



FRODSHAM RAIL CONNECTION, FRODSHAM, CHESHIRE

**Archaeological Desk-
Based Assessment,
Walkover and
Topographic
Surveys, and
Watching Brief**



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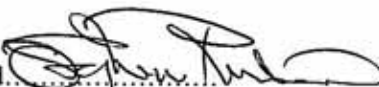
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SUMMARY

In 2007 Network Rail made an application to National Grid for an electrical connection from Frodsham Substation (NGR SJ 253 794) to the West Coast Main Line (WCML), close to Weaver Junction (NGR SJ 564 792). This involved the installation of a 25kV underground cable running in an easterly direction from Frodsham Substation to a substation and trackside feeder station in the vicinity of Weaver Junction. TEP, acting on behalf of National Grid, commissioned Oxford Archaeology North (OA North) to undertake a desk-based assessment and walkover survey of the proposed cable route in order to better understand the impact of the development on the archaeological resource.

The desk-based assessment comprised a search of both published and unpublished records held by the Cheshire Historic Environment Record (CHER), the Cheshire County Record Office, and the archives and library held at OA North. The walkover survey was conducted within a 200m wide corridor along the route of the proposed cable, in order to relate the landscape and surroundings to the results of the desk-based assessment.

The desk-based research and walkover survey were undertaken in June and July 2007 and established the presence of 46 sites of cultural heritage interest within a study area extending 500m either side of the proposed cable route. Of these sites, 21 were recorded on the CHER, of which ten have statutory designations. These included the nationally significant Frodsham anti-aircraft battery (Site **17**), which is a scheduled ancient monument and the Grade I listed Sutton Hall (Site **15**). Eight Grade II listed buildings of regional significance were also present, comprising the Frodsham Viaduct, a Boatman's Shelter, two buildings at Marshgate Farm, Frodsham Bridge, Sutton Mills, Mill House and the Severn Vyrnwy Aqueduct (Sites **1, 2, 3, 4, 6, 8, 16** and **31**, respectively). Two of these structures, the Frodsham Viaduct and the Severn Vyrnwy Aqueduct, unavoidably lay within the path of the cable route, although the deep drilling methodology for inserting the cable at these points greatly reduced the risk of adverse impact. The remainder of the sites with statutory designations lay outside the zone of impact.

Of the 36 undesignated sites identified within the study area, nine were interpreted as being of regional significance on the basis of their date and their potential to provide information that could be assimilated into a better understanding of contemporary activity within the wider region. These comprised Roman remains and a Roman road (Sites **5** and **20**), the Sutton prehistoric flint scatter (Site **12**), which could also be considered rare, the Sutton medieval findspot (Site **14**), the Sutton Hall ring ditch crop marks (Sites **18** and **19**) and the Sutton/Aston parish boundary, which could conceivably be of early medieval origin. The unscheduled parts of the anti-aircraft emplacement (Site **17**) were also considered to be of regional significance on the basis of wider group value, as were the Weaver Navigation Canal (Site **45**) and the Sutton Dock (Site **37**), due to their period of construction and importance in encouraging local industrial development. The remaining sites within the study area, which included field boundaries, industrial sites and communications, were considered to be of local significance, due to their interrelationships as components of a wider agrarian and industrial landscape. Eleven of the undesignated sites lay on the route of the cable, including the regionally significant Roman remains and road, the Weaver Navigation

Canal, and the prehistoric and medieval findspots, the extent of which could not be defined closely.

For each of the sites to be impacted upon by the development, a provisional scheme of further investigation and mitigation was devised, including topographic survey before, and watching briefs during, the enaction of groundworks. OA North was subsequently commissioned by TEP, on behalf of National Grid, to undertake this programme of mitigation between March and May 2008.

During the watching brief few archaeological remains were encountered, indicating that the plan to direct the cable route around areas of archaeological potential had been successful. Two undated pits and a later post-medieval ditch-type feature were identified, together with a truncated furrow which was associated closely with a small scatter of medieval pottery. Finds recovered from the subsoil across the easement testified to the agricultural use of the area from at least the twelfth century. Despite the potential for findings of Roman date, including a Roman Road thought to bisect the cable route, no such remains were identified. This may relate to the deep burial of these features by the deposition of alluvium, various layers of which were identified extending beyond the 1.3-2m depth of impact from the cable trenches.

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Oxford Archaeology North (OA North) would like to thank Timothy Bull of National Grid and Joanne Boothroyd, Sally Cowley and Liz Seal of TEP for commissioning the project, for the provision of detailed information, and for their assistance throughout. OA North is also grateful to Moya Watson at the Cheshire Historic Environment Record, the staff at Cheshire County Record Office in Chester and Mark Leah of Cheshire County Historic Environment Service for his advice and liaison. OA North is particularly grateful to Peter Randall and Oz of Balfour Beatty Utility Solutions/Electrical Alliance, who managed and directed the site works.

The desk-based assessment and walkover survey were undertaken and reported upon by Alastair Vannan, and the topographic survey by Christina Robinson. The watching brief was undertaken by Ailsa Westgarth, Ged Callaghan, Tom Mace and Liz Murray, who also wrote that section of the report. The finds were examined and reported upon by Christine Howard-Davis and Ian Miller, and the animal bones by Andrew Bates. Stephen Rowland managed the project and edited the report, which was illustrated by Marie Rowland.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In 2007 Network Rail made an application to National Grid for an electrical connection from Frodsham Substation (NGR SJ 253 794) to the West Coast Main Line (WCML), close to Weaver Junction (NGR SJ 564 792; Fig 1). This involved the installation of a 25kV underground cable running in an easterly direction from Frodsham Substation to a substation and trackside feeder station in the vicinity of Weaver Junction. TEP, acting on behalf of National Grid, commissioned Oxford Archaeology North (OA North) to undertake a desk-based assessment and walkover survey of the proposed cable route in order to better understand the impact of the development on the archaeological resource.
- 1.1.2 The desk-based assessment comprised a search of both published and unpublished records held by the Cheshire Historic Environment Record (CHER), the Cheshire County Record Office (CRO), and the archives and library held at OA North. The walkover survey was conducted along the route of the proposed cable, in order to relate the landscape and surroundings to the results of the desk-based assessment. The significance criteria detailed in PPG 16 (DoE 1990) were employed during the assessment. The desk-based research and walkover survey were undertaken in June and July 2007 and, although submitted previously in draft format, for the sake of completeness, are reported upon here. Also included are the original statement of the archaeological potential and significance of the locale of the proposed cable route (*Section 6*), the assessment of the impact of the proposed works (*Section 7*), and the programme of archaeological mitigation (*Section 8*) established in consultation with Cheshire County Council Historic Environment Service (the county council's body responsible for providing advice and guidance on heritage matters).
- 1.1.3 Following assimilation of the results of the draft desk-based assessment and the recommendations for further works presented therein, OA North was commissioned to undertake the programme of archaeological mitigation, between March and May 2008. This comprised the topographic survey of several sites identified during the desk-based assessment, as well as a watching brief of the central section of the cable route. The monitored stretch ran eastwards from the railway embankment to the north-east of Frodsham, crossed the Weaver Navigation Canal, and terminated at Sutton Weaver Vicarage, on Aston Lane, a distance of *c* 1.8km.
- 1.1.4 This report briefly sets out the results of each stage of the archaeological programme in the order in which it was undertaken, concluding with a brief synthetic discussion and an assessment of the overall impact of the development on the heritage resource.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The cable route ran from Frodsham Substation (NGR SJ 253 794), to the south-east of Whitehouse industrial estate, in the vicinity of Weaver Junction (NGR SJ 564 792), in the Borough of Vale Royal, Cheshire (Fig 1). The western part of the route lay on a narrow spit of land between the River Weaver and the Weaver Navigation Canal, on the relatively flat flood plain of the River Weaver. This area features a mixture of saturated reed beds, lying below 10m OD, grassed meadow and low, but prominent, wooded hillocks. The eastern part of the route runs through agricultural land that, to the north of the River Weaver, rises gently to around 50m OD.
- 1.2.2 The western end of the cable route lay at the southern edge of the Mersey Valley, much of which is underlain by estuarine and river alluvium bordered by areas of wind-blown sand (Countryside Commission 1998, 142). Other parts of the valley are mantled by glacial boulder clay with pockets of sand and gravel (*ibid*). There are outcrops of Triassic sandstone bedrock in the Frodsham area, and elsewhere to the south and east of Runcorn. In the rest of the valley only the drift geology is visible on the surface (*ibid*).
- 1.2.3 The remainder of the proposed cable route runs through the north-west of the Shropshire, Cheshire, and Staffordshire Plain (*op cit*, 145). This rural landscape exists in an area that was formed from Triassic sandstones and marls, which were overlain by glacial deposits, largely consisting of boulder clay, with local deposits of silt, peat, sand and gravels (*ibid*).

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 Throughout the programme of works, OA North adhered fully to the standard guidance for archaeological projects set out by the Historic Environment Planning Officer (Archaeology) at Cheshire County Council Environmental Planning department (CCCEP 2003, Section 3), with specific reference to desk-based assessments, topographic surveys and watching briefs. All work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, which is generally accepted as best practice. As far as possible, the programme of mitigation sought to meet the recommendations of the desk-based assessment (*Section 8*). Any necessary diversions from that programme were undertaken in consultation with representatives of the Client, and with the Cheshire County Council Historic Environment Officer, and are described within the individual methodology sections. The Vale Royal Conservation Officer at the Planning Office was also consulted to ensure that the methodology for deep-drilling the cable beneath several listed structures was acceptable.

2.2 DESK-BASED ASSESSMENT

2.2.1 The principal sources of information consulted were historical and modern maps of the Frodsham, Sutton, and Aston by Sutton areas and information held by the CHER, as well as published and unpublished secondary sources. A study area with a radius of 0.5km, extending from the proposed cable route, was examined in detail in order to provide an understanding of the historical and archaeological background of the area and assess the potential impact of the proposed works on any sites of archaeological interest. All sites of archaeological interest identified within the study area have been included in the Site Gazetteer (*Section 5*) and plotted onto the corresponding Figure 2. The results were analysed using the Secretary of State's criteria for the scheduling of ancient monuments, outlined in Annex 4 of *Planning Policy Guidance 16: Archaeology and Planning* (DoE 1990).

2.2.2 **Cheshire County Historic Environment Record (CHER):** the CHER held in Chester was consulted to establish the sites of archaeological interest already known within the study area, and the extent and number of these. The CHER is a database of all archaeological sites in Cheshire, and is maintained by Cheshire County Council. Each entry was included in the Site Gazetteer (*Section 5*). Aerial photographs were also consulted.

2.2.3 **Cheshire County Record Office (CRO):** the CRO in Chester was visited to examine primary documents relating to the study area. Both published and manuscript maps were consulted, as well as secondary published sources and unpublished primary sources.

2.2.4 **Oxford Archaeology North:** OA North has an extensive archive of secondary sources, as well as numerous unpublished client reports on work carried out

both as OA North and under its former title of Lancaster University Archaeological Unit (LUAU). These were consulted where relevant.

2.3 WALKOVER SURVEY

2.3.1 A walkover survey was conducted over an area extending 100m to each side of the proposed cable route on the 10th and 11th of June 2007. The main aim of this survey was to identify the location and extent of any previously unrecorded sites of archaeological interest, as well as to gain an understanding of the state of preservation and extent of any known sites that might be affected by the proposed works. The results of the survey were compiled by using photographic and written records and the locations of any sites of interest were recorded on annotated maps.

2.4 TOPOGRAPHICAL SURVEY

2.4.1 Based on the findings of the desk-based assessment and walkover survey, it was proposed that a topographic survey should be undertaken on five earthwork sites of heritage interest that were considered to lie within the zone of impact associated with the cable route; specific details are provided in Table 6, *Section 8.2* (Figs 2 and 9). In the event, however, Site **32**, an undated clearance cairn, was avoided by the route, and could thus be preserved *in situ*, whilst the cable route had crossed Sites **27** and **46** before they could be recorded. Both represented elements of more extensive features (a post-medieval lynchet and a parish boundary, respectively) that were preserved within the landscape either side of the route. An enhanced Level 2 topographic survey was thus conducted on two sites, comprising an area of ridge and furrow at Site **22** and a post-medieval boundary ditch at Site **28**.

2.4.2 The survey was undertaken using Leica differential GPS (Global Positioning System) equipment, using real-time (RTK) corrections and equipped with mobile SmartNet technology to achieve an accuracy of $\pm 0.01\text{m}$. 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 OS data (Fig 10). Descriptive records and annotated plans were generated on-site on *pro-forma* recording sheets. A photographic record of the sites was maintained in digital colour photography.

2.5 ARCHAEOLOGICAL EVALUATION

2.5.1 Although it was proposed within the desk-based assessment that a number of sites should be evaluated in order to better identify any potential risks to the groundworks schedule prior to the commencement of cable route works, issues with land access meant that this was not practical, and no evaluation was undertaken.

2.6 WATCHING BRIEF

- 2.6.1 **Introduction:** the watching brief was concentrated on the *c* 1.8km-long central section of the cable route, as this was deemed from the results of the desk-based assessment and walkover survey to have the most risk of disturbing archaeological remains. This stretch ran eastwards from the railway embankment to the north-east of Frodsham, crossed the Weaver Navigation Canal to Marshgate Farm, ran parallel with the Chester Road and terminated at Sutton Weaver Vicarage, on Aston Lane (Figs 9 and 11). For ease of recording, the observed area was sub-divided and numbered according to the modern fields through which the cable route passed (Fig 11).
- 2.6.2 **Groundwork contractor's methodology:** groundworks were enacted utilising a variety of mechanical excavators fitted with a range of buckets. Initially, a 0.3m depth of topsoil was removed in a 5m-wide strip along the length of the working easement for the laying of a stone haul road. The 7m wide topsoil strip for the cable followed, often in conjunction with excavation of the trenches and laying of the cable by a team working a little distance behind. The pair of cable trenches were 1m wide and dug 4-5m apart to a depth of 1.3m below ground level (bgl). Where there is a requirement within the following document to refer to a specific trench, given the general east/west alignment of the cable route, the trenches are referred to as the northerly or southerly trench, irrespective of their actual juxtaposition at any given point. Carriage of the cable in the area of listed linear structures, such as the Weaver Navigation Canal (Site 45) and the Railway viaduct (Site 1), was achieved by deep drilling, so that the cable passed beneath the sites at an appropriate depth. For reasons of practicality and visibility, only the initial excavation at deep drilling locations was monitored.
- 2.6.3 **Archaeological monitoring:** as far as possible, close liaison was maintained with the groundwork contractors involved with the project. The programme of field observation comprised the systematic examination and accurate recording of all features, horizons, and artefacts of archaeological interest exposed during the groundworks. The location, extent, and character of features of archaeological interest, including sub-soil horizons, were recorded.
- 2.6.4 The recording conformed to the standard context recording system utilised by OA North, which comprised the use of *pro-forma* watching brief record sheets with supporting registers and indices. A full, indexed, photographic record in colour transparency and monochrome formats was also produced. Section drawings and plans were made at appropriate scales, and these were located using taped measurements from existing boundaries and landmarks.

2.7 ARCHIVE

- 2.7.1 The results of the archaeological work undertaken form the basis of a full professional archive, in accordance with current English Heritage guidelines (1991). The archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Cheshire County Council Historic Environment Record (CHER) in Chester. The original

archive, including paper, magnetic and plastic media, will be deposited in the Cheshire County Record Office, also in Chester, whilst the finds will be deposited with the Cheshire Museum.

3. BACKGROUND

3.1 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.1.1 **Introduction:** in addition to a detailed investigation of the closely defined study area, it is also necessary to present a general archaeological and historical background of the wider locale. This will allow the site to be considered within the context of the differing systems of land use, ideology, and resource exploitation that helped to define the broader human landscapes in this area over time.
- 3.1.2 **Mesolithic Period (8000–4000 cal BC):** early Mesolithic sites in lowland Cheshire have tended to be found where solid geological deposits outcrop through glacial drift, with sandstone ridges being utilised for the foundation of base camps, such as those at Greasby, Harrol Edge, and Thurstaston (Leah *et al* 1997, 146–7). Although this pattern does not conform to the geological make-up of the study area, elsewhere in Cheshire sparse distributions of flint have also been found on mineral soils fringing wetland areas, such as at Rixton and Risley Mosses (*op cit*, 149), which represent situations that are perhaps more analogous. Much of the study area comprises land sloping gently up from the wetlands associated with the River Weaver and a scatter of possible Mesolithic flints, including cores, which suggest a site of tool manufacture, were found within the study area (Site 12). It has also been suggested that the peat deposits of Cheshire could conceal late-glacial and post-glacial material, as has been discovered at Porth-y-Waen and Tatton Park (*op cit*, 147). Although the CHER descriptions state the non-indigenous nature of flint in Cheshire and suggest that any flint must have been imported, the walkover survey identified several flint pebbles and pebble fragments within the study area. The diminutive size of these pebbles suggests that they were naturally occurring, albeit in small quantities.
- 3.1.3 **The Neolithic and Bronze Age periods (c 4000–700 cal BC):** the Neolithic period represents the beginning of the adoption of agriculture into the hunter-gatherer- and fisher-based subsistence strategies that were used during the earlier prehistoric periods. In Cheshire, the general correspondence of the elm decline with the earliest instances of cereal pollen suggests that the early fourth millennium cal BC saw the combination of woodland clearance and cereal production indicative of early farming practices (Fitzpatrick-Matthews 2006). Lithic material dating to the Neolithic has been found on land overlooking the River Weaver in the Aston area, just to the south of the study area. This includes two arrowheads found to the north of Aston Lane (CHER 2366 and 2645/0/1; LUAU 1993) and a scraper found in the same area (CHER 2645/0/2). A blade fragment found nearby may also date to the Neolithic (CHER 2645/0/3), whilst two Neolithic scrapers were found close to Townfield Lane, in east Frodsham (Petch 1975, 59).
- 3.1.4 As well as a change in subsistence strategies, the Neolithic was also a time of change in relation to the expression of ideologies with the introduction of monumental architecture throughout Britain and Ireland. Although few such monuments are found in Cheshire (Fitzpatrick-Matthews 2006), there is

evidence within the study area for the presence of hengiform monuments (CHER 2448/1/1 and CHER 2448/1/2) in association with round barrows, which are likely to date to the Bronze Age. A ring ditch and a barrow also lie to the south-east of Frodsham cut, south of the study area (Higham 1993).

