

# Barnacre 24" Water Main, St Michaels, Lancashire



## Archaeological Watching Brief and Topographic Survey: Updated Report



**Oxford Archaeology North**

June 2004

**Alfred McAlpine Utility  
Services**

Issue No: 2004-5/253

OAN Job No: L9080

NGR: SD 4695 4415

**Document Title:** BARNACRE 24" WATER MAIN, ST MICHAELS,  
LANCASHIRE

**Document Type:** Archaeological Watching Brief and Topographic Survey:  
Updated Report

**Client Name:** Alfred McAlpine Utility Services

**Issue Number:** 2004-5/253

**OA Job Number:** L9080

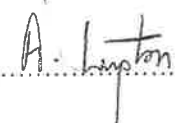
**National Grid Reference:** SD 4695 4451

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**Document File Location**            Alison/Projects/L9080Barnacre/Report/9080rep

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## SUMMARY

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Following a planning application by Alfred McAlpine Utility Services to undertake the re-lining of the Barnacre 24" Watermain, St Michaels, Lancashire, Lancashire County Council Archaeological Services requested a watching brief to be conducted on the launch and retrieve pits and topsoil stripping associated with this development. A topographic survey was also specified for the site of a known but undated earthwork located near Humblecough Farm (SD 4695 4415). Oxford Archaeology North was commissioned to undertake this work in June 2002, the fieldwork carried out between the months of August of that year and May 2004.

The topographic survey of the earthworks is presented as Figure 3, and a written description is included within the text. The topographic survey did little to further our interpretation of this structure.

The watching brief identified an area of post-medieval brick-making activity concentrated in Field 4, with the remains of outlying brick clamps in Fields 5 and 6. Those located in Field 4 were dealt with outside the remit of the watching brief; the results of the subsequent excavation of features in Field 4 were presented in OA North 2003b.

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## ACKNOWLEDGEMENTS

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Oxford Archaeology North would like to thank Alfred McAlpine Utility Services for commissioning the project, and the owners of both Poplar Grove Farm and Humblescough Farm for their co-operation and understanding through the course of the project.

The fieldwork was carried out by Andy Bates, Dan Elsworth, Neil Wearing and David Tonks. The report was compiled by Andy Bates and David Tonks, and the CAD drawings produced by Emma Carter. The project was managed by Alison Plummer, who also edited this report.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Following the planning application by Alfred McAlpine Utility Services, on behalf of United Utilities, to undertake the relining of the Barnacre 24" Water Main, St Michael's, Lancashire, Lancashire County Council Archaeological Services (LCCAS) issued an archaeological brief (*Appendix 1*) requesting an archaeological watching brief on the topsoil stripping and excavation of the launch and retrieve pits associated with the development. LCCAS also requested a topographic survey of a known earthwork located near Humblescough Farm (NGR SD 4695 4415). Oxford Archaeology North (OA North), following the submission and approval of a Project Design (*Appendix 2*) was contracted to carry out the watching brief in June 2002. The field work for the project was carried out between August 2002 and May 2004. This updated report details the results of the watching brief and topographic survey followed by a discussion of the findings, including the results of the watching brief carried out on fields 9, 10 and 11 in May 2004, as the final phase of the topsoil stripping activities. The results of all other work relating to this project may also be found in a previously issued report (OAN 2003c).

### 1.2 SITE LOCATION

- 1.2.1 The pipeline route lies to the east of Garstang, in the Wyre District of Lancashire (Fig 1). This is situated on the south-eastern boundary of Nateby Parish, and lies at a height of c10m above Ordnance Datum. The area is within the North Lancashire Plain, which extends southwards from Morecambe Bay in the north to the outskirts of Liverpool in the south. The eastern boundary of the Plain is contained by the Bowland Fringe. The area is one of medium-to large-scale fields, with an extensive system of raised drainage ditches and dykes (Countryside Commission 1998, 86). All of the fields examined at were under permanent pasture.

### 1.3 GEOLOGY

- 1.3.1 Although Permo-Triassic red mudstones, siltstones and sandstones ('New Red Sandstone') constitute much of the floor of the Lancashire lowlands, the solid rock geology rarely emerges from beneath its thick covering of glacial and post-glacial deposits, which is dominated by clay soils (Countryside Commission 1998, 87). Prior to widespread reclamation of land during the last two centuries, the area was predominantly marshland formed by rising sea levels after the last glaciation. Retreating ice-sheets created many badly drained hollows which soon became filled with post-glacial peat, giving rise to the mosses and meres which dominated the area until only recently (*op cit*, 88).

## 1.4 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.4.1 **Prehistoric:** the prehistory of Lancashire is largely non-monumental in character, and is predominantly represented by finds of lithics and metalwork, made either by chance or during systematic surveys (Middleton *et al* 1995, 17). Scatters of lithic material recovered from ploughsoil constitute the commonest evidence for settlement in the period. Palaeolithic finds from Lancashire are limited, but the Mesolithic is better represented, with large numbers of upland sites, and an increasing body of lowland sites, particularly adjacent to wet mire, alluvial, and coastal deposits (Cowell 1996, 30). For the Neolithic, the distribution of lithics suggests that settlement was concentrated in the lowlands, mainly around the coasts and in the river valleys; in particular, the early farming communities seem to have sought out areas of gravel within a landscape predominantly covered with boulder clay (Middleton 1996, 40).
- 1.4.2 A great increase in the variety and geographical spread of finds in the Bronze Age probably indicates a more extensive use of the landscape (*op cit*, 54). Finds of metalwork are concentrated in the lowlands, particularly in the wetlands, although this may reflect depositional practices, rather than the location of settlements (*op cit*, 45); conversely, finds of axe hammers and other perforated stone implements, which are relatively common in north Lancashire, tend to be found in 'dry land' locations, evenly spread across the landscape; an axe and hammer, a stone axe maul head, an iron spear head, and an iron sword were recovered from Sandhole Wood, near Claughton Hall, some 6km east of the pipeline (Mawson 1937, 216). In addition, there is a considerable body of evidence for Bronze Age burial monuments, dating to the period 2500-1600BC; many lie in upland areas, although they were formerly much more common in the lowlands, farming activity having removed a large number (Middleton 1996, 49). The Sandhole Wood axe hammer appears to have been associated with a cremation, which formed the primary burial within a burial mound (SMR 119). However, despite the wider distribution of finds, it has been argued that, on clay soils away from the coast, the landscape continued to support thick, mixed woodland (*op cit*, 54).
- 1.4.3 Artefactual evidence declined sharply after c1400BC, and the development of blanket peats in the uplands and raised mires in the lowlands suggests that this may have been indicative of a genuine abandonment of some parts of the landscape because of worsening climatic conditions and over use of ephemeral land (*op cit*, 55). Evidence for the Iron Age in lowland Lancashire is notoriously scarce, indeed very little is known about the nature of material culture and settlement in northern England generally (Cunliffe 1991, 101). In part this is regarded as being a product of poor site visibility, with Iron Age pottery being relatively fragile, the boulder clay soils which cover much of the region not favouring aerial photographic or geophysical prospection, and the predominance of pastoral farming meaning that finds have less chance of being turned up by ploughing (Middleton *et al* 1995, 19). The contrast of limited artefactual evidence with substantial evidence for prolonged clearance in pollen diagrams suggests that the number of known archaeological sites of the period grossly under-represents actual settlement activity, and that many sites remain to be detected.

- 1.4.4 **Roman:** a Roman presence in the region is clearly attested by the forts of Kirkham and Ribchester, c12 km and c19km to the south-west and south-east of the subject site respectively; by the extensive first to third century site at Walton-le-Dale, some 18km to the south, which appeared to be involved in part with the manufacture and distribution of goods (Gibbons *et al* forthcoming); and by the fort at Lancaster, 17km to the north (Shotter 1997). Sections of a Roman Road leading from Walton-le-Dale to Lancaster have been identified on the ground, predominantly through topographic study and the examination of aerial photographs, and its probable course leads some 3km to the east of the subject site (Margary 1957, 108). A section of the road was recently excavated by Oxford Archaeology North near Catterall (NGR SD 50498 41353) (OAN 2003a). A second road, suggested to be of Roman origin, has also been identified 1km to the west of the study site (SD 459 441), following a north-east/south-west aligned route (Pilling and District Historical Society).
- 1.4.5 In contrast to the sites referred to above, the rural non-military archaeology of the Roman period remains elusive over much of northern Lancashire (Middleton *et al* 1995, 19), and few farms or rural settlements have been discovered. As for the Iron Age, the small number of such sites identified probably represents a small fraction of the total. Romano-British activity in the area is demonstrated by the discovery of a Roman coin hoard in Myerscough Park (SD 5008 3997), c3km south-east of the subject site; the find was made in the seventeenth century, but has since been lost. The presence of a non-military Romano-British site has been postulated some 2km to the south-west of Poplar Grove Farm, at SD 441 427, where a small assemblage of Roman pottery and glass has been discovered (Pilling and District Historical Society).
- 1.4.6 **Early Medieval:** evidence for early medieval activity is limited throughout northern Lancashire; few artefacts of the period have been recovered, and there is almost no archaeological evidence for settlement. However, logic suggests that the rural settlements of the Roman period either continued or declined gradually, and by the end of the period, considerable densities of Scandinavian place names imply that a large number of settlements were in existence, either newly founded, or renamed (Newman 1996a, 103). The subject site lies within one such cluster of names, which follows the low land flanking the Wyre, and includes Catterall and Garstang; indeed, it has been suggested that Garstang itself represented the meeting place for the Scandinavian community in the Fylde (Kenyon 1991, 134-5). Similarly, Nateby suggests Scandinavian origins (Cameron 1988, 85-6), whilst Humblecough Farm, may also have Scandinavian origins; *Scough* meaning a woodland, and *Hume* possibly the name of the owner.
- 1.4.7 Settlement can also be inferred from the presence in the vicinity of a Scandinavian burial and hoard. The burial was found at Sandholme Wood near Claughton Hall, some 6km east of the subject site, and took the form of a secondary interment within a Bronze Age tumulus. Several weapons were found, as well as a pair of 'tortoise' brooches of tenth century date, and a third brooch, a converted Carolingian baldric mount (*op cit*, 124).



