Archaeological Services & Consultancy Ltd

ARCHAEOLOGICAL EVALUATION: SOUTHFIELDS TO SWAFFHAM PRIOR WATER MAIN REPLACEMENT SCHEME CAMBRIDGESHIRE AND SUFFOLK

NGR: TL 6167 6429 - TL 5925 6222

on behalf of Anglian Water Services Ltd.

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February 2007

ASC: 752/SPS/2r

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REGISTERED IFA ORGANISATION

Site Data

ASC project code:	SPS	*ASC Project No:*	752
Event No:	ECB2216 (Cambs); EXG Misc (Suffolk)		
County:	Cambridgeshire & Suffolk		
Village/Town:	Southfields to Swaffham Prior		
Civil Parish:	Swaffham Prior, Burwell, Exning		
NGR (to 8 figs):	TL 6167 6429 - TL 5925 6222		
Present use:	Arable fields		
Planning proposal:	Construction of water main replacement		
Local Planning Authority:	n/a		
Date of fieldwork:	30th January – 10th February 2006		
Client:	Anglian Water Services Limited Thorpe Wood House Thorpe Wood Peterborough PE3 6WT		
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CONTENTS

Appendices:

Figures:

Plates:

Tables:

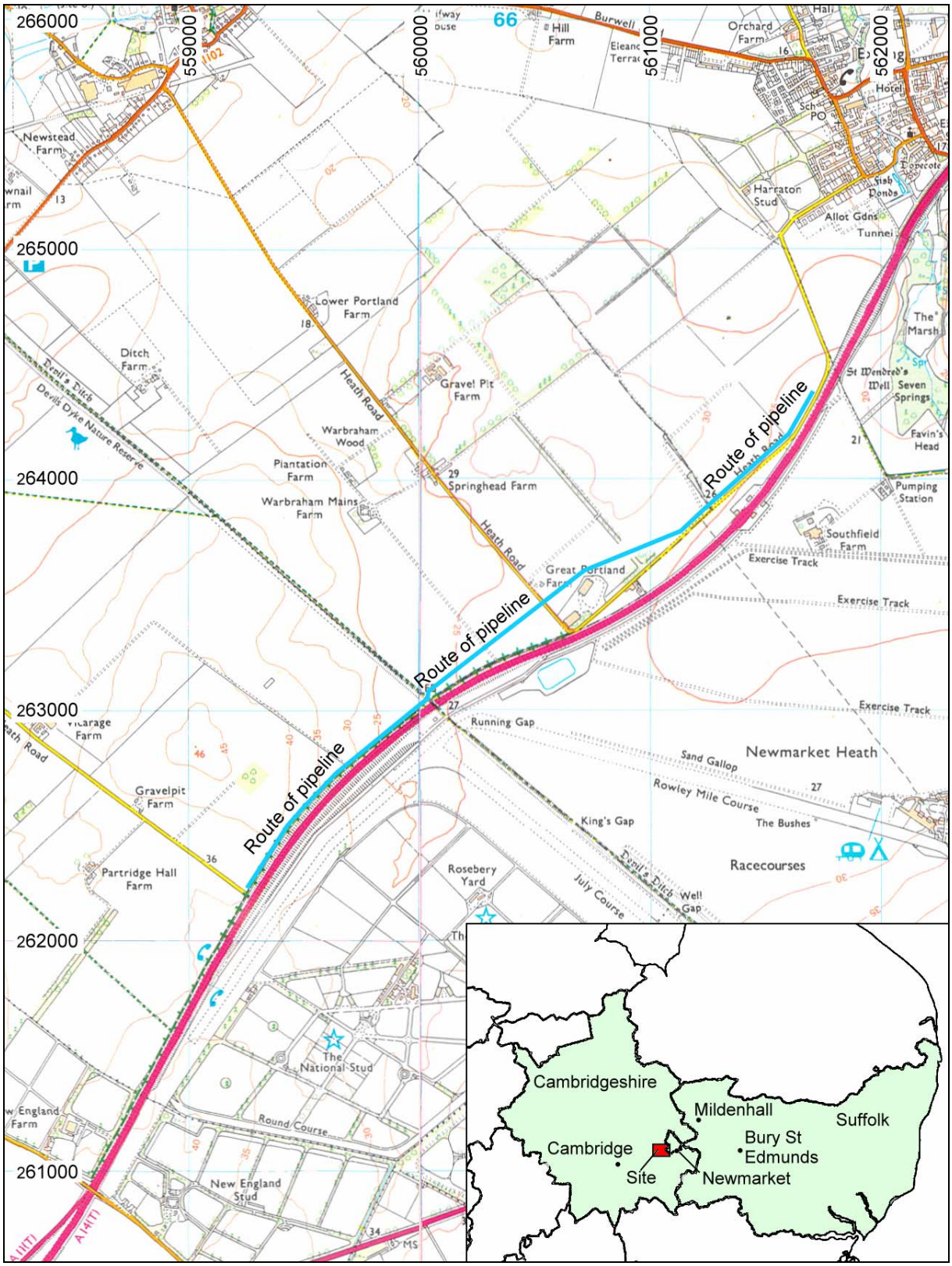


Figure 1: General location *(scale 1:25,000)*

Summary

During January and February 2006 Archaeological Services and Consultancy Ltd undertook an evaluation along the proposed route of the Southfields to Swaffham Prior water main replacement in Cambridgeshire and Suffolk. This work was carried out under the terms of Anglian Water's statutory obligations, to determine the location, extent, date, character, condition and significance of any surviving archaeological remains under threat.

Evidence for prehistoric activity was revealed at the south-western end of the pipeline in the form of a series of substantial post-pits aligned north-south and a scatter of worked flint in the topsoil. Environmental analysis supports a prehistoric date for these pits, suggesting that they were in use at a time when woodland clearance had recently taken place. The post-pits were probably peripheral to any related settlement and may have served as a boundary marker. Previous analysis of early Iron Age coins found in the vicinity suggests that the nearby Devil's Dyke follows a more ancient boundary between the tribes of the Iceni and the Catuvellauni. It is possible that the post-pits revealed in this evaluation were a component of this boundary or its predecessor.

1 Introduction

1.1 In January and February 2006 *Archaeological Services and Consultancy Ltd* (ASC) carried out an evaluation along the route of the Southfields to Swaffham Prior water main replacement (NGR TL 6167 6429 - TL 5925 6222: Fig. 1). The project was commissioned by *Anglian Water Services Ltd*, and was carried out according to a project design prepared by ASC (752/SPS/1), and a brief (Gdaniec & Tipper 2005) prepared on behalf of the local planning authorities (LPA), *Cambridgeshire County Council and Suffolk County Council*, by their archaeological advisors (AA), *Cambridgeshire Archaeology and Suffolk County Council Archaeological Service*.

1.2 *Planning Background*

This evaluation was carried out under the terms of Anglian Water's statutory obligations, in advance of the construction of the Southfields to Swaffham Prior Water Main Replacement pipeline.

1.3 *Location*

The route of the pipeline runs between NGR TL 6167 6429 and TL 5925 6222, to the east of Swaffham Prior and to the west of Newmarket, at the south-eastern Cambridgeshire/Suffolk border (Fig. 1). The route starts at the terminal end of Heath Road (Swaffham Prior), close to the A14, south of the Devil's Dyke and then runs along the northern side of the A14. When it reaches Devil's Dyke the route relocates to the track on the northern side of the A14, and then runs north-eastwards, passing to the north-west of Great Portland Farm. The pipeline then proceeds along the northern edge of Heath Road (Burwell) and ends in a 90^{o} bend, crossing the road where it runs parallel to the A14, to the north of the A14 service station.

1.4 *Description*

The route of the pipeline is 3.2km long, with an easement of 15m width. It crosses mainly arable fields and one grazed paddock to the north-east of Devil's Dyke. Access is via Heath Road (Swaffham Prior) at the south-western end and Heath Road (Burwell) at the north-eastern end. The easement was marked out in advance by Anglian Water's on-site contractors, Balfour Beatty Utilities, along the entire route of the pipeline, with the exception of the area where it crosses Heath Road (Burwell).

1.5 *Geology & Topography*

The soils of the area comprise the *Newmarket 2 Association* (Soil Survey, 1983, 343g), defined as *chalk and chalky drift, shallow well drained calcareous coarse loamy and sandy soils over chalk rubble associated with well drained deeper coarse loamy and sandy soils often in an intricate pattern. Slight risk of water erosion.* In the area of the Devil's Ditch the soils are of the *Swaffham Prior Association* (Soil Survey, 1983, 511e), which are *chalky drift and chalk, well drained calcareous coarse and fine loamy soils over chalk rubble. Some similar shallow soils. Deep non-calcareous loamy soils in places. Striped and polygonal soil patterns locally. Slight risk of water erosion.* The underlying geology consists of Upper Cretaceous Middle Chalk, overlain in patches with Head sands and gravels. The route lies at an elevation of between *c*.20m and *c*.40m OD.

2 Aims & Methods

2.1 *Aims*

As described in the brief (Section 3), the aims of the evaluation were:

- To determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the development.

- To determine the amount of truncation to buried deposits, ascertain the presence or absence of a palaeosol or 'B' horizon, ascertain the preservation of deposits within negative features and investigate site formation processes generally.

2.2 *Standards*

The work conformed to the project design, to the relevant sections of the Institute of Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGAO 2003), to current English Heritage guidelines (EH 1991), and to the relevant sections of ASC's own *Operations Manual.* Reference was made to *Research and Archaeology: A Framework for the Eastern Counties, 1, Resource Assessment* (Glazebrook 1997) and to *Research and Archaeology: A Framework for the Eastern Counties, 2, Research Agenda and Strategy* (Brown & Glazebrook 2000).

2.3 *Methods*

The work was carried out according to the brief (Section 2.5), which required:

- A programme of linear trial trenching to adequately sample the threatened available area.

- All features were investigated and recorded.

- A minimum of 5% of the development area was subject to trial trenching. Trenches were a minimum of 1.8m wide and a toothless 'ditching bucket' of at least 1.2m width was used.

2.4 *Constraints*

Trench 4 was moved slightly further northeast and Trench 5 was moved slightly further southwest in order to remain at least 5 metres distant from a gas main passing through this area.

The landowner of the fields at the southwest end of the pipeline requested that the topsoil in this area should not be contaminated with chalk. In order to prevent contamination, the subsoil could not be removed from Trenches 15-21. The topsoil was stripped as normal, but the subsoil was stripped and then pushed back into archaeologically blank areas of the trenches.

3 Archaeological & Historical Background

HER = Historic Environment Record
SAM = Scheduled Ancient Monument
SMR = Sites and Monuments Record

3.1 The pipeline route lies within an area of archaeological and historical interest, and had the potential to reveal evidence of a range of periods. The locations of known archaeological and historical sites in the area are shown in Fig. 2, and details appear in Tables 1 and 2.

3.2 ***Results***

3.2.1 *Prehistoric (before 600BC)*

Late Pleistocene flint blades and tools have been found along the fen edge at Swaffham Prior. The 'Upper Palaeolithic' pieces are *on a chocolate brown flint which is an exotic material to the area* (Reynolds 2000a, 5). Lithic scatters dating to the Mesolithic period have also been found along the fen edge and intensive collection *has recovered a regular blade industry with scrapers of various types being the most common tool type* (Reynolds 2000b, 6). Other finds from this period include microliths and perforated maceheads (*ibid.*).

A large number of mainly Neolithic flints have been recovered from Driest Fen in Swaffham Prior, which included 30 flint and greenstone polished axes (Hall 1996, 102). A scatter of probably Mesolithic flints is also recorded within 0.25km of the pipeline (HER 11538) and another scatter dating between the early Mesolithic and late Neolithic periods was located close to the route, just south of Devil's Dyke (HER 06486; Fig. 2 & Table 1). Cyril Fox records finds of Neolithic date on the racecourse to the south of Devil's Ditch (Fox 1923, Map 1).

A significant number of barrows (prehistoric burial mounds) are present in the landscape around the pipeline route (HER 00405, 06485, 06488, 07456, 07457, 07459, 07460, 07461, 07462, 07463, 07465, 09030 & 10282). The majority are Bronze Age round barrows and have largely been ploughed out. They are often visible in aerial photographs as crop marks in the form of ring ditches or known through documentary evidence.

Neolithic long barrows are present at Beacon Farm (HER 06485) and south-east of Partridge Hall Farm (HER 10282), 0.3km from the southern end of the pipeline route. The latter is a SAM (SAM 33382) and was once part of an extensive barrow cemetery covering an area *c.*66m x 30m but is now only visible as crop marks. Beacon Farm Long Mound measures *c.* 46m by 12m and has now been almost completely destroyed by ploughing (RCHM 1972, 134).

Long barrows date to the early – middle Neolithic period (3400-2400 BC) and were funerary monuments for communal burial. All long barrows are

considered to be of national importance as they are one of the few types of Neolithic structure to survive as earthworks (DCMS 2003).

The pipeline route passes close to several ring ditches (ploughed out round barrows) (HER 07456, 07459, 07460 & 07461), particularly in the area to the north of Devil's Dyke where the route diverges from the A14 road. 'The Beacons' barrow group (HER 07456) was located on the edge of Newmarket Heath, although its exact location is now uncertain. Two of the barrows were excavated in 1846, one of which contained an urned cremation. There were once a number of barrows on Newmarket Heath (HER 07462) and *several were destroyed in 1883* (RCHM 1972, 40). Two barrows, one of which was destroyed in 1827, contained cremations dating to the Bronze Age (*ibid.*). Wareham and Wright (2002, 336) state that *ten or more Bronze Age round barrows once stood on and near Burwell Heath… among them was a group of four south of Portland Farm, each c. 70 ft across including its ditch, which were still visible in the early 19th century*.