- 3.1.5 The location of Bronze Age barrows in the lowlands of Cheshire appears to demonstrate a preference for river valleys (Leah *et al* 1997, 151) and the siting of the barrows and ring ditches mentioned above, close to the River Weaver, conforms to this pattern. Bronze Age activity in the Weaver river valley is also suggested by the discovery of several putative burnt mounds. These include a burnt stone spread on a tributary of the Weaver (*ibid*), as well as a gully filled with burnt stones, charcoal, and a struck flint, excavated to the east of Frodsham Cut (Lambert *et al* 1996). Although very rare in Cheshire, any further burnt mounds or spreads of stone are likely to be found within river valleys (Leah *et al* 1997, 151).
- 3.1.6 As well as possible Bronze Age monuments within the study area, the wider locale has produced finds, such as a hammer-stone from the Townfield Lane area (Anon 1957, 52), that may date to the Bronze Age and a pygmy cup with a possible inhumation from Clifton (CHER 115) at the western end of the cable route. The wetlands of Cheshire have produced numerous finds of Bronze Age date, such as a stone shaft-hole implement from the surface of Risely Moss and bronze axes and a sandstone hammer from the Rixton/Risely Moss area (Leah *et al* 1997, 151). Two Bronze Age spearheads were also found at Frodsham Marsh (CHER 1013), to the west of the study area. Although these finds may be the result of casual losses, the deliberate deposition of artefacts in wetlands in Lancashire, during both the Neolithic and Bronze Age, is strongly suggested by finds distributions favouring such environments (Middleton 1996, 38; 45), and this might also explain the location some of the Cheshire wetland finds (Leah *et al* 1997, 151). Such practices of wetland deposition were not restricted to northern England and were part of a phenomenon that occurred throughout Britain and Ireland (Middleton 1996, 45; Waddell 2000, 47). The deposition of such valuable deposits might be understood in many ways, from the survival of non-organic remains that would have accompanied water-based body disposals, to sacrifices intended to appease or honour the gods, or the disposal of wealth in order to elevate the status of the person responsible for the deposition (Parker Pearson 2000, 117). The western part of the study area consists of low-lying land in the Weaver River valley, much of which comprises saturated wetland areas, while the central part of the study area occupies the higher ground overlooking the river. As such, there is good potential for the discovery of artefacts deposited within former watery contexts and for other forms of activity on the higher ground.
- 3.1.7 **The Iron Age (c 700 cal BC – AD 43):** there is little evidence of Iron Age activity within the immediate vicinity of the study area, and most of the known sites of this period in the region, such as Bradley promontory fort (CHER 971/1) to the south of the River Weaver, occupy the higher ground of the mid-Cheshire ridge (Leah *et al* 1997, 152). Lowland enclosed settlements in the wider region have, however, been found to the north of the study area, at Great

Woolden Hall in Greater Manchester (*ibid*) and Brookhouse Farm in Merseyside (Cowell 2005) and it has been suggested (Leah *et al* 1997, 151–2) that adverse soil conditions in the Cheshire Plain may have prevented similar sites being identified by aerial photography.

- 3.1.8 The topographic location of the western part of the study area, within the wetlands and former wetland areas fringing the River Weaver, is, once again, relevant when discussing the Iron Age in the region. Human remains have been found in boglands and peat mosses at Lindow Moss, Pilling Moss, Red Moss, Bolton, and Worsley in the north-west of England (Turner and Briggs 1986, 148–9; Haselgrove 1996, 70). Not only do peat deposits aid the preservation of organic remains, but wetland places appear to have been venerated in the Iron Age, as they had been in earlier prehistoric periods, making boglands and mosses focal points for the ritual deposition of both artefacts (Ross 1996, 465) and human bodies (Ross 2004, 82–3). Although the body at Lindow Moss was of early Romano-British date, it appears to represent the continuity of indigenous British practices.
- 3.1.9 ***The Romano-British Period (c AD 43 – AD 409)***: although there are known Romano-British centres at Chester, Wilderspool, and Northwich, few rural sites are known from this period in Cheshire (Leah *et al* 1997, 153). It may be the case that many of the enclosed Iron Age settlements in the region continued in use into, or were reused during, the Romano-British period, as has been demonstrated at Great Woolden Hall in Greater Manchester (*op cit*, 152) and at Brook House Farm in Merseyside (Cowell and Philpott 2000, 62–3).
- 3.1.10 A Roman road (Site **20**) is known to have run north-east from Chester to the Roman settlement of Wilderspool (Margary 1973, 304). Although the line of this road is traceable from Chester to Bridge Trafford, and between Preston on the Hill and Wilderspool, the intervening section running through the Frodsham area encounters terrain that would have prevented the construction of a straight road and the route is, therefore, unclear (*op cit*, 304–5). The road is thought to have followed Howey Lane and Church Road through Frodsham (*ibid*), before possibly running along Townfield Lane towards a bridge or ford crossing on the River Weaver (Hawkin *nd a*, 4–5), to the north-west of Frodsham Bridge. The road may then have followed a course similar to that of Cheshire Road (Gifford and Partners 1994, fig 5). This suggestion relates to the discovery of a portion of an ‘old road surface’ in 1808, which was found approximately 2m below the contemporary surface (Hawkin *nd a*, 5). The Cheshire salt fields were an important resource during the Romano-British period (Ashmore 1982, 10), and a road that intersected with the River Weaver would have allowed the potential to transport salt to the north-east or south-west following the initial transportation by boat. However, no evidence of a Romano-British port has been found in this area.
- 3.1.11 The suggestion that the road followed the course of Chester Road is supported by the discovery of a possible Roman pavement and semi-circular arch, found in the vicinity of Chester Road in 1808 during the construction of the Weaver Canal, close to the current swing-bridge over the canal (Site **5**). Two coins were found at the south-west junction of High Street and Chapel Lane in Frodsham, at least one of which was from the reign of Caesar Augustus (Petch

1975, 60). There were also 10 coins (CHER 931) found at Aston, near Halton, ranging in date from the reigns of Augustus to Constantine (c 31 BC to AD 340). It has been suggested (Thacker 1987, 244) that areas containing the Anglo-Saxon 'ham' place-name element, such as Frodsham, are often situated in the vicinity of Roman roads. This might suggest the foundation of such settlements during the Romano-British period or, alternatively, it could reflect the growth of settlements close to such roads in later periods.

- 3.1.12 ***The early medieval period (c AD 409 – AD 1066)***: Frodsham, meaning the village or settlement of Frod in Old English (Dodgson 1971, 222), has been identified as an area of some importance area during the early medieval period. In the Domesday Survey of 1086 it was recorded (as *Frotesham*) as one of only a small number of settlements in Cheshire to have had a priest and a church (Shaw and Clark 2002, 17). It has been suggested (Higham 1993, 152-3, cited in Shaw and Clark 2002, 18) that Frodsham was the site of an ancient mother-church and originated as the administrative centre of a large royal estate and, prior to the Norman Conquest, had belonged to the Earl of Mercia. The proposed antiquity of the church is supported by the presence of Anglo-Saxon sculptures built into a more recent tower in the town. These consist of a figurine sculpture depicting 'Christ in Glory' and a grave slab with an incised circular head (Chester Archaeology Service 1993, 7). As indicated above, Thacker (1987, 244) suggests that the 'ham' element of Frodsham may be indicative of early medieval occupation of a Roaman settlement. An alternative interpretation of the place-name, however, exchanges *ham* for *hamm*; a word denoting land in a river bed, water meadow, or hemmed in place, and an appropriate description of the topographic location of Frodsham.
- 3.1.13 The central and eastern parts of the study area lie within the townships of Sutton and Aston, which, in conjunction with Norton and Weston, formed four *tuns* with names derived from their cardinal locations (Thacker 1987, 253). It has been suggested (*ibid*) that these place-names are indicative of a centralised pre-Conquest administration unit in the area and that they may have originated in the Romano-British period (*op cit*, 246). The four *tuns* lie within the parish of Runcorn, which was founded as a *burgh* in 915 by Aethelflaed, the daughter of King Alfred and wife of Aethelred. This burgh was apparently established as a defence against the Norse of Ireland (*op cit*, 253). Aston appears in Domesday Book as a holding of William of Nigel; Sutton, however, is not mentioned (*ibid*).
- 3.1.14 ***The medieval period (c AD 1066 – AD 1540)***: historical and archaeological evidence suggests that this area was the setting for a great deal of domestic, recreational, and industrial activity during the medieval period. The value of Frodsham at the time of the Norman Conquest shows that it had been one of the most valuable manors in Cheshire (Shaw and Clark 2002, 18), although it subsequently suffered in the rebellion of 1069-70, which devastated Cheshire. However, by 1086, when the next valuation figures were published, it appears to have recovered economically (*ibid*).
- 3.1.15 Frodsham was granted its burgh charter in the early thirteenth century (Dodgson 1971, 227, cited in Shaw and Clark 2002, 18), and several sites that represent domestic and industrial activity, as well as aristocratic landholdings,

are situated within the wider locale of the study area. These include residences such as Sutton Hall (Site **15**), Aston Old Hall (CHER 935/1/1), and the Bishop of Chester's residence (CHER 950). Medieval deer parks were also present within the wider area at Aston Park (CHER 934/2; de Figueirido and Treuherz 1988, 214) and Clifton Park (CHER 106/2). Industrial sites at Beech Mill (Norris 1965, 62), Aston Mill (*op cit*, 61), Sutton Mill (Site **8**), and Aston Lower Mill (CHER 937/2), are also believed to have had medieval origins.

- 3.1.16 Frodsham operated as a port during the medieval period, using the estuary port on the River Weaver produced by Frodsham Bridge (Hawkin nd b, 1). The area was reputed to have been crowded with vessels unloading (Shaw and Clark 2002, 20), and it has been referred to by historians as Frodsham Port (Hawkin nd b, 1). Close to the site of Sutton Mill, and spanning the River Weaver, was the location of the medieval Frodsham Bridge (Site **6**), which was rebuilt in 1625 before being replaced with the current bridge (CHER 987). The low arches of the medieval bridge did not allow the passage of sea-going ships and, therefore, the port at Frodsham would have played an important role in the transfer of cargo from, and to, marine vessels.
- 3.1.17 Salt from the Cheshire wiches came into Frodsham, from where it was exported to Liverpool and beyond (*ibid*) and Irish merchants were known to export grain to Frodsham in the late thirteenth century (*op cit*, 2). The success of Frodsham Port appears to have encouraged settlement during the medieval period. in the form of a satellite town to the north of Frodsham, (*op cit*, fig 2). This has since been absorbed into Frodsham and the evidence for this settlement is largely based on the place-name 'Newtown', which was often given to thirteenth-century foundations (Shaw and Clark 2002, 25) and continued to appear on twentieth-century maps of the area.
- 3.1.18 The village of Sutton Weaver, at the northern side of the study area, features a cottage that might pre-date the sixteenth century (CHER 436813) and a silver penny of Edward I (Site **13**) and medieval pottery sherds (Site **14**) were found in fields at the south-west of the village. The township of Sutton was the seat of the Dutton family during the medieval period; however, during the thirteenth century their family name was changed to Warburton, following the acquisition of a manor of that name (Morgan 1978, 266). The historic arrangement of tenurial plots within Sutton village gave the appearance of burgage plots lining both sides of Chester Road (*Section 3.2.3*), and might suggest a medieval origin for the layout of the village.
- 3.1.19 As well as being the location of a medieval deer park, Clifton, to the north-west of the study area, was also associated with Clifton Hall (CHER 56026), which was built prior to 1565 and is also the possible site of a shrunken medieval village (CHER 106/0). The village was mentioned in Domesday Book and in sources throughout the medieval period (Dodgson 1970 cited in CHER 106/0).
- 3.1.20 **Post-medieval period:** the port of Frodsham continued to flourish during the post-medieval period and, in the seventeenth century, the wood used as fuel to heat the salt pans in Cheshire was replaced by coal, which was imported into Frodsham from the Lancashire pits, via the River Mersey (Ashmore 1982, 1).

However, as the coal was transported from the port to the various salt works by packhorse, the land carriage rates began to have a detrimental effect on the salt trade (Willan 1951, 4). Importers in Ireland and elsewhere had already turned to France and Spain for their supplies (*ibid*). As a result, in the late seventeenth century the tradesmen pushed for efforts to enable the River Weaver to be navigable further inland than Frodsham (*op cit*, 2) to promote riverine transportation. The scheme was known as the Weaver Navigation Act (Nicholson 1991, 179).

- 3.1.21 In addition to the established brine salt industry, rock salt was discovered in Cheshire in 1670, increasing the scale of the salt industry and adding to the support for the Weaver Navigation (Whittingham 1969, 1). The exploitation of rock salt led to the construction of a works for refining salt on the western bank of the River Weaver in 1670, which in 1772 was the site of a later salt works (CHER 977/1). However, due to competition between the rock and brine salt suppliers, and the subsequent reduction in cost to rock salt that the Navigation would have, the brine salt manufacturers were strongly opposed to the Weaver Navigation Act (Willan 1951, 6).
- 3.1.22 There was further opposition to the scheme because it was feared that the thousands of families employed in the carrying trade would be made destitute should the bill be passed, which could have negative implications for local landlords and the local economy (*ibid*). This was a common opposition to canals, although it is thought that some of those whose jobs became redundant may have found new employment working on the canals. Due to the strength of opposition, the Act was not passed until 1721 (Nicholson 1991, 179) and by 1732 the Weaver was made fully navigable (*ibid*). It was not until 1780, however, that Frodsham Lock and Cut were constructed as improvements to the navigation (British Waterways 2004, Appendix 2). At some time between 1806 (Nicholson 1991, 179) and 1810 (British Waterways 2004, Appendix 2) an artificial cut was created from Sutton Weaver to Weston Point for through traffic, which by-passed Frodsham Lock and Sluice and Cut leaving it to mainly local traffic.
- 3.1.23 In addition to the salt industry, the dockland areas of Frodsham were also utilised for ship building, and wharves for slate and coal (Ashmore 1982, 41) as well as facilitating the export of other products, such as bark to be shipped to Ireland during the early eighteenth century (CRO DSS 1/5/116). Other industries in the local area comprised lime kilns (CHER 4350) and bone works (such as CHER 4349). The corn mill at Sutton Mills was in use until the early twentieth century and had been powered by water, steam, and, finally, electricity (Site 8). Agricultural sites were also a prominent part of the landscape with marl pits, for the extraction of a clay and lime mixture for fertiliser, being depicted on the Sutton tithe map of 1844 (Fig 4). Boundary stones are also present in the fields to the east of Chester Road and south of the River Weaver (Site 16; CHER 994/0/2), which represent strips of water meadow that would have been used for the cultivation of hay. In the fields to the west of these boundary stones, ridge and furrow at Site 22 provided evidence for agricultural practices that pre-dated the extant field boundaries.

3.1.24 In the mid-nineteenth century the Chester to Warrington railway was constructed and this falls within the study area at the western and eastern ends of the cable route. The grade-II listed Frodsham Viaduct (Site 1) that carries the railway over the River Weaver was built in 1848–50 and is situated at the western end of the study area (CHER 436340). The nineteenth century also saw the construction of the Severn Vyrnwy Aqueduct (Site 31), which crosses through the eastern end of the study area.

3.2 MAP REGRESSION ANALYSIS

3.2.1 **Introduction:** the following section comprises an appraisal of the cartographic evidence available from the CRO. Although not every edition of the OS (OS) map for the county were available from that source, it is felt that those that could be consulted allow a fair representation of the historical development of the study area.

3.2.2 **Aston by Sutton Tithe of 1844 (Fig 3):** this map covers the eastern 0.75km of the proposed cable route, land which the accompanying tithe award attributes to the ownership of Sir Arthur Ingram Aston. The overall character of the township is rural, comprising fields and the occasional dispersed settlement in the area of Aston Heath. The fields within the southern part of the study area are large and generally defined by a wider network of straight boundaries. Those to the north, notably those adjoining the Runcorn and Northwich and the Chester and Warrington Turnpikes, are much smaller. Even amongst these there would appear to be a clear distinction between the small, irregular fields to the north-west of the rather sinuous Chester Turnpike, which clearly utilised a much older route, and those to the south-west which are much more regular. The straight Runcorn Turnpike must be more recent than even the regularly laid fields, since their boundaries are clearly cut by the road. The agricultural nature of the landscape is suggested by the large numbers of marl pits, which often cluster at field boundaries, and the small amount of woodland, which is restricted to four areas, the most westerly of which would appear to have developed within an area utilised heavily for marl extraction.

3.2.3 **Sutton Tithe Map, 1844 (Fig 4):** this map encompasses the bulk of the cable route, and is again recorded as under the ownership of Sir Arthur Ingram Aston. The principal settlement foci within the study area include Sutton Village, with Sutton Hall just to the south, a farm, seemingly called ‘The Fields’ to the east, to the south-west another farm, ‘Marshgate,’ and the northern elements of Frodsham Newtown, which includes Frodsham Bridge (Site 6), Sutton Mills (Site 8) and an associated wharf and dockyard. Sutton village is a linear settlement, with a series of small, somewhat elongated fields running from the central street. Not all these fields, particularly at the northern end of the village, are occupied by building plots, and there is evidence to suggest that many of the once narrow plots have since been merged. If Sutton was indeed medieval in origin, then it might have been more populous in the middle ages than the mid-nineteenth century.

