBA:AV GEOLOGICAL MARKS
DBA:NQ FORMER BUILDINGS
DBA:OI FORMER BUILDINGS
DBA:CY FORMER TRAMWAY
LSMR 60308 NOCTON HALL DUCK DECOY
DBA:NS FORMER BUILDING
DBA:CZ FORMER BUILDING
DBA:OJ FORMER BUILDINGS
TF 16SW AC/D DUG OUT BOATS
SAM 22750 NOCTON PARK PRIORY
DBA:AX DUNSTON & METHERINGTON PARISH BOUNDARY
DBA:OL FORMER SMALL BUILDINGS
DBA:OK FORMER SMALL BUILDINGS
DBA:NW FORMER BUILDINGS & BARN
DBA:OM FORMER BUILDINGS/BARNS
DBA:DA FORMER TRAMWAY
DBA:CU FORMER BUILDINGS
SAM 312 CAR DYKE
DBA:AW DUNSTON & NOCTON PARISH BOUNDARY
DBA:OO FORMER BARNS
DBA:AG CM:? WATERCOURSES/STREAMS
DBA:CT FORMER BUILDING
NK 42.20 FORMER WALL
TF 06SE L COIN MOULDS
DBA:AH ?RING DITCH
DBA:OP FORMER POND
LSMR 60706 NON SCHEDULED SECTION OF 'CAR DYKE'
DBA:AZ CM: ?BUILDING

Hatton to Silk Willoughby

Archaeological Constraints

Re-route A

Produced by Network Archaeology Ltd on behalf of Mouchel for Transco

MARCH 2000

Proposed pipeline corridor
Proposed pipeline re-route Februar
Proposed pipeline route
Category A Site
Category B Site
Category C Site
Category D Site
Category E Site
Site with uncertain provenance
Known extent of archaeological site or find (coloured according to category)
Known extent of archaeological site discovered by aerial photography (coloured according to category)
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Scale 1:

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