In 1902 C.P. Allix excavated a round barrow at Middle Hill, 1.7km west of the pipeline route, which contained a female burial and fragments of Bronze Age pottery (Wareham & Wright 2002, 274). Cyril Fox also describes archaeological finds at Middle Hill, in the form of a pit containing charcoal, pot-boilers, flint scrapers, hammerstones, and the jaws and teeth of ox, sheep, pig and red deer, along with a female skeleton and part of a child's skeleton (Fox 1923, 47).

The Suffolk SMR has only three specifically prehistoric entries; a round barrow named "Nine Score Hill" (EXG 066: SF16931), which is now in Cambridgeshire, a Bronze Age chisel ended tracer or awl, found close to Southfield Farm (EXG 029; SF 12086) and a possible settlement site in the south-east of the study area (EXG 075: SF 17715).

Six undated sites of probable prehistoric date are shown on the 1st edition Ordnance Survey map, which was published in 1890 (Fig. 4). These comprise a round barrow (EXG 067: SF 16932), two further round barrows which are visible on aerial photographs (EXG 068: SF 16933 & EXG. 069: SF 16934), and ring ditches (EXG 071: SF 16936 & EXG 070: 16935), which may in fact be EXG 068 and 069.

A ring ditch is depicted in an aerial photograph (ABN 73) centred on TL 56190 26440 to the west of St. Wendreda's Well at the eastern boundary of the present study area. In addition, three photographs taken as part of the Fenland Survey in 1982 cover the fields affected by the pipeline works (RC8EA077, 078 & 079). These show that the fields to either side of the Devil's Dyke are those containing the greatest density of possible features, although it is not clear to what extent these may be considered archaeological.

3.2.2 *Iron Age* *(600BC-AD43)*

During the Iron Age the area probably lay within the territory of the *Iceni* (OS 1979). There is only limited evidence for activity of this period in the study area but Iron Age pottery has been found on the chalk slopes of Burwell and Swaffham Prior (Hall 1996, 102) and a silver coin of the *Iceni* (EXG 025; SF 735) was found by a metal detectorist near Southfield Farm.

3.2.3 *Roman* *(AD 43-c.450)*

During the Roman period settlement in the area was centred on the small towns of *Duroliponte* (Cambridge) and *Camboritum* (Lackford). The study area was away from these centres of settlement but a villa was situated north of the pipeline route at Exning (OS 1979). A second example was partly excavated in Swaffham Prior in 1892 (Hall 1996, 102). Finds of pottery, roof tiles, painted wall plaster and other occupation debris underneath Burwell Castle, suggest a villa in the area (Lucas 2000, 19; Wareham & Wright 2002, 336). A large circular lead tank *possibly used for baptism and other liturgical functions* has also been found at Burwell (Frend 2000, 23).

A square mausoleum containing burials and a circular temple within a double rectangular ambulatory are known at Swaffham Prior (Taylor 2000a, 17; Taylor 2000b, 18). Southfield Farm also produced a bronze coin of the 4th century and a very worn 1st-2nd century coin (EXG 015: SF 736).

3.2.4 *Saxon* *(c.450-1066)*

Burwell was first mentioned in written records in 1060 and means *spring by the burg* (Hall 1996, 107). Records from the 10th century suggest that an Anglo-Saxon fort may have preceded the 12th century Burwell Castle (Wareham & Wright 2002, 334).

The Holy Well of St. Wendreda lies at the eastern boundary of the study area (EXG 015: SF 6413). It is in an area known as the Seven Springs and is named after *St. Wendred*, who was allegedly born in Exning in the 630s and went on to found a nunnery in March, Cambridgeshire. The well was initially dedicated to St. Mildred, a cousin of St. Etheldreda who founded the monastic house in Ely in 673, and is known on the 1st edition Ordnance Survey Map as St. Mindred's Well (Fig. 4).

A possible Anglo-Saxon hundred or wapentake meeting place is located 0.7km north of the pipeline route (HER 11835). Evidence for settlement and burial practices in the area is limited but a cemetery containing at least 130 burials was excavated to the north of Burwell High Town in 1924-9 (Hall 1996, 107; Wareham & Wright 2002, 336). A second cemetery was discovered to the south-east of Swaffham Prior in 1991 (Wareham & Wright 2002, 274).

A bronze wrist clasp approximately 3.5cm long was also found by a metal detectorist in the Southfield Farm vicinity (EXG 025: SF 737).

The Devil's Dyke or Devil's Ditch (HER 07801; SAM 5; EXG 072: SF 16937; Malim *et al*. 1996, 106) is also believed to be of Saxon date. The modern name for it was first used in the late 16th century, previously being known as the Great or Mickle Ditch, and also the King's Ditch (Wareham & Wright 2002, 275). The dyke is 7 ½ miles long and runs across the chalk ridge of the Icknield Way from Reach to Woodditton, forming the boundary between the dioceses of Norwich and Ely.

The dyke now forms part of the present county boundary between Cambridgeshire and Suffolk. It comprises a single phase bank *c*. 65m wide, standing up to 6m high and a 6m deep ditch . It was probably built *c*. AD 400 – 600 to *defend the early Saxon kingdom of East Anglia from incursions from the south, and … acted as part of the frontier between the East Angles and their neighbours to the west and south* (Oosthuizen 1996, 23). Numismatic evidence suggests that the dyke follows the more ancient boundary between the tribes of the *Iceni* and the *Catuvellauni* (HER 07801). The location, within a prehistoric burial area, suggests a significant secondary function. It later took on the role of boundary marker for the Liberty of St. Edmund and the county of Suffolk (www.wuffings.co.uk/WuffSites/Dykes/EADykes.htm).

It has been excavated by Sir Cyril Fox in 1923-4, Hope-Taylor in 1973 and the Cambridgeshire Field Unit in 1991 (Malim *et al*., 1996, 106). All the sections excavated indicated that the dyke is a single phase monument with a bank raised above a ditch with sloping sides. The bank reaches up to 6m above ground level and the ditch extends to 4m below the present ground level (www.devilsdykeproject.org.uk).

In 1973 archaeological investigations were undertaken by the University of Cambridge's Archaeology Department prior to the destruction of part of the dyke by road building (shown in Fig. 2). The burial of a young male (HER MCB 16183) was discovered within the ditch fills, below a layer containing pottery dating to *c*. AD 1000-1200 (Hope-Taylor 1977, 124). However, the construction of Devil's Dyke pre-dates this. Roman pottery shards have been recovered from below the ramparts of the dyke and the 1973 excavations recovered a Roman coin dating to AD 350, which *was found sealed in the Old Land Surface* beneath the bank (Hope-Taylor 1977, 124).

3.2.5 *Medieval (1066-1500)*

The place name *Swaffham* probably derives its name from the tribal name *Swaefe* (*ibid.*) and the modern name of Swaffham Prior has been in use since the early 13th century (Wareham & Wright 2002, 273). The alternative name of Great Swaffham was recorded from the mid 13th century and was used locally until 1900 (*ibid*). The Priory part of the name pertains to the fact that there was once a Benedictine Priory in Swaffham.

In Swaffham Prior the churches of St Cyriac and St Julietta and the Church of St Mary share the same churchyard. Oosthuizen states that this is *probably the result of a growing population in the eleventh century… where documentary evidence exists (which it does not at Swaffham Prior), it suggests that by about*

the time of the Norman Conquest churches were unable to accommodate their growing congregations. To solve the problem, public-spirited religious freemen combined together to donate the money, and sometimes the land, needed to extend the churchyard, and to build another church to take the expanding church-going population. (Oosthuizen 1996, 37).

The Domesday survey (1086) states that in Swaffham Prior, or *Suaf(h)am*, in the 'Staine' Hundred, the Abbot of Ely held 3 hides. *There is land for 5 ploughs. In demesne [is] 1 hide and 3 virgates, and there are 2 ploughs: and 5 villans and 2 bordars with 3 ploughs. There are 2 slaves, and 6s. from a fishing-net toll, [and] 6d. from the fen. It is and always was worth 100s. This land pertains and always pertained to the church* (Williams & Martin 2003, 523).

Also in Swaffham Prior, *Aubrey* [de Vere] *holds half a hide and 20 acres from the king. There is land for 1 plough, and there is [1 plough], with 1 villain, and 1 mill [rendering] 7s. It is and always was worth 10s. 1 sokeman of King Edward held this land. He could not depart without leave and provided cartage-due for the king's sheriff. Aubrey's predecessor did not have this land, as the men of the hundred bear witness, but Aubrey himself usurped it in defiance of the king.* (Williams & Martin 2003, 542).

Burwell, or *Burewelle, Burwella* or *Burwelle,* is also mentioned in the Domesday survey. *The Abbot of Ramsey holds Burwell. There are 10 hides and 1 virgate. There is land for 16 ploughs. In demesne [are] 3 hides and 40 acres, and there are 4 ploughs. There are 42½ villans with 12 ploughs. There are 8 slaves, meadow for 10 ploughs, pasture for the livestock of the vill, and 2 mills rendering 6s8d. In all it is and was worth £16; TRE £20. This manor pertains and always pertained to the demesne of the Church of St Benedict.* (Williams & Martin 2003, 527).

In Burwell the nuns of the Church of Chatteris hold half a hide. [There is] land for half a plough, and there is [half a plough, and] meadow for 2 oxen. It is and was always worth 10s. This land belonged and belongs to the demesne of the church. (Williams & Martin 2003, 528).

The town of Exning is also mentioned in the Domesday survey as being within 'Staploe' Hundred. *In Exning King William has 13½ hides. There is land for 34 ploughs. In demesne are 7 ploughs, and there can be 3 more. There are 35 villans and 34 bordars with 24 ploughs. There are 7 slaves, and 3 mills [rendering] 20s and 7,000 eels, [and] meadow for 4 ploughs. In all it is worth £53; when Godric received it, £12; TRE £56. Eadgifu the Fair held this manor, and in this manor were 7 sokemen, men of the same Eadgifu, and they could depart without her leave but she herself had their soke, and each of them provided cartage-due or 8d in the king's service or [gave] a pledge.* (Williams & Martin 2003, 521).

In 1071 *Hereward's men from the Isle of Ely burnt the village of Burwell* (Wareham & Wright 2002, 336). Burwell Castle was built in 1144 by King Stephen to defend against the rebellion of Geoffrey de Mandeville, earl of

Essex. Geoffrey was mortally wounded here during a reconnaissance visit and the castle was never finished (*Ibid.* 341).

The pipeline route passes through an area that has probably always comprised open land. The remains of ancient headlands have been recorded *c.*0.9km west of the pipeline, near Partridge Hall Farm (HER 06728; Fig. 2 & Table 1). They comprise curved earth ridges, probably the remnants of boundaries between medieval furlongs. A further furlong boundary is visible 0.3km to the west of the route (HER 10282A).

A low-lying area known as *The Marshes* is situated beyond the east end of the pipeline route. Aerial photography shows a series of rectilinear crop marks (EXG 049: SF 14582) that are considered to be associated with drainage systems. Although undated, these are likely to be of the medieval or post-medieval period.

A flat, bronze annular brooch, approximately 2.9cm in diameter was recovered by a metal detectorist near Southfield Farm (EXG 025: SF 1893). The pin was missing, but there appeared to be very worn lettering and possible scratched lines on the brooch itself.

3.2.6 *Post-Medieval (1500-1900)*

The route of the pipeline passes to the northwest of Newmarket Heath. The heath has been associated with the sport of horseracing since at least the early seventeenth century (Oosthuizen 1996, 93) and details of the course are shown, for example, on the first edition Ordnance Survey map (Fig. 4).

Newmarket Heath was part of a wider area of common heathland, which survived until the early 19th century (Wareham & Wright 2002, 274; 334). The early history of the area is not known in detail but Burwell Heath was divided into 5 sheepwalks, perhaps as early as 1580 and certainly by 1700 (Wareham & Wright 2002, 349).

The earliest readily available map to show the area in detail is Chapman's map of Newmarket Heath, compiled in 1768 (Fig. 3). This illustrates The Devil's Dyke and shows the landscape as largely open. The route of the pipeline passes the dyke through a gap, labelled *Running Gap* and follows the north side of an area of heathland, labelled *The Flat*. The route is intersected by, and partially follows, a minor road now known as *Heath Road*, which is not fully shown on the 1768 map.

Swaffham Prior was enclosed in 1807 and Burwell in 1815. The enclosure map clearly shows that the present layout of the landscape was largely established as a result of the enclosure and the map shows a regular pattern of rectangular plots. Heath Road had been established and the line of the predecessor to the modern A14 trunk road is shown. Many of the modern field boundaries had also been established.

Farmhouses were built on the former open fields and a pair of dwellings for labourers and farm buildings (HER 06676) were built at Partridge Hall Farm between 1810 and 1836. The house and farm buildings at Bunbury Farm, 0.7km south of the route, were also erected following the enclosure (HER 07421).

The layout of the area in the mid 19th century is shown on the Burwell Tithe Map, compiled in 1842. The field layout and road pattern is illustrated and had changed little since the compilation of the enclosure map. A group of buildings is shown on the north side of Heath Lane, which is likely to be Great Portland Farm, but whether these buildings are the present farm buildings is uncertain.

The first large scale Ordnance Survey map was compiled in 1886-7 and essentially shows the modern layout of the area (Fig. 4). The present farms and field layout to the north of the pipeline route are shown on the map and the area to the south is dominated by Newmarket Racecourse. The present A14 Newmarket Bypass was constructed during the 20th century and follows the approximate course of the northeast to southwest aligned road, shown on the Ordnance Survey map.

A single post-medieval site is listed in the Suffolk SMR. This is the Southfield Pumping Station, which has two engine houses; one containing a 1912 Hathorn-Davey marine type triple expansion steam engine and the other electric pumping equipment and a diesel standby.

3.2.7 *Modern (1900-present)*

Aerial photographs show traces of at least fourteen square, rectangular and sub-rectangular enclosures 0.6km to the south of the pipeline route (HER 09062). These may be modern, possibly associated with the racecourse.

