MID CHESHIRE PHASE 2 PIPELINE, EATON BOREHOLE TO NANNEY'S BRIDGE, Cheshire

Walkover, Topographic Surveys and Evaluation - Supplementary Report

Oxford Archaeology North

December 2009

United Utilities

Issue No: 2009-10/1005
OA North Job No: L9906
NGR: SJ 568634 – 660564

Document Title:	**MID CHESHIRE PHASE 2 PIPELINE, EATON BOREHOLE TO NANNEY'S BRIDGE, CHESHIRE**
Document Type:	**Walkover, Topographic Surveys and Evaluation - Supplementary report**
Client Name:	**United Utilities**
Issue Number:	**2009-10/1005**
OA Job Number:	L9906
National Grid Reference:	SJ 568634 – 660564

Prepared by:	Claire Gardner	
Position:	Supervisor	
Date:	March 2008	
Checked by:	Alison Plummer	Signed....
Position:	Project Manager	
Date:	December 2009	
Approved by:	Alan Lupton	Signed...
Position:	Operations Manager	
Date:	December 2009	

Oxford Archaeology North
Mill 3, Mill Lane,
Moor Lane Mills,
Lancaster
LA1 1TF
t: (0044) 01524 541000
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

Janus House
Osney Mead
Oxford
OX2 0EA
t: (0044) 01865 263800
f: (0044) 01865 793496

CONTENTS

SUMMARY

United Utilities proposed the construction of a pipeline in the Eaton and Cholmondeston area of Cheshire, from Eaton Borehole to Nanney's Bridge (NGR SJ 568634 to 660564). Following the results of a desk-based assessment specified by the Cheshire Planning Archaeologist, and undertaken by Oxford Archaeology North (OA North 2007), it was recommended that a walkover survey, targeted topographic survey and archaeological evaluation trenching should be undertaken. The walkover survey was carried out in December 2007, and the subsequent topographic survey and evaluation trenching were undertaken during February and March 2008.

The walkover survey identified nine additional archaeological sites that might possibly be affected by the pipeline works. These include five field boundaries (Sites **39**, **41**, **42**, **44** and **46**), a trackway (Site **40**), ridge and furrow earthworks (Site **43**), a possible bank (Site **45**), and three linear mounds (Site **47**). Although the field boundaries, trackway and ridge and furrow are not closely dated they are most likely of post-medieval date, whereas the bank and linear mounds are of unknown function and date.

Following the walkover survey, those visible sites that were to be directly affected by the proposed development were subject to a programme of topographic survey. These included: a penannular enclosure (Site **32**), which following the topographic survey and consultation with the landowner was reinterpreted as a lynchet, and a modern animal burial pit; ridge and furrow earthworks (Sites **43** and **47**); a possible bank (Site **45**), which following the topographic survey was reinterpreted as three marl pits (Sites **45a-c**); and a lynchet field boundary (Site **46**).

Two sites, a possible D-shaped enclosure (Site **17**), and a possible rectangular enclosure (Site **34**) were also subject to evaluation trenching. No archaeological remains were observed. A third site (Site **32**) was not investigated as intended, as following consultation with the landowner it was found to contain a 1920s foot and mouth burial pit.

Due to the high number of archaeological remains identified along the route, particularly along the north-west section where most of the sites were identified, a permanent presence watching brief throughout all topsoil stripping activities is recommended. More intensive watching briefs are recommended in the locales of the following features: a Romano-British findspot (Site **12**); Smithy Field (Site **25**); ridge and furrow (Sites **33**, **35** and **36**); Cross Field (Site **37**) and Mill Croft (Site **38**); and a trackway (Site **40**). Further mitigation strategies may be implemented as a result of the findings of this work.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to Robert Edwards at Cheshire Historic Environment Record (CHER) and the staff at Cheshire County Record Office in Chester.

Claire Gardner undertook the walkover survey, and Pete Schofield carried out the topographic survey, while Claire undertook the evaluation trenching with the assistance of Liz Murray. Claire Gardner compiled the report, and Mark Tidmarsh produced the drawings. Alison Plummer managed the project and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 United Utilities propose the construction of a pipeline in the Eaton and Cholmondeston area of Cheshire. The proposed pipeline (Fig 1) is aligned in a north-west to south-east direction, from Eaton Borehole to Nanney's Bridge (NGR SJ 568634–660564), with an additional short stretch of pipeline from Vyrnwy Large Diameter Trunk Main (LDTM) to Eaton Borehole. The total length of the proposed pipeline is 10.1km.

1.1.2 As a result of an archaeological desk-based assessment (OA North 2007), a further programme of archaeological work was agreed with the Cheshire Planning Archaeologist. This comprised walkover and topographic surveys and evaluation trenching.

1.1.3 This supplementary report sets out the results of all the fieldwork in the form of a document outlining the findings and should be read in conjunction with the desk-based assessment (OA North 2007).

1.2 SITE LOCATION AND TOPOGRAPHY

1.2.1 The proposed pipeline is situated between Eaton and Crewe in mid Cheshire (Fig 1). The site is located on gently sloping land lying between 90m and 40m AOD, which generally slopes from north-west to south-east. Most of the study area occupies the Shropshire, Cheshire, and Staffordshire Plain, with the western end of the proposed pipeline occupying the sloping land that signals the transition from the plain into the Cheshire Sandstone Ridge (Countryside Commission 1998, 145–7). The areas of sandstone ridge rise sharply from the flat plain and the relative height and steep slopes of these areas of raised land create extremely prominent features in the landscape. This largely pastoral landscape is dominated by dairy farming within a productive and managed agricultural area.

1.2.2 The underlying geological deposits consist of Triassic sandstones and marls that are overlain by Diamicton glacial till (British Geological Survey 2007).

2. METHODOLOGY

2.1 WALKOVER SURVEY

2.1.1 A *Level 1* walkover survey was undertaken to relate the current landscape to the research findings and record the existence, location and extent of any new sites of archaeological interest. It encompassed a 100m corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape were recorded using 1:5000 scale maps, and the features were photographed using digital and SLR cameras for a comprehensive archive. Each existing site in the corridor identified by the preceding desk-based analysis was updated in the gazetteer and a short note for each new site was added (*Section 5*). All work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 TOPOGRAPHIC SURVEY

2.2.1 Based on the findings of the walkover survey, an enhanced *Level 2 Topographic Survey* was conducted on site using Global Positioning System (GPS) techniques. This was conducted with Leica differential GPS equipment, using real-time (RTK) corrections and equipped with mobile SmartNet technology to achieve an accuracy of ± 0.01m. The digital survey data was transferred, via Leica Geo Office (V.3), as *dxf* drawing files into a CAD system (AutoCAD 2004), and was superimposed onto the embedded digital Ordnance Survey data (Figs 3 and 4). The descriptive records and sketch plans were hand-annotated on-site on to *pro forma* recording sheets. A photographic record of the sites was maintained in digital colour photography, which have been used to accompany the present report. The six sites recommended for topographic survey are shown in Table 1, below:

Site No	Description
31	Curvilinear feature
32	Penannular enclosure/lynchet and marl pit
43	Ridge and furrow
45	Possible bank/marl pits
46	Lynchet field boundary
47	Linear mounds, probable ridge and furrow

Table 1: Sites recommended for topographic survey

2.3 EVALUATION TRENCHING

2.3.1 Three sites were recommended for a programme of evaluation trenching in order to ascertain the presence and quality of archaeological remains. The D-shaped enclosure (Site **17**) in Field 9, the penannular enclosure (Site **32**) in Field 44, and the rectangular enclosure (Site **34**) in Field 45. Prior to the archaeological works, however, it came to light that Site **32** was in fact an animal burial pit dating to the 1920s, and in the interests of health and safety, it was not disturbed.

2.3.2 Six evaluation trenches (three per site) measuring between 16m and 40m were excavated by a 7.5 ton 360° mechanical excavator fitted with a 1.2m wide toothless ditching bucket, under the constant supervision of an archaeologist. Once the trenches were open they were cleaned by hand, enabling an assessment of the nature, date, survival and depth of any surviving archaeological deposits present.

2.3.3 The trenches were recorded utilising OA North *pro forma* sheets, which detailed the orientation, length and depth of the trench, and described the nature of the overburden and the underlying geological deposits. Any horizons or features of archaeological significance were also recorded. A full textural, drawn, and photographic record in monochrome and colour formats was compiled for each trench.

2.3.4 The work undertaken complied with current legislation and accepted best practice, including the Code of Conduct and the relevant professional standards of the Institute of Field Archaeologists (IFA).

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in the Cheshire County Record Office in Chester on completion of the project.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 INTRODUCTION

3.1.1 The following is not meant to reproduce fully the background information presented in the desk-based assessment (OA North 2007), but it is included to place the results of the walkover survey, topographic survey and investigative evaluation, in their archaeological and historical contexts.

3.2 THE PREHISTORIC PERIOD

3.2.1 ***The Upper Palaeolithic and Mesolithic periods (c 12,800–4000 cal BC)***: although the natural history of the local area has been informed by the discovery of fossilised footprints of *Chirotherium Herculis*, an animal present in the area around 230 million years ago, in Eaton, evidence of human activity in the wider locale begins at around 12800–12000 cal BC (Matthews 2007a). This evidence consists of a Cresswell point found at Carden Park, around 15km to the south-west of the study area, and represents activity during the final stages of the Devensian glaciation (Hodgson and Brennand 2006, 23), at a time when the glacial climate of the region was becoming gradually more hospitable. There is little further evidence for the late Upper Palaeolithic period or for the earliest Mesolithic period (*c* 8000–6500 cal BC) in the region, with Mesolithic material from Carden Park dating to around 6800–4300 cal BC (Matthews 2007b). The later Mesolithic period is not generally evident elsewhere in the mid Cheshire area.