- 1.4.8 **Medieval:** the majority of the larger settlements in the vicinity have recorded origins of at least medieval date. At the time of the Norman Conquest the majority of the lands in of the area were held as part of the Lordships of Earl Tostig (Farrer and Brownbill 1912), before being split into smaller territories. Before the Conquest the parish of Garstang comprised three manors, Garstang, Catterall and Claughton (*op cit*, 7, 291), while Weeton and Greenhalgh with Thistlton were separate, smaller territories (*op cit*, 7, 176 and 179). There are references to all of these settlements, as well as several others, as early as the twelfth to fourteenth centuries (*op cit*) demonstrating that the majority of the modern settlement pattern was established by at least this time. There is little archaeological evidence for the medieval period in rural Lancashire, however, and detailed study has yet to begin (Newman 1996b). The majority of the land around Garstang became part of William de Lancaster's estate in the thirteenth century, who granted a large part of it to Cockersands Abbey in 1246 (Farrer and Brownbill 1912). A market charter was granted for Garstang in 1310, perhaps leading to the separation of Garstang and Garstang Churchtown (*ibid*). The fourteenth century was not generally a particularly prosperous time, however; the great Scottish raid of 1322 undoubtedly would have made great use of the main road through Garstang, and the area was ravaged by the plague in around 1359 (Tetlow 2001).
- 1.4.9 The following centuries saw a gradual recovery, and in 1490 Greenhalgh Castle and deer park were created. The Earl of Derby fortified an existing property after having threats made against his life following the end of the War of the Roses (Collinson 1993, 20). The position of the deer park is not precisely known, although maps of 1610 (Speed) and 1693 (Morden) show an enclosed area around the east side of the castle and up to the River Wyre. Other sites of possibly late medieval date within the study area include several wayside crosses around Garstang used as marker points and during funeral processions (Taylor 1902). The Dissolution of the Monasteries in the late 1530s essentially marks the beginning of the end of the medieval period, most of the land within the survey area reverted to the crown, and the market at Garstang closed for almost 50 years (Tetlow 2001).
- 1.4.10 **Post-Medieval:** the majority of sites identified in the of the area are post-medieval in date, representing the massive expansion in production and construction that signals the industrial revolution. Several of the sites are farms of late seventeenth to eighteenth century date, a time of increased building and prosperity across the country (Platt 1994), when middle class yeoman farmers began to become a powerful social and economic force (Marshall 1991). The major land-owning estates such as the Brockholes of Claughton Hall were well established by this point, and Greenhalgh Castle was in ruins following the civil war (Collinson 1993). Large areas of land were being enclosed for the first time, parts of Claughton in 1730 for example (AE1/2), while mosses to the west were drained and reclaimed for agriculture (Middleton *et al* 1995). The process of industrialisation was evident, even in such a rural area, with the construction of the Lancaster Canal in 1797 and railways in the mid-nineteenth century vastly improving communication and trade and allowing further exploitation of the available resources. Large-scale economic factors were an important aspect of this rapid development, which in

part led to the attempted sale of the entire Garstang estate in 1867 and again in 1919 (*ibid*; DDX131/1).

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## 2. METHODOLOGY

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### 2.1 TOPOGRAPHIC SURVEY

- 2.1.1 The topographic survey of the undated earthwork at SD 4695 4415 was completed using a Differential Global Positioning System (GPS). GPS instrumentation uses electronic distance measurement along radio frequencies to satellites to enable a positional fix in latitude and longitude, which can be converted mathematically to the National Grid. It uses a post-processed system by comparing a roving station with a similar station on a fixed known point in order to achieve high levels of accuracy, which are typically between  $\pm 0.25\text{m}$ .

### 2.2 WATCHING BRIEF

- 2.2.1 **Field work:** the topsoil strip and excavation of the launch and retrieve pits was carried out using a mechanical excavator fitted with a 1.8m wide toothless bucket. Permanent observation of the work was undertaken, as well as examination of any soil horizons exposed, and the accurate recording of all archaeological features, horizons and any artifacts found during the excavations.
- 2.2.2 **Recording:** this comprised a full description and preliminary classification of the features and materials revealed on OA North *pro forma* sheets. A plan was produced showing the location of all the trenches and features located by the watching brief, with representative sections of any archaeological features being drawn at a scale of 1:10. A photographic record, using black and white and colour slide formats, was also maintained.

### 2.3 ARCHIVE

- 2.3.1 A full archive of the work has been produced to a professional standard in accordance with current English Heritage guidelines (1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The paper archive will be deposited with the County Record Office. In addition, a copy of the report will be forwarded to the County Sites and Monuments Record (SMR) and a summary sent to the National Monuments Record (NMR).

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### 3. RESULTS OF THE TOPOGRAPHIC SURVEY

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#### 3.1 INTRODUCTION

- 3.1.1 Only one earthwork complex was surveyed as part of the topographic survey, located to the east of Humblescough Farm, in Field 3. Below is presented a brief description and suggested interpretations of the earthwork, with the survey results presented in Figure 3.

#### 3.2 EARTHWORKS AT HUMBLESCOUGH FARM

- 3.2.1 **Description:** the earthworks cover an area of approximately 224m by 126m, and are visible in one field only. It is possible that they extended into adjacent fields and have been, subsequently, ploughed out, but if so there is no visible trace of them. The monument takes the form of a north/south-aligned curving bank, although the southern half is presently more akin to a lynchet with an eastern sloping face built up against the natural slope.
- 3.2.2 It is evident that the most southerly break in the earthwork is due to a grubbed-out field boundary, showing that the monument pre-dates the current field boundaries. Two other gaps in the structure may be due to erosion, although they could conceivably have been part of the original construction. The most northerly terminus certainly appears to be an original feature. A second earthwork, or possibly a natural slope which has been altered, also exists to the east of the curving earthwork which has a steep westerly face. Together they make an internal area of approximately 160m by 58m.
- 3.2.3 Two other smaller earthworks also exist to the north-east of the northern terminus previously mentioned. One is directly in line with the terminus measuring 14m by 4m, appearing to be truncated by the current field boundary ditch, creating a possible entrance 19.5m wide. The second is a roughly circular mound, measuring 11m long by 9m wide, located a few meters to the north of this 'entrance'.
- 3.2.4 **Interpretation:** the Pilling Historical Society have suggested that these earthworks or a prehistoric settlement enclosure, based on a small excavation carried out at the site producing some wood. The wet ground conditions, which are likely to have been wetter in prehistory, mean that such a settlement would have to have been raised above the water table on stakes. A second possible interpretation for the monument is that of a duck decoy pond, with the wood located within the excavations being from naturally fallen trees rather than stakes from a raised settlement (Peter Isles pers comm). The date and function of these earthworks is, therefore, still a matter of some debate.

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## 4. RESULTS OF THE WATCHING BRIEF

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### 4.1 INTRODUCTION

4.1.1 The watching brief covered 11 fields; three launch and retrieve pits in Fields 1, 2 and 3, and five areas of topsoil stripping in Fields 4, 5, 6, 7 and 8. Below is given a summary account of the archaeological remains located during the watching brief. The launch and retrieve pits in Fields 1, 2 and 3 and the topsoil strips in Fields 7, 8, 9, 10 and 11 located nothing of archaeological significance. Detailed descriptions of the deposits located in each field are given in *Appendix 3*.

### 4.2 RESULTS

4.2.1 **Field 4:** extensive areas of burnt clay were noted across almost the entire topsoil strip in Field 4, an area measuring approximately 160m by 3m. These represented the vestigial remains of post-medieval brick clamps. However, the excavation of these features were considered beyond the remit of a watching brief. Following discussions between Oxford Archaeology North, Alfred McAlpine Utility Services and LCCAS, the excavation of these features was completed as a separate project. The results of the subsequent excavation are to be found in OA North (2003b).

4.2.2 **Field 5:** three areas of burnt clay were noted in Field 5 ( Fig 4) located below approximately 0.25m of topsoil and above the natural clays. The southernmost area of burnt clay was the best preserved, measuring 0.5m thick and 0.75m in width, but the remaining two areas were only approximately 10mm thick. These were to be considered the remains of brick clamps, similar to those found in Field 4. Fragmented brick fragments were also found within the topsoil, presumably the wasters, also called clinker, from the brick-making process.