There are no modern sites or monuments listed in the Suffolk SMR. However, a rectilinear feature of possible WWII date known from an aerial photograph is yet to be entered. It is located at the northwestern end of Field 2.

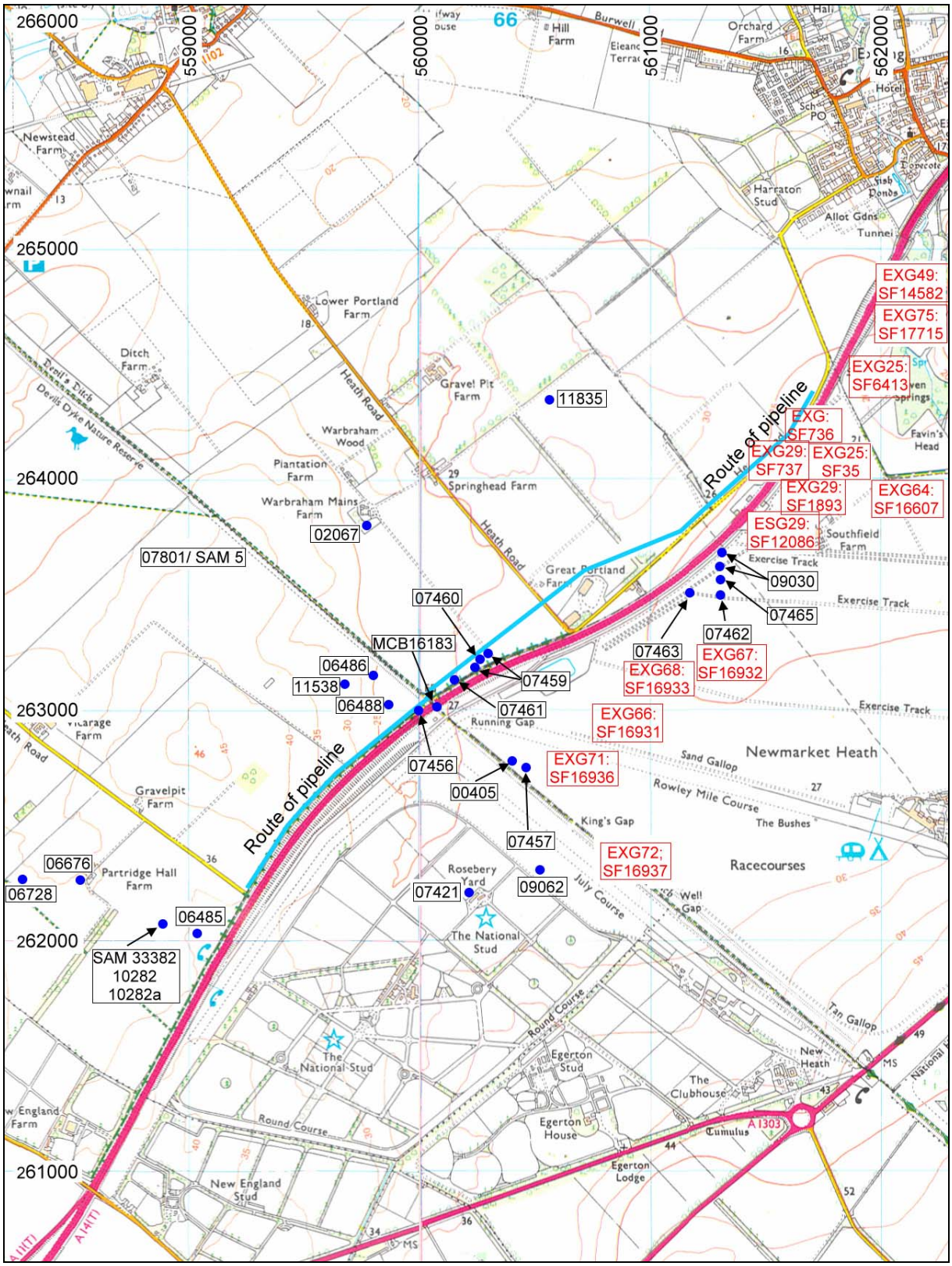


Figure 2: Archaeological sites in the Cambridgeshire HER (black text) and Suffolk SMR (red text). Scale 1:25,000

Sites listed below are those within the Cambridgeshire part of the study area, *i.e.* within a 500m radius of the pipeline:

HER No	NGR	Period	Type	Description
00405	TL 604 628	-	Monument	Ring ditch (crop mark)
02067	TL 598 638	-	Building	Warbraham Farm framed barn
06485	TL 5903 6202	Neolithic	Monument	Beacon Farm Long Mound (barrow)
06486	TL 598 631	Early Mesolithic – Late Neolithic	Monument	Dark area with scatter of worked flints
06488	TL 5990 6303	Bronze Age	Monument	Ploughed out ring ditch, central pit shows on aerial photographs
06676	TL 585 623	Post Medieval	Building	Partridge Hall Farm, pair of dwellings for labourers and farm buildings established between enclosure *c.*1810-1836
06728	TL 5829 6229	Medieval	Monument	Ridge and furrow. Remains of ancient headlands
07421	TL 602 622	Post Medieval	Building	Bunbury Farm, house and farm buildings erected between enclosure *c.*1810-1836
07456	TL 60 63	Bronze Age	Monument	The Beacons barrows
07457	TL 6047 6278	Bronze Age	Monument	Ring ditch (crop mark)
07459	TL 602 631	-	Monument	Two ring ditches (crop marks)
07460	TL 6026 6324	-	Monument	Ring ditches (crop marks)
07461	TL 6020 6316	-	Monument	Ring ditches (crop marks)
07462	TL 612 635	-	Monument	Site of 4 barrows (crop marks, documentary evidence, finds)
07463	TL 611 635	-	Monument	Site of barrows
07465	TL 6122 6358	-	Monument	Barrow east of Great Portland Farm (crop marks, documentary evidence)
07801	TL 6101 6221	Saxon	Monument	Devil's Ditch/Dyke, SAM 5
09030	TL 612 636	-	Monument	Two ring ditches (crop marks)
09062	TL 603 625	-	Monument	Traces of at least 14 square, rectangular and sub-rectangular enclosures, could be modern (crop marks)
10282	TL 589 621	Neolithic	Monument	Long barrow, SM33382 (crop mark)
10282A	TL 589 621	Medieval	Monument	Furlong boundary (crop mark)
11538	TL 5966 6308	Mesolithic	Find spot	Scatter of flints, probably Mesolithic
11835	TL 606 644	Saxon	Place	Possible AS hundred or wapentake meeting place
MCB16183	TL 60056 63020	11th – 12th century	Monument	Inhumation

Table 1: Archaeological sites in the Cambridgeshire Historic Environment Record.

Sites listed below are those within the Suffolk part of the study area, *i.e.* within a 500m radius of the pipeline:

SMR No.	Grid Ref.	Period	Type	Description
EXG 025; SF 6413	TL 6208 6451	Medieval	Monument	Holy well named initially after St. Mildred (St. Etheldreda's cousin) and by 1925 after St. Wendred, born in Exning in the 630s. Named St. Mindred's Well on 1st edition OS map. Well is in an area known as the Seven Springs.
EXG 029; SF 736	TL 6168 6413	Roman	Find	Bronze 4th century coin and a worn 1st-2nd century coin found by metal detector
EXG 025: SF 735	TL 6180 6418	Iron Age	Find	Iceni silver coin, Pattern-Horse type (Mack 423) found by metal detector at TL 6180 6418.
EXG 029: SF 1893	TL 6180 6400	Medieval	Find	Bronze annular brooch, flat, pin missing, dia. 2.9cm, scratched lines-? Very worn lettering. Found by metal detector in the same areas as Iron Age, Roman and Saxon metalwork.
EXG 029: SF 737	TL 6174 6401	Saxon	Find	Bronze wrist clasp, 3.5cm long, metal detector find.
EXG 029: SF 12086	TL 6140 6377	Bronze Age	Find	?Bronze Age chisel ended tracer/awl, 5.2cm long, found by metal detector.
EXG 049: SF 14582	TL 622 647	Undated	Monument	Mass of rectilinear crop marks in low lying pasture beside a stream. Probably drainage channels. Further possible enclosure crop mark to SE.
EXG 064: SF 16607	TL 6200 6390	Post-med	Monument	Pumping station. Contains two engine houses: one containing a 1912 Hathorn-Davey marine type triple expansion steam engine and the other electric pumping equipment and a diesel standby.
EXG 066: SF 16931	TL 6090 6300	Bronze Age	Monument	Site of round barrow named on OS 1st ed map as "Nine Score Hill". Destroyed in 1885, it contained 2 primary inhumations (or 1 primary & 1 secondary), flint arrowheads & possibly beakers. In Cambs. since 1995. Ring ditch on APs approx. 65m in diameter.
EXG 067: SF 16932	TL 6129 6326	Undated	Monument	Site of round barrow shown on 1st ed OS map.
EXG 068: SF 16933	TL 6120 6352	Undated	Monument	Site of round barrow depicted on 1st ed OS map. Possibly visible on APs as ploughed out ring ditch, 75m in diameter.
EXG 069: SF 16934	TL 6127 6356	Undated	Monument	Site of round barrow depicted on 1st ed OS map. Visible on APs as ploughed out ring ditch, 70m in diameter.
EXG 070: SF 16935	TL 6120 6360	Undated	Monument	Two ring ditches. Alternative location for barrow sites EXG 068 and 069.
EXG 071: SF 16936	TL 6047 6275	Undated	Monument	Ring ditch visible on APs with a central pit.
EXG 072: SF 16937	TL 6006 6305	Undated	Monument	Devil's Dyke linear defensive ditch.
EXG 075: SF 17715	TL 6200 6405	Prehistoric	Monument	Monitoring and part excavation of natural hollow in chalk subsoil containing burnt and struck flints, animal bones & flint gritted pottery. There was also an angular grouping of post holes which also contained charcoal.

Table 2: Archaeological sites in the Suffolk Sites and Monuments Record.

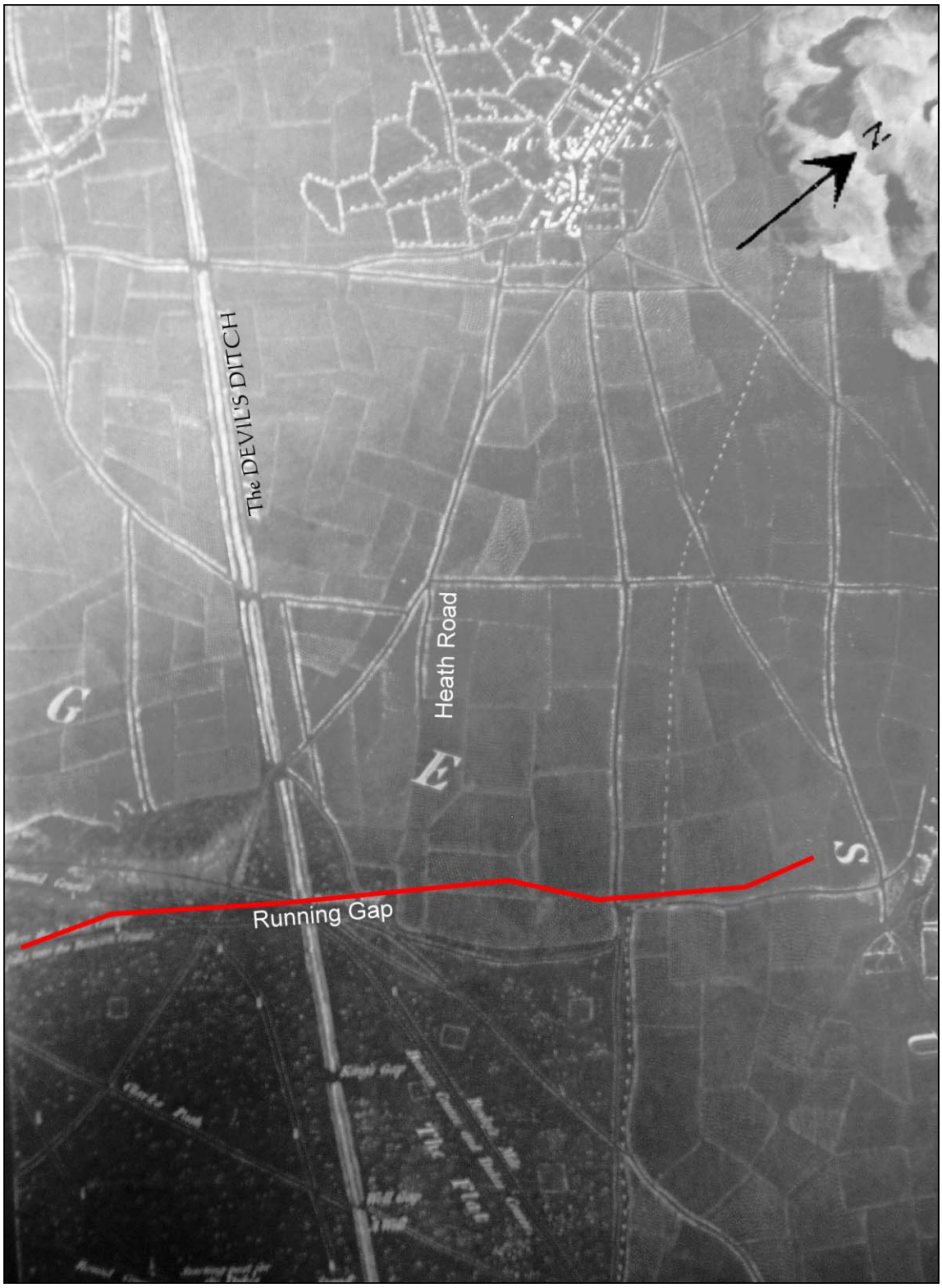


Figure 3: Extract from T. Chapman's map of Newmarket Heath, 1768 (scale *c*.1:25,000; approximate route of pipeline shown in red).