3.2.4 The township is again essentially rural in character, with areas of arable, pasture and occasional meadows, although the landscape is a mixture of older

and more recent elements. A fairly ancient road network seems to be represented by the sinuous east/west path of Chapel Lane and possibly also Rock Savage Lane, together with the north/south routes of Sutton High Street (by then the Chester and Warrington Turnpike) and Halton Lane. To the north and south-west of these routes there is a patchwork of fields, irregular in terms of their shapes, sizes and boundaries. To the south-east and between the canal and the meandering Weaver, the fields are much more regular. Those in the crook of the Weaver clearly conform to the canal and to the Mill Cut, whilst those around Sutton Hall are generally larger, suggestive of later, or more organised, enclosure than that enacted to the north of Chapel Lane. Marl pits are also more common within these larger fields. Those fields to the south of Rock Savage Lane are different in character again, being long, thin and irregular, and the most westerly is divided internally into a series of parallel strips. It is possible that this field system is older than any of the others within the township. With the exception of the Mill Field Plantation, to the south of Sutton Hall, woodland is restricted to the valleys of a series of small tributaries of the Weaver.

- 3.2.5 Several of the field names on the tithe award are suggestive of some former industrial usage, including Fields 134 and 139, ‘Back Mill Brow’ (Site **41**) and ‘Mill Field’ (Site **42**), respectively, to the south of Sutton Hall. Field 44, to the north of Marsh Gate Farm, is identified as ‘Brick Kiln Field’ (Site **39**), as is Field 303 at the north-eastern end of the township (Site **44**).
- 3.2.6 **Clifton Tithe Map, 1845 (Fig 5):** this map covers the most westerly *c* 0.65km section of the cable route and its corresponding study area. The majority of the area is occupied by undeveloped land to the north of the Weaver Navigation Canal and marshland between the canal and the Weaver itself. The canal towpath and one or two adjoining routes, likely to be indicative of metalled tracks, are depicted, but the majority of routes are footpaths. Two such footpaths are intersected by the cable route, including an embanked footpath running close to the north bank of the Weaver. The same area is occupied by two small meandering watercourses, the most easterly of which, part of the Flood Brook, would seem to pass beneath the canal on its course to the Weaver. The bridle path to the north of the canal follows a rather sinuous route, which could relate to the local topography of the flood plain, but may conform to earlier field boundaries. The existing field boundaries, although enclosing large fields, are somewhat sinuous in conformation and, particularly around Clifton itself and within the valley of the Flood Brook, are lined with belts of woodland. The only possible structural feature within the study area is a wharf (Site **34**) at the junction of the tow path and the route to Clifton.
- 3.2.7 **Frodsham Tithe Map, 1846:** only a small part of the Frodsham township falls within the study area. The map and accompanying schedule show a salt works west of the River Weaver and mention numerous ‘marsh’ field names. South of the Weaver are several fields with ‘tween mills’ in their names, suggestive of mills in the near vicinity.
- 3.2.8 **OS first edition 6”:1 mile, 1874 (Fig 6) and OS first edition 25”: 1 mile, 1872:** the close dates of these maps mean essentially that they show the same features, albeit in differing detail, and can be discussed as a single entity. The

main difference between these maps and the preceding tithe maps is the superimposition of the rail network onto the landscape, with associated installations, such as stations at Frodsham, Halton and Sutton Weaver, together with various signal boxes. The principal routes are the Liverpool, Runcorn and Birdswood section of the London and North Western Railway (L&NWR), which runs east/west to the north of the study area, and the Cheshire Junction Railway, which runs north-east/south-west through Frodsham. The lines are connected by a branch of the L&NWR running between Halton and Frodsham Junctions. The former turnpikes are no longer labelled as such, and a new foot bridge (Site 35) crosses the canal to the south of Rock Savage in the area of the wharf (Site 34) identified on the Clifton tithe map; a small, unidentified building occupies the adjacent plot.

- 3.2.9 Although there has been some realignment of the field system to the rail network, the majority of changes relate to a more general pattern of expansion of field dimensions through the removal of some boundaries, together with the regularisation of others, including the very small fields around Rock Savage Lane and the former Runcorn and Northwich Turnpike. A greater number of marl pits are shown than on the tithe maps; this may relate to the fact that they were of little interest to the latter documents, but may equally reflect an intensification of agricultural practice and fertilisation. The boundary stones (Site 9) around the field at Frodsham Lock are clearly depicted. The settlement pattern would appear largely unchanged, with the only clearly new development comprising two terraces of houses on former agricultural land to the south of Rock Savage. 'The Fields' at the eastern end of the cable route is now labelled 'Sutton Fields Farm' (Site 43).
- 3.2.10 A number of industrial sites are shown within the area of the canal and Weaver which are not shown on the tithe maps. The Rock Savage Bone Works (Site 36), within the north-west angle of the canal and the Flood Brook, is shown as a complex of around ten adjoining structures. Further eastwards along the canal is the larger Runcorn Bone Works (Site 38), to the north-east of which stand a terrace of six houses, the largest of which may have been for the bone works foreman. In the adjoining plot there is a rectangular dock basin (Site 37) with an accompanying rail track that feeds onto the Cheshire Junction Railway. A third bone works, on the very edge of the study area, lies on the south bank of the Weaver in Frodsham Newtown, just to the south-east of the salt works complex (now labelled 'disused') with several accompanying terraces of houses. The old limekiln (Site 7) can also be seen in this area. A smithy (Site 40), comprising four separate structures, is shown close to the junction of the former Chester and Warrington Turnpike and Chapel Lane west of Sutton, close to the site of the former turnpike gate, and just to the north of the cable route.
- 3.2.11 *OS third edition 25": 1 mile, 1910 (Fig 7)*: changes to the field system have not been extensive, with a continuation of a general theme of expansion and regularisation. There also appears to be a gradual process of drainage of some of the boggy areas and infilling of marl pits within fields, although from the presence of several new pits within the wood to the south-east of Sutton Fields Farm, marl is still an important fertiliser.

- 3.2.12 Changes within the settlement pattern include the construction of further terraces and a primitive methodist chapel to the south of Rock Savage, now labelled Clifton, whilst the structure on the canal to the immediate south has been extended and is recorded as a boat house. Frodsham Newtown is starting to become quite developed, as is north Sutton, although expansion within the study area is more modest. There has been some demolition of buildings at Marshgate Farm, particularly within the north-eastern part of the enclosure, and these have been replaced with larger structures within the area of the former orchard. Sutton Fields Farm has also been expanded through the addition of ancillary structures and a large barn-like building, and there is similar development at Aston Heath Farm, which is named for the first time. At the far eastern end of the study area in Dutton, an ‘Isolation Hospital’ has been built.
- 3.2.13 The west wing of the Rock Savage Bone Works (Site **36**) has been remodelled, and the positions of tanks and a chimney are marked, as is the chimney at the Runcorn Bone Works (Site **38**), to which a small terrace of houses has also been added. The nearby dock is labelled ‘Sutton Dock’ (Site **37**), but is otherwise unchanged. The disused salt works buildings and tanks have been utilised as the Weaver Chemical Works, with the addition of a few new structures to the north-west. There has also been expansion of the existing industrial sites in Frodsham Newtown, including the Sutton Mills and the bone works. The old lime kiln (Site **7**) is no longer shown in this area, which is instead occupied by an oil cake works.
- 3.2.14 *OS fourth edition 6”:1 mile map, 1938*: only data for the western part of the study area was available. There were no changes in the visible elements of the rural landscape, but there were one or two changes to the industrial character of the area. The Rock Savage Bone Works (Site **36**) is not shown, although the tank is still extant. With the exception of a round tank and a rectangular feature likely to be some sort of pond or reservoir, the industrial components of the Weaver Chemical Works have been demolished, leaving only domestic structures. A Steel Tube Works, comprising a large rectangular building and a smaller structure, has been built to the north-west of the Sutton Dock (Site **37**), whilst three semi-detached houses have been built along the Sutton causeway, to the north-east of Marshgate Farm.
- 3.2.15 *OS fifth edition 6”:1 mile map, 1954 (Fig 8)*: beyond the occasional amalgamation and regularisation of smaller fields to make larger ones, there are few changes to the rural background, which remains largely agricultural. One or two large clay pits seem to have been dug, including that to the east of the smithy at Sutton, and a large triangular feature has been excavated to the north of the canal between the Flood Brook and the Steel Tube Works. Industry in the area seems to be on the decline, with all elements of the Rock Savage Bone Works (Site **36**) removed, whilst a canal dump deposit at the north-western end of the study area is likely to relate to Hadfield’s Weston Charcoal Works, which formerly occupied the adjacent plot to the west. The Oilcake Works are no longer labelled, and its site is marked by an area of hatching, perhaps suggesting recent demolition. Although there is little evidence of permanent expansion within the existing settlement pattern,

almost all, including Frodsham Newtown, Sutton, Ashton Heath, Marshgate Farm, Sutton Fields Farm and Sutton Hall, have a number of simple unshaded rectangular features. The prevalence of these features suggests that they are temporary accommodation built during and after the Second World War.

3.2.16 **OS current edition, 1:10,000, 2000 (Fig 2):** major changes have occurred in the study area within the last 50 years, although the amount of alteration is less severe than that to the north, which has largely been subsumed by the southward expansion of Runcorn. Much of the northern boundary of the study area is occupied by the route of the M56 motorway, and that to the north-east of the former LGWR is almost completely taken up by the Whitehouse Industrial Estate. The Sutton Dock (Site 37) remains extant, whilst the Steel Tube Works and the site of the former Runcorn Bone Works (Site 38) are occupied by warehouses and work units of the Ashville Industrial Estate. With the exception of small amounts of ribbon development along Chapel Lane, the settlements and farms seem little changed.

3.3 ARCHAEOLOGICAL INVESTIGATIONS

3.3.1 Several archaeological investigations have been carried out in the vicinity of the cable route. The first of these was by the Frodsham and District Local History Group at the site of a former salt works (CHER 977/1) in 1990 (FDLHG 1990). Excavations revealed wooden sleepers from the quayside railway, upon which a crane for loading and unloading the flats once ran (*op cit*, 2). In addition, a large brick-paved area, curved brick tunnels lined with pitch, and an area of ash and cinders with a concrete base was uncovered (*ibid*). Some of these features are thought to have been associated with the later use of the site as a Bone Works (CHER 4349).

3.3.2 A desk-based assessment and a programme of permanent presence watching brief were carried out at Saltworks Farm (Chester Archaeology Service 1993; Gifford and Partners 1999), in the vicinity of the former salt works (CHER 977/1). This established that although none of the original buildings from the rocksalt refinery or succeeding factories remained standing, their foundations were revealed during field inspection (Chester Archaeology Service 1993, 1). The watching brief only identified two archaeological features: a post-medieval boundary ditch, and a possible nineteenth-century brick and mortar wall on a sandstone footing (Gifford and Partners 1999, 1).

3.3.2 The North Western Ethylene Pipeline project, undertaken by OA North in its former guise as LUAU, involved numerous archaeological elements of investigation including desk-based assessment, field-walking, topographic survey, trial-trenching, and watching briefs. The results of the project were published in 1996 (Lambert *et al* 1996).

3.3.4 A desk-based assessment was carried out on land at Sutton Hall Farm (Gifford and Partners 1994), and extrapolated the possible course of the Roman road (Site 20) as running parallel with and along the southern side of Cheshire Road (*op cit*, fig 5). Following this line, its postulated course could be expected to

cross the cable route to the south of Chester Road and the current swing bridge.

- 3.3.5 The Frodsham area has been the subject of considerable regeneration proposals, and that closest to Frodsham Bridge is the REVIVE project (WYGE 2004).

4. WALKOVER SURVEY

4.1 INTRODUCTION

- 4.1.1 The walkover survey was carried out on the 11th and 12th of June 2007 and aimed to determine the survival of above ground remains of sites recorded during the desk-based assessment and also to identify previously unrecorded sites within a zone extending 100m on each side of the cable route. Where possible, all of the areas adjacent to the proposed route were walked systematically. The weather was generally good, with a mixture of bright and overcast dry conditions.
- 4.1.2 To the west of the railway line, the Weaver Navigation canal occupied much of the northern half of the survey zone. A mixture of saturated reed beds, with extremely high reed growth, and areas of dense tree, shrub, and bramble growth also hampered the survey of this area. The eastern section of the cable route ran through several fields hosting mature potato or cereal crops, making a thorough inspection of these areas impossible. One of the fields to the east of Sutton Fields Farm was difficult to survey due to the grass or hay meadow environment and the field to the north of Stretche's Gorse was observed from the perimeter only, due to the presence of male cattle.

4.2 RESULTS

- 4.2.1 Out of a total of nine sites within the walkover survey area previously recorded on the CHER, four listed buildings (Sites **1–4**) were observable as standing structures during the walkover survey. Site **1** is the site of Frodsham viaducts 53 and 54, built between 1848 and 1850, which carry the Chester to Warrington Railway over the Weaver Navigation Canal (Plate 1). Sites **2**, **3**, and **4** represent a boatman's shelter, Marshgate Farmhouse, and a barn, respectively. None of these buildings lie within 25m of the cable route and, therefore, the works will not affect them. Site **31** is the subterranean Severn Vyrnwy Aqueduct, which is a grade II listed building and lies across the route of the cable. Although visible as a slight linear cropmark on aerial photography from 1971–3 (HSLUK7360/1642), no evidence of this feature was visible during the survey.
- 4.2.2 Two Romano-British sites (Sites **5** and **20**) appearing on the CHER were situated within the survey area. Site **5** is the site of a possible Roman-British arch and pavement, discovered during the construction of the Weaver Navigation Canal in 1808. Given the depth at which they were discovered, unsurprisingly no evidence of these features was observed. Site **20** is the putative route of the Roman road from Chester to Wilderspool and, although a possible linear feature was visible in this area from aerial photographic inspection, there was no sign of any earthworks representing a road during the walkover survey. A natural plateau was, however, evident, running roughly north-east to south-west, to the east of Marshgate Farm, and this appears to share an alignment with a possible linear cropmark to the north-east. The

precise course of the Roman road in this area is not, however, known with any certainty (Margary 1973, 304) and it remains possible that the current Chester Road could overlie it.

- 4.2.3 In addition to the sites previously identified during the desk-based assessment, 12 further sites were identified during the walkover survey (Sites **21–30** and Sites **32** and **33**) and are described in the gazetteer (*Section 5*). These consisted of a hollow way (Site **21**), a group of ridge and furrow, possibly representing a water meadow (Site **22**), Sutton Bridge (Site **23**), the Mill Cut (Site **24**), two banks associated with agricultural activity (Sites **25** and **27**), a brick shaft that may have been a well (Site **26**), a drainage ditch (Site **28**), an accumulation of bricks that might represent a structure (Site **29**), a bank probably associated with the excavation of the railway cutting (Site **30**), a probable clearance cairn (Site **32**) and a findspot for a blue glass bead of uncertain date (Site **33**). The eastern part of the survey area, from the Weaver Canal to eastern Aston, featured numerous hedgerows. These consisted mainly of hawthorne varying in condition from stockproof to overgrown relict hedges that had been reinforced with modern wire fences. There were also 11 observable depressions that appeared to represent former ponds that had dried up.
- 4.2.4 Sites **21**, **22**, **24**, and **25**, were of indeterminate date. It seems likely, however, that the Mill Cut (Site **24**) relates to the major phase of activity at Sutton Mills in the nineteenth century (CHER 956/1) and that the ridge and furrow (Site **22**) might also be post-medieval in date. It also seems likely that the bank dividing the agricultural land from houses at Site **25** post-dated these houses, the earliest of which dated to the early seventeenth century (CHER 436816). Sites **23**, **26**, **27**, **28**, **29**, **30**, and **32** all appear to be post-medieval in date.

5. GAZETTEER OF SITES

Site number	1
Site name	Frodsham Viaduct, Chester to Warrington Railway, Frodsham
NGR	SJ 5286 7863
Site type	Viaduct
Period	Post-medieval; 1848–50
CCHER No	436340
Statutory Design	Grade II Listed Building
Sources	CHER
Description	The railway viaduct spans the River Weaver and adjoining land on both banks (Plate 1), and was built between 1848 and 1850. The viaduct comprises red sandstone, brown brick, and cast iron, and it has two segmental-arched iron spans of <i>c</i> 30m over the river, two round arches on the west bank, and 21 on the east bank. The piers to the iron spans are rusticated tooled ashlar, and the other spans have rusticated voussoirs, pier faces, and quoins and rock-faced spandrels. There are also brick reveals. The iron-span piers have a cornice, and there are plainer imposts to the others. The top of the central pier in the river has been modified to take a mid-twentieth-century railway track bed.
Assessment	The viaduct lies on the cable route and may be affected by the works.

Site number	2
Site name	Boatman's Shelter on east bank of Weaver Navigation
NGR	SJ 53525 78882
Site type	Building
Period	Post-medieval; 1833–66
CCHER No	436815
Statutory Design	Grade II Listed Building
Sources	CHER
Description	This is a Boatman's Shelter on the east bank of the Weaver Navigation. It dates to the mid-nineteenth century and is no longer in use. The shelter is constructed from red and brown brick and has a pyramidal slate roof. There is a tooled sandstone lintel above the doorway and the door and windows have been boarded-up. Part of the shelter has been rebuilt in blue brick.
Assessment	The shelter lies outside the cable route and will not be affected by the works.

Site number	3
Site name	Marshgate Farmhouse
NGR	SJ 5355 7889
Site type	Building
Period	Post-medieval
CCHER No	436816
Statutory Design	Grade II Listed Building
Sources	CHER
Description	This farmhouse dates to the later seventeenth century and was altered in the nineteenth century. A brick-nogged oak frame has been partly rebuilt in brown brick and a graded grey slate roof is present. The house has two storeys.
Assessment	The farmhouse lies outside the cable route and will not be affected by the works.