4.2.3 **Field 6:** one area of burnt clay was identified at the northern extent of this field, protruding 0.8m from the north-western baulk and measuring 2.0m wide (Fig 4). This, again, represents the remains of a brick clamp similar to those excavated in Field 4.

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## 5. DISCUSSION

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### 5.1 INTRODUCTION

- 5.1.1 It is evident that the area of the pipeline adjacent to Poplar Grove Farm has been used for brick making, the area of most intensive activity appears to be located in Field 4. A detailed account and discussion of excavation of features in Field 4 can be found in the excavation report on this site (OA North 2003b).
- 5.1.2 The watching brief identified further four areas where the residual remains of the base of brick clamps were to be found to the south of Field 4, in Fields 5 and 6 (Fig 6). However, the amount of activity identified in these fields was far less than that in Field 4, suggesting that these were periphery structures to the main centre of activity. It should also be noted that within Field 4 are two ponds, almost certainly the original extraction pits, adjacent to which the brick making was concentrated. Other similar ponds are found elsewhere in the area, indicating other possible areas of brick-making.
- 5.1.3 The analysis of these structures are, inevitably, based on the excavations carried out in Field 4 (OA North 2003b). However, the historical background of the area and the conclusions of the excavations at Poplar Grove Farm are also relevant here.

### 5.2 HISTORICAL BACKGROUND

- 5.2.1 Documentary sources indicate that bricks were manufactured in Nateby township from at least the mid-nineteenth century. An early source of information is an 1844 tithe map of the township, whilst trade directories provide detailed information for the later period. In 1898, for instance, Jonathan Collison and Sons were listed as farmers and brick and tile manufacturers (Kelly 1898, 590). They are also listed as such in 1901 and 1905 (Kelly 1901; Kelly 1905), whilst a directory of 1932 lists Jonathan Collison and Sons as builders and contractors, and gives their address as Nateby Works (Barrett 1932, 810). This important local manufactory was situated 1.5km north-east of Nateby, and employed c120 men during the early twentieth century (Neil Thompson pers comm). Farrer and Brownbill (1912, 308) similarly state that tiles were made in Nateby township during the early twentieth century, and whilst they do not provide any additional detail, it is most likely that they are referring to Nateby Works.
- 5.2.2 There are few cartographic representations of the study site, and the earliest source is a tithe map (LRO DRB 1/140A), drawn in 1844. The associated apportionment (LRO DRB 1/140B) shows a field called 'Brickfield' to have been occupied by Thomas Ally, although this is listed as being 'arable'. Similarly, Henry Pedder occupied 'New Brick Field', which is also listed as being 'arable'. Both fields are in the vicinity of Nateby House, some 2km to the north of the present Poplar Grove Farm. In the south-western part of the township is a field called 'Kilns Dale', occupied by William Jackson, and owned by the Duke of Hamilton. The tithe map also marks 'Brick Kiln Field', and places it within a kilometre to the west of Poplar Grove Farm. This field is

listed as 'pasture', suggesting any brick kilns to have been there at an earlier date.

- 5.2.3 The earliest detailed map of the area is that produced by the Ordnance Survey in 1847, although this shows nothing pertaining to the manufacture of bricks. The First Edition 1:2500 Ordnance Survey map of 1892 provides little additional detail, although Gibson's Farm is shown as Manor House, and numerous 'old clay pits' are marked to the west of Brook Farm. It also shows Nateby Works, marked as a brickworks, to have been served by railway sidings, which demonstrates the large size of Jonathan Collinson's business.

### 5.3 DESCRIPTION OF BRICK-MAKING

- 5.3.1 The basic process of brick-making is simple. Clay is dug from superficial deposits, sometimes referred to as 'brick-earth', and mixed with water to make it plastic. It may then be moulded either by hand alone or by pressing it into a mould, followed by either baking it in the sun, or slowly drying and then firing it in a kiln. Traditional methods of preparing brick clays involved digging up the clays in autumn and leaving them in heaps to weather until spring, when they were turned and tempered with water, before being kneaded by bare-footed workmen (Plumridge and Meulenkamp 2000). From the late seventeenth century onwards, but especially during the late eighteenth and nineteenth centuries, the introduction of the pug mill speeded up the process. A pug mill consisted of an inverted metal cone with a set of knives projecting from a central vertical axle turned by horses treading a circular path. The power from this simple horse-engine made it possible for the knives to slice and mix the clay and force it out of an orifice at the bottom of the inverted cone in a form suitable for use by the brick-moulder.
- 5.3.2 During the Roman period, bricks are believed to have been made by kneading plastic earth and beating it into shape, whilst those of the medieval period and subsequently were made in moulds (Lloyd 1990, 29). There are many variations in the moulding process, but after the introduction of moulding boxes and before the development of mechanised brick-making in the early twentieth century, the processes were essentially simple; the various processes have been codified by LJ Harley (1974).
- 5.3.3 In order to convert mud into durable brick, the bricks must be fired for several hours at a temperature greater than 900°C. Probably the oldest and most rudimentary method of firing bricks was a clamp kiln, which have been used in Britain since the Middle Ages (Brunskill 1997, 27). This was a temporary structure requiring only the bricks themselves, some turf or mud from the site, and the addition of fuel. Constructing a clamp entailed the preparation of a level floor and the stacking of bricks so that tunnels are left for the wood fuel. The tunnels were covered with an insulating layer of mud or additional bricks. Ideally, a clamp should not hold fewer than 40000 bricks in order to limit the extent of uneven firing (Plumridge and Meulenkamp 2000), although some clamps were clearly not of this magnitude; during his tour of a mining district in Wales, Plot observed that '*for burning a clamp of 16000 bricks they use about seven tunns [sic] of coal*' (1686, 128).



- 5.3.4 A clamp would take two or three weeks to burn out, although a large clamp might burn for as many as twelve weeks (Brunskill 1997, 27); after cooling it was dismantled. The bricks at the bottom were often overburnt, fused together and would have to be discarded; it has been estimated that losses of over 50% may be expected from clamp kilns (Douglas and Oglethorpe 1993, 65).
- 5.3.5 The original fuel used in brick-making seems to have been wood, which was either burnt directly or as charcoal. Where wood was scarce, then furze gathered from the fields and peat collected from the mosses could be used (Brunskill 1997). Coal could also be used directly as a fuel or indirectly as ashes, although until the development of transport systems, brick-makers were dependent on outcrop supplies for coal.
- 5.3.6 The main problem with clamp firing is the lack of control, which can result in bricks of variable quality. Nevertheless, the convenience of producing bricks at the building site where they are required accounted for the widespread use of this process in Britain until well into the nineteenth century (Plumridge and Meulenkamp 2000), and its continued use in many other countries.
- 5.3.7 **Poplar Grove Farm site:** the results of the excavations carried out in Field 4, supported by the limited documentary and cartographic evidence available, strongly suggest that the manufacture of bricks was undertaken at the Poplar Grove Farm site.
- 5.3.8 The relatively small size of the clamps, however, would suggest that they were intended to supply a local building project, perhaps for a single building; it seems unlikely that the clamps pertained to a large commercial operation, and there is no evidence for the clamps to have been in operation for an extended period. This is perhaps corroborated by the paucity of waste brick, which may be expected on a manufacturing site that had been in production for an extended period. Similarly, despite the route of the Lancaster Canal lying 2km to the north-east and the turnpike road from Lancaster to Preston just beyond to the east, transportation of the finished bricks would have presented a problem, again suggesting that they were used in the vicinity.
- 5.3.9 The absence of a large quantity of waste brick is particularly surprising, and suggests that the site was scavenged, any residual material perhaps having been used for hardcore. It should, however, be noted that the field had clearly been returned to agriculture subsequent to brick manufacture, as demonstrated by the plough furrows revealed during the excavation. This is likely to have removed, or obliterated, at least some of the waste brick that survived in the area. Whilst it was not possible to ascribe a precise date for the brick clamp kilns at the Poplar Grove Farm site, it is likely that they represent a period of manufacture during the late nineteenth century, and are possibly associated with the expansion of Nateby village during the 1870s

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## 6. BIBLIOGRAPHY

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### 6.1 CARTOGRAPHIC SOURCES

Speed's Map of Lancashire (1610)

Morden's Map of Lancashire (1693)

### 6.2 PRIMARY SOURCES

*Lancashire County Record Office (LRO), Preston*

DDX131/1 Sale particulars of the Garstang Estate, 1919

DRB 1/140A Nateby Tithe Map (1844)

DRB 1/140B Apportionment for Nateby Tithe Map (1844)

### 6.3 SECONDARY SOURCES

Barrett, P, 1932 *Directory of Preston and District*, Preston

Brunskill, RW, 1997 *Brick Building in Britain*, London

Cameron, K, 1988 *English Place-Names*, London

Collinson, E, 1993 *Greenhalgh Castle Garstang and the Earls of Derby*, Garstang

Countryside Commission, 1998 *Countryside Character, Volume 2: North West*, Cheltenham

Cowell, R, 1996 The Upper Palaeolithic and Mesolithic, in *The Archaeology of Lancashire* (ed R Newman), 19-34, Lancaster

Cunliffe, B, 1991 *Iron Age Communities in Britain*, 3rd edn, London

Douglas, G, and Oglethorpe, M, 1993 *Brick, Tile and Fireclay Industries in Scotland*, RCAHMS, Edinburgh