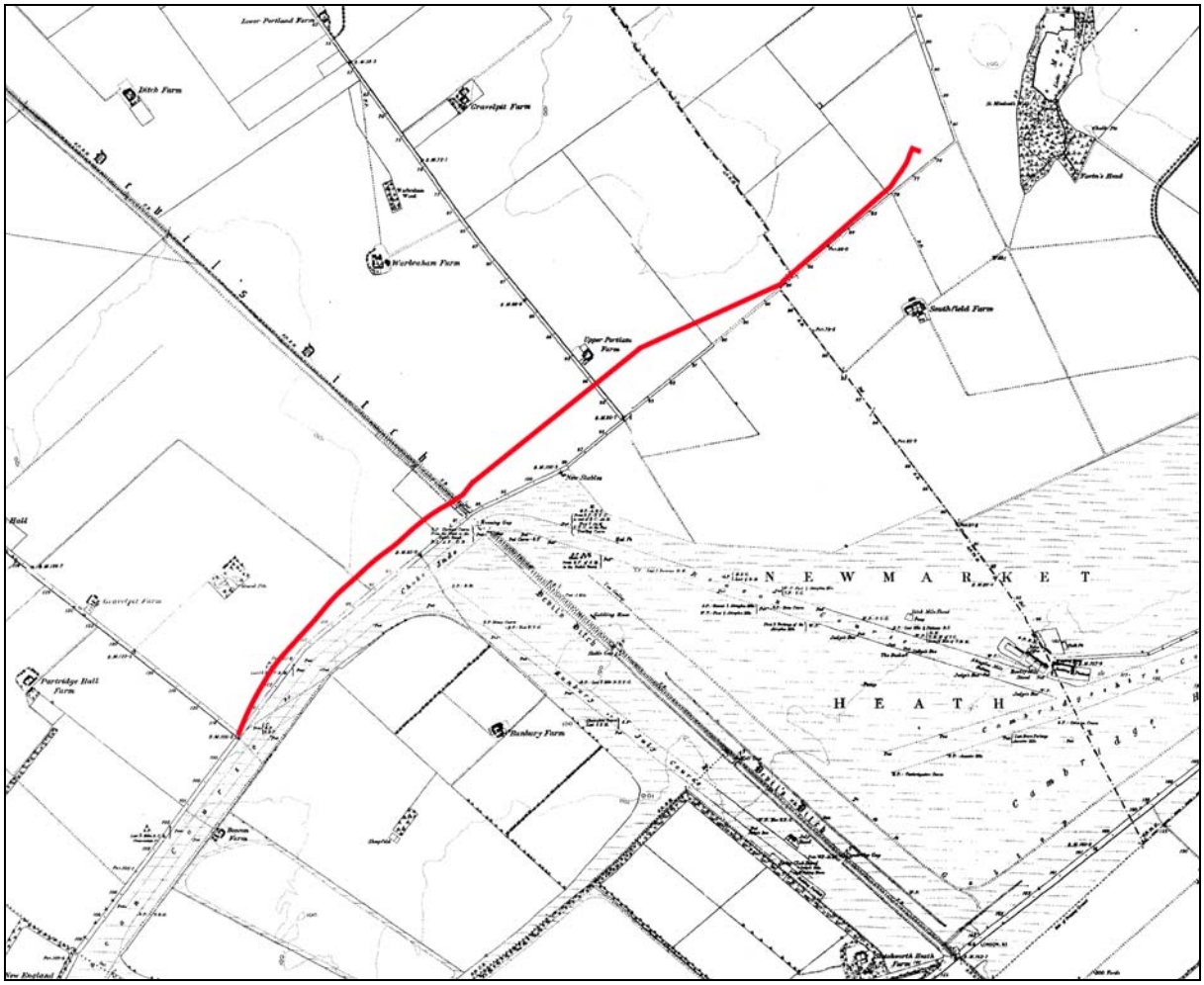


Figure 4: Ordnance Survey 1st edition 25 " map (1890) with the route of the pipeline in red. *(not to scale)*

4 Results

4.1 Twenty-one trenches were excavated (Fig. 5) using a mechanical excavator fitted with a toothless ditching bucket. After excavation each trench was cleaned sufficiently to determine if any archaeological remains were present. Basic trench information was recorded and a photographic record made of the trenches. The trenches were located using a Garmin GPSmap 60CS unit.

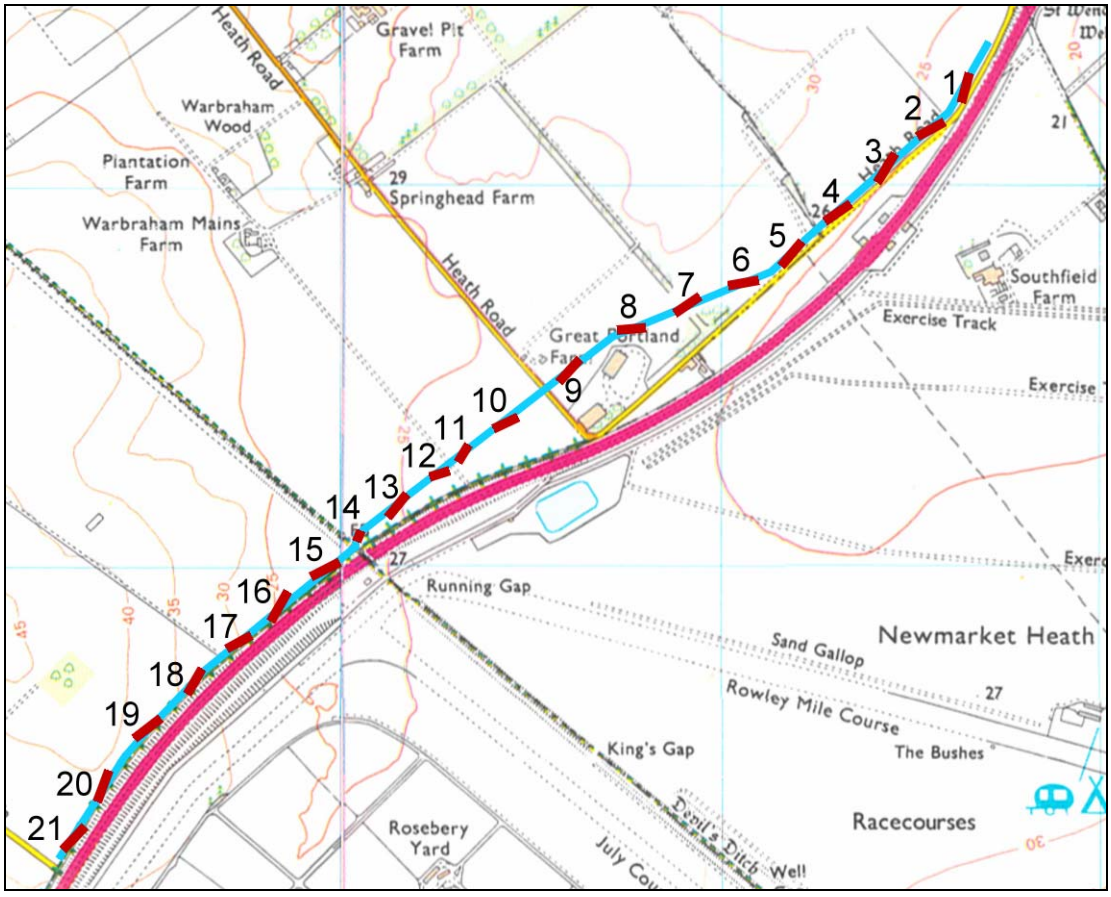


Figure 5: Trench location plan (trench widths exaggerated) *(scale 1:20,000).*

4.2 Natural strata were reached in each trench, which consisted of chalk with occasional lenses of sand and occasional pockets of flint nodules. Occasional E-W oriented plough marks were seen cutting into the natural strata (Plate 1).

4.3 In Trenches 1 and 2 the topsoil was a chalky sandy loam, below which sandy colluvial subsoil (102) & (202) was identified, with a maximum thickness of 200mm. This subsoil was not present in Trench 3, where the topsoil (301) was a chalky loam overlying a paler loamy chalk interface between the topsoil and natural chalk (302).

4.4 Similar stratigraphy was seen across Trenches 5 to 9, although in Trench 7 and the eastern half of Trench 8 the sandy colluvial deposit, (701) & (804), re-appeared between the topsoil and subsoil, with a maximum thickness of 80mm.

Plate 1: North-facing shot of plough marks (arrowed) in Trench 19. (1m scale).

4.5 In Trench 4 a modern levelling layer (401) with a maximum thickness of 200mm was identified below the chalky loam topsoil (400). This contained fragments of brick and tarmac and probably dates to when the nearby service station was constructed. Below this layer a chalky loam subsoil (402) was present, which was probably the original topsoil before the levelling layer was added.

4.6 The chalky loam topsoil in Trenches 10 to 14 directly overlay the natural chalk and reached a maximum thickness of 350mm. Trench 10 also contained a lens of palaeosol (buried soil), (1006), consisting of a firm, dark grey-brown silty loam, surviving within an undulation of the natural chalk (Plate 2 & Fig. 6, Plan 2). This was very shallow, reaching a maximum thickness of only 100mm.

Plate 2: NNW-facing shot of palaeosol (1006) in Trench 10. (1m scale).

4.7 In the area southwest of Devil's Dyke, Trenches 15 to 18, the topsoil was a sandy loam overlying layers of colluvial sands of up to 400mm thickness, which appeared to be oriented NE-SW. No archaeological features were seen to cut into or underlie these layers. The colluvial layers are described further in the Trench Summary Tables in Appendix 1.

4.8 The topsoil in Trenches 19 and 20 was also a sandy loam, with a depth of up to 350mm. This was separated from the natural chalk by a sandy chalk interface (2002). In the southern 50m of Trench 20 the topsoil (2001) became gradually less sandy and a second interfacing layer of loamy chalk (2004) developed between (2001) and (2002). In Trench 21 the topsoil (2101) was a sandy chalky loam of up to 260mm depth, with an interface of loamy chalk (2102) between the topsoil and natural chalk (2103).

4.9 Several additional areas were stripped of topsoil alongside trenches containing archaeological features, or possible archaeological features. In Trench 1 three postholes were revealed 30.7m from the southern end of the trench, oriented NE-SW. These were square in plan with dimensions of *c.* 250mm width x 250mm length x 80mm depth and were filled by a dark grey brown sandy silt. An additional area was stripped to the NE, up to the edge of the field, following the alignment of these postholes. Seven postholes were revealed (Plate 3), between 1.45m and 1.63m apart, all of similar dimensions. The northernmost posthole still contained wood in-situ (Plate 4) and it is likely that these features represent a relatively modern fence line.

Plate 3: NE-facing shot of postholes revealed in Trench 1.

Plate 4: Trench 1, northernmost posthole in plan. (1m scale with 20cm divisions).

4.10 Numerous possible archaeological features were investigated, although on excavation the majority were determined to be natural lenses of sand, solution holes or root boles. Additional areas were stripped of topsoil alongside Trenches 10 to 13 to clarify the nature of some of these possible features, most of which were revealed to be tree boles with the characteristic double kidney shape in plan. None of these features yielded any archaeological artefacts or evidence of human activity.

4.11 In Trench 10 one archaeological feature was identified, a shallow pit towards the eastern end, [1003] (Plate 5; Fig. 6, plan 2; Fig. 8, section 2), containing a sheep/goat mandible. The dimensions were *c.* 1.0m x 0.5m in plan and 0.08m depth. The fill was a light brown-grey sandy chalky silt. This feature was deemed to be relatively modern.

Plate 5: ENE-facing shot of pit [1003]. (1m scale with 20cm divisions).

Plate 6: SE-facing shot of post-pit [2104]. (2x 1m scales with 20cm divisions).

4.12 Trench 21 also partially revealed a single archaeological feature, pit [2104] (Plate 6; Fig. 6, plan 1; Fig. 8, section 1). This was a steep-sided pit of 680mm diameter, containing two fills, a primary (lower) fill (2106) of compact chalky silt with frequent large chalk inclusions and a secondary (upper) fill (2105) of moderately compact chalky sandy silt with occasional small to medium chalk inclusions and occasional charcoal flecks. The pit was excavated to a depth of 840mm, at which point excavation was stopped for safety reasons. This feature is likely to be a post-pit, which would have originally supported a substantial wooden post, in which the primary fill probably represents a packing fill and the secondary fill represents a post pipe (soil discolouration where the wooden post has decayed).

4.13 In the topsoil between Trenches 19 and 21 a number of worked flints were observed. Most were poor-quality flint flakes and debitage (waste from flint-knapping). One flint scraper was retrieved in the vicinity of Trench 19 and one large flint flake near Trench 20, both of which were struck from low quality blue-grey and white flint.

4.14 The stripping of the easement around Trench 21 was monitored for evidence of further archaeological features and an area of approximately 27m x 15m around the post-pit was stripped to clean chalk, revealing a further 5 post-pits ([2107], [2110], [2113], [2116] and [2119]) oriented north-south (Plate 7; Fig. 7). Several possible archaeological features within the stripped area were investigated but were determined to be natural root boles. An additional area of 5m x 100m was stripped north-westwards along the easement but revealed no further archaeological features.

4.15 All of the post-pits revealed were investigated and post-pit [2104] was excavated to its full depth. The sections of these post-pits (Plates 8-13; Fig. 8, sections 3-8) revealed similar profiles, with compact chalky primary fills representing packing material and siltier secondary fills representing post pipes. The pits were all circular in plan, with near-vertical sides, and of similar dimensions, ranging between 0.7m to 0.9m in diameter and 0.59m to 0.84m in depth.