Site number	4
Site name	Barn, 20m east of Marshgate Farm
NGR	SJ 53574 78893
Site type	Building
Period	Post-medieval; 1700–32
CCHER No	436817

Statutory Design Grade II Listed Building
Sources CHER
Description This barn is situated 20m east of Marshgate Farm and is now used as a farm store. It is probably early eighteenth century in date and is built of brown brick with a grey slate roof and coped gables with kneelers. The interior has been altered.
Assessment The site lies outside the cable route and will not be affected by the works.

Site number 5
Site name Roman remains at Weaver Canal, Sutton
NGR SJ 5351 7887
Site type Possible Roman structures; arch and road
Period Roman
CHER No 990
Statutory Design -
Sources CHER
Description During the construction of the Weaver Canal at Sutton across the Chester turnpike road in 1808, a semicircular arch was found and thought to be Roman. A portion of pavement, 8-10yds long and 3-4yds wide, was also found 6ft below the ground surface.
Assessment The extent of the site is unknown and it could be affected by the works.

Site number 6
Site name Frodsham Bridge
NGR SJ 5300 7845
Site type Bridge
Period Medieval to Post-medieval
CHER No 987
Statutory Design Grade II Listed Building
Sources CHER
Description Frodsham parish bridge is situated at the eastern end of the town and dates from the reign of Henry III, its earliest known incarnation in wood. In the fourth year of Henry V's reign, John Done, the forester of Delamere, was requested to give one oak for the repairs of Frodsham bridge. The bridge was rebuilt in brick in the reign of Elizabeth I. In 1625 it was rebuilt in stone with four arches, and the remains of it could be seen on the Frodsham side of the river approximately 30 yards downstream of the present structure. This was taken down some time before 1816 to make way for the present structure, which is now a Grade II Listed Building.
Assessment The site lies outside the cable route and will not be affected by the works.

Site number 7
Site name Lime Kiln, Sutton
NGR SJ 52925 78637
Site type Lime kiln
Period Post-medieval
CHER No 4350
Statutory Design -
Sources OS first edition 1875 25" to 1 mile
Description Old lime kiln marked on the first edition 25 inch to 1 mile map
Assessment The site lies outside the cable route and will not be affected by the works.

Site number 8
Site name Sutton Mills, Frodsham Wharf
NGR SJ 5298 7853
Site type Watermill, Mill, Flour Mill, Mill House
Period Medieval to Post-medieval

CHER No	956/1
Statutory Design	Grade II Listed Building
Sources	CHER
Description	It is possible that there was a medieval mill at Sutton, but the location is unknown. The present building, however, was described in 1965 as the largest of the Cheshire mills, with four storeys and many additions. It had an internal loading way direct from the River Weaver. The mill was re-equipped during the First World War, but after 1918 some of this equipment was removed to Edinburgh and the rest sold for scrap in around 1940. The mill has been powered by water (with the mill cut evident from cartographic sources), steam and electricity. By 1982 the mill had suffered considerable demolition and was used for storage and warehousing. Little remains of the mill, with the remaining structure being the Mill House, a Grade II Listed Building, which is now used as an industrial estate office. It was built around the year 1820. It is painted brick, the front is pebbledashed, and it has a graded slate roof. It is a two-storey building with an attic, and with three windows arranged symmetrically. It has a slightly projecting pedimented two-storey porch and a four-panelled door in the opening with rusticated quoins, stepped voussoirs and a keystone. It has sixteen-pane flush sash windows, a small attic window below the pediment, and attic windows in the gables, with an eaves cornice to the front. There is a low two-storey one-room wing on the left and a small one-storey twentieth century lean-to on the right.
Assessment	The site lies outside the cable route and will not be affected by the works.

Site number	9
Site name	Boundary Stones, Nine Acres, Frodsham Cut
NGR	SJ 5390 7836
Site type	Boundary marker stones
Period	Post-medieval
CHER No	994/0/1
Statutory Design	Grade II Listed Building
Sources	CHER; OS first edition <i>c</i> 1874, 25" to 1 mile
Description	The OS first edition map (<i>c</i> 1874) depicts a line of five boundary stones along the north side of the field named Nine Acres on the Frodsham Lordship tithe map. The present listing covers the four remaining sandstone boundary stones on the north bank of the water meadow, which have been dated to <i>c</i> 1770. The stones stand about 0.5m above the ground and are rectangular in section, measuring 0.2m-0.25m. The second stone from the west is inscribed 'JW' in bold capitals on the west face and '177(?)' on top. The stones are survivors from a larger number and marked the boundaries of farmers' rights to strips of the water meadow.
Assessment	The site lies outside the cable route and will not be affected by the works.

Site number	10
Site name	Prehistoric findspot in Sutton
NGR	SJ 5398 7862
Site type	Prehistoric flint
Period	Prehistoric
CHER No	2364
Statutory Design	-
Sources	CHER
Description	A flint flake recovered from the surface of the subsoil during work on the North Western Ethylene Pipeline Project (NWEPP).
Assessment	The findspot lies outside the cable route; however, the precise location and extent of the site is unknown and it might be affected by the works.

Site number	11
Site name	Lowe's Wood Brick kiln
NGR	SJ 5410 7870

Site type	Brick kiln
Period	Post-medieval
CHER No	2363/1
Statutory Design	-
Sources	CHER; Maynard 1991
Description	The remains of a clamp-type brick kiln were discovered on the northern side of the Weaver Canal during work on the NWEF Project. It was composed of the remains of hand-made bricks lying in rows associated with deposits of ash and burnt clay. The detritus seems to have been raked downhill to the east.
Assessment	The site lies outside the cable route and will not be affected by the works.

Site number	12
Site name	Prehistoric Flint Scatter from Sutton
NGR	SJ 5410 7930
Site type	Flint scatter
Period	Prehistoric
CHER No	2402
Statutory Design	-
Sources	CHER
Description	Fieldwalking on 7th March 1990 by the Liverpool Museum Field Archaeology Section revealed five pieces of flint, to the north of a dried up stream course on the southern edge of a field. The group consisted of two blade cores, a probable core fragment, and two chips possibly associated with flint knapping. They are possibly Mesolithic in date. There appeared to be two possible foci of activity, with the other in a pasture field to the south. The fact that there were cores present suggests that the site is more significant than the number of finds implies. These finds differ from those found in other areas during Ron Cowell's fieldwalking survey, as they represent activities based around the reduction of flint nodules for the manufacture of implements. The nature of site is unclear, as most of the field was under pasture. This findspot could represent the edge of a larger site.
Assessment	The findspot lies within the cable route and will be affected by the works.

Site number	13
Site name	Medieval Coin from Sutton
NGR	SJ 5405 7937
Site type	Medieval coin
Period	Medieval
CHER No	958/0/1
Statutory Design	-
Sources	CHER
Description	A rather worn silver penny of Edward I from the mint of Berwick upon Tweed and dated <i>c</i> 1298 was found.
Assessment	The findspot lies within the cable route and will be affected by the works.

Site number	14
Site name	Medieval Findspot in Sutton Parish
NGR	SJ 5300 7845
Site type	Bridge
Period	Medieval to Post-medieval
CHER No	958/0/2
Statutory Design	-
Sources	CHER
Description	Fieldwalking in 1990 produced 13 pieces of unglazed sandy pottery and green splash-glaze pottery in an area <i>c</i> 40m x 40m. Probably late medieval/early post-medieval in date. May suggest a settlement of this date in the corner of the field. A few pieces of same type of pottery also came from the rest of the field, with a possible slight concentration on the northern slopes of the dried up stream course.

Six other pieces of sixteenth- to nineteenth-century pottery were also recovered from the field.

Assessment The findspot lies within the cable route and will be affected by the works.

Site number 15
Site name Sutton Hall
NGR SJ 54486 79081
Site type Building
Period Medieval to Post-medieval
CHER No 436810
Statutory Design Grade I Listed Building
Sources CHER
Description This hall is currently in use as a farmhouse and is datable to the late fifteenth or early sixteenth century. It was extended as late as the seventeenth and early nineteenth centuries. It is constructed of brown brick and the roof has been replaced with cement tiles. There are two storeys and an attic. The earliest part of the house is the east wing, which contains late medieval oak-framed great halls now cased in brown brick. The west wing is late seventeenth century in date. The cross-wing at the rear of the great halls dates partly to the Tudor period and partly to 1805.

Assessment The site lies outside the cable route and will not be affected by the works.

Site number 16
Site name Mill House
NGR SJ 54543 79115
Site type Barn and shippon at Sutton Hall
Period Post-medieval
CHER No 436819
Statutory Design Grade II Listed Building
Sources CHER
Description This site consists of a barn and shippon at Sutton Hall dating to the late seventeenth century. The buildings are brick-built with a graded grey slate roof. The buildings feature two storeys and attics.

Assessment The site lies outside the cable route and will not be affected by the works.

Site number 17
Site name Heavy Anti-aircraft gunsite
NGR SJ 5491 7935
Site type Heavy Anti-aircraft gunsite
Period Twentieth century (1940–5)
CHER No 2850
Statutory Design Scheduled Ancient Monument 33857
Sources CHER
Description This is a Second World War heavy anti-aircraft gunsite at Sutton Weaver (Station H18 or Sutton). The site consists of five gun emplacements, a command post, two garages with maintenance bays, and a generator building. The billeting for staff occurred in huts to the south of the complex, but these have not survived. The station was first mentioned in Feb 1940. In June 1942 it was armed with four 3.7in guns, supported by GL MkII radar, and manned by the Home Guard. The site was not retained after 1945. The defence foci were the Weaver Navigation and the Manchester Ship Canal. The gun emplacements are arranged in an arc around the south-east and south-west sides of the central command post and four of the emplacements survive as octagonal concrete open pens. There are also concrete-roofed boxes used to store ammunition and a concrete roofed shelter. This site is exceptionally well preserved.

Assessment The site lies outside the cable route and will not be affected by the works.

Site number 18
Site name Sutton Hall 1
NGR SJ 5482 7895
Site type Ring ditch, cemetary, funerary site, henge, round barrow
Period Prehistoric, pre-Iron Age?
CHER No 2448/1/1
Statutory Design -
Sources CHER
Description This comprises a ring ditch with two opposed entrances that was discovered during aerial reconnaissance in 1994.
Assessment The site lies outside the cable route and will not be affected by the works.

Site number 19
Site name Sutton Hall 2
NGR SJ 5482 7890
Site type Ring Ditch, round barrow, funerary site
Period Prehistoric, pre-Iron Age?
CHER No 2448/1/2
Statutory Design -
Sources CHER
Description This ring ditch was discovered during aerial reconnaissance in 1994.
Assessment The site lies outside the cable route and will not be affected by the works.

Site number 20
Site name Roman Road: Chester to Wilderspool, via Frodsham
NGR SJ 5300 7845
Site type Road
Period Roman
CHER No 2417/1/0
Statutory Design -
Sources CHER
Description The road ran north-east from Chester to connect with the northern road through Warrington at the Roman settlement of Wilderspool. Traces of it were found at the junction of Birkenhead Road and Parkside Road in Chester. It is then thought to run via Brook Lane to Hoole Bank, after which it follows the road to Bridge Trafford where the *agger* can be seen at a few points. It is likely that the road linked the fortress at Wilderspool and the nearby river crossing. While there are convincing road lines as far as Bridge Trafford, and from Preston on the Hill to Wilderspool, the intervening terrain is not suited to straight alignments and, as such, the road has not been identified.
Assessment The putative line of the road is poorly defined and is crossed by the cable route to the south of the Weaver Navigation. The cable route may also affect the road as it runs between Chester road and Sutton Hall Golf Course.

Site number 21
Site name Hollow Way
NGR SJ 532 790
Site type Track
Period unknown
CHER No -
Statutory Design -
Sources Walkover survey, June 2007
Description This is a hollow way representing the course of a disused track (Plate 2). This sinuous track was around 180m long and 2m wide. The track was situated within the depression of a hollow way that was up to 2.5m deep and 6m wide. The track was orientated roughly east/west (Plate 3) and, although the eastern end was accessible by a gate from the access road running along the southern side of the

canal, this end of the routeway had become extremely overgrown with young trees and dense undergrowth. The hollow way was only observable as it crossed over a wooded rise in the landscape. This might suggest that the track-way had been deliberately cut through this rise, in order to ease transport over the uneven ground, rather than developing purely as a product of erosion through use.

Assessment The eastern end of the hollow way lies close to the cable route and might be affected by the works.

Site number 22
Site name Ridge and Furrow
NGR SJ 533 786
Site type cultivation ridges
Period Post-medieval?
CHER No -
Statutory Design -
Sources Walkover survey, June 2007; White Young Green Environmental 2004; Farm Direct 2007

Description A series of ridge and furrow cultivation earthworks lying in four fields to the east of Sutton Causeway and north of the River Weaver (Plate 4). These ridges were approximately 8m wide and around 0.5m higher than their associated furrows, which were around 1.75m wide. The earthworks were also visible on current aerial photographs (Plate 5) and underlay field boundaries that can be shown to date to at least 1754, as they were depicted on a map of this date of the estate of Peter Warburton. The ridge and furrow also appeared to have been truncated by the east to west line of the Mill Cut, as similar linear features were observed to the north of this channel. It has been suggested (WYGE 2004, 83) that the low-lying location of this land close to the River Weaver would have fostered a wetland environment that would have been unsuitable for arable agriculture. It should also be noted that these fields lay around 500m to the west of two rows of four boundary stones (Site 9; CHER 994/0/2) that marked the ownership of strips of water meadow, which were associated with the cultivation of hay (Farm Direct 2007).

Assessment The northern part of the ridge and furrow lies within the cable route and will be affected by the works.

Site number 23
Site name Sutton Bridge
NGR SJ 533 787
Site type Bridge
Period Post-medieval
CHER No -
Statutory Design -
Sources Walkover survey, June 2007

Description This is a bridge allowing the passage of Chester Road/Sutton Causeway road over the Mill Cut (Plate 6). Twin-vaulted red-brick culverts run beneath the road and sandstone walls line the roadsides on either side of the bridge.

Assessment The site lies outside the cable route and will not be affected by the works.

Site number 24
Site name Mill Cut
NGR SJ 535 787
Site type Water management feature
Period Post-medieval?
CHER No -
Statutory Design -
Sources Walkover survey, June 2007; Sutton tithe map 1844

Description	Depicted on the Sutton tithe map of 1844, this feature provided water for Sutton Mills (Site 8). The channel was around 16m wide and 1.25m deep, including the banks on either side, which were up to 0.75m high. These banks were each around 15m wide and, in conjunction with the channel, formed a linear feature up to 46m wide and around 510m long, aligned east/west. At the time of the survey, a modern causeway of concrete rubble (Plate 7) occupied the space marked as a footbridge on the current OS mapping. This causeway precluded the flow of water from east to west, as suggested by the OS mapping, and the stagnant channel has become overgrown with very high wetland foliage.
Assessment	The site lies within the cable route and might be affected by the works.

Site number	25
Site name	Bank to the east of Marshgate Farmhouse
NGR	SJ 537 789
Site type	Earth work
Period	Post-medieval?
CHER No	-
Statutory Design	-
Sources	Walkover survey, June 2007
Description	A low bank was observed running along the eastern boundary of the gardens associated with the houses flanking Chester Road. The bank was around 1m wide and 0.75m high and might represent the original banked boundary associated with Marshgate Farmhouse (Site 3).
Assessment	The site lies outside the cable route and is unlikely to be affected by the works.

Site number	26
Site name	Shaft to the north of Aston Lane
NGR	SJ 547 792
Site type	Brick shaft
Period	Post-medieval
CHER No	-
Statutory Design	-
Sources	Walkover survey, June 2007
Description	A brick-built shaft located 13m north of Aston Lane; square in plan and capped with broken concrete flagstones. This might have been a well shaft or could have been associated with the anti-aircraft gun site (Site 17).
Assessment	The site lies outside the cable route and is unlikely to be affected by the works.

Site number	27
Site name	Lynchet east of Sutton Fields Farm
NGR	SJ 555 792
Site type	Lynchet
Period	Post-medieval?
CHER No	-
Statutory Design	-
Sources	Walkover survey, June 2007
Description	This is a lynchet that had formed at the boundary between a field currently used for wheat and an area of grass meadow between two ponds. This appeared to be the result of plough action, rather than a purposefully constructed bank.
Assessment	The site lies within the cable route and is likely to be affected by the works.

Site number	28
Site name	Boundary Ditch
NGR	SJ 560 794
Site type	Bank and ditch

Period Post-medieval?
CHER No -
Statutory Design -
Sources Walkover survey, June 2007
Description This boundary ditch was very large with a width of 4.5m and a depth of 0.3m, running from the north-west corner of Stretche's Gorse northwards towards the railway cutting (Plate 8). The remnants of a hawthorne hedge grew along the western up-cast bank associated with the ditch.
Assessment The site lies within the cable route and will be affected by the works.

Site number 29
Site name Possible brick structure
NGR SJ 561 793
Site type Accumulation of bricks
Period Post-medieval
CHER No -
Statutory Design -
Sources Walkover survey, June 2007
Description Around 10m south of the northern boundary to Stretche's Gorse and 50m west of Aston Lane was an accumulation of tumbled, unbonded, moss-covered bricks (Plate 9). This could represent the remains of a structure in the vicinity, or might be a dump of bricks from elsewhere.
Assessment The site lies outside the cable route and is unlikely to be affected by the works.

Site number 30
Site name Railway cutting up-cast bank
NGR SJ 564 793
Site type Bank
Period Post-medieval
CHER No -
Statutory Design -
Sources Walkover survey, June 2007
Description This was a low and wide bank that ran parallel to the southern side of the Chester to Warrington Railway line. The bank measured around 8m wide by 0.6m high and was situated approximately 5m to the south of the railway fence close to Aston Heath Farm.
Assessment The site lies within the cable route and will be affected by the works.