3.2.2 ***The Neolithic and Bronze Age periods (c 4000–700 cal BC)***: the Mesolithic was the latest cultural epoch in Britain during which people employed a subsistence strategy based wholly upon hunting, gathering, and fishing. Following the introduction of farming to the British Isles, from around 4000 BC, the Neolithic period saw a gradual increase in permanent settlement and the beginning of the widespread construction of monumental architecture, although few such structures are known from Cheshire (Hodgson and Brennand 2006, 39).

3.2.3 The exploitation of the mid Cheshire region for agricultural purposes during the early Neolithic is attested by pollen evidence demonstrating the growth of cereals at Hatchmere and Delamere (Crosby 1996, 17), within 6km to the north of the study area. Worked flint dating to the Neolithic and Bronze Age were also found associated with an enclosure at Peckforton Mere (Leah *et al* 1997, 109; 112), within 5km to the south-west of the study area. These areas have been the subject of intensive archaeological investigation as part of the North West Wetlands Survey (*see* Leah *et al* 1997). Activity within the study area during the Neolithic period is suggested by the discovery of a stone axe, said to have been found at Eaton Cottage (Tredwell 1982, 9), and an axe and perforated stone instrument that were found nearby at Tarporley (Latham 1969, 2).

3.2.4 The beginning of the Bronze Age in Britain, defined mainly by the introduction of the use of copper alloy metals, developed gradually out of the

preceding Neolithic during the mid third millennium BC (Parker Pearson 2000, 13). There is little evidence for settlement at this period within the locale of the study area, however, several sites suggest that funerary practices were taking place in the area at this time. Several tumuli, probably representing Bronze Age barrows, are located around 3km to the north of the study area, near to Oak Mere and Hatchmere (Leah *et al* 1997, 107–8). Finds of Bronze Age pottery at Beeston Castle, to the south-west of the study area, were interpretated as being representative of disturbed burials that may have been covered by mounds (Ellis 1993, 20). A tumulus in Alpraham, a township partially included in the study area, known as 'Robin Hood's Tump' was excavated, revealing pits beneath the mound but no associated finds (Latham 1969, 2). Another probable barrow, known as 'Round Mound', is located at the western end of the study area (*ibid*).

3.2.5 As mentioned above, settlements associated with Bronze Age and Neolithic groups have proved elusive, however, enclosures have been found at Peckforton Mere and Oak Mere (Leah *et al* 1997, 107–8) that may suggest structural evidence relating to domestic or subsistence activities during these periods. It is also possible that, as demonstrated at Beeston, some of the other hillforts of the Cheshire Sandstone Ridge, such as Eddisbury, traditionally interpreted as Iron Age in origin, may have originated in earlier prehistoric periods (Ellis 1993, 87). A D-shaped enclosure (Site **17**) and a pennannular enlosure (Site **32**) within the study area, identified as a crop marks from aerial photographs, may relate to early farming practices, however, no evidence is available with which to date the features.

3.2.6 ***The Iron Age (c 700 cal BC – AD 43)***: the most obvious traces of Iron Age activity in the locale relate to the series of hillforts situated along the Cheshire Sandstone Ridge. Kelsborrow and Eddisbury hillforts lie around 6km to the north-west and north of the study area, respectively, while Beeston lies around 3km to the south-west (*op cit*, 90–1). Some of these hillforts, such as Beeston and Eddisbury, may have represented social and political centres from which the trade of salt was controlled (*ibid*).

3.2.7 A general lack of pottery and other surviving elements of material culture from both the Iron Age and Romano-British periods in the region has led to great difficulty in identifying settlement sites from these periods (Hodgson and Brennand 2006, 51–2; Philpott 2006, 59). Aerial photography has, however, revealed numerous cropmark enclosures in Cheshire (Hodgson and Brennand 2006, 52) and when similar examples have been excavated, Iron Age and Romano-British occupation has been demonstrated (Hodgson and Brennand 2006, 53; Philpott 2006, 61). A great deal of continuity in rural settlement has been observed between the Iron Age and Romano-British periods in the region (Leah *et al* 1997, 153; Philpott 2006, 73). Therefore, Romano-British rural sites, such as the villa at Eaton and the site at Birch Heath, Tarporley (Philpott 2006, 61), might be seen as indicators of late pre-Roman Iron Age populations in the area. Although no sites associated with the Iron Age have been identified within the study area, the D-shaped enclosure (Site **17**) and penannular enclosure (Site **32**) identified from aerial photography have not been dated and could date to the late prehistoric period.

3.3 THE HISTORIC PERIOD

3.3.1 ***The Romano-British Period (c AD 43 – AD 409)***: the general character of the this region during the Romano-British period, as suggested by the nature of most of the known sites in the area, is one of military and industrial centres being interlinked by roads (Philpott 2006, 59–60; 69). The Romano-British salt trade was focused on the industrial centres at Nantwich, Northwich, and Middlewich, with smaller production areas scattered across rural areas, in locations where brine springs occured (*op cit*, 83). These industrial areas and forts were then linked by road systems with the legionary fortress at Chester (*Deva*) and the wider fort network (*op cit* 60). One of these roads runs from Middlewich to Nantwich, and is situated around 1km to the east of the study area (Margary 1957, road no. 700, 304–5). A second road has been suggested to have run between Nantwich and Tiverton (Thompson Watkin 1886), passing through Tilstone Fearnall and Calveley Halls (Latham 1969, 3) around 2km to the south of the study area.

3.3.2 There is only one demonstrable Roman villa known from Cheshire, representing domestic Romano-British occupation, and this is within the study area at Eaton (Leah *et al*, 153). The presence of Romano-British activity in this area was initially suggested due to the discovery of tiles, mortar, and a coin of Marcus Aurelius found during the construction of the Severn Vyrnwy Aqueduct in 1886 (Tredwell 1982, 10). Although there are few excavated Romano-British rural, and non-military, settlements known from the region (Philpott 2006, 59), this does not preclude their existence. Aerial photography has identified numerous cropmarks, particularly in the Weaver and Dee valleys, that have been interpreted as Romano-British enclosed settlements (*op cit*, 61) and archaeological monitoring of construction schemes, such as pipelines, has revealed previously unknown Romano-British rural sites (*ibid*).

3.3.3 ***The Early Medieval Period (c AD 409 – AD 1066)***: in similarity to the sites associated with rural activity in the preceeding Romano-British and Iron Age periods, the investigation of early medieval sites in the region has been hampered by a lack of material remains (Newman 2006, 91–3). Although documentary sources attest to considerable activity throughout the region during this period, artefactual and general archaeological evidence relating to the period have proved difficult to identify (*ibid*). In the absence of abundant material traces, the use of place-name and documentary evidence can be cautiously used as a guide in order to attempt to identify areas of population density and activity, which can then be more closely observed in an attempt to recognise any contemporary sites. Some Romano-British farmsteads may have continued in use into this period (*op cit*, 97) and some Romano-British towns, such as Nantwich, may also have continued in use, or been reocccupied, during this period (Crosby 1996, 26). The subsequent continued use of such towns through to the present day may, therefore, have concealed or destroyed traces of early medieval activity.

3.3.4 Place-name evidence from the study area suggests that some of the current townships in the area may have been founded, or at least have been present and subsequently fallen under the administrative control of successive

kingdoms, during the Anglo-Saxon period. This period of influence is likely to have begun in the early seventh century, when the Northumbrian Anglo-Saxon kingdom gained control over Cheshire, which was then subsumed into the Anglo-Saxon kingdom of Mercia around AD 633. Mercian control of Cheshire passed to the kingdom of Wessex in the tenth century (Crosby 1996, 27–31). Against a backdrop of Danish raids, and a brief period of Danish control, in the ninth century, Cheshire was part of one of the Anglo-Saxon kingdoms from the seventh century until the Norman Conquest (*ibid*).

3.3.5 It is often repeated that Eaton does not appear in Domesday Book (*eg* Tredwell 1982, 7), however, there is mention of a place called *Opetone* (Chesire Archives and Local Studies Service nd) which may refer to this township. Eaton was mentioned in 1240, as *Parva Eyton*, and Calveley in 1180 as *Kaluileia* (Dodgson 1971, 289; 307–8).

3.3.6 Further evidence of the importance of the general area during the Anglo-Saxon period is provided by the place-name element *wich* associated with Nantwich, Middlewich and Northwich, and responsible for the designation of the salt-rich areas of Chesire as 'the three wiches'. This stems from the Anglo-Saxon *wic*, meaning trading settlement (Crosby 1996, 26), suggesting the continuation of these towns from the Romano-British period as important industrial centres. Whether the early medieval settlements in the immediate locale of the study area provided agricultural support for these industrial centres, as a productive hinterland forming one part of a mutually dependant exchange network, remains to be seen.