Plate 7: SW-facing view across post-pit alignment in Area 21 (post-pits arrowed). (1m scales)

4.16 No dating evidence or artefacts were retrieved from any of the pits. Bulk soil samples were taken from the primary fill (2117) and secondary fill (2118) of pit [2116] and the secondary fill (2109) of pit [2107]. These were processed and analysed by Gemma Martin and James Rackham of The Environmental Archaeology Consultancy (Appendix 3). The analysis revealed the presence of a small amount of unidentifiable animal bone (less than 1g) in context (2109) but no other archaeological finds were present in any of the samples.

4.17 Fragments of comminuted charcoal and a small amount of charred grain and chaff were identified, indicating a low density of occupation debris. The wheat chaff could not be confidently identified. It could be spelt, suggesting a date after the 1st millennium BC, but if it is emmer then an earlier date could be possible. Unfortunately the environmental archaeology assessment stated that "none of the samples contain material particularly suitable for radiocarbon dating. The charred seeds and chaff could be AMS dated but we would not recommend this for samples this sparse since the material could be re-deposited" (Martin and Rackham – see Appendix 3 p55).

4.18 Snails retrieved from all three samples show evidence of an open country or grassland environment with a woodland component, and one of the species present is associated with woodland clearance. This indicates that the pit fills were formed soon after local woodland clearance, suggesting a prehistoric date for the features.

4.19 The date of construction of the post-pits cannot be ascertained in the absence of any further archaeological or environmental evidence, but they are likely to be prehistoric in date. The presence of these pits and the scatter of worked flints in this area are suggestive of prehistoric activity in the area, but this activity was of a low density and the post-pits are likely to be peripheral to any settlement in the area.

Plate 8: SE-facing shot of post-pit [2104]. (2x 1m scales).

Plate 9: NW-facing shot of post-pit [2107]. (2x 1m scales).

Plate 10: W-facing shot of post-pit [2110]. (2x 1m scales).

Plate 11: SE-facing shot of post-pit [2113]. (2x 1m scales).

Plate 12: S-facing shot of post-pit [2116]. (2x 1m scales).

Plate 13: NE-facing shot of post-pit [2119]. (2x 1m scales).

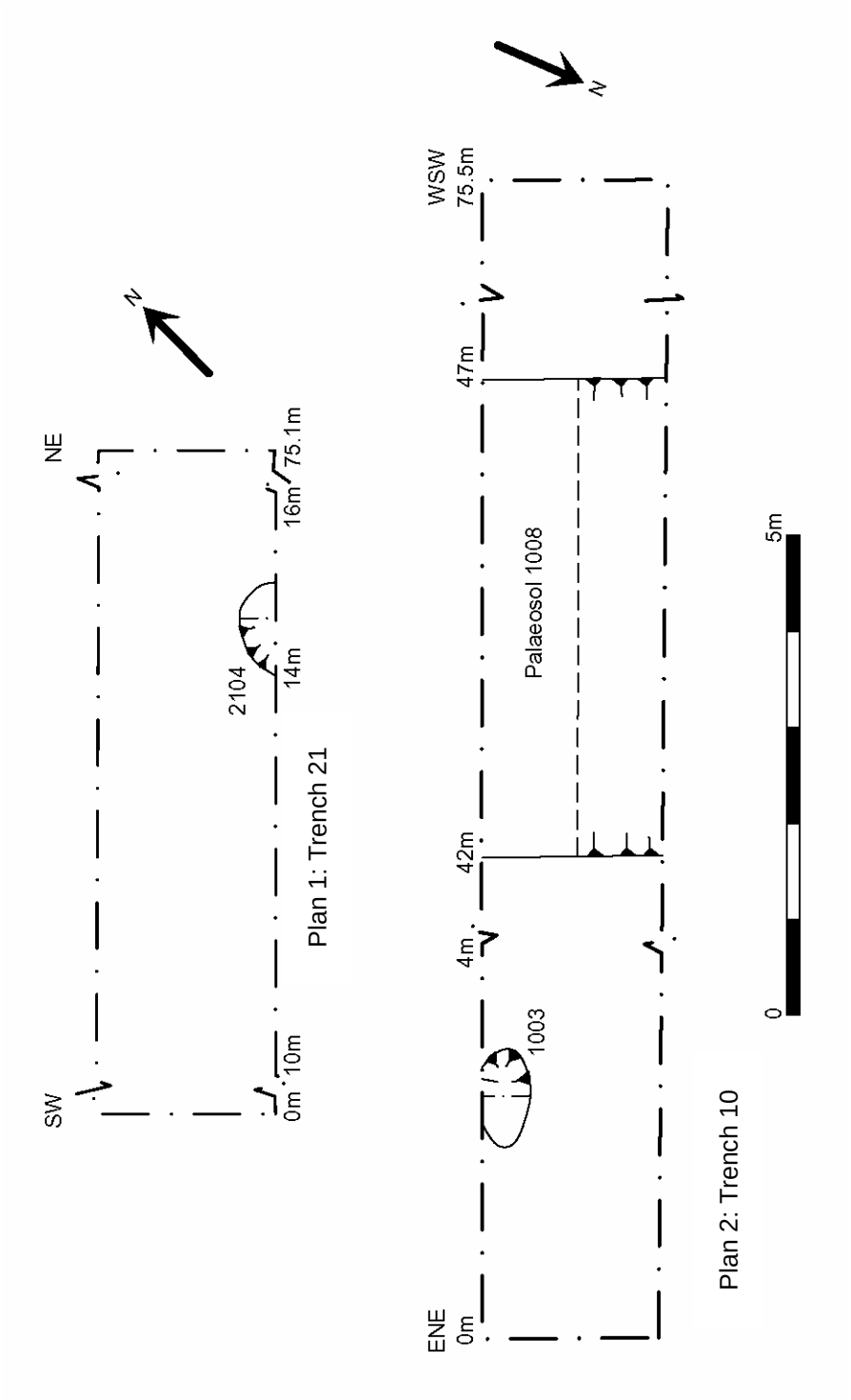
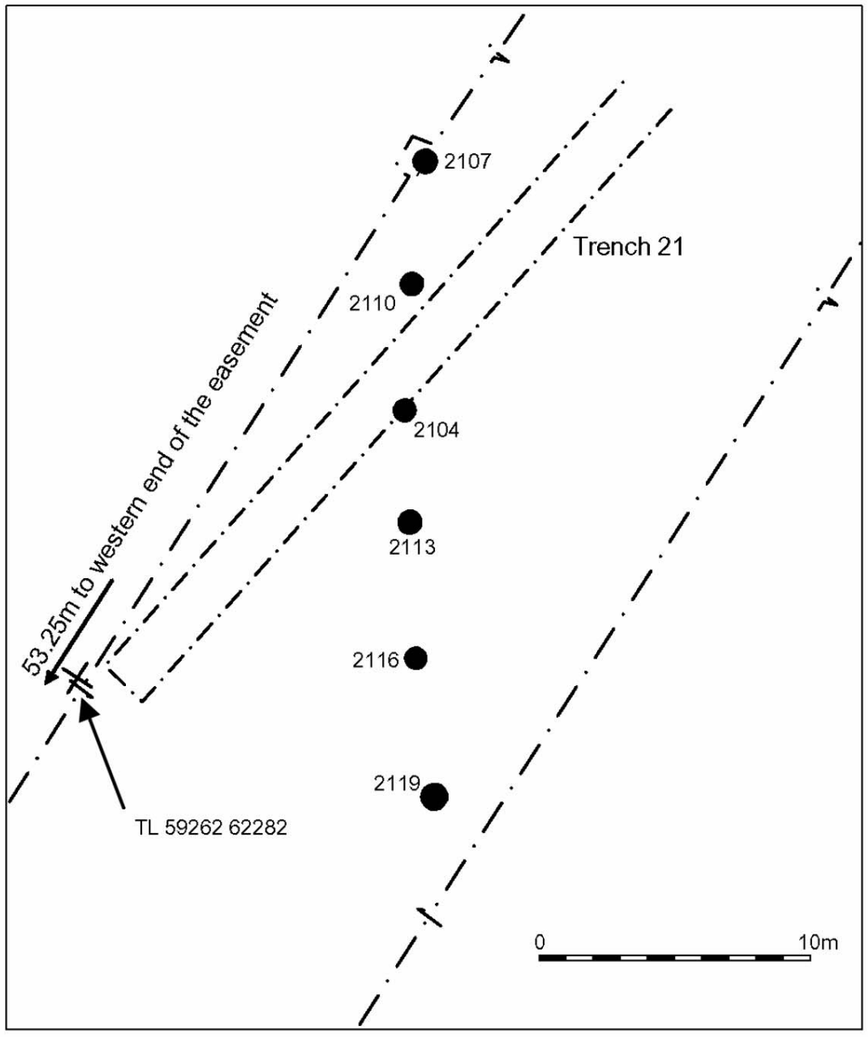


Figure 6: Plans of Trenches 21 and 10 *(Scale 1:75)*



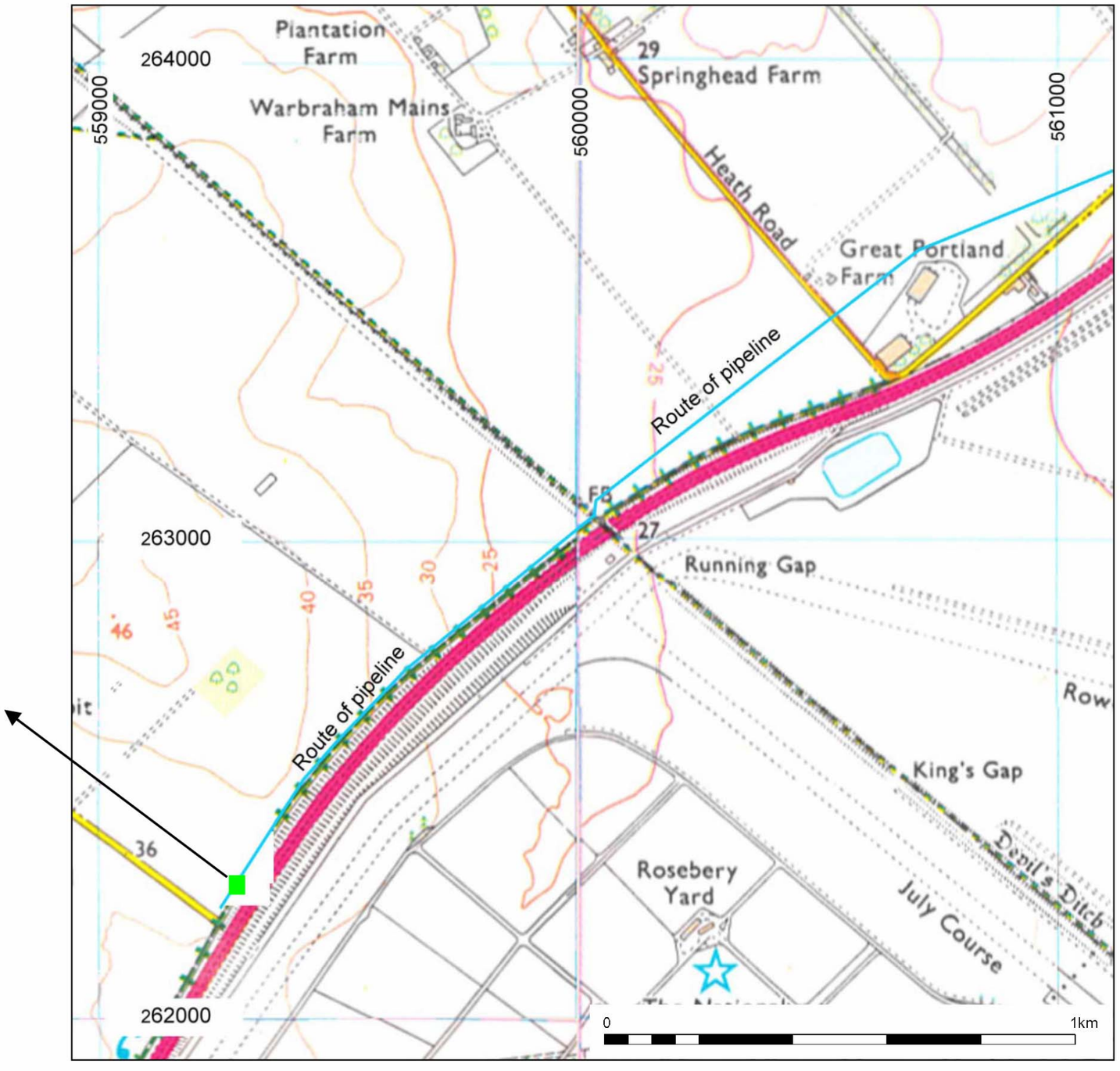


Figure 7: Plan showing the location and alignment of the postholes excavated in Trench 21 (see Fig 8 for detailed plan of the postholes), in relationship to the Devils Ditch