Site number 31
Site name Severn Vyrnwy Aqueduct
NGR SJ 50727 66209
Site type Aqueduct
Period Post-medieval
CHER No 2655/0/0
Statutory Design Grade II Listed Building 56013
Sources CHER
Description This is an aqueduct that was built between the survey for the OS first and second edition 6 inch to 1 mile maps (OS, 1874; 1896–98). It carried water from Llyn Vyrnwy to Liverpool, which was much needed for the growing city.
Assessment The aqueduct is crossed by the cable route and could be affected by the works.

Site number 32
Site name Clearance Cairn
NGR SJ 533 788
Site type Mound

Period	Post-medieval
CHER No	-
Statutory Design	-
Sources	Walkover survey, June 2007
Description	This site consisted of a sub-ovoid earth and stone mound that measured approximately 7m wide by 15m long and 1.7m high. The position of the mound close to a drainage channel suggested that it might have been derived from up-cast from the cleaning of the channel or, alternatively, it may have been associated with field clearance.
Assessment	The site lies within the cable route and might be affected by the works.

Site number	33
Site name	Bead findspot south of Aston Lane
NGR	SJ 542 793
Site type	Findspot
Period	Unknown
CHER No	-
Statutory Design	-
Sources	Walkover survey, June 2007
Description	This blue glass bead was found to the south of Aston Lane during the walkover survey
Assessment	The findspot lies within the cable route and will be affected by the works.

Site number	34
Site name	Wharf
NGR	SJ 52558 79607
Site type	Canal Wharf
Period	Post-medieval (pre-1845)
CHER No	-
Statutory Design	-
Sources	Clifton Tithe Map, 1845
Description	A small rectangular wharf on the north side of the Weaver Navigation Canal, close to the road leading south from Clifton
Assessment	The site appears to be no longer extant, lies outside the cable route, and will not be affected

Site number	35
Site name	Foot Bridge
NGR	SJ 52591 79564
Site type	Site of Footbridge
Period	Post-medieval (built 1845 - 1873)
CHER No	-
Statutory Design	-
Sources	OS 1872; 1874; 1910
Description	A foot bridge was shown on the OS map of 1911, carrying the road southward from Clifton across the Weaver Navigation Canal. The map indicates that the canal was crossed by a swing bridge at this point, and it is uncertain whether this merely provides more detail concerning an existing feature, or refers to a more recent structure that replaced the footbridge shown on the first edition map.
Assessment	The site lies outside the cable route and will not be affected

Site number	36
Site name	Rock Savage Bone works
NGR	SJ 52872 79478
Site type	Bone works

Period Post-medieval (built 1845 - 1873, demolished between 1911-1938)
CHER No -
Statutory Design -
Sources OS 1872, 1874, 1910; 1938; 1954
Description The Rock Savage Bone Works, within the north-west angle of the canal and the Flood Brook, presumably post-date the survey for the 1845 Clifton Tithe Map, since they were not depicted, but are shown on the OS first edition map of 1873. The complex of around ten adjoining structures was still in existence in 1911, but seems largely to have been demolished by 1938, leaving only a circular tank, which had been demolished by 1954.
Assessment The site is no longer extant, lies outside the cable route and will not be affected

Site number 37
Site name Sutton Dock
NGR SJ 53253 79139
Site type Canal dock
Period Post-medieval (built 1845 - 1873)
CHER No -
Statutory Design -
Sources OS 1872, 1874, 1910; 1938; 1954
Description The Sutton Dock was first shown on the OS first edition as a large rectangular feature adjoining the northern side of the Weaver Navigation Canal, but first named as such on the 1910 OS map. Although there were no associated structures, there was a branch line linking the dock to the Cheshire Junction Railway to the north-east.
Assessment The site lies outside of the cable route and will not be affected

Site number 38
Site name Runcorn Bone Works
NGR SJ 53335 79078
Site type Bone Works (built 1845 - 1873, demolished between 1954-2000)
Period Post-medieval
CHER No -
Statutory Design -
Sources OS 1872, 1874, 1910; 1938; 1954; 2000
Description A bone works was first shown on the OS first edition map, comprising two main ranges of buildings adjoining the canal to the south and with the Frodsham Viaduct to the east. Probable worker's cottages, added between 1872 and 1910, were located to the north, and these remain extant, although the main bone works structures were demolished between 1954 and 2000
Assessment The main elements of the site are no longer extant, lie outside the cable route and will not be affected

Site number 39
Site name Brick Kiln Field Name
NGR SJ 53768 79118
Site type Field Name
Period Post-medieval
CHER No -
Statutory Design -
Sources Sutton Tithe Map 1844
Description The Sutton Tithe map recorded this field as 'Brick Kiln Field' indicating that is likely to be the location of a post-medieval brick clamp, possibly associated with the construction of Marshgate Farm in brick
Assessment The site lies outside of the easement, and will not be affected by the cable route

Site number	40
Site name	Sutton Smithy
NGR	SJ 53992 79469
Site type	Site of smithy
Period	Post-medieval
CHER No	-
Statutory Design	-
Sources	OS 1872, 1874, 1910; 1938; 1954; Sutton Tithe Map, 1844
Description	A smithy, comprising four separate structures, was shown on the OS first edition maps close to the junction of the former Chester and Warrington Turnpike and Chapel Lane, near to the site of the former turnpike gate. As it was not shown on the Sutton Tithe map of 1844, it was presumably built between 1844 and 1872. The site is recorded as a smithy on the 1954 OS map, but was not labelled as such on the present edition, suggesting that the site was converted for domestic purposes
Assessment	The site lies outside of the cable route, and will not be affected by the development

Site number	41
Site name	Back Mill Brow Field Name
NGR	SJ 54424 78829
Site type	Field name
Period	Undated
CHER No	-
Statutory Design	-
Sources	Sutton Tithe Map and Award, 1844
Description	The Sutton Tithe Map and Award of 1844 recorded Field 134 as 'Back Mill Brow' suggesting that a mill, no longer extant by 1844, was located in the vicinity
Assessment	The site lies outside of the cable route, and will not be affected by the development

Site number	42
Site name	Mill Field Field Name
NGR	SJ 54451 78970
Site type	Field name
Period	Undated
CHER No	-
Statutory Design	-
Sources	Sutton Tithe Map and Award 1844
Description	The Sutton Tithe Map and Award of 1844 recorded Field 139 as 'Mill Field' suggesting that a mill, no longer extant by 1844, was located in the vicinity. Given the proximity to Site 41 , it is likely that the same mill is referred to.
Assessment	The site lies outside of the cable route, and will not be affected by the development

Site number	43
Site name	Sutton Fields Farm
NGR	SJ 55336 79399
Site type	Farm
Period	Post-medieval
CHER No	-
Statutory Design	-
Sources	Sutton Tithe Map 1844; OS 1872, 1874, 1910; 1938; 1954; 2000
Description	First referred to as 'The Fields' on the 1844 Sutton Tithe Map, the farm is shown as an 'L'-shaped structure and two rectilinear buildings. It was named 'Sutton Fields Farm' on the OS first edition maps, and the arrangement of buildings remained largely unchanged until the more northerly of the rectilinear buildings was demolished and replaced by a barn at the southern end of the farm complex, as shown on the 1910 OS map. Further outbuildings appeared on the 1954 OS map,

but an 'L'-shaped building, possibly that shown on the 1844 tithe map, is still present on the current edition of the OS map.

Assessment The site lies outside of the cable route, and will not be affected by the development

Site number 44
Site name Brick Kiln Fieldname II
NGR SJ 55473 79533
Site type Field Name
Period Post-medieval
CHER No -
Statutory Design -
Sources Sutton Tithe Map, 1844
Description The Sutton Tithe map records this field as 'Brick Kiln Field' indicating that it is likely to be the location of a post-medieval brick clamp, possibly associated with the construction of Sutton Fields Farm in brick
Assessment The site lies outside of the cable route, and will not be affected by the development

Site number 45
Site name Weaver Navigation Canal
NGR SJ
Site type Canal
Period Post-medieval
CHER No -
Statutory Design -
Sources Nicholson 1991, 179; British Waterways 2004
Description In the late seventeenth century Frodsham formed the navigable limit of the River Weaver, and schemes, known as the Weaver Navigation Act, were mooted for increasing the navigability of the river. The Act did not meet with overwhelming support and was not passed until 1721 but, by 1732, the Weaver was made fully navigable. Frodsham Lock and Cut were constructed in 1780 and, at some time between 1806 and 1810, an artificial cut was created from Sutton Weaver to Weston Point for through traffic, which by-passed Frodsham Lock, Sluice and Cut, leaving it to mainly local traffic.
Assessment The site lies within the cable route, and could be affected by the development

Site number 46
Site name Sutton/Aston Parish Boundary
NGR SJ
Site type Parish Boundary
Period Medieval/Post-medieval
CHER No -
Statutory Design -
Sources Sutton Tithe Map 1844; OS 1872, 1874, 1910; 1938; 1954; 2000
Description Although the majority of boundaries in the area follow natural features and fall outside of the cable route, that between Aston and Sutton runs north/south to the east of Sutton Fields Farm. As such, it is likely to be a feature of some antiquity and, given the supposed early medieval origins of the townships in question, could be pre-Conquest in origin
Assessment The site lies within the cable route, and will be affected by the development

6. SIGNIFICANCE OF THE REMAINS

6.1 INTRODUCTION

6.1.1 The assessment and walkover survey identified a total of 46 sites of archaeological interest within the study area, of which 21 (Sites **1-20** and **31**) were recorded on the CHER, an additional twelve (Sites **21-30** and **32-33**) were identified during the walkover survey and twelve more from the regression of historic maps (Sites **34 - 46**). Thirteen of these sites lie within or, very close to, the cable route, two of which are Grade II listed structures: the Frodsham Viaduct (Site **1**) and the Severn Vyrnwy Aqueduct (Site **31**). Together with the Grade I listed Sutton Hall (Site **15**), there are an additional six Grade II listed buildings, comprising the Boatman's Shelter (Site **2**), Marshgate Farmhouse (Site **3**), Marshgate Farm Barn (Site **4**), Frodsham Bridge (Site **6**), Sutton Mills (Site **8**) and Mill House (Site **16**). In addition, Site **17**, the Sutton Weaver heavy anti-aircraft battery, is a Scheduled Ancient Monument. The scheduled area for this site lies outside of the cable route, but the cable does run very close to other elements of the site. The types of sites identified are summarised by period in Table 1, below:

Period	No of sites	Sites
Prehistoric	1	Sutton Prehistoric Findspot (Site 10)
Mesolithic	1	Sutton Prehistoric Flint Scatter (Site 12)
Neolithic to Bronze Age	2	Sutton Hall Ring Ditch1 (Site 18); Sutton Hall Ring Ditch2 (Site 19)
Romano-British	2	Roman Remains at Weaver Canal, Sutton (Site 5); Roman Road: Chester to Wilderspool, Frodsham (Site 20)
Medieval	5	Frodsham Bridge (Site 6); Sutton Mills (Site 8); Sutton Medieval Coin (Site 13); Sutton Medieval Findspot (Site 14); Sutton Hall (Site 15); Sutton/Aston Parish Boundary (Site 46)
Post-medieval	24	Boatman's Shelter (Site 2); Marshgate Farmhouse (Site 3); Marshgate Farm Barn (Site 4); Frodsham Bridge (Site 6); Lime Kiln, Sutton (Site 7); Sutton Mills (Site 8); Boundary Stones (Site 9); Lowe's Wood Brick Kiln (Site 11); Sutton Hall (Site 15); Mill House (Site 16); Ridge and Furrow (Site 22); Sutton Bridge (Site 23); Mill Cut (Site 24); Marshgate Farm Bank (Site 25); Aston Lane Shaft (Site 26); Sutton Fields Farm Lynchet (Site 27); Boundary Ditch (Site 28); Possible brick structure (Site 29); Brick Kiln Field Names (Sites 39 & 44); Back Mill Brow Field Name (Site 41); Mill Field Field Name (Site 42); Sutton Fields Farm (Site 43); Weaver Navigation Canal (site 45); Sutton/Aston Parish Boundary (Site 46)
Nineteenth century	9	Frodsham Viaduct (Site 1); Railway cutting up-cast bank (Site 30); Severn Vyrnwy Aqueduct (Site 31); Wharf (Site 34); Foot bridge (Site 35); Rock Savage Bone Works (Site 36); Sutton Dock (Site 37); Runcorn Bone Works (Site 38); Smithy (Site 40)
Twentieth century	2	Heavy Anti-aircraft Gun Site (Site 17)
Unknown	2	Hollow Way (Site 21); Clearance Cairn (Site 32); Bead Findspot (Site 33)

Table 1: Number and types of sites by period identified during the desk-based assessment and walkover survey

6.2 CRITERIA

- 6.2.1 There are a number of different methodologies used to assess the cultural heritage significance of sites; that to be used here is the ‘Secretary of State’s criteria for scheduling ancient monuments’ which is included as Annex 4 of PPG 16 (DoE 1990). Using these criteria, the significance of sites and monuments is defined as National, Regional or Local, and Table 2 (*Section 6.3*) indicates examples of site-types which might be expected to fall within each category. The undesignated sites previously listed (*Section 5*, above) were each considered using the criteria, with the results presented below. These include Site **17**, the anti-aircraft battery, not all of which has been scheduled.
- 6.2.2 **Period:** in terms of period, the most obviously significant sites are the Roman remains at Site **5** and the route of the Roman road (Site **20**), since this can be considered a ‘type site’ for the period. High significance can also be attributed to the Sutton Hall ring ditches (Sites **18** and **19**) which, although not particularly closely-dated, could again be interpreted as type sites of the Later Neolithic/Early Bronze Age. Although hardly definitive, the scatter of medieval finds from Site **14** provide important archaeological evidence for lower status medieval activity in the area. The Sutton/Aston Parish Boundary is potentially a feature of great interest, in view of the fact that such boundaries are often medieval in date, and many originate in the early medieval period.
- 6.2.3 Sites representing the industrial heritage of the area can also be seen to reflect a specific period of industrial and agricultural expansion, and can again be considered to be of some regional significance; such undesignated sites include the lime kiln (Site **7**), the various bone works (Sites **36** and **38**), Sutton Bridge (Site **23**), the Mill Cut (Site **24**), the Sutton Dock (Site **37**) and the Weaver Navigation Canal (Site **45**). The Lowes Wood Brick Kiln (Site **11**) and the Brick Kiln field names (Sites **39** and **44**) on the Sutton Tithe Map are also locally important, since they may relate to the reconstruction of local buildings in brick and, if in the case of Site **39**, associated with Marshgate Farm, for example, may date to the seventeenth century. Unscheduled structures associated with the Second World War anti-aircraft battery (Site **17**) are period-specific, and can be argued to have some local significance as a result.
- 6.2.4 **Rarity:** few of the undesignated sites within the study area can be seen as particularly rare, perhaps with the exception of the Mesolithic flint cores from Site **12**, which represent a specific activity. Locally, the ring ditches (Sites **18** and **19**) and the Roman remains (Sites **5** and **20**) are rare, although quite well represented regionally.
- 6.2.5 **Documentation:** there are a number of secondary sources relating to the Weaver Navigation Canal (Site **45**), and further research is likely to reveal the existence, if not the availability, of documents relating to the construction and use of this feature. As such, the canal is most likely to have enhanced significance on the basis of the documentary resource. A number of those finds made in the nineteenth century, such as the Roman remains found during the building of the canal (Site **5**) now exist only as documentary records of

contemporary observations. Although the area is well-covered by general medieval sources and post-medieval cartography, the nature of the majority of the undesignated sites mean that there is little specific and readily available pertinent information that might enhance their significance. The exceptions are likely to be the various bone works (Sites **36** and **38**), primary information for which may have been deposited at the CRO but which was not immediately available within the scope of the present study.

6.2.6 **Group value:** significant local group value can be attributed to the industrial sites along the canal and River Weaver, including Sutton Bridge (Site **23**) and the Mill Cut (Site **24**), not least because of their association with the Grade II listed Sutton Mill (Site **8**), but also to other canal features, such as the wharf (Site **34**), foot bridge (Site **35**) and the Sutton Dock (Site **37**), as well as the bone mills (Sites **36** and **38**) that were built alongside the canal and the lime kiln (Site **7**), which may have provided elements of the raw materials for these structures. Other grouping would include the Roman road (Site **20**) and Roman remains (Site **5**), and the Sutton Hall ring ditches (Sites **18** and **19**). Other sites within the landscape, although not intrinsically related, gain a certain group value from the fact that they form elements of an integrated and managed post-medieval agricultural and industrial landscape. The lime kiln (Site **7**) and the numerous marl pits together provided a base for fertiliser and share a certain relationship with agricultural crop marks such as the Site **22** ridge and furrow and the Sutton Fields Farm lynchet (Site **27**). Various boundary features, such as the Marshgate Farm bank (Site **25**), the Site **9** boundary stones and the boundary north of Stretche's Gorse (Site **28**) are elements of older land allotments and field divisions. Old access routes, such as the hollow way (Site **21**) can also be considered within such a context. Although the anti-aircraft emplacement (Site **17**) has no associated sites within the study area, it shares a group value with the countrywide network of Second World War defensive features.

6.2.7 **Survival/condition:** a number of undesignated sites, such as Sutton Bridge (Site **23**), the Mill Cut (Site **24**), Sutton Fields Farm (Site **43**) the Weaver Canal (Site **45**), and the Site **9** boundary stones appear to survive in very good condition. Others, such as the Marshgate Farm bank (Site **25**), the Sutton Fields Farm lynchet (Site **27**), the nearby boundary (Site **28**) and the Sutton/Aston Parish Boundary (Site **46**), survive as earthworks. The survival of the Roman sites is harder to attest; the route of the Roman road (Site **20**) within the area is of some conjecture, whilst those remains discovered during the construction of the canal (Site **5**) are likely to have been destroyed or damaged during the process. Artefacts from the stone age and medieval find spots (Sites **10**, **12**, and **14**) have been collected so, whilst it cannot be said that the exact site survives, it is possible that further examples are present within the near vicinity. It is possible that the remains of the lime kiln (Site **7**), together with those of the various bone works (Sites **36** and **38**), and earlier phases of outbuildings at the local farms, survive as below-ground remains beneath the structures that now occupy their sites.