3.3.7 ***The Medieval Period (c AD 1066 – AD 1540)***: during the medieval period, and extending into the post-medieval period, this area of Cheshire was dominated by the forests of Mara and Mondrum, which extended from the Mersey in the north to beyond the southern limits of the study area (Tredwell 1982, 14–15). The township of Rushton extended far enough north to fall under the administrative control of Mara (*ibid*), whereas the rest of the study area would have been part of Mondrum, as demonstrated by the township name of 'Aston juxta Mondrum'. The forests would not, however, have been completely dominated by boundless woodlands, with open areas, settlements, and routeways forming part of the forest landscape (Tredwell 1982, 14–15). Some areas, such as Wettenhall (Harris and Thacker 1987, 360), and Alpraham would, however, have been quite densely wooded, with wolves and boar being present in the fourteenth century (Latham 1969, 5).

3.3.8 Evidence exists of industry in the study area during the thirteenth and fourteenth centuries. At Eaton, a Red- and Grey-ware kiln site stood, representing only one of four such sites known in Cheshire (Leah *et al* 1997, 217). This partially overlay the Roman Villa and associated debris also extended to the east of the villa. In 1312 a water mill was recorded within Alpraham, and it has been suggested that this may have been situated in the Pages Wood area of the township (Latham 1969, 8). Part of this wood lies within the study area and it is bounded to the north by the potential power source of Wettenhall Brook. Pages Wood appears to have been named after a family present in the area in the fifteenth and sixteenth centuries and may,

therefore, date to at least as early as this period (*ibid*). A house named 'Flaxyordes' in 1461 (Cheshire Archives and Local Studies Service nd) suggests the growth of flax in the area and it is possible that the flax was also processed locally. This house was depicted on the Ordnance Survey first edition map of 1875 as featuring a moat and may represent a medieval moated hall. As well as being a time of local industry, the fourteenth century was also a time of stress with the arrival of the Black Death in around 1368 impacting upon the local area (*op cit*, 5). In Rushton and Cholmondston at this time, fields were recorded as lying fresh and uncultivated and rents in the locality were reduced, perhaps reflecting a diminishing population (*ibid*). No doubt this outbreak also had a negative effect on the industries based at the kiln and water mill sites.

3.3.9 The primacy of Nantwich, Northwich, and Middlewich as centres of salt production continued into the medieval period (Rochester nd, 27). Nantwich appears to have been the dominant town, in terms of salt production, in Cheshire between the eleventh and seventeenth centuries (*ibid*) and, once again, this is likely to have had an impact on the local economy beyond the industrial centre.

3.3.10 ***The Post-Medieval Period***: the gradual deforestation of Mara and Mondrum meant that by the time that the office of Chief Forester was held by Sir John Done (1577–1629) the Forest of Mara had been reduced to 8346 acres and was surrounded by common grazing land exempt from the restrictions of the forest laws (Tredwell 1982, 15). The Forest of Mara was finally enclosed, and the office of Chief Forester was dissolved, during the lifetime of Sir John (*op cit*, 16). By the time of the production of the tithe maps of the nineteenth century, the part of the forest of Mondrom within the locale of the study area was also lacking the large expanses of woodland that had been described in the Domesday Book (Harris and Thacker 1987, 356; 360). These maps post-date the enclosure of the Eaton and Rushton commons by the enclosure act of 1808 (Tredwell 1982, 34), and this enclosure suggests that the Forest of Mondrom had ceased to be a viable wooded entity in the local area by this time.

3.3.11 The Eaton tithe map of 1838 shows most of the property units to consist of crofts, meadows, arable land and pasture. The agricultural aspect of the area during this period is reinforced by the numerous marl pits that were in use as sources of fertiliser (Tredwell 1982, 44). Dairying was an important local industry in the post-medieval period (*op cit*, 47) and allowed Cheshire to become a centre of cheese production, with the making of cheese surviving as a farmhouse-based industry until 1968, when the last of the cottage industries yielded to factory production (*op cit*, 46). One significant threat to the dairying industry was that of foot and mouth disease with recurrent outbreaks of *rinderspest* in 1749, 1865, 1923, and 1967 (*op cit*, 48–9). Arable agriculture also played a key role in the post-medieval economy, with such abundant potato crops being produced that Irish workers migrated seasonally for work during the harvest period and were housed in 'shants' consisting of farm buildings (*ibid*).

3.3.12 In addition to agriculture, the local area hosted various other industries. Mill Lane, in Eaton, was mentioned in the eighteenth century, with a mill having been situated on this thoroughfare between Winterford Farm and Boothouse (*op cit*, 24), at the western end of the study area. Mill Croft (Site **38**) was shown on the Eaton tithe map of 1838 in this area and is likely to reference this structure. A windmill (property unit 280), to the north-east of the study area, is also named on the Eaton tithe map. A house in Eaton called Flaxyards features a lintel with the inscription '1668' (*op cit*, 22), suggesting that flax may have been produced or processed locally during the post-medieval period. Numerous trades were undertaken in the area during the eighteenth century, including, in Eaton, wheelwright, stone-cutter, mason, shoe-maker, carpenter, tailor and weaver (*op cit*, 55). By 1850 this list had expanded to include blacksmith, clogger, shopkeeper, sawyer, engine smith, bricklayer and joiner (*ibid*). The addition of engine smith to this list poses the question of whether this was related to steam-ploughing engines or steam-powered mills in the area. The Eaton tithe map of 1838 mentions two fields called Brick Kiln Field and Brick Kiln Meadow, suggesting that bricks were being made in the area, prior to the tithe survey.

3.3.13 The locale of the study area was situated in the midst of hostlities during the English Civil War, lying between Royalist Chester and Parliamentarian Nantwich. West Alpraham was utilised as a camp by each of the armies at different times, and a battle was fought to the west of the study area at Tarporley (Latham 1969, 12).

3.3.14 ***The Industrial Period***: the eighteenth and early nineteenth centuries were a time of consolidation and creation of communication routes and, being situated between large towns and cities, such as Nantwich and Chester, the study area lay close to several of these improved transport arteries. In 1772 the Chester to Nantwich section of the Shropshire Union Canal, to the south of the study area, was constructed and by 1805 the Middlewich branch, which runs through the eastern end of the study area had been completed (Shropshire Union Canal Society 2007). Jackson's Bridge and Nanney's Bridge (Site **27**) were also constructed over the Middlewich branch of the canal, allowing private field access and road access repectively, and Minshull Lock was installed as part of the canal system. In 1782 comments were recorded relating to the proposals for a turnpike road to be instituted between Tarporley and Eaton, utilising Sapling Lane (Tredwell 1982, 36); the road from which access to Eaton Borehole is enabled.

3.3.15 In stark contrast to, and yet presumably enabled by the affluence and economic stability suggested by these communications enterprises, a poorhouse, or workhouse was built in Eaton in 1773 (*op cit*, 93). This was located at Portal Green and is now called Portal Lodge (*ibid*).

3.3.16 Several buildings, currently listed, were erected during the post-medieval period, within the study area. These consist mainly of timber-framed cottages and farmhouses that cluster around the village of Eaton, at the western end of the study area, as well as a lock-keepers cottage at the eastern end of the study area (Tredwell 1982, 95–6). In around 1886 the Severn Vyrnwy Aqueduct was

constructed (*op cit*, 10), which runs from north to south across the western end of the study area.

4. WALKOVER SURVEY

4.1 INTRODUCTION

4.1.1 The proposed pipeline route incorporates 58 fields and cuts across 12 roads and one canal. The route was walked from Nanney's Bridge to Eaton Borehole (NGR SJ 568634–660564; Fig 2a and 2b) following a roughly north-west/south-east course, resulting in the field numbers increasing in the same direction. The land is predominantly laid to pasture, with only four fields under cultivation.

4.1.2 The desk-based assessment (OA North 2007) identified 38 sites of archaeological interest, of which only 13 were either partially or entirely within the 200m research corridor. Of these sites, ten had no visible remains when visited (Sites **12**, **16**, **17**, **25**, **33**, **34**, **35**, **36**, **37** and **38**). These sites are described fully in the Gazetteer of the desk-based assessment (OA North 2007: *Appendix 1*), and therefore, will not be discussed further in this document.

Site No	Description
12	Romano-British findspot
16	Severn Vyrnwy Aqueduct
17	D-shaped enclosure
25	Smithy Field
27	Nanney's Bridge
31	Curvilinear feature
32	Penannular enclosure
33	Ridge and furrow
34	Rectangular enclosure
35	Ridge and furrow
36	Ridge and furrow
37	Cross Field
38	Mill Croft

Table 2: Desk-based assessment sites targeted by the walkover survey

4.1.3 The walkover survey also identified an additional nine sites (Table 3 below), and these sites were added to the revised gazetteer (*Section 5*).

Site No	Description
39	Field boundary
40	Trackway
41	Field boundary
42	Field boundary
43	Ridge and furrow
44	Field boundary
45	Possible bank
46	Field boundary
47	Linear mounds

Table 3: Additional sites identified during the walkover survey

4.2 RESULTS

4.2.1 As the land slopes from north-west to south-east the first section of the route is lower lying. This is evident by the relative height of the water table in comparison with the ground level. Approximately, the first 8km are poorly draining, wet areas prone to flooding. The change to slightly higher ground is marked by Field 29. However, the entire route is in a waterlogged region defined by numerous brooks and the construction of several large ponds or dykes in each field to aid drainage. All but one (Aston Juxta Mondrum/Cholmondeston) of the eight township boundaries crossed by the pipeline exploit watercourses.