English Heritage, 1991 *The Management of Archaeological Projects*, 2nd edn, London

Farrer, W, and Brownbill, J (eds), 1912 *The Victoria History of the County of Lancaster*, 7, London

Gibbons, P, Howard-Davis, CLE, Garner, DJ, Miller, I, and Hair, NJ, forthcoming *Excavations at Walton-le-Dale*

Harley, LS, 1974 A Typology of Brick, *J Brit Archaeol Association*, ser 3, 37, 63-87

Kelly and Co, 1898, *Directory of Lancashire*, London

- Kelly and Co, 1901, *Directory of Lancashire*, London
- Kelly and Co, 1905, *Directory of Lancashire*, London
- Kenyon, D, 1991 *The origins of Lancashire*, Manchester
- Lloyd, N, 1990 *A History of English Brickwork*, London
- Margary, ID, 1957 *Roman Roads in Britain*, 2, London
- Marshall, JD, 1991 *Rural Society Before the Victorians*, in Westall, OM ed, *Windermere in the Nineteenth Century*, Lancaster
- Mawson, TH, 1937 *Amounderness: Report to the Fylde Regional Committee*, London
- Middleton, R, 1996 The Neolithic and Bronze Age, in *The Archaeology of Lancashire* (ed R Newman), 35-59, Lancaster
- Middleton, R, Wells, CE, and Huckerby, E, 1995 *The Wetlands of North Lancashire*, Lancaster Imprints 4, Lancaster
- Newman, R, 1996a *Medieval Rural Settlement*, in Newman, R ed, *The Archaeology of Lancashire*, Lancaster
- Newman, RM, 1996b *The Dark Ages*, in Newman, R ed, *The Archaeology of Lancashire*, Lancaster
- OA North 2003a *Franklaw to Barnacre Waterpipe, Lancashire: Archaeological Evaluation, Watching Brief and Excavation*, unpub clt rep
- OA North 2003b *Poplar Grove Farm, Nateby, Lancashire: Archaeological Evaluation Report*, unpub clt rep
- OA North 2003c *Barnacre 24" Water Main, St Michaels, Lancashire: Archaeological Watching Brief and Topographic Survey*, unpub clt rep
- Pilling and District Historical Society, unpublished reports
- Platt, C, 1994 *The Great Rebuildings of Tudor and Stuart England*, London
- Plumridge, A, and Meulenkamp, W, 2000 *Brickwork*, London
- Shotter, D, 1997 *Romans and Britons in North West England*, CNWRS:Lancaster
- Taylor, H, 1902 The Ancient Crosses of Lancashire, *Trans Cheshire Lancashire Antiq Soc*, 20, 145-213
- Tetlow, D, 2001 *Peeps into Garstang's Past*, Garstang

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## APPENDIX 1: PROJECT BRIEF

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## BRIEF FOR ARCHAEOLOGICAL WORKS

**Location: Barnacre 24" Water main, Contract 2**  
**Proposal: Refurbishment of Water Mains**

### 1. Summary

- 1.1 In order to improve the quality of drinking water supply United Utilities is proposing to refurbish the Barnacre 24" water main. An appraisal of the route on using the Lancashire Sites and Monuments Record (SMR) showed that there are a significant number of sites potentially affected by the works, including a potentially important site north east of Humblescough Farm, Nateby. A series of watching briefs has been carried out on trial pits undertaken in preparation for these works by the Lancaster University Archaeology Unit (now Oxford Archaeology North, OAN).
- 1.2 Following a discussion between the County Archaeology Service and Ms Kempster of Alfred McAlpine, the main contractors, a scheme of impact mitigation was agreed. This work comprises:
- 1.2.1 The undertaking of all ground disturbance at Humblescough Farm in a stratigraphic manner by an appropriate archaeological team.
  - 1.2.2 A watching brief during topsoil stripping for the remaining pipe corridor.
  - 1.2.3 A limited programme of watching briefs during pipe trench excavation.

### 2. Site Location and Description

- 2.1 The lines of the pipes are shown on the attached plans (REF ). They are located to the west of Garstang, passing through land that is generally in pastoral use although there are both areas of arable land and woodland. The landscape here is generally low-lying and rolling, but with some local steep slopes. Drift geology is generally of fluvio-glacial origin, but there are extensive areas of former lowland peat moss. Remains of peat diggings, clay, sand and gravel pits are common, as are hollows and ponds interpreted as former marl pits.
- 2.2 The site at Humblescough Farm comprises a low-lying level area partly outlined by a sharply defined earthen bank. This site has been investigated by members of the Pilling Historical Society, but no formal report has been lodged with the Sites and Monuments Record.

### 3. Archaeological Background

- 3.1 All pipeline construction and refurbishment projects involve considerable disturbance to the landscape, either by topsoil stripping and trench cutting, or by the excavation of the pits necessary to undertake slip-lining. In refurbishment projects the disturbance of new land is, however, limited by the presence of disturbance from the original pipeline construction. For this reason a full programme of archaeological research and recording has not been undertaken in advance of this pipeline.
- 3.2 Where this pipeline passes Humblescough Farm, Nateby, however, there is an area which may be of considerable archaeological importance, and it is not known how much

## Brief for Archaeological Works – Barnacre 24" main

disturbance occurred here during the original construction works. Investigations by Pilling Historical Society (PHS) in the mid 1990's included the excavation of a trench within a level area enclosed by a sharply defined earthen bank with distinct gaps.

- 3.3 The trench revealed a topsoil layer resting on a thin layer of fine grey-white clay, which was said to dry to a very hard consistency. This clay sealed a layer of horizontal tree trunks and limbs in a darker matrix, resting on a browner clay layer. The PHS wished to interpret this layer of wood as a deliberately laid prehistoric feature, but had discovered no obviously worked wood or man-made objects. It was tentatively identified as a possible natural carr-wood deposit by Peter Iles and Robert Middleton (LUHPC and LUAU) but this theory too cannot be confirmed. The surrounding bank was not investigated by the trench and its origin or purpose was not clear.
- 3.4 Plans provided by Alfred McAlpine indicate that the field in which the above trench was excavated would be subject to a large scale topsoil strip, followed by the excavation of a trench for the pipeline refurbishment. It has been recommended that any ground disturbance work which would affect the bank or the enclosed level area should be minimised, and undertaken in a stratigraphic manner either by an archaeological team or under strict archaeological control with an appropriate record being made of the features revealed.
- 3.5 A watching brief will be necessary during the topsoil stripping phase, along the whole length and width of the pipeline corridor. This work will need to be coordinated with the work programme of the pipeline contractors and will also need to include a contingency plan for the discovery of archaeological remains which may need (a) rapid recording or (b) full excavation prior to the construction of the pipeline.
- 3.6 Any site that reveals archaeological remains during topsoil stripping will also require a watching brief during trenching for the pipe laying unless otherwise agreed with the County Archaeology Service.

### 4. Requirements – Excavation and Recording near Humblescough Farm

- 4.1 The proposed works in the vicinity of Humblescough Farm would damage or destroy archaeological remains that may be present. It has therefore been recommended that (i) groundworks here be minimised and (ii) that any work within the area indicated on the attached plan should be undertaken in a stratigraphic manner by an archaeological team or under strict archaeological control. An appropriate record of any deposits encountered during this work should be made.
- 4.2 The work should include a topographical survey of any portions of the area affected by the pipe corridor. It should be undertaken by such methods as may be deemed appropriate by the archaeological contractor. The results of this work should include a written report, maps and diagrams, indicating the methods employed, the results obtained and the conclusions drawn. Paper and digital versions of the report and survey results should be submitted to the County Archaeology Service for inclusion in the SMR and to the Archaeology Data Service at York.
- 4.3 Following the topographical survey topsoil stripping and any other necessary excavation work should be undertaken in a stratigraphic manner. It may employ suitable machine excavation provided it is under appropriate archaeological control and is undertaken with a

toothless ditching bucket in a series of shallow spits. Any deposits encountered should be then cleaned by hand and recorded. An appropriate sampling strategy for intact archaeological deposits, features and finds should be employed and disturbance and damage to important remains minimised as far as is possible. The results of this work should include a written report, maps and diagrams, indicating the methods employed, the results obtained and the conclusions drawn. Paper and digital versions of the report should be submitted to the County Archaeology Service for inclusion in the SMR.

## **5 Requirements - Watching Brief During Topsoil Stripping**

- 5.1 This work will cover the whole of the topsoil stripping process and any associated earthmoving activities including the preparation of access routes, site compounds and material/equipment stores.
- 5.2 Appropriately qualified archaeologists shall systematically observe the above works and record any surviving archaeological remains revealed. All records shall include an accurate location, a description of the remains encountered and at least one photograph. Where appropriate plans and/or section drawings should be made. Photographs should normally be 35mm (colour slides and black and white prints) although digital photography may be acceptable if it is to a sufficient quality and appropriate storage of the images can be ensured. The report shall include a gazetteer and plan locating all the remains recorded.
- 5.3 Whilst it is anticipated that the archaeological contractor will have the ability to stop works for up to one hour to allow the recording of significant archaeological deposits, the contractor should ensure that an agreement is included in their contract and that methods of invoking it are robust and sufficient.
- 5.4 The archaeological contractor should have a contingency plan to deal with particularly important remains that may require more extensive recording or excavation in advance of construction and an agreement on how such recording is to be invoked.