6.2.8 **Fragility/Vulnerability:** a number of sites within the study area are likely to be vulnerable to development. This is particularly true of the crop mark sites such as the ring ditches (Sites **18** and **19**) and the earthwork features such as the

hollow way, the ridge and furrow, various relict boundaries and the lynchet (Sites **21**, **22**, **25**, **28**, **27** and **46**, respectively) which would be very susceptible to complete eradication during soil stripping, and from tracking damage from machinery. Any elements of the Roman road (Site **20**) and of the remains represented by Site **5** would also be extremely vulnerable to intrusive groundworks. Any find spots within the study area similar to the chance finds of the prehistoric tools, medieval artefacts and the glass bead (Sites **10**, **12**, **13**, **14** and **33**, respectively), would also be considered vulnerable to any earth-moving activity, since it is likely to destroy the buried contexts from which these artefacts may have derived. The remainder of the sites that lie within the study area are away from the development site and cannot presently be considered vulnerable.

6.2.9 **Diversity:** although in terms of date and function a broad range of sites are present within the study area, none can be considered to be diverse in terms of their individual usage.

6.2.10 **Potential:** a number of the sites have the potential to provide an understanding of their individual development and of their wider archaeological and historical context. Any elements of the Roman road (Site **20**) would further an understanding of its little-known route, whilst further remains such as those represented by Site **5** have the potential to elucidate the nature of Roman rural settlement or engineering works in the area. The presence of findspots of prehistoric and medieval artefacts in the area, as well as the undated glass bead (Sites **10**, **12**, **13**, **14** and **33**, respectively), indicate that there is good potential for the discovery of similar artefacts, possibly even from stratified contexts, within the development area and, if recovered in a scientific manner, could further an understanding of contemporary human activity within the area.

6.3 SIGNIFICANCE

6.3.1 Table 2 summarises the levels of significance attributed to generic site-types, together with guideline recommendations for appropriate mitigation strategies in each case.

Significance	Examples of Site-type	Mitigation
National	Scheduled Monuments (SMs), Grade I and II* Listed Buildings	To be avoided
Regional/County	Conservation Areas, Registered Parks and Gardens (Statutory Designated Sites), Grade II Listed Buildings Listed on the Historic Environment Record	Avoidance recommended
Local/Borough	Sites with a local or borough value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged

Significance	Examples of Site-type	Mitigation
Low Local	Sites with a low local value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Negligible	Sites or features with no significant value or interest	Avoidance unnecessary

Table 2: Summary of significance according to site-type and appropriate mitigation

6.3.2 By definition, Grade I listed Sutton Hall (Site **15**) is of national significance as is the heavy anti-aircraft battery (Site **17**), which is a SAM. The eight Grade II listed buildings comprising the Frodsham Viaduct, the Boatman's Shelter, the buildings at Marshgate Farm, Frodsham Bridge, Sutton Mills, Mill House and the Severn Vyrnwy Aqueduct (Sites **1, 2, 3, 4, 6, 8, 16** and **31**, respectively) are of regional/county significance. Through assessment of each of the criteria in *Section 6.2*, of those 24 undesignated sites identified within the present study area, none can be considered to be of national significance. Six have been interpreted as being of regional significance on the basis of their date and their potential to provide information that could be assimilated into a better understanding of contemporary activity within the wider region. These comprise both Roman sites (Sites **5** and **20**), the Sutton prehistoric flint scatter (Site **12**), which could also be considered rare, the Sutton medieval findspot (Site **14**) and the Sutton Hall ring ditches (Sites **18** and **19**). Given that the Sutton/Aston parish boundary is a feature of some antiquity, and shares a group value with other such features, this too could be considered to be of regional significance. The Weaver Canal is also considered to be of regional significance due to the period of its construction and its importance in encouraging local industrial development. The unscheduled elements of the anti-aircraft emplacement (Site **17**) can also be considered to be of regional significance on the basis that they are closely linked to the nationally important Scheduled elements of the site. They are thus part of a wider network of installations defending important industrial cities, such as Liverpool and Manchester, from the depredations of the Luftwaffe, who would have been able to use the Mersey for navigation and targeting. The remaining sites within the study area can be considered to be of local significance, due to their interrelationships as components of a wider agrarian and industrial landscape.

7. IMPACT ASSESSMENT

7.1 IMPACT

7.1.1 The following section draws upon the results of the desk-based research and walkover survey to provide an assessment of the likely impact of the proposed development upon the archaeological resource. The roughly 4.5km-long cable route will be established within a permanent easement 12m in width, which will be stripped of topsoil and will involve the construction of a 5m wide temporary haul road and the placing of two parallel cables, 4m apart, within trenches 1m wide by 0.9m – 1.1m deep.

7.1.2 In its Planning Policy Guidance Note 16, the Department of the Environment (DoE) advises that archaeological remains are a continually diminishing resource and *‘should be seen as finite, and non-renewable resource, in many cases, highly fragile and vulnerable to destruction. Appropriate management is therefore essential to ensure that they survive in good condition. In particular, care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed’*. It has been the intention of this study to identify the archaeological potential of the study area, and assess the impact of redevelopment, thus allowing the advice of the DoE to be enacted upon. Assessment of impact has been achieved by the following method:

- assessing any potential impact and the significance of the effects arising from redevelopment;
- reviewing the evidence for past impacts that may have affected the archaeological sites;
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce or remedy adverse archaeological impacts.

Scale of Impact	Description
Substantial	Significant change in environmental factors; Complete destruction of the site or feature; Change to the site or feature resulting in a fundamental change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Moderate	Significant change in environmental factors; Change to the site or feature resulting in a significant change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Slight	Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Negligible	Negligible change or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

Table 3: Criteria used to determine scale of impact

7.1.3 The impact is assessed in terms of the sensitivity or importance of the site to the magnitude of change or potential scale of impact during future redevelopment scheme. The magnitude, or scale of an impact is often difficult to define, but will be termed as substantial, moderate slight, or negligible, as shown in Table 3.

7.1.4 From the interaction of the scale of impact (Table 3) and the importance of the archaeological site (Table 2) it is possible to deduce the impact significance. This may be calculated by using the matrix shown in Table 4:

Resource Value (Importance)	Scale of Impact Upon Archaeological Site			
	Substantial	Moderate	Slight	Negligible
National	Major	Major	Intermediate/Minor	Neutral
Regional/County	Major	Major/Intermediate	Minor	Neutral
Local	Intermediate	Intermediate	Minor	Neutral
Local (low)	Intermediate / Minor	Minor	Minor/Neutral	Neutral
Negligible	Neutral	Neutral	Neutral	Neutral

Table 4: Impact significance matrix

7.1.5 The extent of any previous disturbance to buried archaeological levels is an important factor in assessing the potential impact of the development scheme. It would seem that the southern part of the western cable route, situated within an area that is always likely to have been low-lying and marshy, has not been greatly disturbed through modern development, and is unlikely to have been affected heavily by modern deep ploughing. The state of preservation of any buried remains within this area is, therefore, potentially good. Since the later post-medieval period, the northern and central western section of the route are more industrial in character and, although elements survive, such as Sutton Mills (Site 8), others, such as the various bone works and the salt works have been subsumed by more recent development. Given the propensity for raft foundations on more recent developments (as may be the case with the Ashville Industrial Estate) it is possible that traces of older, more deeply-founded buildings may survive in these areas. The impact that the construction of these older industrial sites, together with the groundworks associated with the canal and the various sections of railway, had upon any more ancient archaeological resource, is likely to be more severe. The potential for encountering well-preserved buried archaeological remains within the western part of the cable easement to the immediate south of the canal therefore seems rather low.

7.1.6 East of Marshgate Farm, the cable route passes through a much more agrarian landscape. The most obvious previous impact upon the archaeological resource is the M56 motorway, which is likely to have had a deleterious effect on any buried remains within the northern part of the study area. No doubt the Whitehouse Industrial Estate at the eastern end of the study area will have had some negative effect on buried archaeological remains, but considering that it

is likely to have been raft-founded, its impact upon the archaeological resource may actually have been less than within agricultural areas that have been regularly subjected to modern deep ploughing.

7.2 IMPACT ASSESSMENT

7.2.1 Following on from the above considerations, the scale of impact on the present condition of the cultural heritage and archaeological assets has been determined based on the present understanding of the nature of the development (*Section 7.1.1*) The results are summarised in Table 5.

Site	Site Name/Type	Nature of Impact	Significance	Scale of Impact	Impact Significance
1	Frodsham Viaduct, Chester to Warrington Railway, Frodsham	Cable will be deep drilled beneath the viaduct; impact could only occur through unforeseen accidents but not as part of methodology	Regional/ County	Intermediate /Negligible	Minor/ Neutral
2	Boatman's Shelter on east bank of Weaver Navigation Canal	None	Regional	Negligible	Neutral
3	Marshgate Farmhouse	None	National	Negligible	Neutral
4	Marshgate Farm Barn	None	Regional/ County	Negligible	Neutral
5	Roman remains at Weaver Canal, Sutton	The presently known remains will not be impacted upon, but their unknown extent means that they could be damaged during the groundworks	Regional	Moderate	Major
6	Frodsham Bridge	None	Regional/ County	Negligible	Neutral
7	Lime Kiln, Sutton	None	Local	Negligible	Neutral
8	Sutton Mills	None	Regional/ County	Negligible	Neutral
9	Boundary Stones	None	Local	Negligible	Neutral
10	Sutton Prehistoric Findspot	Not likely	Local	Slight	Minor
11	Lowe's Wood Brick Kiln	None	Local	Negligible	Neutral
12	Sutton Prehistoric Flint Scatter	Likely to indicate more extensive activity in area. Finds could be lost during topsoil stripping, whilst deeper groundworks could disturb below-ground remains from which the finds derive	Regional/ County	Moderate	Major/ intermediate

Site	Site Name/Type	Nature of Impact	Significance	Scale of Impact	Impact Significance
13	Sutton Medieval Coin	Potentially indicates more extensive activity in area. Finds could be lost during topsoil stripping, whilst deeper groundworks could disturb below-ground remains from which the finds derive	Local	Moderate	Intermediate
14	Sutton Medieval Findspot	Potentially indicates more extensive activity in area. Finds could be lost during topsoil stripping, whilst deeper groundworks could disturb below-ground remains from which the finds derive	Regional/ County	Moderate	Major/ intermediate
15	Sutton Hall	None	National	Negligible	Neutral
16	Mill House	None	Regional/ County	Negligible	Neutral
17	Heavy Anti-aircraft gunsite	None	National	Negligible	Neutral
18	Sutton Hall Ring Ditch1	None	Regional/ County	Negligible	Neutral
19	Sutton Hall Ring Ditch 2	None	Regional/ County	Negligible	Neutral
20	Roman Road: Chester to Wilderspool, Frodsham	Disturbance of below-ground remains along several points of the easement	Regional/ County	Substantial	Major
21	Hollow Way	Unlikely	Local	Probably negligible	Minor/ neutral
22	Ridge and Furrow	Disturbance of surface and below-ground remains	Local	Substantial	Major
23	Sutton Bridge	None	Local	Negligible	Neutral
24	Mill Cut	None	Local	Negligible	Neutral
25	Marshgate Farm Bank	Not likely	Local	Probably negligible	Minor/ neutral
26	Aston Lane Shaft	None	Local	Negligible	Neutral
27	Sutton Fields Farm Lynchet	Disturbance of surface and below-ground remains	Local	Substantial	Major
28	Boundary Ditch	Disturbance of surface and below-ground remains	Local	Substantial	Major
29	Possible brick structure	None	Local	Negligible	Neutral

Site	Site Name/Type	Nature of Impact	Significance	Scale of Impact	Impact Significance
30	Railway cutting up-cast bank	Not likely	Local	Probably negligible	Minor/neutral
31	Severn Vyrnwy Aqueduct	Cable will be deep drilled beneath the aqueduct; impact could only occur through unforeseen accidents but not as part of methodology	Regional/County	Intermediate/Negligible	Minor/Neutral
32	Clearance Cairn	Disturbance of surface and below-ground remains	Local	Substantial	Intermediate
33	Bead findspot south of Aston Lane	Potentially indicates more extensive activity in area. Finds could be lost during topsoil stripping, whilst deeper groundworks could disturb below-ground remains from which the finds derive	Local	Substantial	Intermediate
34	Wharf	None	Local	Negligible	Neutral
35	Foot bridge	None	Local	Negligible	Neutral
36	Rock Savage Bone Works	None	Local	Negligible	Neutral
37	Sutton Dock	None	Regional	Negligible	Neutral
38	Runcorn Bone Works	None	Local	Negligible	Neutral
39	Brick Kiln Field Name	None	Local	Negligible	Neutral
40	Smithy	None	Local	Negligible	Neutral
41	Back Mill Brow Field Name	None	Local	Negligible	Neutral
42	Mill Field Field Name	None	Local	Negligible	Neutral
43	Sutton Fields Farm	None	Local	Negligible	Neutral
44	Brick Kiln Field Name	None	Local	Negligible	Neutral
45	Weaver Navigation Canal	Cable will be deep drilled beneath the canal; impact could only occur through unforeseen accidents but not as part of methodology	Regional	Intermediate/Negligible	Minor/Neutral
46	Sutton/Aston Parish Boundary	Disturbance of surface and below-ground remains	Regional	Substantial	Major

Table 5: Assessment of the impact significance on each site within the study area during development

8. RECOMMENDATIONS FOR FURTHER ARCHAEOLOGICAL INVESTIGATION AND MITIGATION

8.1 INTRODUCTION

8.1.1 In terms of further archaeological investigation and mitigation, it is necessary to consider only those sites that will be affected by the development. Current legislation draws a distinction between archaeological remains of national importance and other remains considered to be of lesser significance. Those perceived to be of national importance may require preservation *in situ*, whilst those of lesser significance may undergo preservation by record, where regional or high local significance can be demonstrated.

8.1.2 No sites were identified on the cable route that may be considered as being of national importance and therefore meriting preservation *in situ*. However, the cable route could impact upon *in situ* remains of regional/county and local importance, and has potential to impact upon previously unknown buried features of similar significance, particularly those represented by artefact findspots which may extend into the cable route. Such remains would require preservation by record should they be directly affected by future development proposals. The scope and details of any archaeological investigation and recording required in advance of development has been devised by Cheshire County Council Historic Environment Service (CCCHES). In the first instance, a programme of further archaeological investigation and survey would be useful to better inform the necessity and scope of more detailed mitigation measures. Such further investigation includes a programme of archaeological trial trenching within selected areas of the cable route as a means of providing details about the actual presence, extent and preservation of archaeological remains. Once more complete information becomes available about those sites to be impacted upon, some form of mitigation could be necessary. The exact form of mitigation would be dependent upon the nature of the archaeological site, of the groundworks themselves, and the results of any further investigatory works. Such mitigation may include topographic survey in the case of earthwork features, watching briefs in areas of below groundworks and archaeological excavation where previous phases of detailed investigation identify the presence of significant archaeological remains that cannot be preserved *in situ*. The provisional mitigation strategy is outlined below (*Sections 8.2-8.6*), with site-specific recommendations for further investigation summarised in Table 6 and illustrated on Figure 9.

8.2 METHODOLOGICAL MITIGATION

8.2.1 The cable route will pass through three structures of regional importance: the Frodsham Viaduct (Site 1), the Severn Vyrnwy Aqueduct (Site 31) and the Weaver Navigation Canal (Site 45); however, the methodology of deep drilling beneath these structures from some distance away (*see Fig 9 for the deep-drilling easements*) will mean that they are highly unlikely to be

impacted upon by the development. Furthermore, the nature of the deep drilling, except at the points of entry, means that it would be very difficult to monitor such works in a practical manner. In the cases of these sites, no further works is envisaged, unless the methodology is altered.

Site	Site Name/Type/Date	Site Significance	Impact Significance	Recommendations
1	Grade II listed Frodsham Viaduct,	Regional/ County	Minor/ Neutral	No further work envisaged within present scheme
5	Roman remains at Weaver Canal, Sutton	Regional	Major	Watching Brief
12	Sutton Prehistoric Flint Scatter	Regional/ County	Major/ intermediate	Watching Brief
13	Sutton Medieval Coin	Local	Intermediate	Watching Brief
14	Sutton Medieval Findspot	Regional/ County	Major/ intermediate	Watching Brief
20	Roman Road: Chester to Wilderspool, Frodsham	Regional/ County	Major	Watching Brief
22	Ridge and Furrow	Local	Major	Topographic survey
27	Sutton Fields Farm post-medieval Lynchet	Local	Major	Topographic survey and Watching Brief
28	Post-medieval Boundary Ditch	Local	Major	Topographic survey and Watching Brief
31	Grade II listed Severn Vyrnwy Aqueduct	Regional/ County	Minor/ Neutral	No further work envisaged within present scheme
32	Undated Clearance Cairn	Local	Intermediate	Topographic survey, evaluation and Watching Brief
33	Undated Bead findspot south of Aston Lane	Local	Intermediate	Watching Brief
45	Weaver Navigation Canal	Regional	Minor/ Neutral	No further work envisaged within present scheme
46	Sutton/Aston Parish Boundary	Regional	Major	Topographic survey and Watching Brief

Table 6: Summary of site-specific recommendations for further archaeological investigation and provisional mitigation

8.3 ARCHAEOLOGICAL EVALUATION

8.3.1 A limited programme of trial trenching is recommended in recognition that archaeological remains within the easement would generally be investigated through a watching brief of the topsoil strip. Such topsoil stripping would not necessarily define the undated clearance cairn (Site 32) in a controlled manner,

and it is this recommended that this feature be evaluated by a single trial trench that would help establish the date, origin and structure of this feature.