4.2.2 ***Sites 27, 31 and 32***: were visible and can be commented on further. Nanney's Bridge (Site **27**) has not altered and is depicted accurately in the gazetteer. The curvilinear feature (Site **31**) in Field 43 is in fact a track way continuing to the south-east from Oxheys Farm. It is possible that this is a reused pre-existing feature. In Field 44 a group of cropmarks (Site **32**), possibly representing pennanular enclosures and smaller circular structures, are visible on aerial photographs. Not all of these features were visible during the walkover survey. One circular element of the cropmarks is currently a drainage pond but the larger enclosures were not evident.

4.2.3 ***Sites 39 to 47***: the majority of the sites identified during the walkover survey are associated with agricultural processes and land management. In Field 1 a field boundary (Site **39**) is represented by three mature trees atop a roughly east/west aligned bank, marked on the 1881 Ordnance Survey map. In Field 6 are Sites **40** and **41:** Site **40** is perceptible only as a slight linear depression aligned north-west/south-east. However, when considered within its location and with reference to the 1881 Ordnance Survey map, it is possible to interpret it as a disused trackway to Jackson's Bridge and over the Shropshire Union Canal. Site **41** is a shallow, linear bank and ditch running almost at right angles to the trackway. Along this are eight well-established trees, which are illustrated on the 1881 Ordnance Survey map. It appears that this would have formed a field boundary but was removed by 1881. Beyond this there was nothing of archaeological significance until the higher ground is encountered at Field 29.

4.2.4 Fields 41 and 43 are to the north-east of Field 30, and all have linear arrangements of trees suggesting old field boundaries. These three sites (**44**, **46** and **42**) are on the 1881 Ordnance Survey map but only Site **42** is a recognised boundary. It can be presumed from this that the boundaries had fallen into disuse and they were no longer required. Site **43** in Field 30 appears to be post-medieval ridge and furrow. It is present at the sloping boundaries to the north, east and west, which are bordered by a brook, but not on the majority of the flat field.

4.2.5 The anomalous sites are **45** and **47,** these lack a typical agricultural purpose, and, as such, are impossible to attribute a time period. Site **45** in Field 43 comprises a regular linear bank with possible associated hollow to the south. Site **47** in the adjacent Field 44 comprises three linear mounds extending

further than 40m. They are not visible on the aerial photographs but could be associated with the other features (Site **32**) identified in this field.

5. GAZETTEER OF SITES

5.1 INTRODUCTION

5.1.1 The following Gazetteer of Sites is not a replication of the complete Gazetteer found in the desk-based assessment (OA North 2007), but is an updated version, including only those sites visited during the walkover survey and the topographic survey.

Site Name Nanney's Bridge
Site number **27**
NGR SJ 657 585
HER no -
Site Type Bridge
Period Industrial
Statutory Designation Grade II Listed Building – ref 351234
Sources HER
Description Road bridge over canal. 1827-33. Telford design. Brick, with stone band and copings. Single basket arch, solid parapet and piers. Parapets partly rebuilt. Brick ribbed towpath surface with stone coping.
Assessment The site lies outside of the proposed pipeline route and is unlikely to be affected by the works.

Site Name Curvilinear feature
Site number **31**
NGR SJ 587 620
HER no -
Site Type Trackway
Period Not closely dated
Statutory Designation -
Source (1) HER
(2) OA North walkover survey
Description Curvilinear feature which is no longer extant, possibly a field boundary, apparent on an aerial photograph. It could be a palaeochannel, however, water courses in the local area were, and continue to be, used as boundaries and divisions and this may have been utilised in such a way. From the walkover survey this feature was identified as a trackway currently in use from Oxheys Farm, through Field 43 to a gate on the southern boundary and into a field beyond.
Assessment The site lies within the proposed pipeline route and is likely to be affected by the works

---

Site Name Penannular Enclosures
Site number **32**
NGR SJ 585 621
HER no -
Site Type Enclosures
Period Not closely dated
Statutory Designation -
Source (1) HER
(2) OA North walkover survey
(3) Topographic survey

Description	A group of cropmarks visible on aerial photographs that may represent several penannular enclosures and smaller circular structures (1). Only the largest of these features was visible during the walkover survey and was being utilised as a pond (2). During the topographic survey, the site was re-assessed as a lynchet and marl pit (3).
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site Name	Field boundary
Site number	**39**
NGR	SJ 659 584
HER no	-
Site Type	Field boundary
Period	Not closely dated
Statutory Designation	-
Sources	(1) OA North walkover survey 2007
Description	A linear, banked feature with several well-established trees along it, suggesting an old field boundary (1).
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site Name	Jackson's Bridge Trackway
Site number	**40**
NGR	SJ 652 587
HER no	-
Site Type	Agricultural site
Period	Not closely dated
Statutory Designation	-
Sources	(1) OA North walkover survey
Description	A linear, ditched feature running from Jackson's Bridge to the north-west. It was the continuation of the trackway from Highfield Farm over the canal (1).
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site Name	Field boundary
Site number	**41**
NGR	SJ 653 586
HER no	-
Site Type	Field boundary
Period	Post-Medieval
Statutory Designation	-
Sources	(1) OA North walkover survey
Description	A linear, banked feature with several well-established trees along the north edge, suggesting an old field boundary (1).
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site Name	Field boundary
Site number	**42**
NGR	SJ 591 621
HER no	-
Site Type	Field boundary
Period	Post-Medieval
Statutory Designation	-
Sources	(1) OA North walkover survey

Description A linear feature defined by several well-established trees, suggesting an old field boundary (1).
Assessment The site lies within the proposed pipeline route and is likely to be affected by the works.

Site Name Ridge and Furrow
Site number **43**
NGR SJ 607 610
HER no -
Site Type Cultivation ridges
Period Post-Medieval
Statutory Designation -
Sources (1) OA North walkover survey
Description Ridge and furrow on the steep slope down to the brook forming the west, north and eastern boundaries. May represent steam ploughing with cable-drawn balance ploughs (1).
Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site Name Field boundary
Site number **44**
NGR SJ 591 621
HER no -
Site Type Field boundary
Period Post-Medieval
Statutory Designation -
Sources (1) OA North walkover survey
Description A linear feature defined by several well-established trees, suggesting an old field boundary (1).
Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site Name Possible bank
Site number **45 (45a to 45c)**
NGR SJ 588 621
HER no -
Site Type Earthwork
Period Not closely dated
Statutory Designation -
Sources (1) OA North walkover survey
(2) Topographic survey
Description An irregular, possible bank with ditch feature, uncertain if archaeologically significant (1). During the topographic survey they were re-assessed as three marl pits (2), each was partially renamed, being **45a** to **45c** from east to west.
Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site Name Field boundary
Site number **46**
NGR SJ 588 622
HER no -
Site Type Field boundary
Period Post-Medieval
Statutory Designation -

Sources	(1) OA North walkover survey
Description	A linear feature defined by several well-established trees, suggesting an old field boundary, currently in use as a new fence has been erected (1).
Assessment	The site lies within the proposed pipeline route and is likely be affected by the works.

Site Name	Linear mounds
Site number	**47**
NGR	SJ 585 621
HER no	-
Site Type	Earthwork/ridge and furrow
Period	Not closely dated
Statutory Designation	-
Sources	(1) OA North walkover survey (2) Topographic survey
Description	Three linear mounds, all running parallel to each other near to site number **32** (1). During the topographic survey, the site was re-assessed as the remnants of large ridge and furrow (2).
Assessment	The site lies within the proposed pipeline route and is likely be affected by the works.

6. TOPOGRAPHIC SURVEY

6.1 INTRODUCTION

6.1.1 Based on the results of the walkover survey the following six sites were recommended for topographic survey:

Site No	Description
31	Curvilinear feature/trackway
32	Penannular enclosure/lynchet and marl pit
43	Ridge and furrow
45	Possible bank/marl pits
46	Lynchet field boundary
47	Linear mounds, probable ridge and furrow

Table 4: Sites recommended for topographic survey

6.1.2 Of these sites, only one (Site **31**) was not surveyed, as waterlogging had obscured its remains. The remainder were surveyed, with the results illustrated on Figures 3 and 4. The following section comprises a description of the survey results.

6.2 RESULTS

6.2.1 ***Site 32***: (Fig 3; Plate 1) was originally thought to be a penannular enclosure, possibly of prehistoric date. However, re-assessment in light of the topographic survey indicates that the site was more likely to be the remains of a lynchet field boundary to the north-east, and a pit to the south-west. The lynchet measured approximately 100m in length, and was truncated to the south by a water trough. The possible pit measured roughly 60m in diameter and was filled with water. It seems to respect the field boundary to the south (Site **46**). Following later consultation with the landowner this pit was discovered to represent the site of a 1920s foot and mouth animal burial pit.

6.2.2 ***Site 43***: (Fig 4) was an area of ridge and furrow initially identified in Field 30, but during the topographic survey was found to extend into Field 43 to the north-east. It comprises heavily denuded but regular, post-medieval ridge and furrow, with the crests measuring approximately 7m apart. It has been truncated by later marl pits, Site **45**.

6.2.3 ***Site 45***: (Fig 3; Plates 3 and 4) was first interpreted as an irregular bank running across Field 43. On closer inspection during the topographic survey, it was concluded that the earthworks was actually three marl pits, each being in a different condition. The marl pit to the east, Site **45a**, had been truncated by a modern field boundary, and measured roughly 40m in diameter. The central pit, Site **45b**, was approximately 65m by 25m, and denuded to the south-west, while the western pit, Site **45c**, was roughly figure-of-eight in shape, and measured 70m by 30m. It appeared to respect the field boundary to the north and west (Site **46**). Again, all the pits were filled with water.