## **6 Requirements – Further Watching Brief**

- 6.1 Where significant archaeological remains were identified during the topsoil stripping (above), a further phase of watching brief shall be undertaken during pipeline trenching or the excavation of slip-lining pits, etc. The methodology should be the same as that above.

## **7 Other Considerations**

- 7.1 All appropriate health and safety matters should be taken into account when projects are being designed. In particular the hazards of undertaking the watching brief work and the possible need to undergo formal safety inductions with pipeline contractors need to be considered.
- 7.2 All work shall be undertaken to the standards and guidance set out by the Institute of Field Archaeologists.

## **8 Reporting and Archive**

- 8.1 The project will result in the production of a series of formal reports on the separate requirements above. All should include an executive summary, methodology, results and discussion sections. Where appropriate digital data sets (survey and geophysical survey, digital photography) should be included. All appropriate plans, drawings and maps should be included, and a copy of the project design should be included as an appendix.
- 8.2 Copies of the reports will be supplied to the County Archaeological Officer and to the Lancashire Sites and Monuments Record on the understanding that it will become a public document after an appropriate period (a maximum of 6 months after the completion of the assessment unless another date is agreed in writing with the County Archaeological Officer). They should be provided both as bound paper documents and in an agreed digital format on CD-ROM.
- 8.3 The site archive, including finds and environmental material, shall be conserved and stored according to the UKIC Guidelines for the preparation of excavation archives for long-term storage (1990) and the Museum and Galleries Commission Standards in the Museum Care of Archaeological collections (1992) ‘Standards for the preparation and transfer of archaeological archives’.
- 8.4 Provision and agreement will be made for the appropriate academic publication of any results that are not to form part of any further work. A brief summary report of fieldwork, to appear in the Council for British Archaeology North West *Archaeology North West* will be produced, even when a project encountered no archaeological deposits. This will be sent to the editor of *Archaeology North West* in time for it to appear within a calendar year of the completion of fieldwork.

## **9 Further Details**

- 9.1 Further information about the proposed pipeline works can be obtained from Alfred McAlpine.
- 9.2 Any queries about the contents of the brief should be addressed to the Lancashire County Archaeology Service, Lancashire County Council Environment Directorate, Guild House, Cross Street, Preston PPR1 8RD Tel 01772 2261550, fax 01772 2634203
- 9.3 The document entitled "General Conditions for Appropriate Archaeological Contractors in Lancashire" is in use as a model of expected practices and procedures. A copy of that document is attached as Appendix One.



**Appendix 1**

**Lancashire County Council**

**General Conditions for Archaeological Contractors**

Organisations and individuals wishing to be included on the County Council’s list of Archaeological Contractors are requested to fulfil the general conditions below that provide a model for best practice and professional conduct in archaeological work. The County Council will require the fulfilment of these conditions in its own contracts. Other clients are advised that it is their responsibility to satisfy themselves that their contractors meet all relevant standards.

**1. Professional Standards**

- 1.1 Contractors shall work to the standards of professional conduct outlined in the Institute of Field Archaeologists Code of Conduct, the IFA Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology, and the British Archaeologists and Developers Liaison Group Code of Practice.
- 1.2 Contractors should be either IFA Registered Organisations or individual corporate members of the IFA. In addition Project Directors should be recognised in an appropriate Area of Competence by the IFA.
- 1.3 Contractors with a significant backlog of unpublished projects will not usually be included on the list.
- 1.4 Where students or trainees are employed on a project, their ratio to professional staff shall not normally exceed 1:2.
- 1.5. In the case of dispute over matters of professional conduct or practice, arbitration will normally be sought through the IFA or the British Archaeologists and Clients Liaison Group.

**2. Finance**

- 2.1 Contractors shall make available at the request of the County Council a recent set of audited accounts.

**3. Insurance**

- 3.1 Contractors shall hold a current certificate of Public Liability and (where relevant) Employers Liability insurance, and shall produce it at the request of the County Council.

**4. Health and Safety**

- 4.1 Contractors shall comply with the requirements of all relevant Health and Safety legislation.
- 4.2 Site procedures shall be in accordance with the guidance set out in the Health and Safety Manual of the Standing Conference of Archaeological Unit Managers.

**5. Project Design**

- 5.1 Individual projects shall be designed in accordance with a brief provided by the County Archaeology Service. Before commencement of a project, Contractors shall submit a written project design for agreement with the County Council

**6. Sub-Contracting**

- 6.1 The names of proposed Sub-Contractors shall be included in the Project Design. All such Sub-Contractors shall be required to fulfil the General Conditions for Contractors.

**7. Form of Contract**

- 7.1 Before commencement of a project, the Contractor shall enter into a written agreement with the Client. It is recommended that such agreements should be in conformity with the IFA Model Contract for Archaeological Services or such other form as approved by the County Council.

**8. Project Monitoring**

- 8.1 The County Council may make arrangements for the monitoring of archaeological progress throughout the project.
- 8.2 Contractors shall provide the County Council with an outline programme of work. Any modification to this programme, due to unforeseen or other circumstances, shall be agreed with the Council. It is recommended that Project Designs include a contingency factor to allow for such circumstances.

**9. Publication**

- 9.1 Publication shall be in a form and to a timetable to be agreed on completion of the site archive and narrative. A copy of the site narrative and publication synopsis shall be lodged with the County Sites and Monuments Record.
- 9.2 Whilst acknowledging the need for confidentiality in some instances, a summary of the archaeological information resulting from a project should normally enter the public domain within six months of the completion of fieldwork.

**10. Archive**

- 10.1 Archive deposition shall take place according to a timetable to be agreed on completion of the site archive and narrative.
- 10.2 The site archive, including finds and environmental material, shall be conserved and stored according to the UKIC *Guidelines for the preparation of excavation archives for long-term storage* (1990) and the Museums and Galleries Commission *Standards in the Museum Care of Archaeological Collections* (1992), "Standards for the preparation and transfer of archaeological archives".

- 10.3 The archive shall be deposited as soon as is practicable in a Registered Museum fulfilling the HBMC/MGC Eligibility Criteria for the Grant Aided Storage of Excavation Archives. This will normally be the Lancashire County Museums Service (artefact and environmental collections and their documentation), or the County Record Office (site documentation).
- 10.4 Any material not to be archived, such as unstable material or items to be retained by the landowner, shall be fully analysed and reported upon.
- 10.5 A copy of the reproducible elements of the site archive should be deposited in the National Archaeological Record.

**11. Acknowledgement**

- 11.1 Lancashire County Council shall be acknowledged in all publicity - including media releases, site displays, exhibitions and publications - arising from the project, and any such publicity should be agreed in advance with the County Council.

All enquiries regarding these conditions should be addressed to:

The County Planning Officer  
Lancashire County Council Environment Directorate  
PO Box 9  
Guild House  
Cross Street  
PRESTON  
Lancashire  
PR1 8RD

Tel. 01772 261734  
Fax 01772 263423

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## APPENDIX 2: PROJECT DESIGN

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**Oxford  
Archaeology  
North**

**June 2002**

**BARNACRE 24" WATER MAIN  
ARCHAEOLOGICAL TOPOGRAPHIC SURVEY AND WATCHING BRIEF  
PROJECT DESIGN**

*Proposals*

*The following project design is offered in response to a request by Alfred McAlpine Utility Services for an archaeological topographic survey and watching brief in advance of the refurbishment of existing water mains at Barnacre, Lancashire.*

## 1. INTRODUCTION

- 1.1 In order to improve the quality of drinking water supply Alfred McAlpine Utility Services (hereafter the client), on behalf of United Utilities, propose to undertake the refurbishment of the Barnacre 24" Water Main, Nateby, Lancashire. The Lancashire Sites and Monuments Record (SMR) has indicated that there are a significant number of archaeological sites potentially affected, including a potential important site northeast of Humblescough Farm, Nateby.
- 1.2 Lancashire County Council's Archaeology Service (LCAS) has issued a brief for a programme of archaeological works to be undertaken. This project design is written in response to that document.
- 1.3 Investigations by the Pilling Historical Society (PHS) in the mid 1990's included the excavation of a trench within a level area enclosed by a sharply defined earthen bank northeast of Humblescough Farm. The trench revealed a layer of horizontal tree trunks and limbs. The PHS interpreted this as a prehistoric trackway. LCAS and LUAU tentatively identified the trees as natural carr-wood deposit. The surrounding bank was not investigated and its origin and purpose is not clear.
- 1.4 OAN has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. In recent years, OAN has undertaken similar types of work in many parts of Lancashire. Of most relevance OAN have recently undertaken projects of a similar nature at Rivington and Adlington and the Lune Valley, all on behalf of United Utilities. OAN undertook a series of watching briefs on trial pits undertaken in preparation for the Barnacre 24" water main refurbishment.
- 1.5 OAN has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OAN is an Institute of Field Archaeologists (IFA) registered organisation, **registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

## 2 OBJECTIVES

- 2.1 The following programme has been designed to provide for accurate recording of any archaeological deposits that are disturbed by the soil strip and trench cutting associated with the excavation and refurbishment of the pipeline. The watching brief will be preceded by a topographic survey to identify any archaeological landscape features within the area of topsoil stripping at Humblescough Farm.