8.4 TOPOGRAPHIC SURVEY

8.4.1 A topographic survey is essentially a mitigation strategy for preserving by record upstanding earthworks that would otherwise be damaged or destroyed by topsoil stripping and deeper groundworks. It is recommended that such works be undertaken on those sections of earthwork Sites **27, 22, 28** and **46**, as well as clearance cairn Site **32**, before it is evaluated, that lie within the proposed easement.

8.5 ARCHAEOLOGICAL WATCHING BRIEF

8.5.1 It is likely that an archaeological watching brief would be an appropriate form of mitigation for the majority of sites along the route. This would involve monitoring groundworks associated with the development within areas of archaeological potential in order to record the extent, character and date of any buried remains, and to provide sufficient information to mitigate fully the impact of the development. It may be necessary to deploy additional members of staff to investigate and record significant remains, should they be encountered. In the event of such discoveries, liaison would take place with the Cheshire County Archaeologist for Development Control and with the client, and it may be decided that adjustments to the cable route may be possible to preserve these remains *in situ*.

8.5.2 At this stage, such works can be envisaged along the easement route where it nears or traverses Sites **5, 20, 12-14, 27, 28, 33** and **46**. In the case of the earthworks sites, following any topographic survey and evaluation, the watching brief may be able to provide dating evidence that would certainly not be available through non-intrusive topographic survey.

9. RESULTS OF THE MITIGATION PROGRAMME

9.1 TOPOGRAPHIC SURVEY

9.1.1 **Results:** although five sites were recommended for topographic survey, only two of these sites were surveyed, as described in *Section 2.4.1*. The more complex of these sites was an area of ridge and furrow (Site **22**; Fig 10) and a post-medieval boundary ditch (Site **28**) was also surveyed. Both sites are described in the gazetteer (*Section 5*).

9.1.2 **Discussion:** on inspection of the aerial photographs (Plate 5), it is apparent that the small area of earthworks surveyed is part of a much larger network that had been divorced by the imposition of the later system of straight field boundaries that tie into the Mill Cut. This is particularly apparent from the fact that the survey has captured both the rounded northern termini of the furrows, and their truncated southern ends. The juxtaposition of the two groups of furrows relative to the major east/west field boundary that divides them provides an important clue to their mutual origin. The more extensive group to the south of the boundary run on a rough north-east/south-west alignment, whilst those surveyed to the north run north/south. The surveyed earthworks would thus appear to pertain to the characteristic terminal ‘flare’ of an aratral earthwork, as the ploughman, circling clockwise, manoeuvred his stolid team in a wide arc, before returning down the other side of the ridge. Indeed, this process is particularly well illustrated by the broad termini of several of the surveyed ridges (Fig 10).

9.2 WATCHING BRIEF

9.2.1 **Introduction:** the following section summarises the results of the watching brief in a systematic manner, rather than one that matches the chronology of the works undertaken. A catalogue of the deposits identified is provided as *Appendix 1* and the location of the fields, and of any archaeological features identified, are shown on figure 11.

9.2.2 **Haul road strip:** no archaeological features were observed during the haul road strip. This can be attributed to two principal factors: firstly, the removal of a 0.3m depth of topsoil (deposit **1**) was not always sufficient to reveal the underlying and somewhat variable subsoil deposits and; secondly, to the north of the Weaver Navigation Canal, regular ploughing had created a subsoil/plough horizon that obscured any of the underlying features.

9.2.3 **Field 1:** removal of topsoil **1** in Field 1 revealed a 0.4m-thick layer of re-deposited mid-grey mottled clay, **8**. Several land drains cut this layer, which sealed a number of sandy deposits. The uppermost of these was very light sand, **9**, which was up to 0.5m thick in places and had been cut by more field drains. There was a very clear division between deposit **9** and the underlying deposit, **10**, which was much darker in colour and showed signs of root action, suggesting deposit **10** was a relict soil horizon, rather than an interface layer or

representative of the natural geology. Such a hypothesis was supported in one small area of the cable route where it was necessary to excavate to a depth of 2m bgl in order to feed the cable beneath an existing service. This revealed underlying layer **11**, another sandy deposit, this time rather wet and ‘running,’ with small numbers of small, fragmented weathered red sandstone inclusions. No features of archaeological significance were observed in Field 1.

9.2.4 **Field 2:** the sequence of deposits noted in Field 1, topsoil **1** and layers **8–10**, continued within Field 2 until a point approximately 20m east of Chester Road. Eastwards from there, the stratigraphy changed, with topsoil removal revealing a mid-greyish-brown clay, **12**. This was possibly a variation of layer **8** but, at between 1-1.5m deep, was a much thicker deposit, and comprised the majority of the observed stratigraphy within the cable trench through Field 2. Just south of the canal the trench was dug to a depth of 2m to avoid the pre-existing high pressure gas pipeline, revealing the base of layer **12** and underlying deposit **13**, a mid-grey clay sand. There was no below-ground evidence of the ridge and furrow that had been included and noted in the topographic survey, although this may in part have been due to the fact that the cable trench within Field 2 frequently coincided with disturbance caused by the insertion of the earlier service.

9.2.5 **Field 3:** within Field 3, the nature of the stratigraphy varied with proximity to the canal. Closer to the canal the uppermost deposits beneath topsoil **1** comprised 0.5m-deep reddish-brown sandy clay **5**, which in turn overlay **7**, a brownish-red clay. Layer **5** was very similar in colour and consistency to layer **7**, and it seems likely that layer **5** could be redeposited natural deposits from the cutting of the Weaver Navigation Canal. Further northwards, deposit **5** was not observed and, instead, a 0.6m-thick layer of orange/brown silty sand (**2**) lay between the topsoil and clay **7**. No features of archaeological value were observed within Field 3.

9.2.6 **Field 4:** the stratigraphic sequence observed within the northern part of Field 3 continued into Field 4 (Plate 10), before changing once again as the route neared Chester Road. There, immediately beneath the topsoil, the subsoil comprised a greyish-yellow sand, **4**, which in turn overlay a mid-grey/black banded sand and clay deposit, **19**. This latter deposit was very wet and humic, with good preservation of organic material, including tree roots, with one root ball more than 1m in diameter (Plates 11 and 12). Disturbance of the deposit released a strong sulphurous smell, characteristic of prolonged saturation and anaerobic decomposition. Although the layer covered a substantial length of the cable route, waterlogging was most apparent within the western corner of the field, close to where the cable route dog-legged to run alongside Chester Road. This was the most low-lying area of the field and may at some point have been saturated enough to be a watering hole. As the land rose to the north-east, deposit **4** progressively dried out, whilst deposit **19** petered out 60-70m short of Field 5, being replaced by a very friable sand with a high stone content (**25**).

9.2.7 Three potential archaeological features were noted in Field 4 (Fig 11). The first, pit **14**, was observed cutting clay layer **7** in the north-facing section of the southern trench (Plate 13). It was 0.6m in depth and contained two fills, but no

artefactual evidence that could be used to date it or ascertain its purpose. 15m further north-west another potential feature, **17**, was observed in the north-facing section of the northern trench. It was below (but not cut by) a modern field drain and was probably associated and contemporary with it. The sides were steep and extended below the base of the trench (1m +), whilst the fill was very waterlogged and so similar to the subsoil as if to suggest it had been back-filled very soon after excavation. The third feature, **21** (Plate 14), was observed within both trenches, cutting grey deposit **19** on a north-west/south-east alignment. The cut was 1.1m in width, continuing beyond the base of the cable trench; although an attempt was made to find the base of feature **21**, this was prevented by the rapid ingress of ground water. Fill **22** of the cut was a pale yellow stony sand, which contained some heavily abraded post-medieval pottery (*Section 9.3*).

- 9.2.8 **Fields 5 and 6:** Fields 5 and 6 displayed a broadly similar stratigraphic sequence. Beneath topsoil **1** the 0.5m-thick subsoil varied between an orange/brown silty sand, **2**, and a clay, **6**. The subsoil overlay a brownish-orange sand, **3**, which varied only towards the boundary of Fields 5 and 6, where it contained an abundance of sub-rounded stones and was recorded as deposit **25** (Plate 15). No features of archaeological interest were identified within Field 6, but a cluster of medieval pottery sherds (*Section 10.3*) were identified within subsoil **2**, close to the north-west corner of Field 5. These were recovered from a spot almost directly above feature **23**, interpreted as the base of a furrow and observed in the sections of the southern cable trench. The furrow had been almost completely truncated by ploughing, but its remains were U-shaped in section with a compacted, concreted fill, **24**. No further furrows were observed in the rest of the section, nor was the furrow noted in the sections of the parallel pipe trench.

9.3 FINDS

- 9.3.1 **Finds from the walkover survey:** two artefacts were recovered during the walkover survey at this site. One (OR 1000) is part of the base of a yellow ware vessel. The pinkish fabric might suggest that it is a Staffordshire product, probably dating to the early part of the eighteenth century. The other object, recovered from Site **33** is a complete royal-blue globular glass bead. Examination suggests that the body of the bead is an opaque white glass, cased in blue. There are no obvious typological traits which might allow the bead to be dated with any precision, but the apparent method of its manufacture might suggest that it is of relatively late date, possibly nineteenth century or more recent.
- 9.3.2 **Finds from the watching brief:** in total, 44 artefacts were recovered during the watching brief; the majority date to the post-medieval period, although a significant proportion of medieval material was also present. The assemblage was dominated by fragments of pottery, which was entirely domestic in nature. Fragments of clay tobacco pipe, animal bone, and flint were also present in the assemblage, albeit in low amounts, whilst other commonly represented material classes, such as ironwork, ceramic building materials and

glass, were absent (Table 7). A summary catalogue of the artefacts is set out in Appendix 2.

- 9.3.3 In broad terms, the finds were in reasonable condition; few of the fragments displayed much indication of abrasion, implying that the majority had not moved far from their original place of deposition.

Material	Category	Quantity
Ceramic	Vessel	39
Ceramic	Clay tobacco pipe	3
Stone	Flint	1
Bone	Animal bone	1
Total		44

Table 7: Quantities of material types

- 9.3.4 **Pottery:** in total, 39 fragments of pottery were recovered from the site, with a date range spanning the medieval and post-medieval periods. The earliest material was recovered from subsoil horizon 2 (OR 1008), and comprised three body sherds of a Grittyware vessel. The sherds co-joined, although the breaks were worn, indicating that the fragments represented a single vessel, broken in antiquity. The medium-coarse sandy fabric has dark pinkish-brown surfaces, and a reduced grey core, with traces of a green lead glaze visible on both surfaces. Traces of sooting on the exterior of one sherd suggested that the vessel had been used for cooking purposes. Typologically, a late twelfth- to early thirteenth-century date may be ascribed to the vessel (Edwards 2000).
- 9.3.5 Eight fragments of pottery (OR 1009) of a slightly later date were recovered from unstratified contexts, although all of the sherds were small and abraded, with clear indication of having been rolled. The earliest fragment of the group was a body sherd of a Grittyware vessel of a similar fabric and date to those recovered from subsoil 2 (Section 9.3.4). A sherd of partially reduced Greyware may have derived from the shoulder of a jug, and was likely to be of a thirteenth- or early fourteenth-century date. The remainder of the group comprised five small, soft sherds of an orange oxidised fabric, with an olive-green glaze on the exterior surface, possibly of fifteenth-century origin, and a single small sherd of Staffordshire slipware. Fragments of at least one more Staffordshire slipware vessel were recovered from topsoil 1 (OR 1001). This buff-bodied earthenware, covered with a streaked, mottled brown lead glaze, became popular from the mid-seventeenth to early eighteenth centuries (Davey 1987).
- 9.3.6 Topsoil 1 also yielded small fragments of stoneware vessels. One was typical of the mid-eighteenth century and likely to have originated from Staffordshire, whilst another had rouletted decoration characteristic of the Nottingham industry and may be dated broadly to the eighteenth to nineteenth centuries. The remainder of the group from topsoil 1 comprised coarse, dark-glazed red earthenware storage vessels. Whilst it was not possible to ascertain the precise form of these vessels, it is likely that they were pancheons or storage vessels. Four small and heavily abraded sherds of similar vessels were recovered from

fill **22** (OR 1003) of drainage feature **21**, and a large rim sherd from topsoil **1** (OR 1004). The source of these vessels is unknown, although it is likely that they were produced locally. Collectively, these can be dated generally between the eighteenth and nineteenth centuries.

- 9.3.7 **Clay tobacco pipe:** in total, three fragments of a single clay tobacco pipe bowl were recovered from topsoil **1**. The bowl had a Pollocks-type leaf decoration (Oswald 1975, 100, Fig 17), together with a wheatsheaf. Pipes with similar decoration were produced at the Rookery Farm Kiln, Rainford, during the latter half of the nineteenth century (Davey 1982). No fragments of pipe stem were recovered.
- 9.3.8 **Flint:** a single fragment of dark grey/brown flint was recovered from the topsoil. Although it had suffered a number of recent breakages, it had a slightly rounded end with evidence of retouch, and could represent a spoke scraper, perhaps of Mesolithic date (Fraser Brown *pers comm*).
- 9.3.9 **Animal Bone:** a single fragment of animal bone, recovered from waterlogged soil horizon **19** (OR 1010), was present in the assemblage. The bone was a radius from a small horse, or pony, and displayed clear indication of dismemberment and carnivore gnawing.
- 9.3.10 **Conclusion:** the finds assemblage is restricted in its range and size, but some elements are nevertheless of local interest. In particular, it is of note that the site yielded fragments of medieval pottery with a date range spanning the twelfth to fifteenth centuries, hinting at continuous settlement of the locale during this period. The other material classes are of little archaeological interest.

10. CONCLUSIONS

10.1 DISCUSSION

- 10.1.1 The results of the desk-based assessment and walkover survey have been given some discursive treatment in *Sections 6-8*, and will not be dealt with further here, except where their synthesis helps to contextualise the watching brief results, or, where the absence from the watching brief of significant features identified during the DBA, bears some consideration.
- 10.1.2 Although very few archaeological features were revealed during the watching brief, some useful information was gained from the recovered artefacts and from the stratigraphy that was exposed. The latter was particularly important, as it suggested that, even within those localised parts of the cable easement where groundworks penetrated to depths of around 2m bgl, boulder clay natural geology was not encountered. Instead, there appeared to be a succession of alluvial deposits, varying from sandy to clay-rich. In places, the build up of these layers would seem to be influenced by the dumping of spoil associated with the construction of nineteenth-century infrastructure. For example, deposit **5** may well have been redeposited upcast from the construction of the Weaver Navigation Canal, whilst sandy deposit **9**, which sealed a relict soil horizon, **10**, may pertain to the excavation of the Mill Cut, slightly later in the nineteenth century.
- 10.1.3 The quantity of artefacts recovered during the fieldwork was relatively small, but those that were datable help to shed some information on the contemporary land use in the area. The single flint object was recovered from the topsoil, and likely to have been ploughed-out from a long-since truncated feature. It does, however, tie in with the scatter at Site **12**, not least because, if it was indeed a spoke scraper for the production of hafts and shafts, then it too could have been disposed-of following a period of tool production. Both the medieval and post-medieval sherds displayed a certain degree of abrasion, and are likely to have been deposited as a result of manuring fields with refuse. Both their date and location of their discovery correlates closely with findspot Sites **13** and **14**. A study of the Sutton tithe map of 1844 (Fig 4) shows that the fields through which the cable route passed between the Weaver and Aston Lane are quite different in character to those to the north of Aston Lane. The latter, comprising a series of quite small fields with rather irregular boundaries, are likely to relate to the more piecemeal enclosure of fields farmed from Sutton Village. Those within the area defined by the Weaver, Chester Road and Aston Lane are much larger, generally more regular, and likely to have been owned by the inhabitants of Sutton Hall (Site **15**), which lies at their centre. Although the recovered finds could not be described as high status, this need not be surprising given their utilitarian nature. More significant, perhaps, is the fact that the earlier sherds of recovered pottery are of twelfth- to fourteenth-century date, whilst the present hall is attributed to the later fifteenth or early sixteenth century (*Section 5*). Following the premise that the field and road system in 1844 preserved a rather ancient pattern of land holding, with the possibly shrunken medieval village of Sutton on the

north side of Aston Lane, then it would not be unreasonable to deduce that the recovered pottery represented manuring of fields associated with a contemporary hall or manor on the southern side of the road. It may be that a grange farm associated with the Hall, but at a suitable distance from it, had once stood in that area.

10.1.4 The overall absence of archaeological features can thus be attributed to a number of factors. Firstly, the largely agrarian nature of the area is unlikely to have fostered intensive activity away from the immediate vicinity of the known settlement foci. Secondly, the use of deep ploughing in modern agriculture would appear to have led to the development of a thick interface horizon (up to 0.5m thick in places), which is likely to have truncated all but the deepest of features. Thirdly, the deposition of alluvium across much of the study area may have blanketed earlier features, except where they had been placed on raised land, against which the alluvium would have developed. For example, historical accounts describe the Roman remains (Sites **5** and **20**) discovered during the construction of the Weaver Navigation Canal as lying at a depth of 2m below ground level (CHER 990). This, therefore, implies the deposition of a considerable thickness of alluvium, and it is perhaps unsurprising that the cable trench, which was generally cut to a depth of only 1.3m, did not disturb these remains. The suggested line of the Roman road (Site **20**) has only been extrapolated and might not be associated with the remains that were buried deeply at Site **5**. However, even if truncated heavily, the Roman road would have been quite distinctive had it lain within the zone of impact.

10.2 FINAL IMPACT ASSESSMENT

10.2.1 Overall, the limited findings made during the watching brief would indicate that, generally, the cable route had avoided successfully major impact on archaeological remains. To a large extent, this avoidance related to the routing of the cable around the archaeological sites, and the deep-drilling of the cable beneath the listed, and other important, linear structures, such as the Frodsham Viaduct, Severn Vyrnwy Aqueduct, and the Weaver Navigation Canal (Sites **1**, **31**, and **45**). Where remains of archaeological interest were identified during the watching brief, often they had been truncated by modern deep ploughing, although better preservation might be expected in areas that had not been cultivated recently, such as the golf course to the east of Chester Road. Across the site, especially in the proximity of the river, there is the possibility that remains of prehistoric and Romano-British date may remain blanketed by alluvial deposits. Any such sites might thus be too deeply buried to be affected by the present programme of groundworks.