6.2.4 ***Site 46***: (Fig 3) formed a lynchet field boundary, dividing Fields 43 and 44. It was L-shaped in plan, running north-east/south-west, before dog-legging to

the south. The east/west section was approximately 325m in length, and was lined with mature trees. Two water troughs were located a long its length. The western side held no mature trees, and ran for 140m before reaching the current field boundary.

6.2.5 ***Site 47***: (Fig 3; Plate 2) this comprised a limited area of ridge and furrow (four ridges) seen aligned slightly off north/south, to the immediate west of a marl pit and lynchet (Site **32**).

7. EVALUATION TRENCHING

7.1 RESULTS

7.1.1 Two of the three sites to be affected by the pipeline (Sites **17** and **34**) were subject to evaluation trenching in order to ascertain the nature and origin of the archaeological remains. The possible enclosures were identified through the study of aerial photographs (OA North 2007).

7.1.2 Prior to the archaeological works, information from a discussion with the landowner of Fields 44 and 45 revealed that Site **32** was in fact a burial pit. It contained the remains of a foot and mouth outbreak from the 1920s. Due to the risk to the environment and lack of archaeological interest this field was avoided.

7.1.3 ***Site 17***: this was located in a flat, low-lying field (Field 9) towards the eastern extent of the pipeline, approximately 1.5km to the north-west of Nanney's Bridge. A 60m buffer zone had to be respected around an existing gas pipe reducing the area for evaluation to approximately 350m^2 (Fig 5). Three trenches were excavated by a 7.5 ton 360 degree mechanical excavator with a ditching bucket 1.52m (5ft) wide. No evidence of Site **17** was visible either above or below ground (Fig 5).

7.1.4 All three evaluation trenches were shallow and reached natural at about 0.20m. This was a grey/orange clay with virtually no inclusions. Some rare sub-rounded and sub-angular stones were present and occasional flecks of manganese. A piece of waterlogged wood *c* 0.30m x 0.20m was recovered from the clay and photographed but not retained as it was not associated with any human activity. No sub-soil was present and above the natural clay was topsoil which varied from 0.15-0.18m. This was a mid grey-brown silty-clay with rare rounded pebbles.

7.1.5 Trench 1 was aligned north-east/south-west for a length of 28.50m. It was excavated to an average depth of 0.30m with a deeper slot at the north-east end to 0.55m. This was inserted to ensure that natural deposits had been reached. No archaeological features were observed.

7.1.6 Trench 2 was aligned almost east/west 10.00m from the south-west end of Trench 1. It had a length of 20.50m and depth of 0.30m. A possible linear feature was observed running north/south towards the centre of the trench but after a slot was inserted by machine at the north-east to a depth of 0.40m it was deemed to be a variation in the colour of the natural. No archaeological features were observed.

7.1.7 Trench 3 ran parallel to the north-east of Trench 2 and truncated the south-east section of Trench 1. It was 16.00m in length and 0.32m in depth. A slightly more frequent collection of rounded pebbles was present at the western end within the natural. No archaeological features were observed.

7.1.8 ***Site 34***: this was located with Field 45, positioned towards the western end of the route approximately 3.5km from Eaton Borehole. The field was to the south-west of Oxheys farm.

7.1.9 A rectangular feature, Site **34**, was identified on aerial photographs and three trenches were positioned to investigate it (Fig 6). As the information from the aerial photograph suggested the possible enclosure was aligned north-east/south-west with the closest area to the pipeline being at the west edge of the field, it was here that the trenches were placed. Again the trenches were excavated by a 7.5 ton 360° mechanical excavator with a ditching bucket 1.52m (5ft) wide. An area of flat ground with possible banks could be seen to the south in Field 45 but no evidence of Site **34** was visible above or below ground along the easement (Fig 5).

7.1.10 The natural was very similar to that observed in Field 9. The upper 0.20m of grey-orange clay that were removed appeared to have been the weathered layer of the orange-red clay below. The topsoil was between 0.19m-0.20m deep. It was similar to that in Field 9 as it was a mid grey-brown silty-clay with occasional rounded pebbles but included more brick and slate fragments and pottery sherds. The pottery was identified as black-glazed earthenware, blue and white Indo-Chinese and transfer printed creamware. The pottery assemblage dated to the ninteenth/twentieth century and was most likely brought in during agricultural processes.

7.1.11 Trench 4 was aligned north-east/south-west, had a length of 40.00m and a depth of 0.40m. Two field drain trenches, aligned east/west and north/south were exposed. Both were 0.25m wide and infilled with a mixture of topsoil and clay. As the actual drain was not reached and the cut was so uniform it was presumed that the drains were inserted by machine and were not of archaeological interest. Nothing of archaeological significance was observed.

7.1.12 Trench 5 was similar to Trench 4 in alignment, length and depth and was located 20.00m to the south-east. A similar field drain on the same alignment as the north/south one in Trench 4 was visible. A possible feature was truncated by this near the centre (18.20m from the south-west end) of the trench so a 3.00m long extension was put in on the north-east section. This revealed a sub-circular (2.40m x 1.50m x 0.15m) charcoal rich deposit of grey-brown silty sand on the natural. This feature had no definite edges and appeared to be more of a spread within a depression rather than a cut and fill. A 0.40m slot aligned north-east/south-west revealed black-glazed earthenware within the feature, and it seems likely that it was the remnants of a post-medieval fire.

7.1.13 A second possible feature was also investigated by hand 5.65m from the north-east of the trench. This smaller (0.32m x 0.20m x 0.09m) sub-circular feature was cut into the natural and filled with topsoil. Again black-glazed earthenware was recovered from the fill. It may have been a post-medieval stake hole or similar feature.

7.1.14 Trench 6 was aligned the same as Trench 4 and Trench 5 and was between the two but was shorter at 27.00m and was placed further to the north. Like the other trenches in Field 45 it was excavated to 0.40m but a deeper slot was put in to the south-west extent to 0.60m. This determined that the clay revealed was indeed natural and it was not necessary to excavate further. One field drain was exposed and may have been the continuation to the north-east of that seen in Trench 5 due to its position and alignment. Nothing of archaeological significance was observed.

7.2 CONCLUSION

7.2.1 The earthwork enclosures (Site **17** and **34**) as identified from aerial photographs (OA North 2007) were not detected during the walkover survey, and the subsequent evaluation failed to find any physical evidence. It is possible that the remains of the enclosures have been removed by agricultural activities such as ploughing.

8. RECOMMENDATIONS

8.1 FURTHER ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

8.1.1 Due to the significant number of archaeological sites along the proposed route of the pipeline it is recommended that a permanent presence watching brief should be maintained during all ground disturbing activities.

8.1.2 During the watching brief a section should be put through any township or parish boundaries and that are disturbed by the easement, in particular Sites **39**, **41**, **42**, **44** and **46**. Particular attention should be paid in the locations of sites discussed in the desk-based assessment but not visible during the walkover survey. These are a Romano-British findspot (Site **12**), Smithy Field (Site **25**), ridge and furrow (Sites **33**, **35** and **36**), Cross Field (Site **37**) and Mill Croft (Site **38**). A trackway (Site **40**) identified during the walkover survey should also receive extra consideration.

9. BIBLIOGRAPHY

9.1 PRIMARY AND CARTOGRAPHIC SOURCES

Ordnance Survey, 1875 *Sheets 48.1, 2, 5, 6, 7, 8, 11, 12, 15, 16; 49.6, 7, 9, 10, 13, 14*, 25" : 1 mile

Ordnance Survey, 1881 *Sheets 48, 49*, 6" : 1 mile

Tithe map of township of Eaton of 1838

9.2 SECONDARY SOURCES

British Geological Survey, 2007, Geoindex, www.bgs.ac.uk/geoindex/index.htm, accessed 29 September 2007

Cheshire Archives and Local Studies Service, nd *Township pack 109: Eaton by Tarporley*, Chester

Countryside Commission, 1998 *Countryside character volume 2: North West*, Northampton

Crosby, A, 1996, *A history of Cheshire*, Chichester

Dodgson, J, McN, 1971 *The place-names of Cheshire, part III the place-names of Nantwich hundred and Eddisbury hundred*, Cambridge

Ellis, P, 1993 *Beeston Castle, Cheshire, excavations by Laurence Keen and Peter Hough, 1968–85*, London

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

Harris, B, E, and Thacker, A, T, 1987 *A history of the county of Cheshire, volume 1*, Oxford

Hodgson, J, and Brennand, M, 2006 Prehistoric period resource assessment, in M Brennand (ed) *The archaeology of north west England, an archaeological research framework for north west England: volume 1, resource assessment*, 23–58

Latham, F, A, 1969 *Alpraham*, Alpraham

Leah, M, D, Wells, C, E, Appleby, L, Huckerby, E, 1997 *The wetlands of Cheshire*, Lancaster

Margary, ID, 1957 *Roman Roads in Britain*, London

Matthews, K, 2007a *Carden Park, the earliest occupation of the site*, users.breathe.com/kmatthews/carden2.html, accessed 2nd October, 2007

Matthews, K, 2007b The Carden project, the Mesolithic occupation, www.kmatthews.org.uk/carden/carden3.html, accessed 2nd October, 2007

Newman, RN, 2006 The early medieval period resource assessment, in M Brennand (ed) *The archaeology of north west England, an archaeological research framework for north west England: volume 1, resource assessment*, 91–114