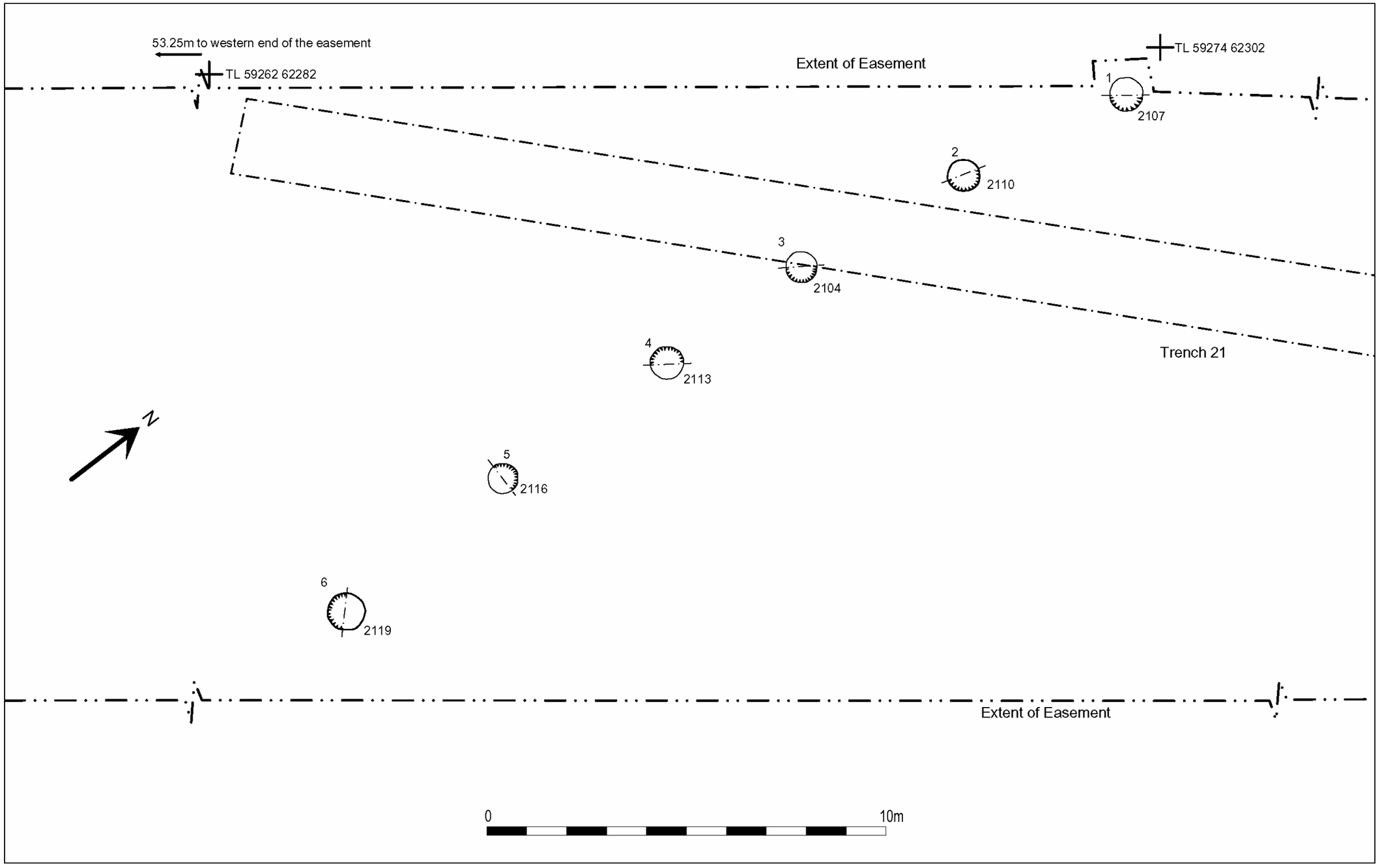


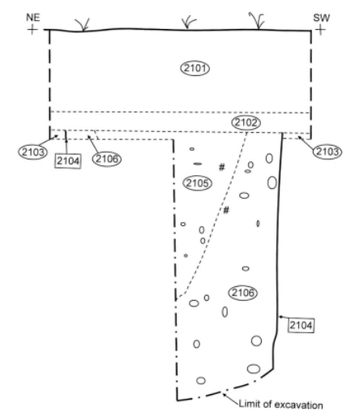
Figure 8: Plan of the area stripped around Trench 21, showing post-pit alignment *(Scale 1:100)*

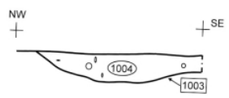
Section 1: Northwest-facing section of post-pit [2104] in Trench 21

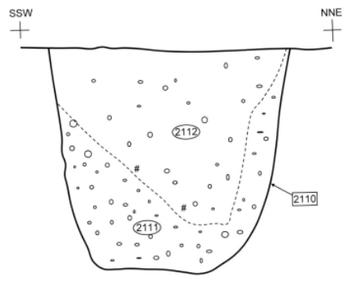
Section 2: Southwest-facing section of pit [1003] in Trench 10

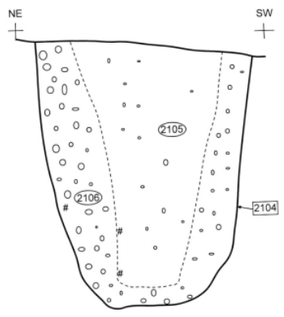
Section 3: East southeast-facing section of post-pit [2110]

Section 4: Northwest-facing section of post-pit [2104]







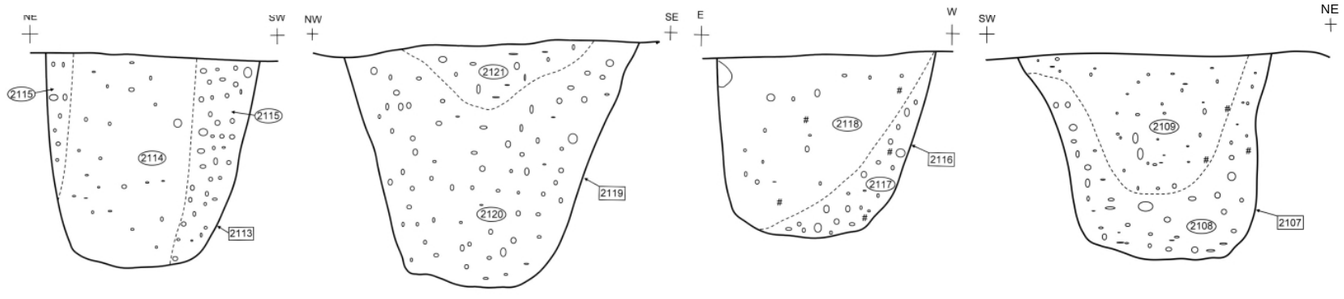


Section 5: Northwest-facing section of post-pit [2113]

Section 6: Southwest-facing section of post-pit [2119]

Section 7: North-facing section of post-pit [2116]

Section 8: Southeast-facing section of post-pit [2107]



KEY: # = charcoal

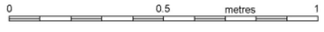


Figure 8: Section drawings *(scale 1:20)*

5. Conclusions

5.1 This evaluation revealed the presence of prehistoric activity at the south-western end of the pipeline route, in the form of a series of substantial post-pits aligned north-south and a scatter of flint debitage in the topsoil. Environmental analysis supports a prehistoric date for these pits, suggesting that they were in use at a time when woodland clearance had recently taken place. The dating of these features cannot be ascertained more accurately, but the research undertaken prior to this evaluation (Hawtin & Semmelmann 2005) showed the presence of Neolithic and Bronze Age activity in the vicinity.

5.2 The low density of archaeological features and finds in the area suggests that these post-pits were peripheral to any related settlement. Their exact function is uncertain, but they clearly supported substantial timber posts. They may have served as a boundary marker, and previous analysis of early Iron Age coins found in the vicinity suggests that the nearby Devil's Dyke follows the more ancient boundary between the tribes of the *Iceni* and the *Catuvellauni* (Hawtin & Semmelmann 2005; HER 07801). It is possible that the post-pits revealed in this evaluation were a component of this boundary or its predecessor.

5.3 No further evidence for human occupation was revealed within the Trenches to the south, or immediate north, of Devil's Dyke. The shallow pit revealed in Trench 10 and the posthole alignment in Trench 1 were both deemed to be relatively modern features. The survival of wood within some of the postholes supported this theory.

5.4 No evidence was revealed within the evaluation trenches for the presence of the ring ditches or burial mounds expected to the north of Devil's Dyke. It is likely that the aerial photographs showing these features had not been plotted accurately enough to ascertain their exact location and they may be in an area of the field that was unaffected by the pipeline route. Alternatively, the shallow topsoil in this area could suggest that the features have been completely obliterated by ploughing of the fields since the aerial photographs were taken.

5. 5 *Confidence Rating*

The conditions during the evaluation were generally cold and overcast, with occasional rain showers. All features were well defined against the natural geology and were easily recognised. All possible archaeological features were tested and natural features such as tree throws and root boles were easily distinguished during excavation. All archaeological features revealed during this evaluation were identified and excavated, and a high degree of confidence is attached to these results.

6. Acknowledgements

ASC would like to express its thanks to Anglian Water Services Ltd. for funding this evaluation, and to the staff of Cambridgeshire Archaeology and Suffolk County Council Archaeological Service (in particular Kasia Gdaniec and Jess Tipper) for their co-operation and assistance in the execution of this project. We are also grateful to James Rackham of The Environmental Archaeology Consultancy for undertaking the environmental analysis.

The project was managed for ASC by Bob Zeepvat BA MIFA. The fieldwork was undertaken by Teresa Hawtin with the assistance of Martin Cuthbert and Nigel Wilson. This report was prepared by Teresa Hawtin and edited by Bob Zeepvat.

7. Archive

7.1 The project archive will comprise:

1. Brief
2. Project Design
3. Initial Report
4. Clients site plans
5. Site records
6. Finds records
7. Finds
8. Sample records
9. Site record drawings
10. List of photographs/slides
11. Colour slides
12. B/W prints & negatives
13. Original specialist reports and supporting information
14. CDROM with copies of all digital files.

7.2 The archive will be deposited with Cambridgeshire County Store, Event Number ECB2216. The Suffolk Event Number for this project is EXG Misc.

8. References

Standards & Specifications

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Internet-based Resources

www.devilsdykeproject.org.uk/

www.wuffings.co.uk/WuffSites/Dykes/EADykes.htm

9. Cartographic Sources

The following maps and plans were consulted in the course of this research:

Date	Reference	Description
1768	CRO TR 274/3	T. Chapman's map of Newmarket Heath
180?	P150/	A Map of the Parish of Swaffham Prior in the County of Cambridge – Edward Gibbons
1842	TR	Plan of the Titheable part of the Parish of Burwell in the County of Cambridge. Surveyed by John King & Son, Saffron Walden
1886-7	XLI.12, XLII.5, XLI.8	Ordnance Survey 1st edition
1787	435	Map of Newmarket
1903	XLI NE	2nd edition Ordnance Survey
1903	LXII NW	Ordnance Survey
1927	XLI NE	Ordnance Survey
1927	LXII NW	Ordnance Survey
1938	LXII SW	Ordnance Survey

10. Aerial Photographs

The following photographs were examined in the course of this research:

Identification	Date	Type (O/V)	Description/comments
RC8EA077	1982	V	Fenland Survey. Covers eastern end of the study area
RC8EA078	1982	V	Fenland Survey. Covers central part of the study area
RC8EA079	1982	V	Fenland Survey. Covers western end of the study area
ABN73	1960	O	Crop marks 0.75mile S of Exning
AMM60	1965	O	Earthworks 0.5mile S of Exning
AMM61	1965	O	Earthworks 0.5mile S of Exning
BFH17	1971	O	Crop marks 0.5mile NE of Swaffham Prior
BLS34	1973	O	Soil marks 1.25miles SSE of Burwell
BLS77	1973	O	Soil marks 1.25miles SSE of Burwell
BMD58	1973	O	Soil marks 1.25miles S of Burwell
BMH 16	1973	O	Ring ditch EXG 071
BMH 17	1973	O	Ring ditch EXG 071
BMH 18	1973	O	Ring ditch EXG 071
BMH 19	1973	O	Ring ditch EXG 071
BNJ28	1973	O	Devil's Dyke near Swaffham Prior, looking SE
CFE14	1978	O	Panorama near Exning looking ESE
XS8	1959	O	Ring ditch associated with EXG 068 - 070
XS9	1959	O	Ring ditch associated with EXG 068
XS10	1959	O	Ring ditch associated with EXG 068

Appendix 1: Trench Summary Tables

Trench 1

Max Dimensions (m)					
Length	77.2m	**Width**	1.8m	**Depth**	0.45m

Levels	
Trench base NNE	24.26m OD
Trench top NNE	24.69m OD
Trench base SSW	24.17m OD
Trench top SSW	24.62m OD

NGR Co-ordinates			
NNE	TL 61669 64311	**SSW**	TL 61642 64239

Orientation	NNE-SSW
Reason for Trench	General evaluation

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
101	Layer	Topsoil. Mid orange-brown chalky sandy loam.	-	250	-
102	Layer	Subsoil. Light brown-orange loamy sandy chalk.	-	200	250
103	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	450

NB: 7 postholes found in Trench 1, 30.7m from SSW end, aligned NE-SW. Square in plan with wood surviving, probably modern. Fill was a dark grey brown sandy silt, dimensions 250mm x 250mm x 80mm (depth).