## 1. INTRODUCTION

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- 2.2 A written report will assess the significance of the data generated by the topographic survey and watching briefs, within a local and regional context.

### 3 METHOD STATEMENT

#### 3.1 TOPOGRAPHIC SURVEY

- 3.1.1 The extent and outline detail of archaeological features identified in the landscape within the area of topsoil stripping at Humblescough Farm will be recorded using the relevant OAN pro forma. The features will be accurately positioned with the use of either a GPS, which can achieve accuracies of  $\pm 0.1\text{m}$  with respect to the OS national grid, or by instrument survey techniques, which will tie in new features to features already shown on the relevant OS map.

- 3.1.2 A gazetteer of identified sites will be compiled. The written descriptions, which should record type and period, would not normally exceed *c.* 50 words in length.

#### 3.2 WATCHING BRIEF – PIPELINE CORRIDOR

- 3.2.1 **Methodology:** a programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits within the excavations in the course of the proposed pipeline refurbishment. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.
- 3.2.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the Client. A photographic record will be undertaken simultaneously.
- 3.2.3 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.
- 3.2.4 A watching brief will be conducted of all topsoil stripping and all below ground works. Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (ie. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).



3.2.5 It is assumed that OAN will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered, but this would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing. Also, should evidence of burials be identified, the 1857 Burial Act would apply and a Home Office Licence would be sought. This would involve all work ceasing until the proper authorities were happy for burials to be removed. In normal circumstances, field recording will also include a continual process of analysis, evaluation, and interpretation of the data, in order to establish the necessity for any further more detailed recording that may prove essential.

3.2.6 Full regard will, of course, be given to all constraints (services etc.), as well as to all Health and Safety regulations. OAN provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Unit Managers.

### 3.3 WATCHING BRIEF – HUMBLESCOUGH FARM

3.3.1 The watching brief to be maintained for the area of topsoil stripping adjacent to Humblescough Farm will be undertaken as *Section 3.2* above, with the following additional methodology.

3.3.2 A mechanical excavator using a toothless ditching bucket will strip the topsoil in a series of shallow spits under permanent archaeological instruction and supervision. The stripping will stop at the upper limit of the first significant archaeological features encountered.

3.3.3 **Contingency plan:** in the event of significant archaeological features being encountered discussions would take place with the County Archaeologist or his representative, as to the extent of further works to be carried out. All further works would be subject to a variation to this project design. In the event of preserved wood/timber being encountered it is envisaged that a programme of both radiocarbon dating and dendrochronology would be necessary. In the event of organic deposits being present on site a programme of palaeoenvironmental sampling would be required. It is likely that the presence of significant archaeological remains would require the opening up of large areas.

### 3.4 ARCHIVE/REPORT

3.4.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is

considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. OAN conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Lancashire SMR (the index to the archive and a copy of the report). OAN practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OAN recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.

- 3.4.2 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further two copies submitted to the Lancashire SMR within twelve weeks of completion of fieldwork. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.
- 3.4.3 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans. This report will be in the same basic format as this project design; a copy of the report can be provided on 3.5" disk (IBM compatible format), if required.
- 3.4.4 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

## 4 PROJECT MONITORING

- 4.1 Monitoring of this project will be undertaken through the auspices of the LCAS Archaeologist, who will be informed of the start and end dates of the work.

## **5 WORK TIMETABLE**

- 5.1 OAN could commence the watching brief within two weeks of receipt of written notification from the client.
- 5.2 The topographic survey for Humblescough Farm is expected to take in the region of two days in the field to complete. An archaeological supervisor will undertake the survey.
- 5.3 The watching brief along the pipeline corridor will be maintained by an archaeological supervisor. Due to the detailed and intense nature of the Humblescough Farm watching brief both an archaeological supervisor and assistant will be present on site.
- 5.4 The duration of the archaeological presence for both of the watching briefs is as yet unknown, being dictated by the schedule of works.
- 5.5 The client report will be completed within twelve weeks following completion of the fieldwork.

## **6 STAFFING**

- 6.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OAN senior project manager) to whom all correspondence should be addressed.
- 6.2 Present timetabling constraints preclude detailing at this stage exactly who will be undertaking the topographic survey and watching brief elements of the project.

## **7 INSURANCE**

- 7.1 OAN has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

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## APPENDIX 3: TRENCH DESCRIPTIONS

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### INTRODUCTION

Below is given detailed accounts of the observations made in each field, based on site visits made to the excavations being conducted by Alfred McAlpine Utility Services. The location of excavations made in each field are found in Figure 2.

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**Field:** 1

#### Description

A watching brief was conducted in the excavation of a single 3m by 13m launch and retrieve pit, located within a Alfred McAlpines Utility Services compound. The topsoil, which comprised of a dark brown sandy clay, and measured 0.15m thick. The underlying subsoil comprised a mid to dark orangey brown sandy clay, with 5% small rounded stone inclusions, 0.35m thick. The trench was excavated to a maximum depth of 1.2m, with natural located at 0.5m. Between the two pipes located within the trench was a linear measuring 0.5m wide and 0.6m deep cut into the natural, orientated in a north-east/south-west alignment. It contained two, unworked, fragments of flint. Its fill comprised of a dark grey sandy clay with 40% small rounded stone inclusions and charcoal concentrations at its eastern end. No reliable interpretation of the feature was arrived at, hampered by limited visible extent within the excavated trench.

---

**Field:** 2

#### Description

A watching brief was conducted on a launch and retrieve pit, measuring 8.5 by 4.0m. A mid-brown grey topsoil was excavated, 0.45m thick, down to the underlying mid-orangey grey natural clay. The original pipe trench was visible running down the centre of the trench across most of its width. Residual topsoil was located in the north-east corner of the trench, excavated to a depth 0.45m by hand. This may represent the edge of a shallow silted-up pond, but more likely just a natural slope in the underlying clay.

---

**Field:** 3

#### Description

A watching brief was conducted on the excavation of a launch and retrieve pit, measuring 4.4m by 3.0m. The soil horizon was removed to a depth of 0.70m, comprised a dark brown grey clayey silt with a high percentage of decayed organic matter (peat). Natural was located in the base of the trench, which comprised a very light grey clay, with the original pipe trench visible across most of the trench. Nothing of any archaeological significance was located during the watching brief.

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**Field:** 4

#### Description

A watching brief was conducted on the topsoil strip for the pipeline, covering an area approximately 160m by 3.25m. An extensive area of bunt clay was located, associated with brick clamps. The ponds adjacent to Poplar Grove Farm are almost certainly the extraction pits of the clay used to make the bricks. Following discussions between OA North, LCCAS and Alfred McAlpine Utility Services, these features were dealt with out of the remit of the watching brief. The results of the subsequent excavation of this site are presented in a separate report (OA North 2003b).

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**Field:** 5

**Description**

A watching brief was conducted in the topsoil strip for the pipeline, measuring approximately 60m by 4m. The topsoil measured 0.25m thick, and comprised a mid dark brown sandy clay above a light grey orange natural clay. Three very thin areas of bright orange burnt clay were noted along within the stripped area, located stratigraphically between the topsoil and the natural clays (Fig 4). These areas were extremely thin, being completely removed when attempts were made to clean them. Fragmented brick fragments was also noted within the topsoil. Charcoal flecks and staining was present in these areas, although infrequently. These are thought to represent the vestigial remains of brick clamps, as located in Field 4. No further excavation of these areas was thought necessary beyond their location and description (Fig 4).

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**Field:** 6

**Description**

This field was visited on three different occasions as the topsoil strip progressed across it in stages. The area of the topsoil strip measured 175m by 2.5m, the topsoil of which comprised a very dark grey fine sandy silt between 0.05m and 0.40m thick. Sub-soil was still present over much of the area, comprised a dark grey silty clay with less than 1% rounded and sub-rounded small stone inclusions. This obscured much of the underlying natural, which was described as a light grey orange clay when visible. Areas of post-glacial peat were also identified in this field. At the northern end of the field, an area of burnt clay, protruding 0.8m from the north western baulk, was noted measuring 2m in width (Fig 4). This was considered to represent the surviving base of a brick clamp, the same as those excavated in Field 4.

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**Field:** 7

**Description**

A watching brief was conducted during the topsoil strip for the pipeline of an area measuring approximately 150m by 10m. The topsoil thickness varied but was on average 0.30m in depth and comprised a dark brown, organic rich sandy clay lying directly above a mid to pale grey mottled natural clay with the occasional cobble. Approximately 20.0m south-west of the northern field boundary, the topsoil strip crossed an old, disused, ditch which was still visible beyond the easement to the east. It was c3.0m wide and c 1.0m deep, and the fill comprised entirely topsoil described above to a depth of c0.40m. One piece of blue-white glazed nineteenth/twentieth century pot was observed in the fill but not retained. Nothing of any archaeological significance was located during the watching brief.

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**Field:** 8

**Description**

A watching brief was conducted during the topsoil strip for the pipeline of an area measuring approximately 250m by 10m. The contractor was only removing the topsoil to the depth of the top of the Victorian pipe that ran down the centre of the easement. Therefore, owing to the uneven topography, in many places the topsoil was not wholly removed and the natural not exposed. However, where visible, the stratigraphy comprised 0.30m mid brown, organic rich, peaty sandy clay which was lighter brown in places lying directly above patchy mid grey brown mottled natural clay with the occasional cobble. Nothing of any archaeological significance was located during the watching brief.