OA North, 2007 *Mid Cheshire Phase 2 Pipeline, Eaton Borehole to Nanney's Bridge, Cheshire: Desk-based Assessment*, inpubl rep

Parker Pearson, M, 2000 *Bronze Age Britain*, London

Philpott, R, 2006 The Romano-British period resource assessment, in M Brennand (ed) *The archaeology of north west England, an archaeological research framework for north west England: volume 1, resource assessment*, 59–90

Rochester, M, nd *Salt in Cheshire*, Chester

Shropshire Union Canal Society 2007, *A brief history of the Shropshire Union Canal with the dimensions of the main sections*,

Thompson Watkin, W, 1886 *Roman Cheshire*, Liverpool

Tredwell, MD, 1982 *The story of Eaton by Tarporley*, Eaton by Tarporley

10. ILLUSTRATIONS

10.1 LIST OF FIGURES

10.2 LIST OF PLATES

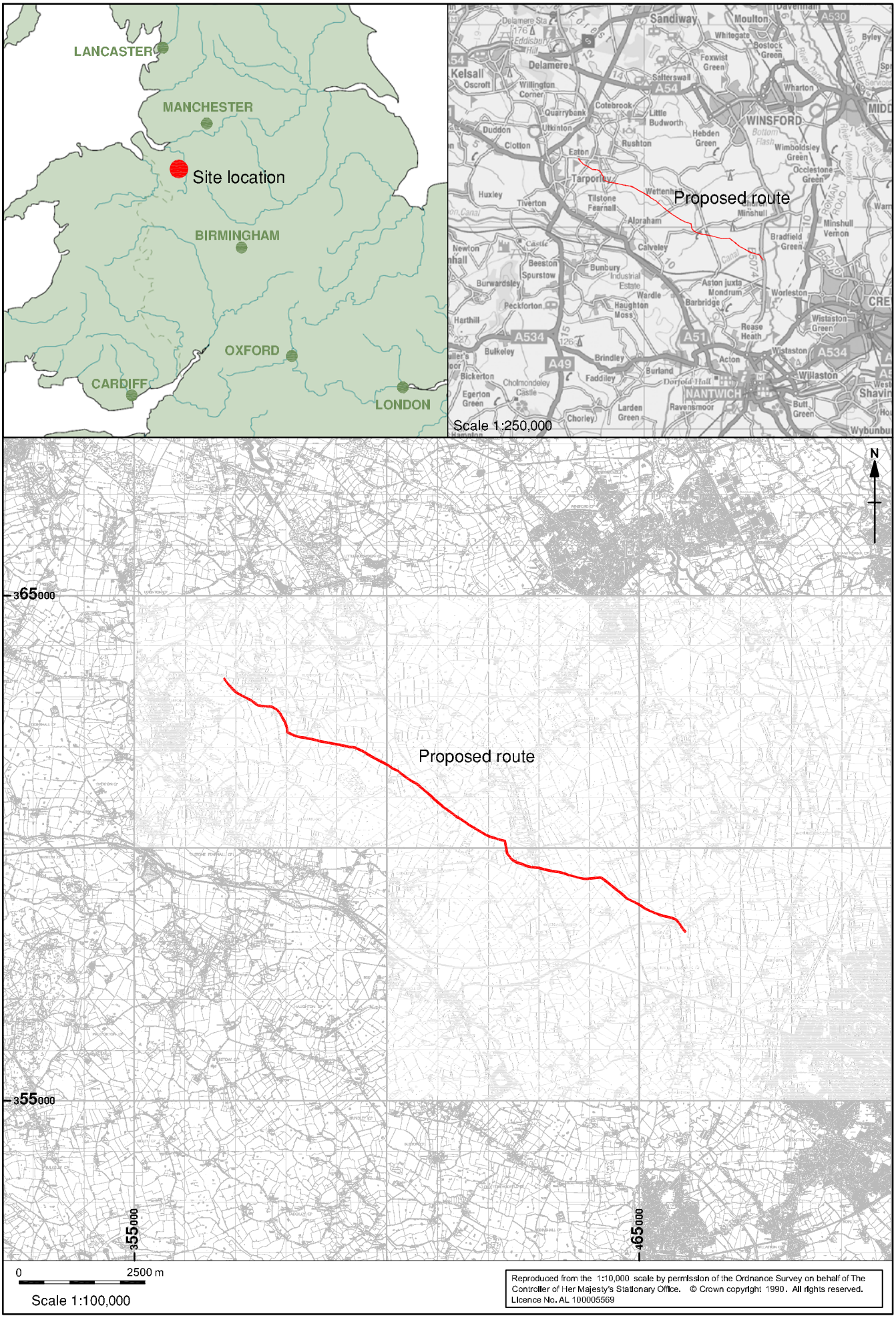

Figure 1: Site Location

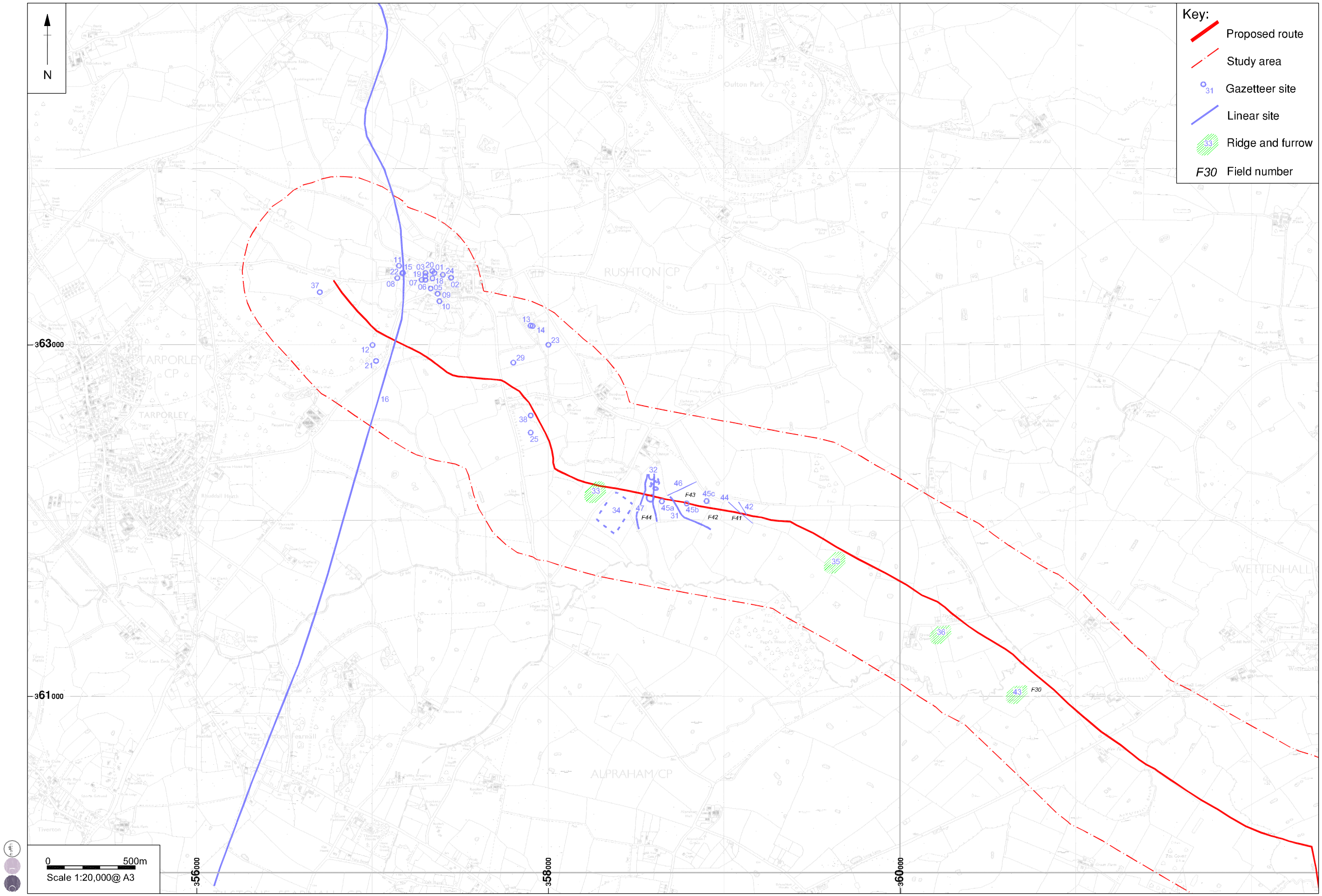

Figure 2a: Plan of gazetteer sites (west)