Trench 2

Max Dimensions (m)					
Length	74.8m	**Width**	1.8m	**Depth**	0.48-0.70m

Levels	
Trench base ENE	24.01m OD
Trench top ENE	24.71m OD
Trench base WSW	24.39m OD
Trench top WSW	24.87m OD

NGR Co-ordinates			
ENE	TL 61587 64175	**WSW**	TL 61527 64137
Orientation	ENE-WSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
201	Layer	Topsoil. Mid orange-brown chalky sandy loam.	-	230	-
202	Layer	Mid brown-orange silty sand colluvial deposit.	-	150	230
203	Layer	Light orange-brown sandy chalk. Interface between natural and colluvial deposit.	-	100	380
204	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	480

Trench 3

Max Dimensions (m)					
Length	75.2m	**Width**	1.8m	**Depth**	0.40m

Levels	
Trench base NE	24.84m OD
Trench top NE	25.21m OD
Trench base SW	24.92m OD
Trench top SW	25.32m OD

NGR Co-ordinates			
NE	TL 61459 64075	**SW**	TL 61412 64017
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
301	Layer	Topsoil. Mid grey-brown chalky loam.	-	300	-
302	Layer	Light grey-brown loamy chalk. Interface between natural and topsoil.	-	100	300
303	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	400

Trench 4

Max Dimensions (m)					
Length	74.3m	**Width**	1.8m	**Depth**	0.5 - 0.95m

Levels	
Trench base ENE	24.92m OD
Trench top ENE	25.42m OD
Trench base WSW	24.59m OD
Trench top WSW	25.54m OD

NGR Co-ordinates			
ENE	TL 61342 63955	**WSW**	TL 61281 63915
Orientation	ENE-WSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
400	Layer	Topsoil. Mid grey-brown chalky loam.	-	300	-
401	Layer	Modern levelling layer containing tarmac fragments at WSW end of trench, extending 19.4m along trench.	-	200	300
402	Layer	Subsoil. Mid orange-brown chalky loam. Probably original topsoil before deposition of levelling layer.	-	200	500
403	Layer	Light grey-brown loamy chalk. Interface between natural and topsoil.	-	250	700 (WSW) 350(ENE)
404	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	950 (WSW) 500 (ENE)

Trench 5

Max Dimensions (m)					
Length	73.8m	**Width**	1.8m	**Depth**	0.48m

Levels	
Trench base NE	25.45m OD
Trench top NE	25.91m OD
Trench base SW	25.36m OD
Trench top SW	25.84m OD

NGR Co-ordinates			
NE		**SW**	
Orientation		NE-SW	
Reason for Trench		General evaluation	

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
501	Layer	Topsoil. Mid grey-brown chalky loam.	-	400	-
502	Layer	Light grey-brown loamy chalk. Interface between natural and topsoil.	-	80	400
503	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	480

Trench 6

Max Dimensions (m)					
Length	76.7m	**Width**	1.8m	**Depth**	0.23m

Levels	
Trench base ENE	25.83m OD
Trench top ENE	26.04m OD
Trench base WSW	26.12m OD
Trench top WSW	26.35m OD

NGR Co-ordinates			
ENE	TL 61132 63799	**WSW**	TL 61060 63771
Orientation		ENE-WSW	
Reason for Trench		General evaluation	

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
601	Layer	Topsoil. Mid brown-grey chalky loam.	-	200	-
602	Layer	Light brown-grey loamy chalk. Interface between natural and topsoil.	-	30	200
603	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	230

Trench 7

Max Dimensions (m)					
Length	74.9m	**Width**	1.8m	**Depth**	0.43m

Levels	
Trench base NE	26.01m OD
Trench top NE	26.42m OD
Trench base SW	26.52m OD
Trench top SW	26.95m OD

NGR Co-ordinates			
NE	TL 60992 63737	**SW**	TL 60929 63696
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
700	Layer	Topsoil. Mid grey-brown chalky loam.	-	300	-
701	Layer	Mid brown-orange silty sand colluvial deposit.	-	80	300
702	Layer	Light orange-brown sandy chalk. Interface between natural and colluvial deposit.	-	50	380
703	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	430

Trench 8

Max Dimensions (m)					
Length	75.8m	**Width**	1.8m	**Depth**	0.38 – 0.45m

Levels	
Trench base ENE	26.59m OD
Trench top ENE	27.04m OD
Trench base WSW	26.46m OD
Trench top WSW	26.84m OD

NGR Co-ordinates			
ENE		**WSW**	
Orientation	ENE-WSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
801	Layer	Topsoil. Mid orange-brown chalky loam.	-	300	-
802	Layer	Light orange-brown loamy chalk. Interface between natural and topsoil.	-	80	300 (ENE) 370 (WSW)
803	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	380 (ENE) 450 (WSW)
804	Layer	Mid brown-orange silty sand colluvial deposit in eastern 35m of trench.	-	70	300

Trench 9

Max Dimensions (m)					
Length	75.6m	**Width**	1.8m	**Depth**	0.38m

Levels	
Trench base NE	27.71m OD
Trench top NE	28.11m OD
Trench base SW	27.04m OD
Trench top SW	27.42m OD

NGR Co-ordinates			
NE	TL 60655 63576	**SW**	TL 60599 63522
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
901	Layer	Topsoil. Mid brown-grey chalky loam.	-	300	-
902	Layer	Light brown-grey loamy chalk. Interface between natural and topsoil.	-	80	300
903	Layer	Natural stratum. Creamy white chalk with brown-orange sandy patches and occasional flint.	-	-	380

Trench 10

Max Dimensions (m)					
Length	75.5m	**Width**	1.8m	**Depth**	0.28 – 0.40m

Levels	
Trench base ENE	27.23m OD
Trench top ENE	27.56m OD
Trench base WSW	27.74m OD
Trench top WSW	28.01m OD

NGR Co-ordinates			
ENE	TL 60457 63411	**WSW**	TL 60391 63373

Orientation	ENE-WSW
Reason for Trench	General evaluation

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1001	Layer	Topsoil. Mid brown-grey chalky loam.	-	350	-
1002	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional flint.	-	-	280 – 400
1003	**Cut**	Cut of pit containing animal bone. Sub-rectangular in plan, gradual break of slope at top, 35º gradually sloping sides, gradual break of slope to concave base. Oriented ENE-WSW.	1000 x 500	80	280
1004	Deposit	Fill of pit [1003]. Light brown-grey sandy chalky silt with occasional small-medium chalk fragments.	1000 x 500	80	280
1006	Layer	Palaeosol. Firm dark grey-brown silty loam within an undulation of the chalk natural. Oriented NNW-SSE across trench, 42m from ENE end.	5200 x >1800	100	350
1007	Layer	Light brown-grey loamy chalk. Interface between natural and topsoil.	-	50	350

Trench 11

Max Dimensions (m)					
Length	50m	**Width**	1.8m	**Depth**	0.35m

Levels	
Trench base NE	28.44m OD
Trench top NE	28.71m OD
Trench base SW	28.20m OD
Trench top SW	28.62m OD

NGR Co-ordinates			
NE	TL 60327 63315	**SW**	TL 60296 63273
Orientation	NE-SW		
Reason for Trench	Evaluation in area near crop marks identified on APs.		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1101	Layer	Topsoil. Mid brown-grey chalky loam	-	350	-
1102	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	350

Trench 12

Max Dimensions (m)					
Length	49.5m	**Width**	1.8m	**Depth**	0.26m

Levels	
Trench base ENE	28.13m OD
Trench top ENE	28.49m OD
Trench base WSW	27.56m OD
Trench top WSW	27.83m OD

NGR Co-ordinates			
ENE	TL 60293 63268	**WSW**	TL 60248 63250
Orientation	ENE-WSW		
Reason for Trench	Evaluation in area near crop marks identified on APs.		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1201	Layer	Topsoil. Mid brown-grey chalky loam	-	260	-
1202	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	260

Trench 13

Max Dimensions (m)					
Length	88m	**Width**	1.8m	**Depth**	0.25m

Levels	
Trench base NE	26.61m OD
Trench top NE	26.97m OD
Trench base SW	24.44m OD
Trench top SW	24.65m OD

NGR Co-ordinates			
NE	TL 60188 63204	**SW**	TL 60141 63149
Orientation		NE-SW	
Reason for Trench		General evaluation	

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1301	Layer	Topsoil. Mid brown-grey chalky loam	-	250	-
1302	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	250

Trench 14

Max Dimensions (m)					
Length	31m	**Width**	1.8m	**Depth**	0.35m

Levels	
Trench base N	22.50m OD
Trench top N	22.81m OD
Trench base S	22.46m OD
Trench top S	22.87m OD

NGR Co-ordinates			
N	TL 60063 63097	**S**	TL 60059 63071
Orientation		N-S	
Reason for Trench		Evaluation in area near Devil's Dyke	

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1401	Layer	Topsoil. Mid brown-grey chalky loam	-	350	-
1402	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	350

Trench 15

Max Dimensions (m)					
Length	75.2m	**Width**	1.8m	**Depth**	0.45 – 0.80m

Levels	
Trench base ENE	23.14m OD
Trench top ENE	23.58m OD
Trench base WSW	22.96m OD
Trench top WSW	23.83m OD

NGR Co-ordinates			
ENE		**WSW**	
Orientation	ENE-WSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1501	Layer	Topsoil. Mid orange-brown sandy loam	-	300	-
1502	Layer	Colluvial deposit. Mid brown-orange sandy silt with patches of light brown-orange chalky sand. Fading out towards eastern end of trench.	-	400	300
1503	Layer	Interface between natural and colluvium. Light orange-brown sandy chalk.	-	150	300 (ENE) 700 (WSW)
1504	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	450 (ENE) 800 (WSW)

Trench 16

Max Dimensions (m)					
Length	74m	**Width**	1.8m	**Depth**	0.45 – 0.90m

Levels	
Trench base NE	24.27m OD
Trench top NE	24.50m OD
Trench base SW	24.39m OD
Trench top SW	25.19m OD

NGR Co-ordinates			
NE	TL 59860 62939	**SW**	TL 59809 62884
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1600	Layer	Topsoil. Dark orange-brown sandy loam	-	350	-
1601	Layer	Colluvial deposit. Dark brown-orange sandy silt with patches of light brown-orange chalky sand.	-	400	300 - 350
1602	Layer	Interface between natural and colluvium. Light orange-brown sandy chalk.	-	150	350 - 750
1603	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	450 - 900

Trench 17

Max Dimensions (m)					
Length	74.1m	**Width**	1.8m	**Depth**	0.40 - 0.60m

Levels	
Trench base ENE	26.34m OD
Trench top ENE	26.70m OD
Trench base WSW	28.44m OD
Trench top WSW	28.92m OD

NGR Co-ordinates			
ENE		**WSW**	

Orientation	ENE-WSW
Reason for Trench	General evaluation

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1701	Layer	Topsoil. Dark orange-brown sandy loam	-	350	-
1702	Layer	Colluvial deposit. Dark brown-orange sandy silt with patches of light brown-orange chalky sand. Fades out 10m from ENE end of trench.	-	100	350
1703	Layer	Interface between natural and colluvium. Light orange-brown sandy chalk.	-	150	350 (ENE) 450 (WSW)
1704	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	400 (ENE) 600 (WSW)

Trench 18

Max Dimensions (m)					
Length	73m	**Width**	1.8m	**Depth**	0.60m

Levels	
Trench base NE	32.32m OD
Trench top NE	32.91m OD
Trench base SW	33.49m OD
Trench top SW	34.12m OD

NGR Co-ordinates			
NE	TL 59619 62734	**SW**	TL 59574 62676
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1801	Layer	Topsoil. Dark orange-brown sandy loam	-	300	-
1802	Layer	Colluvial deposit. Mid orange-brown sandy silt with patches of light brown-orange chalky sand. Deepens from 150mm to 350mm 18 – 20m from SW end of trench.	-	350	300
1803	Layer	Interface between natural and colluvium. Light orange-brown sandy chalk.	-	150	450 - 650
1804	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	600 - 800

Trench 19

Max Dimensions (m)					
Length	75.2m	**Width**	1.8m	**Depth**	0.45m

Levels	
Trench base ENE	35.82m OD
Trench top ENE	36.21m OD
Trench base WSW	37.33m OD
Trench top WSW	37.72m OD

NGR Co-ordinates			
ENE	TL 59521 62620	**WSW**	TL 59465 62573
Orientation	ENE-WSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1901	Layer	Topsoil. Dark orange-brown sandy loam	-	350	-
1902	Layer	Interface between natural and topsoil. Light grey-brown sandy chalk.	-	100	350
1903	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	450

Trench 20

Max Dimensions (m)					
Length	75.1m	**Width**	1.8m	**Depth**	0.50m

Levels	
Trench base NNE	38.48m OD
Trench top NNE	39.04m OD
Trench base SSW	38.86m OD
Trench top SSW	39.38m OD

NGR Co-ordinates			
NNE	TL 59407 62488	**SSW**	TL 59366 62423
Orientation	NNE-SSW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
2001	Layer	Topsoil. Dark orange-brown sandy loam	-	350	-
2002	Layer	Interface between natural and topsoil. Light grey-brown sandy chalk.	-	120	350 (NNE) 430 (SSW)
2003	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	470 (NNE) 550 (SSW)
2004	Layer	Subsoil. Compact brown-grey loamy chalk in the southern 50m of trench between (2001) & (2002).	-	80	350

Trench 21

Max Dimensions (m)					
Length	75.3m	**Width**	1.8m	**Depth**	0.36m

Levels	
Trench base NE	36.50m OD
Trench top NE	36.93m OD
Trench base SW	35.98m OD
Trench top SW	36.35m OD

NGR Co-ordinates			
NE	TL 59265 62881	**SW**	TL 59314 62339
Orientation	NE-SW		
Reason for Trench	General evaluation		

Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
2101	Layer	Topsoil. Dark orange-brown sandy chalky loam.	-	260	-
2102	Layer	Interface between natural and topsoil. Light grey-brown loamy chalk.	-	80	260
2103	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	340
2104	**Cut**	Cut of post pit. Circular in plan, sharp break of slope at top, steep 85º sides.	680	840	330
2105	Deposit	Secondary fill of pit. Moderately compact chalky sandy silt with occasional small – medium chalk inclusions and occasional charcoal flecks. Post pipe.	470	550	330
2106	Deposit	Primary fill of pit. Compact chalky silt with frequent large chalk inclusions and occasional charcoal flecks. Packing fill.	680	840	330

Area 21

Max Dimensions			
Width	15.5m	**Length**	27m
Depth	0.36m	**Level (top)**	36.93m OD

NGR Co-ordinates	
N: TL 59274 62301	**S:** TL 59275 62277
Orientation	-
Reason for Trench	Area around Trench 21 stripped to investigate context of pit.