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**Field:** 9

**Description**

A watching brief was conducted during the topsoil strip for the pipeline across then length on the field, 158.0m, creating an easement 11.0m wide. Topsoil was excavated to a maximum depth on 0.55m, comprised of a dark grey medium sandy silty clay. The underlying natural till was only exposed in limited areas. This till varied from a loose mid-yellowish grey coarse sand, with 70% to 80% sub-

rounded stone inclusions of a maximum size of 0.15m by 0.13m by 0.08m, to a mid-orangy grey clay with only 15% to 20% stone inclusions only present in small areas.

Although fragments of post-medieval and modern pottery was noted within the soil horizon, no deposits or horizons of an archaeological significance were noted during the watching brief.

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**Field:** 10

**Description**

A watching brief was conducted during the topsoil strip for the pipeline across the corner of this field, 170.0m in length, creating an easement 11.0m wide. Topsoil was excavated to a maximum depth on 0.50m, comprised of a dark grey medium sandy-silty-clay. The underlying natural till was only exposed in limited areas. The till was mainly dominated by mid-orange clay with 10% to 20% sub-rounded stone inclusions, of a maximum size of 0.22m by 0.15m by 0.11m

Although fragments of post-medieval and modern pottery were noted within the soil horizon, no deposits or horizons of an archaeological significance were noted during the watching brief.

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**Field:** 11

**Description**

A watching brief was conducted during the topsoil strip for the pipeline across the length on the field, 62.0m, creating an easement 11.0m wide. Topsoil was excavated to a maximum depth on 0.55m, comprised of a dark grey medium sandy-silty-clay. The underlying natural till was only exposed in limited areas. This till varied from a loose mid-yellowish grey coarse sand, with 70% to 80% sub-rounded stone inclusions of a maximum size of 0.15m by 0.13m by 0.08m, to a mid-orangy grey clay with only 15% to 20% stone inclusions only present in small areas.

Although fragments of post-medieval and modern pottery was noted within the soil horizon, no deposits or horizons of an archaeological significance were noted during the watching brief.