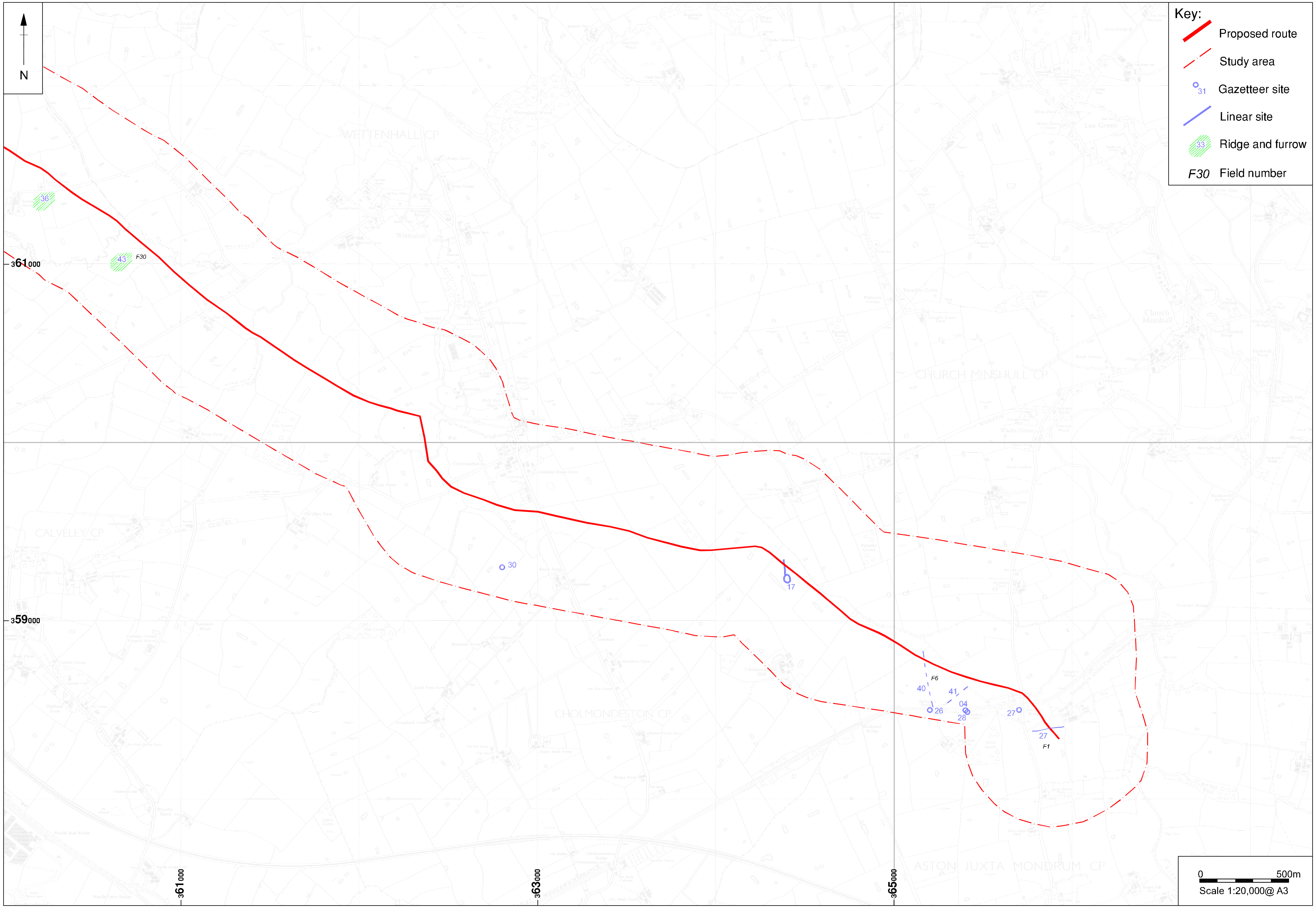

Figure 2b: Plan of gazetteer sites (east)