Context	Type	Description and Interpretation	Max Width (mm)	Max Depth (mm)	Depth BGL (mm)
2101	Layer	Topsoil. Dark orange-brown sandy chalky loam.	-	260	-
2102	Layer	Interface between natural and topsoil. Light grey-brown loamy chalk.	-	80	260
2103	Layer	Natural stratum. Creamy white chalk with occasional brown-orange sandy patches and occasional pockets of flint nodules.	-	-	340
2104	**Cut**	Cut of post pit 3. Circular in plan, sharp break of slope at top, steep 85º sides, gradual break of slope to concave base.	700	840	330
2105	Deposit	Secondary fill of pit [2104]. Moderately compact chalky sandy silt with occasional small – medium chalk inclusions and occasional charcoal flecks. Post pipe.	470	550	330
2106	Deposit	Primary fill of pit [2104]. Compact chalky silt with frequent large chalk inclusions and occasional charcoal flecks. Packing fill.	700	840	330
2107	**Cut**	Cut of post pit 1 (northernmost pit within easement). Circular in plan, sharp break of slope at top, steep sides, gradual break of slope to concave base.	800	740	330
2108	Deposit	Primary fill of [2107]. Compact light-mid brown-grey chalky silt with frequent medium-large chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Packing fill.	800	740	330
2109	Deposit	Secondary fill of [2107]. Moderately compact dark orange-brown sandy silt with moderate medium chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Post pipe.	760	450	620
2110	**Cut**	Cut of post pit 2. Circular in plan, sharp break of slope at top, steep sides, gradual break of slope to concave base.	770	730	340
2111	Deposit	Primary fill of [2110]. Compact light-mid brown-grey chalky silt with frequent medium-large chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Packing fill.	770	730	340

2112	Deposit	Secondary fill of [2110]. Moderately compact mid-dark orange-brown sandy silt with moderate medium chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Post pipe.	770	540	340
2113	**Cut**	Cut of post pit 4. Circular in plan, sharp break of slope at top, steep sides, gradual break of slope to concave base.	780	680	340
2114	Deposit	Secondary fill of [2113]. Moderately compact dark grey-brown sandy silt with moderate medium chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Post pipe.	400	680	340
2115	Deposit	Primary fill of [2113]. Compact light-mid brown-grey chalky silt with frequent medium-large chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Packing fill.	780	680	340
2116	**Cut**	Cut of post pit 5. Circular in plan, sharp break of slope at top, steep sides, gradual break of slope to concave base.	720	590	330
2117	Deposit	Primary fill of [2116]. Compact light-mid brown-grey chalky silt with frequent medium-large chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Packing fill.	720	590	330
2118	Deposit	Secondary fill of [2116]. Moderately compact dark grey-brown sandy silt with moderate medium chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Post pipe.	720	590	330
2119	**Cut**	Cut of post pit 6 (southernmost pit within easement). Circular in plan, sharp break of slope at top, steep sides, gradual break of slope to concave base.	900	800	330
2120	Deposit	Primary fill of [2119]. Compact light-mid brown-grey chalky silt with frequent medium-large chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Packing fill.	900	800	330
2121	Deposit	Secondary fill of [2119]. Moderately compact dark grey-brown sandy silt with moderate medium chalk inclusions, occasional medium sub-angular flint and occasional charcoal flecks. Post pipe.	610	210	330

NB: Additional area of 5m x 100m stripped north-westwards along easement revealed no further archaeological features.

Appendix 2: Excavation Summary Tables

Context Register

Context	Type	Description
2101	Topsoil	Trench 21 Topsoil: Chalky loam.
2102	Subsoil	Interface between topsoil and natural, chalkier than topsoil.
2103	Natural	Chalk with occasional pockets of flint nodules.
2104	Cut	Cut of post pit 3 (seen within trench), filled by (2105) and (2106).
2105	Fill	Secondary fill of [2104].
2106	Fill	Primary fill of [2104].
2107	Cut	Cut of post pit 1 (northernmost pit within easement), filled by (2108) and (2109).
2108	Fill	Primary fill of [2107].
2109	Fill	Secondary fill of [2107].
2110	Cut	Cut of post pit 2, filled by (2111) and (2112).
2111	Fill	Primary fill of [2110].
2112	Fill	Secondary fill of [2110].
2113	Cut	Cut of post pit 4, filled by (2114) and (2115).
2114	Fill	Secondary fill of [2113].
2115	Fill	Primary fill of [2113].
2116	Cut	Cut of post pit 5, filled by (2117) and (2118).
2117	Fill	Primary fill of [2116].
2118	Fill	Secondary fill of [2116].
2119	Cut	Cut of post pit 6 (southernmost pit within easement), filled by (2120) and (2121).
2120	Fill	Primary fill of [2119].
2121	Fill	Secondary fill of [2119].

Plan Register

Sheet No	Drawing No	Scale	Details
1	1	1:50	Trench 21: (2103) [**2104**] (2105) (2106)
1	2	1:50	Trench 10: (1002) (1003) [**1004**]
1	3	1:100	Pits [**2104**] [**2107**] [**2110**] [**2113**] [**2116**] [**2119**]

Section Register

Sheet No	Drawing No	Scale	Contexts
1	1	1:10	(2101) (2102) (2103) [**2104**] (2105) (2106)
1	2	1:10	[**1003**] (1004)
1	3	1:10	[**2110**] (2111) (2112)
1	4	1:10	[**2104**] (2105) (2106)
1	5	1:10	[**2113**] (2114) (2115)
1	6	1:10	[**2119**] (2120) (2121)
1	7	1:10	[**2116**] (2117) (2118)
1	8	1:10	[**2107**] (2108) (2109)

Finds Register

Context	Pottery		Animal Bone		Flint		Shell Wt (g)	Stone No.	Other Finds	
	No.	Wt (g)	No.	Wt (g)	No.	Wt (g)			Type	No/Wt (g)
1004			21	197						
1901					1	8				
2001					1	12				

Sample Register

Sample No	Context No	Sample Type	Quantity
1	2118	Bulk	20 litres
2	2117	Bulk	5 litres
3	2109	Bulk	10 litres

Appendix 3: Specialist Reports

Environmental Archaeology Assessment

Gemma Martin and James Rackham, The Environmental Archaeology Consultancy.

Introduction

Archaeological Services and Consultancy Ltd took three environmental bulk-soil samples during an archaeological evaluation, which were submitted to the Environmental Archaeology Consultancy for processing and assessment (Table1).

Table 1. Swaffham Prior – SPS/752. List of samples taken for assessment.

Sample no.	Cont	Area	Sample vol. l.	Sample wt. kg	Description	*Pot date*
1	2118	21	16	18	Fill of post pit [2116]	***?Prehistoric***
2	2117	21	3	3	Packing fill of post pit [2116]	***?Prehistoric***
3	2109	21	9	10	Secondary fill of post pit [2107]	***?Prehistoric***

The soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet sieve of 1mm mesh for the residue. Both residue and flot were dried and the residues subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flots was measured and the volume and weight of the residue recorded. A total of 28 litres of soil was processed in this way.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill and a count made of the number of flakes or spheroids of hammerscale collected. The residue was then discarded. The flot of each sample was studied using x10 magnifications and the presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The flots were then bagged and along with the finds from the sorted residue, constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are summarised below in Table 2.

Results

The samples washed down to leave residues comprising primarily of rounded/sub-rounded chalk with frequent angular flints and occasional concretions and very fragmented snail shell.

The samples yielded no archaeological finds aside from very small amounts of magnetised material in samples 1 and 3, and which contains no hammerscale or prill. Comminuted charcoal has been recovered from each sample but is very fragmented and does not warrant further analysis. In addition, the small amount of animal bone recovered from sample 3 is unidentifiable.

Table 2. Swaffham Prior – SPS/752. Archaeological and environmental finds from processed samples.

Sample	Context	Area	Volume (l)	Residue vol. (ml)	Flot vol. (ml)	Magnetic wt. (g)	Charcoal $	Char'd grain *	Char'd chaff *	Char'd seed *	Insects *	Snail *	Bone wt. (g)	Comment
1	2118	21	16	2500	5.5	<1	2/4		1		1	5/3		Wheat chaff, *Daphnia* ephippia. Snails - *Hellicella itala, Pupilla muscorum, Vallonia excentrica, V. costata, Truncatellina cylindrica, Cecilioides acicula, Cochlicopa* sp., *Vitrea* sp., *Trichia hispida, Nesovitrea hammonis, Pomatia elegans, Cepeae* sp.
2	2117	21	3	700	<1		0/2	1			1	2/2		Oat/brome?, *Daphnia* ephippia. Snails – *P. muscorum, Cochlicopa* sp., *T. cylindrica, V. costata*
3	2109	21	9	1000	5.5	<1	0/2		1	1		5/3	<1	Wheat chaff, indet. seed. Snails - *Hellicella itala, Pupilla muscorum, V. costata, Cecilioides acicula, Cochlicopa* sp., *Trichia hispida, Nesovitrea hammonis, Pomatia elegans, Cepeae* sp., *Oxychilus* sp., *Carychium* sp., *Discus rotundatus, Ena montana*

* = abundance: 1=1-10, 2=11-50, 3=51-150, 4=151-250, 5=250+: $ = abundance >2mm/abundance < 2mm

The archaeobotanical remains are particularly sparse and comprise of a single grain of oat/brome (*Avena/Bromus* spp.), two wheat (*Triticum* spp.) glume bases, one of which from sample 1, displays similar morphological characteristics to those of spelt wheat (*Triticum spelta* L.) and a single unidentifiable seed. These traces of charred plant remains are likely to be residual in nature.

Uncharred plant vegetative material in the form of root material and seeds of species including campion?, (cf. *Silene* sp.), goosefoot (*Chenopodium* spp.), dock (*Rumex* sp.), knotgrass (*Polygonum* spp.) and stinging nettle (*Urtica dioica* L.) were present in the flots and have been treated as recent contaminants in this instance despite the recovery of two *Daphnia* ephippia, which are indicative of fresh water, from the fills of pit [2116].

All three of the samples produced terrestrial snails, the post pit fills of [2116] and [2107] containing the larger assemblages. The assemblage from post pit fill (2109) contains an open country or grassland fauna comprising *Vallonia costata*, *Pupilla muscorum* and *Helicella itala*, but with a consistent woodland component - *Carychium*, *Oxychilus*, *Discus rotundatus*, *Ena montana* and the snail *Pomatia elegans* which is associated with disturbed ground and typically taken to suggest woodland clearance (Evans 1972). The two samples from post pit 2116 both indicate an open country/grassland fauna with limited evidence for shaded or woodland conditions, although one or two shells are still present and a single shell of *Pomatia elegans* occurs in (2118).

Discussion/Conclusion

The samples provide extremely limited evidence with regards to clarifying the function of the pit features or characterising any potential anthropogenic activities associated with the features. The occurrence of even one or two fragments of charred grain or chaff and the small fragments of animal bone shows the presence of occupation debris in the features but this is at a low density. If the wheat chaff is spelt this would suggest a 1st millennium BC or later date, but in the absence of a confident identification, emmer cannot be ruled out and an earlier date is possible.

The snails perhaps suggest that the post pits date to a period just after local woodland clearance, with the shells of *Pomatia elegans* suggesting this clearance episode but the dominance of open country taxa in all the samples reflecting that the area was already cleared when these fills were forming. This would tend to support a prehistoric date but gives no particular clue as to when in the prehistoric period.

None of the samples contain material particularly suitable for radiocarbon dating. The charred seeds and chaff could be AMS dated but we would not recommend this for samples this sparse since the material could be re-deposited.

Acknowledgements

Bibliography

Evans, J.G. 1972 *Lands Snails in Archaeology*, Academic Press
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Gemma Martin and James Rackham
The Environmental Archaeology Consultancy
March 29th 2006

Appendix 4: ASC OASIS Form

PROJECT DETAILS			
Project Name:	Southfields to Swaffham Prior water main replacement		
Short Description:	In January and February 2006 Archaeological Services and Consultancy Ltd undertook an archaeological evaluation along the proposed route of the Southfields to Swaffham Prior water main replacement in Cambridgeshire and Suffolk. Evidence for prehistoric activity was revealed at the south-western end of the pipeline in the form of a series of substantial post-pits aligned north-south and a scatter of worked flint in the topsoil. Environmental analysis supports a prehistoric date for these pits, suggesting that they were in use at a time when woodland clearance had recently taken place. The post-pits were probably peripheral to any related settlement and may have served as a boundary marker.		
Project Type:	Trenching		
Site status:	None	Previous work:	None
Current land use:	Arable and grazing fields	Future work: (yes / no / unknown)	No
Monument type:	Pit alignment	Monument period:	Prehistoric
Significant finds:	Scatter of worked flint, prehistoric		
PROJECT LOCATION			
County:	Cambridgeshire & Suffolk	OS reference: (to at least 8 figures)	TL 6167 6429 to TL 5925 6222
Site address:	Heath Road, Swaffham Prior to Heath Road, Exning		
Study area:	3.2km x 15m (48000 sq. m.)	Height OD:	Between 22.46m and 39.38m
PROJECT CREATORS			
Organisation:	Archaeological Services & Consultancy Ltd		
Project brief originator:	Kasia Gdaniec & Jess Tipper	Project design originator:	Teresa Hawtin, ASC Ltd.
Project Manager:	Bob Zeepvat BA MIFA	Director/Supervisor:	Teresa Hawtin
Sponsor / funding body:	Anglian Water Services Ltd		
PROJECT DATE			
Start date:	30th January 2006	End date:	10th February 2006
PROJECT ARCHIVES			
	Location (Accession no.)	Content (eg. pottery, animal bone, files/sheets)	
Physical:	Cambs County Stores	Worked flint, animal bone	
Paper:	Cambs County Stores	Brief, PD, report, site records, photographs, plans	
Digital:	Cambs County Stores	PD, report, photographs	
BIBLIOGRAPHY (Journal/monograph, published or forthcoming, or unpublished client report)			
Title:	Archaeological Evaluation: Southfields to Swaffham Prior Water Main		
Serial title & volume:	ASC Report 752/SPS/2r		
Author(s):	Teresa Hawtin BA MSc PIFA		
Page nos		Date:	Date: February 2007