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## ILLUSTRATIONS

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### FIGURES

Figure 1: Location map

Figure 2: Watching brief and topographic survey locations

Figure 3: Topographic survey of earthwork at Humblescough Farm

Figure 4: Vestigial remains of brick clamps in Fields 5 and 6

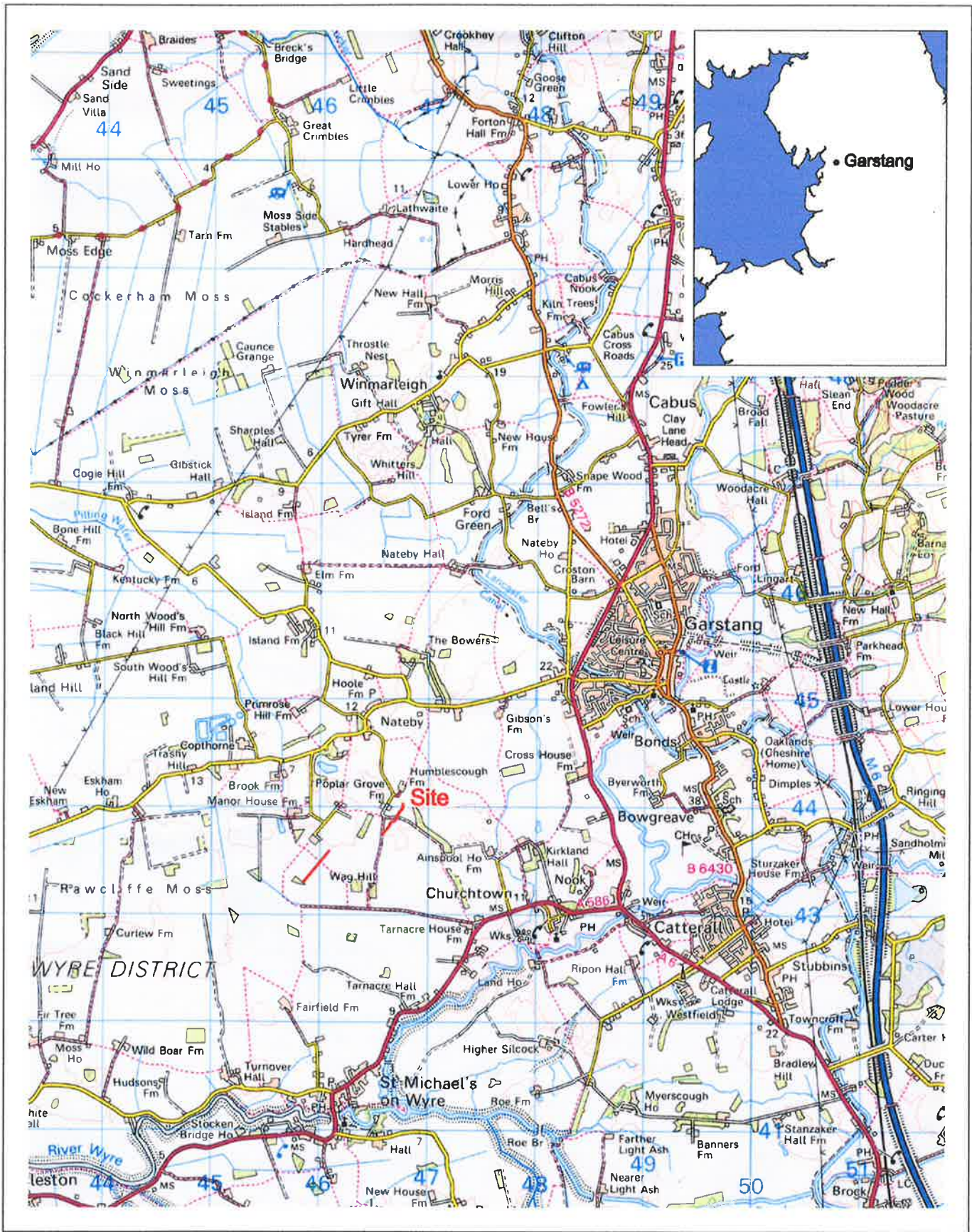
### PLATES

Plate 1: Earthwork at Humblescough Farm, Field 3

Plate 2: Launch and retrieve pit, Field 3

Plate 3: Burnt clay of brick clamp, Field 4



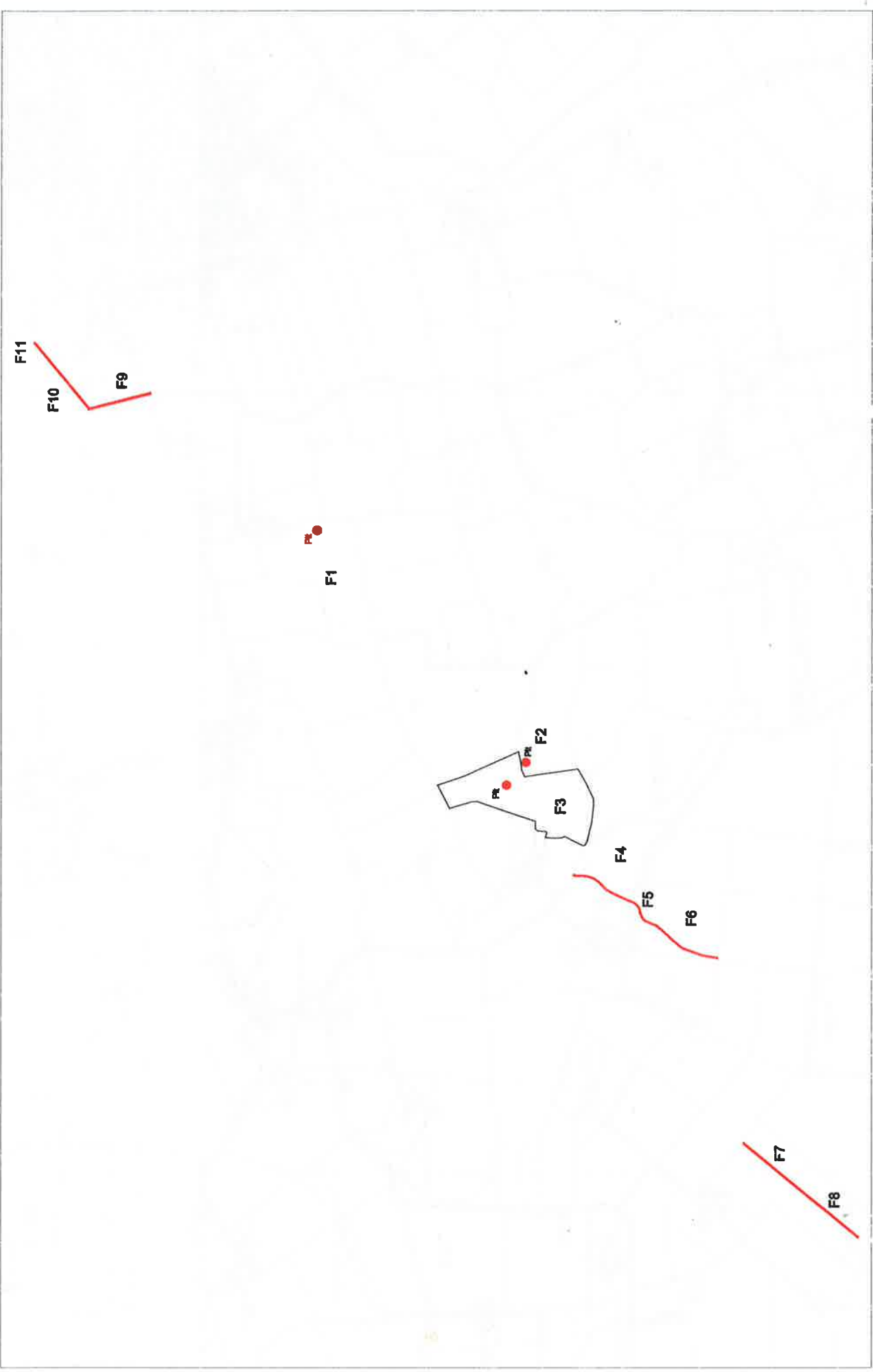


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Figure 1: Location Map



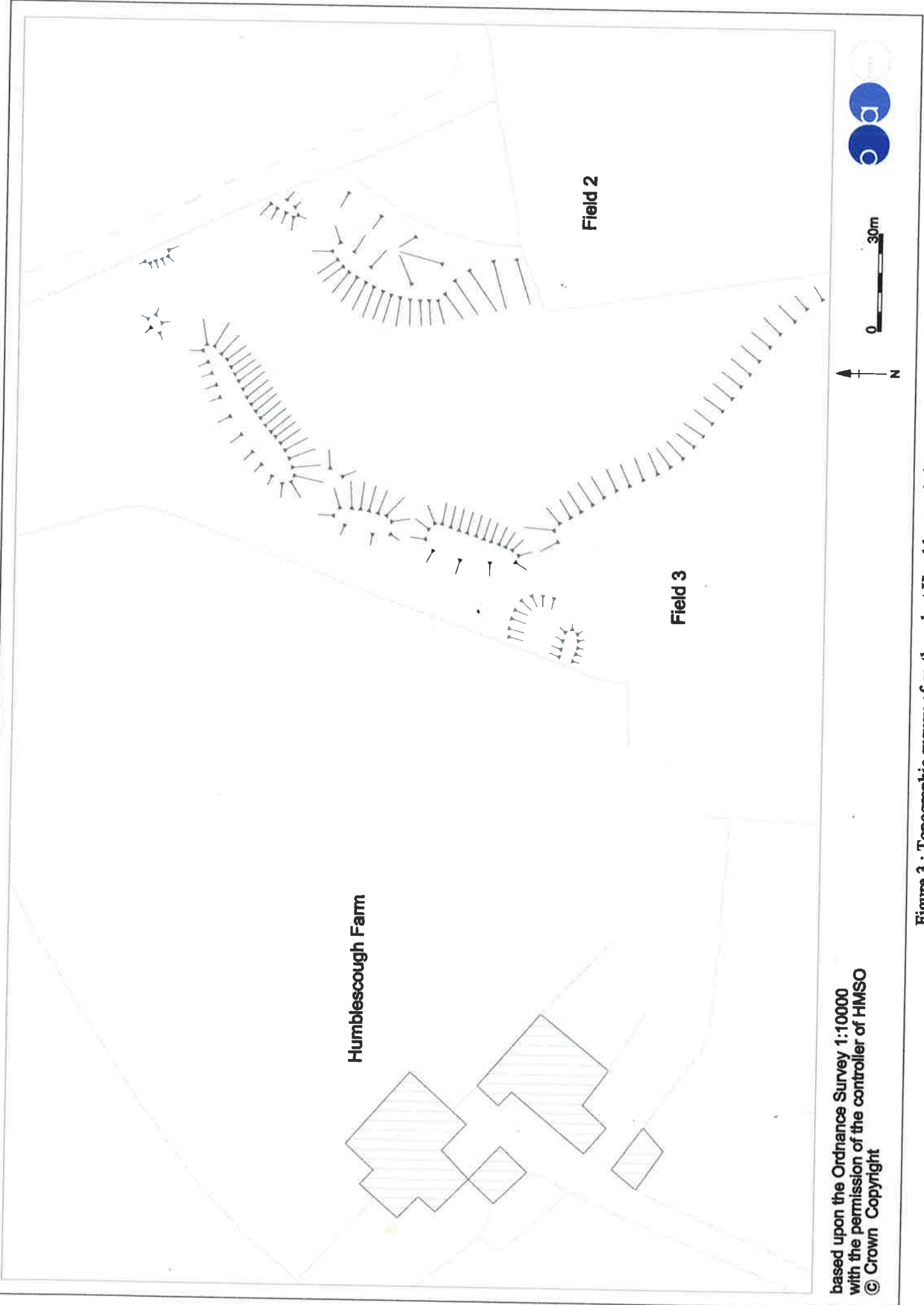


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- Pt Launch & retrieval pit
- F1 Field number
- Pipe trench
- Area of topographic survey



Figure 2 : Watching brief and topographic survey locations



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Figure 3 : Topographic survey of earthwork at Humblescough farm

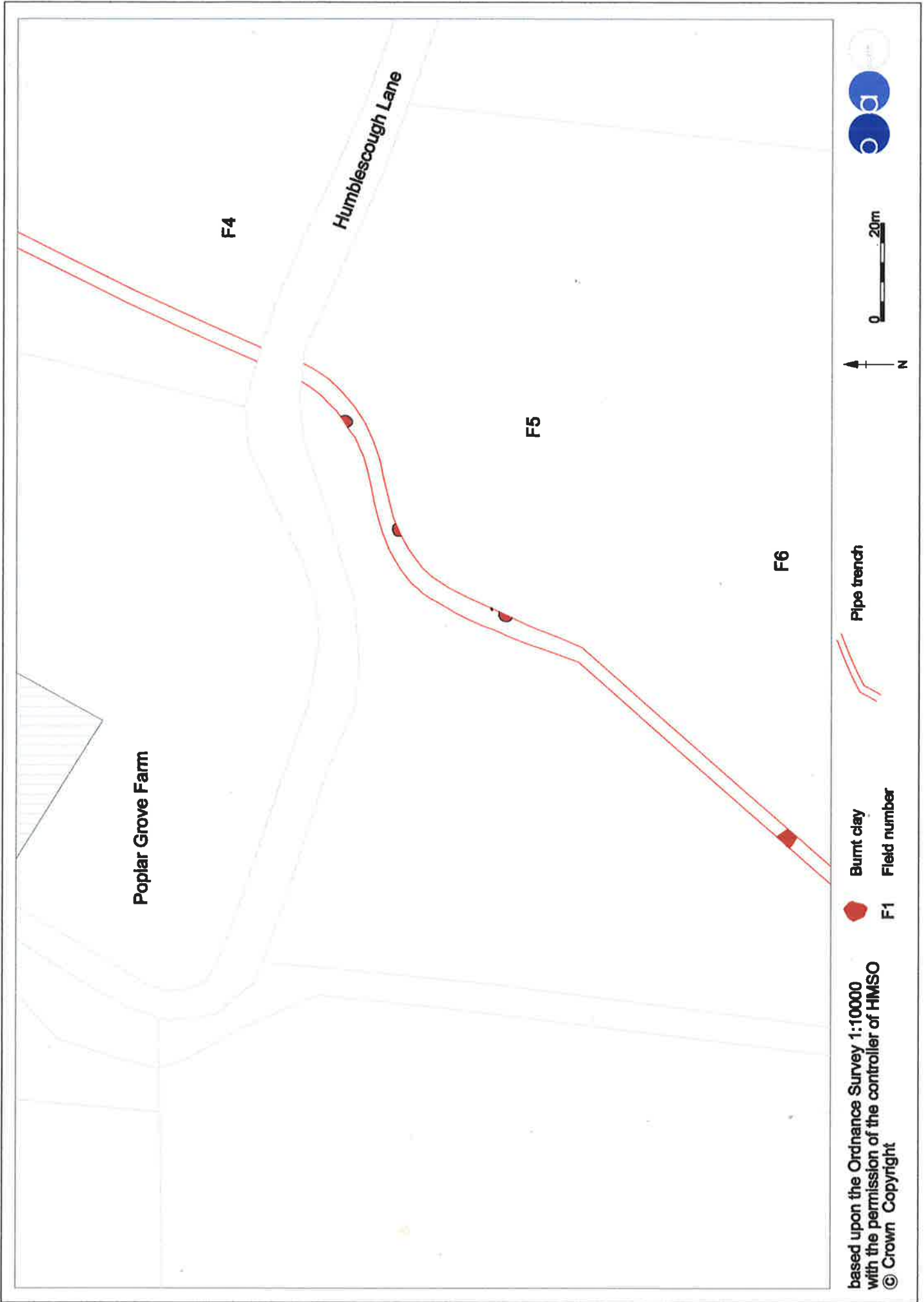


Figure 4 : Vestigial remains of brick clamps in Fields 5 and 6



Plate 1: Earthwork at Humblescough Farm, Field 3



Plate 2: Launch and retrieve pit, Field 3



Plate 3: Burnt clay of brick clamp, Field 4