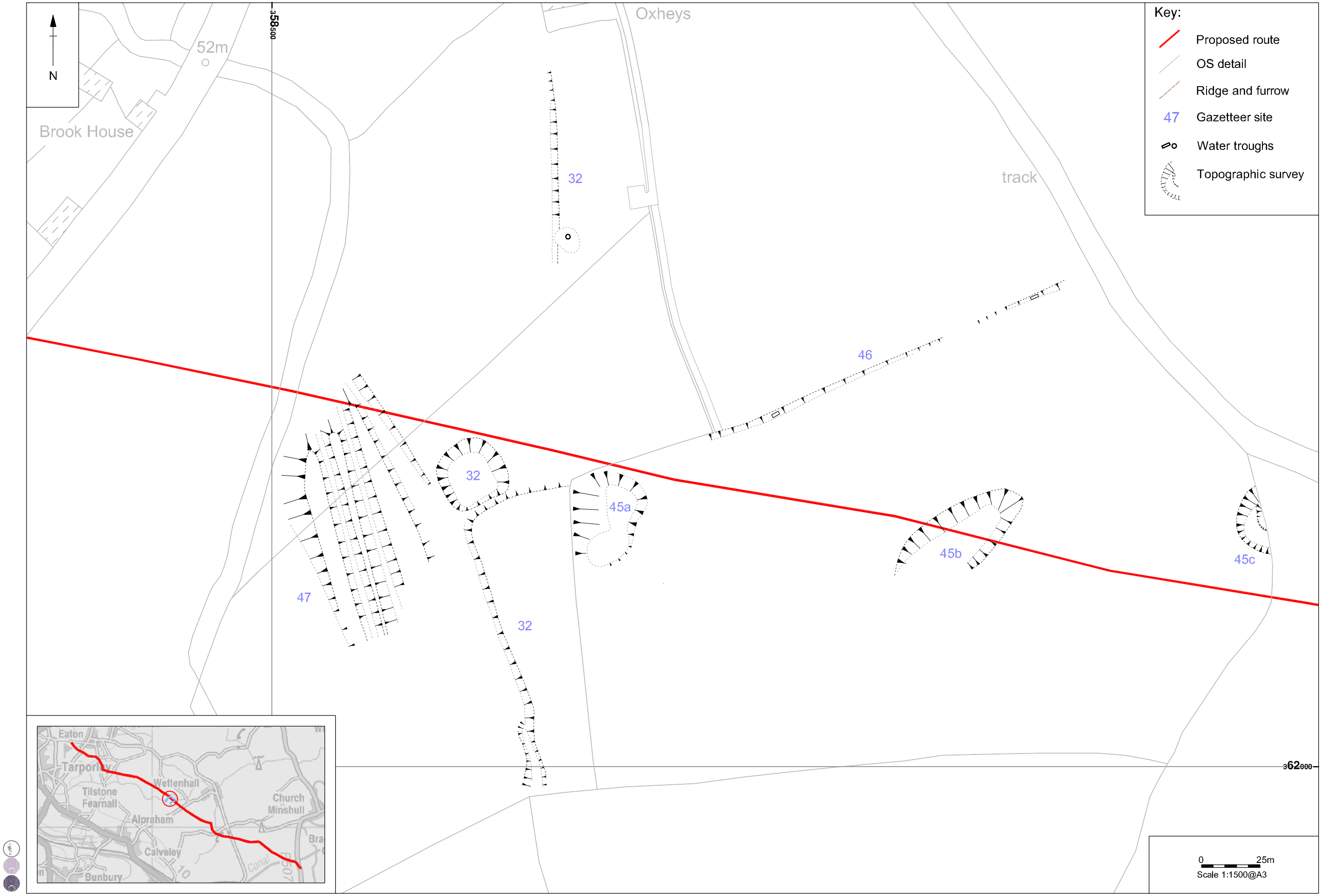

Figure 3: Topographic detail of Sites **32**, and **45** to**47**

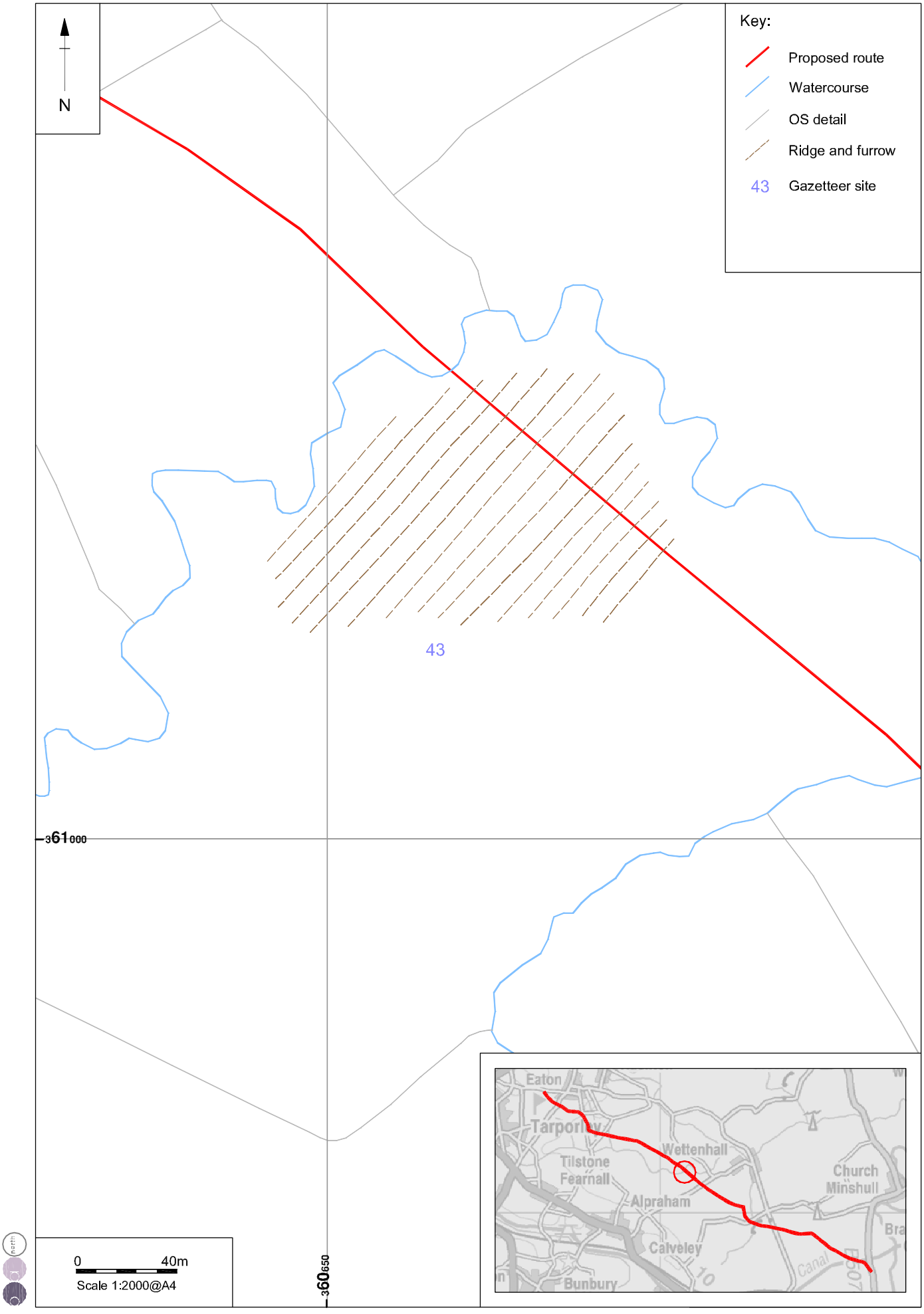

Figure 4: Topographic detail of Site **43**

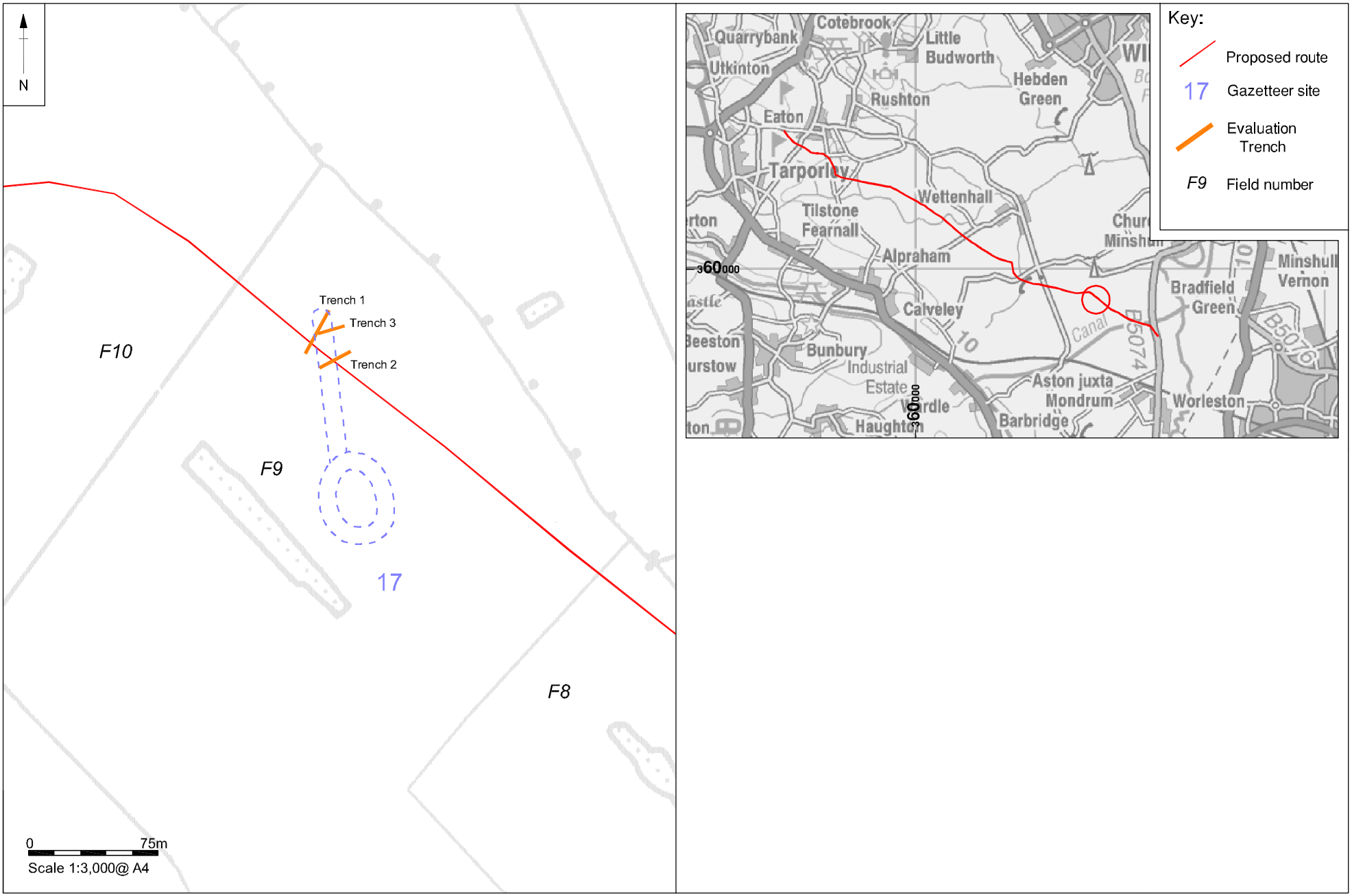

Figure 5: Site **17** evaluation trenches

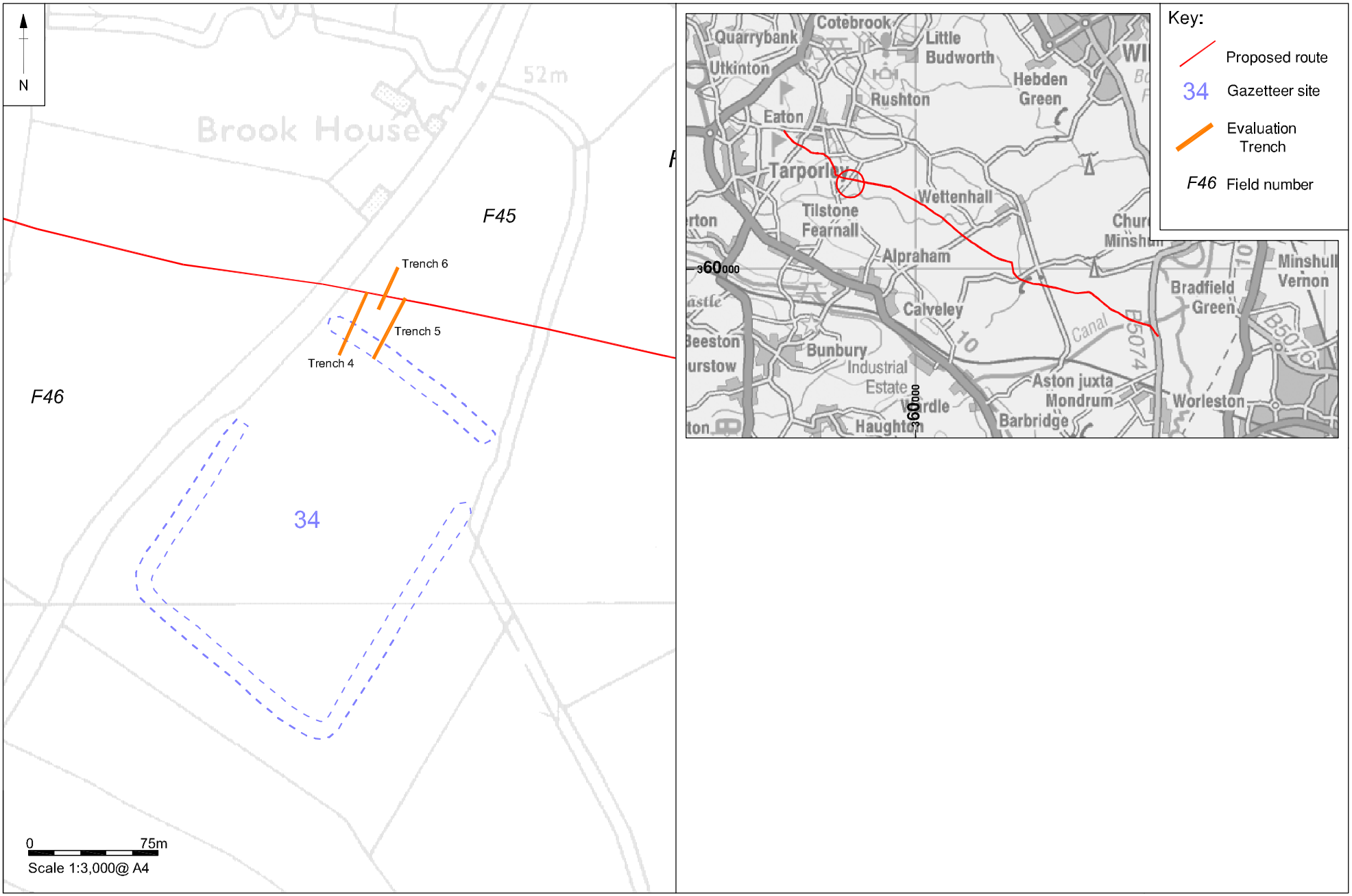

Figure 6: Site **34** evaluation trenches

Plate 1: Flooded marl pit (Site **32**), facing east

Plate 2: Ridge and furrow (Site **47**), facing south-west

Plate 3: Flooded marl pit (Site **45**), figure- of - eight shaped, facing west

Plate 4: Part of marl pit (Site **45**), facing east