11. BIBLIOGRAPHY

11.1 PRIMARY AND CARTOGRAPHIC SOURCES

CRO DSS 1/5/116, Bills, receipts, and associated papers relating to the cutting, preparation, and sale of timber at Allostock, Hulme, Byley, and Yatehouses, and the carriage of bark to Frodsham for shipment to Ireland, dated between 23 July 1728 - March 1731

EDT 25/1 Aston by Sutton Tithe Apportionment Schedule 1844

EDT 25/2 Aston by Sutton Tithe Map 1844

EDT 26/1 Aston Grange Tithe Apportionment Schedule 1843

EDT 26/2 Aston Grange Tithe Map 1843

EDT 116/1 Clifton Tithe Apportionment Schedule 1845

EDT 116/2 Clifton Tithe Apportionment Schedule 1845

EDT 162/1 Frodsham Township Tithe Apportionment Schedule 1846

EDT 162/2 Frodsham Township Tithe Map 1846

EDT 380/1 Sutton Township Tithe Apportionment Schedule 1844

EDT 380/2 Sutton Township Tithe Map 1844

HSLUK7360/1642, aerial photographs taken between 1971 and 1973, Cheshire Aerial Survey

OS, 1874 *Cheshire Sheet XXV*, first edition 6" to 1 mile

OS, 1874 *Cheshire Sheet XXIV*, first edition 6" to 1 mile

OS, 1872 *Cheshire Sheet XXV.9*, first edition 25" to 1 mile

OS, 1872 *Cheshire Sheet XXV.10*, first edition 25" to 1 mile

OS, 1872 *Cheshire Sheet XXIV.12*, first edition 25" to 1 mile

OS, 1872 *Cheshire Sheet XXIV.16*, first edition 25" to 1 mile

OS, 1898 *Cheshire Sheet XXV.9*, second edition 25" to 1 mile

OS, 1898 *Cheshire Sheet XXV.10*, second edition 25" to 1 mile

OS, 1899 *Cheshire Sheet XXIV.12*, second edition 25" to 1 mile

OS, 1899 *Cheshire Sheet XXV.16*, second edition 25" to 1 mile

OS, 1896–8 *Cheshire Sheet XXV*, second edition 6" to 1 mile

OS, 1896–8 *Cheshire Sheet XXIV*, second edition 6" to 1 mile

OS, 1910 *Cheshire Sheet XXV.9*, third edition 25" to 1 mile

OS, 1910 *Cheshire Sheet XXV.10*, third edition 25" to 1 mile

OS, 1910 *Cheshire Sheet XXIV.12*, third edition 25" to 1 mile

OS, 1910 *Cheshire Sheet XXIV.16*, third edition 25" to 1 mile

OS, 1938 *Cheshire Sheet XXV*, fourth edition 6" to 1 mile

OS, 1954 *Cheshire Sheet XXV*, fifth edition 6" to 1 mile

OS, 1954 *Cheshire Sheet XXIV*, fifth edition 6" to 1 mile

OS, 2000 *Cheshire Sheet 57NW*, 1:10000

OS, 2000 *Cheshire Sheet 57NE*, 1:10000

11.2 SECONDARY SOURCES

Anon, 1957 Miscellanea, *J Chester Archaeol Soc*, **44**, 51-6

Ashmore, O, 1982 *The industrial archaeology of north-west England*, Manchester

British Waterways (Wales and Border Counties), 2004 *Consultant's brief for a feasibility study of restoring Frodsham Cut and Lock to navigation on the River Weaver and for the further regeneration of Frodsham waterfront*, unpubl rep

CBA, 2002 *Defence of Britain project*,
http://ads.ahds.ac.uk/catalogue/search/fr.cfm?rcn=CBA_DOBNAI-2281,
accessed 19th November 2007

CCCEP (Cheshire County Council Environmental Planning), 2003 *Guidance and General conditions for archaeological contractors and consultants in Cheshire*, unpubl doc

Chester Archaeology Service, 1993 *Saltworks Farm, Frodsham: Evaluation report*, unpubl rep

Countryside Commission, 1998 *Countryside Character Volume 2: North West: the character of England's natural and man-made landscape*, Cheltenham

Cowell, R, 1990 *Field record sheet*, Archaeological survey of Merseyside, unpubl rep

Cowell, R, 1991 *A prehistoric field survey in North Cheshire*, unpubl rep

Cowell, R, 2005 Late Prehistoric lowland settlement in North-West England, in M Nevell and N Redhead (eds) *Mellor: living on the edge*, Manchester, 65–76

Cowell, R, and Philpott, RA, 2000 *Prehistoric, Romano-British and medieval settlement in lowland North West England, archaeological investigations along the A5300 road corridor in Merseyside*, Liverpool

Davey, PJ, 1982 (ed) *The archaeology of the clay tobacco pipe VII*, BAR Brit Ser, **100**, Oxford

Davey, PJ, 1987 Post-Roman pottery, *J Merseyside Archaeol Soc*, **7**, 121-50

DoE (Department of the Environment), 1990 *Planning policy guidance 16: archaeology and planning*, London

Dodgson, J McN, 1971 *The Place-names of Cheshire Part III: the place-names of Nantwich Hundred and Eddisbury Hundred*, Cambridge

English Heritage, 1991 *The Management of Archaeological Projects (MAP)*, London, Second edition

Farm Direct, 2007 www.farmdirect.co.uk/farming/history/watermeadow/index.html, accessed 19th June 2007

- FDLHG (Frodsham and District Local History Group), 1990 *Frodsham Saltworks archaeological dig 21st to 29th July 1990*, unpubl pamphlet
- de Figueiredo, P, and Treuherz, J, 1988 *Cheshire country houses*, London
- Fitzpatrick-Matthews, K, 2006 *The Neolithic/Early Bronze Age transition*, www.archaeology.kmatthews.net/cheshire/chalco.php, accessed 26th June 2007
- Gifford and Partners, 1994 *Archaeological appraisal of land at Sutton Hall Farm, Sutton Weaver, Runcorn, Cheshire*, unpubl rep
- Gifford and Partners, 1999 *Report on an archaeological watching brief at Saltworks Farm Development Phases 2 and 3, Frodsham, Cheshire*, unpubl rep
- Haselgrove, C, 1996 The Iron Age, in R Newman (ed) *The archaeology of Lancashire, present state and future priorities*, Lancaster, 61–73
- Hawkin, WR, nd a *The Roman road*, FDLHG, unpubl pamphlet
- Hawkin, WR, nd b *The port of Frodsham*, FDLHG, unpubl pamphlet
- Higham, NJ, 1993 *The origins of Cheshire*, Manchester
- Lambert, J, Hair, N, Howard-Davis, C, Newman, R, and Oliver, T, 1996 *Transect through time: the archaeological landscape of the Shell North Western ethylene pipeline*, Lancaster
- Leah, M, Wells, CE, Appleby, C, and Huckerby, E, 1997 *The Wetlands of Cheshire*, Lancaster Imprints, 5, Lancaster
- Margary, ID, 1973 *Roman Roads in Britain*, London
- Maynard, D, 1991 *North Western Ethylene Pipeline Project*, unpubl rep
- Middleton, R, 1996 The Neolithic and Bronze Age, in R Newman (ed) *The archaeology of Lancashire, present state and future priorities*, Lancaster, 35–60
- Morgan, P, 1978, *Domesday Book*, Cheshire
- Nicholson, 1991 *Ordnance Survey guide to the waterways 3: North*, London
- Norris, JH, 1965 Water corn mills of Cheshire, *Trans Lancashire Cheshire Antiq Soc*, 75, 33-71
- Ormerod, G, 1882 *A history of the county palatine and city of Chester*, London
- Oswald, A, 1975 *Clay pipes for the Archaeologist*, BAR Brit Ser, 14, Oxford
- Parker-Pearson, M, 2000 *Bronze Age Britain*, London
- Petch, DF, 1975 Stray finds, *Cheshire Archaeol Bull*, 3, 59-64
- Ross, A, 1996 *Pagan Celtic Britain*, Chicago
- Ross, A, 2004 *Druids: preachers of immortality*, Stroud
- Shaw, M, and Clark, J, 2002 Frodsham archaeological assessment, *Cheshire historic towns survey, Vale Royal Borough Part 1: archaeological assessments*, 15-32, Chester
- Thacker, AT, 1987 Anglo-Saxon Cheshire, in BE Harris (ed) *A history of the county of Cheshire*, Oxford, 237–92

Turner, RC, and Briggs, CS, 1986 The bog burials of Britain and Ireland, in IM Stead, JB Bourke, and D Brothwell (eds) *Lindow Man, the body in the bog*, London, 144–161

Waddell, J, 2000 *The prehistoric archaeology of Ireland*, Bray

Willan, TS, 1951 *The navigation of the River Weaver in the eighteenth century*, Manchester

White Young Green Environmental (WYGE) 2004 *Revive: stage 1 assessment, River Weaver project - Frodsham sites*, unpubl rep

Whittingham, JP, 1969 *Recent changes alongside the Weaver navigation waterfront, from Northwich to Barnton*, unpubl rep

12. ILLUSTRATIONS

12.1 FIGURES

Figure 1: Location Map

Figure 2: Gazetteer Sites

Figure 3: Aston by Sutton Tithe Map, 1844

Figure 4: Sutton Tithe Map, 1844

Figure 5: Clifton Tithe Map, 1845

Figure 6: OS first edition 6":1 mile map of Cheshire, 1870-75

Figure 7: OS first edition 25":1 mile map of Cheshire, 1911

Figure 8: OS first edition 6":1 mile map of Cheshire, 1954

Figure 9: Plan showing areas of archaeological investigation and mitigation

Figure 10: Detail of topographic survey of Site **23**

Figure 11: Plan of watching brief area and location of identified features

12.2 PLATES

Plate 1: Frodsham viaducts 53 and 54 (Site **1**) facing north-west

Plate 2: The hollow way constituting Site **21**, facing south-west

Plate 3: Aerial photograph from Google Earth showing the course of the hollow way (Site **21**) running east to west across a wooded topographic rise in the landscape

Plate 4: Ridge and furrow at site **22** facing south-west

Plate 5: Aerial photograph from Google Earth showing the ridge and furrow at Site **22** overlain by the field boundaries and truncated by the Mill Cut (Site **24**) running east to west at the top of the image

Plate 6: Sutton Bridge (Site **24**) facing north-west

Plate 7: The causeway over the Mill Cut (Site **24**) facing south-east

Plate 8: A large drainage ditch (Site **28**) at the eastern end of the study area, facing south

Plate 9: Moss-covered bricks at Site **29**, facing west

Plate 10: Deposits revealed within Field 3 and 4

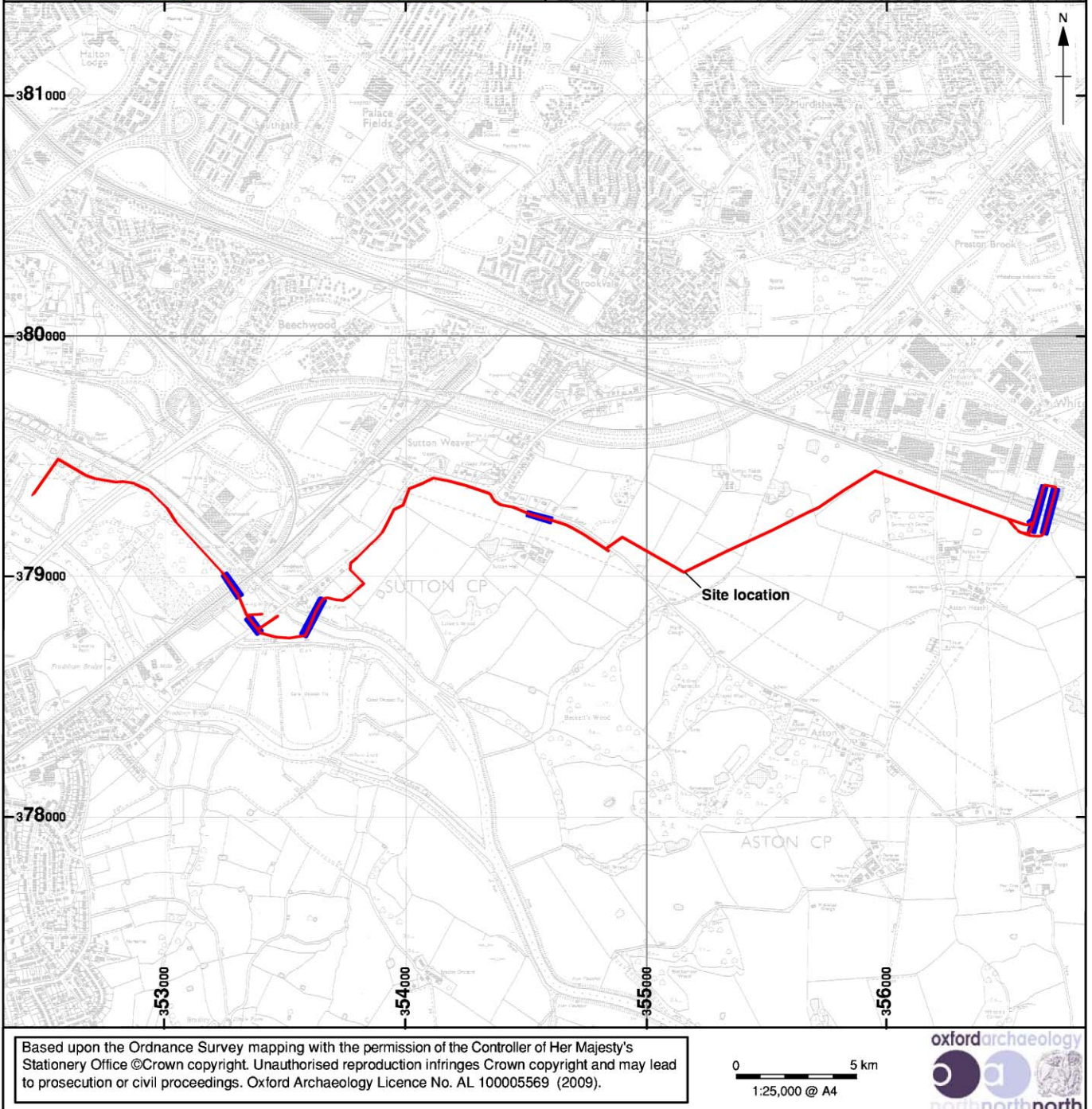
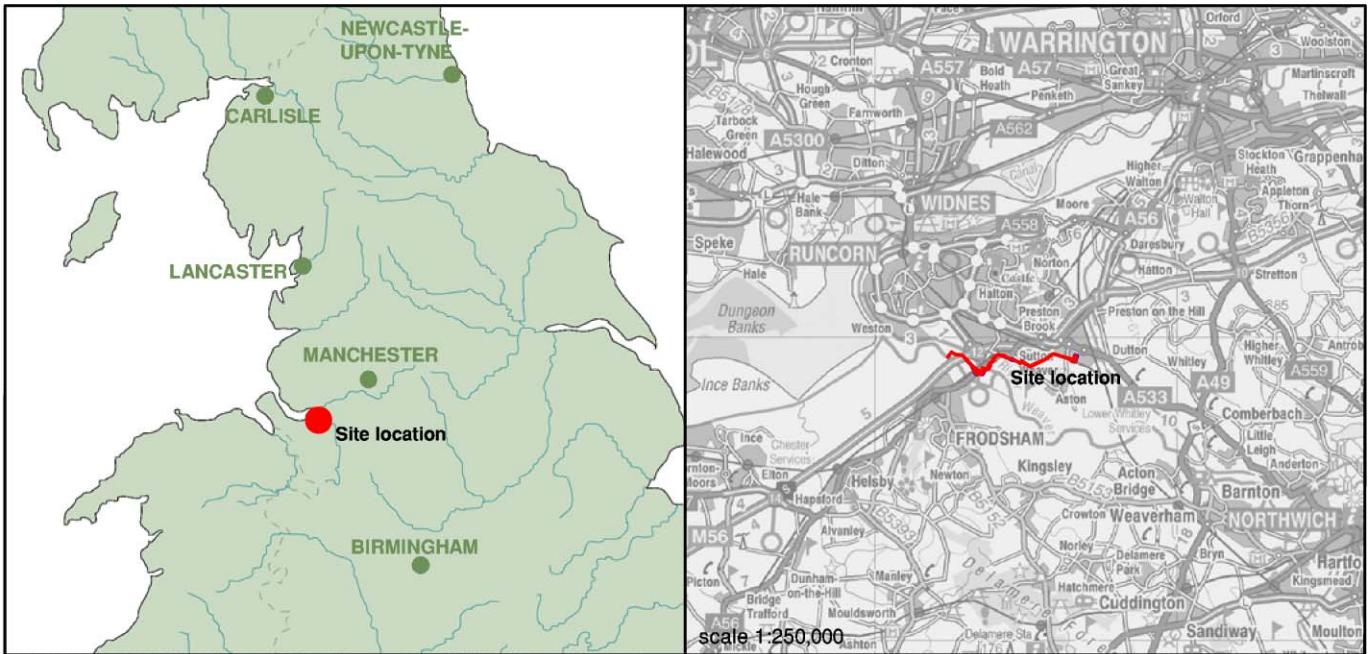
Plate 11: Tree branch within waterlogged deposit **19**

Plate 12: Working shot of trench through Field 4

Plate 13: Pit **14** identified in Field 4

Plate 14: Feature **21** identified in Field 4

Plate 15: Working shot in Field 5



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Figure 1: Site location

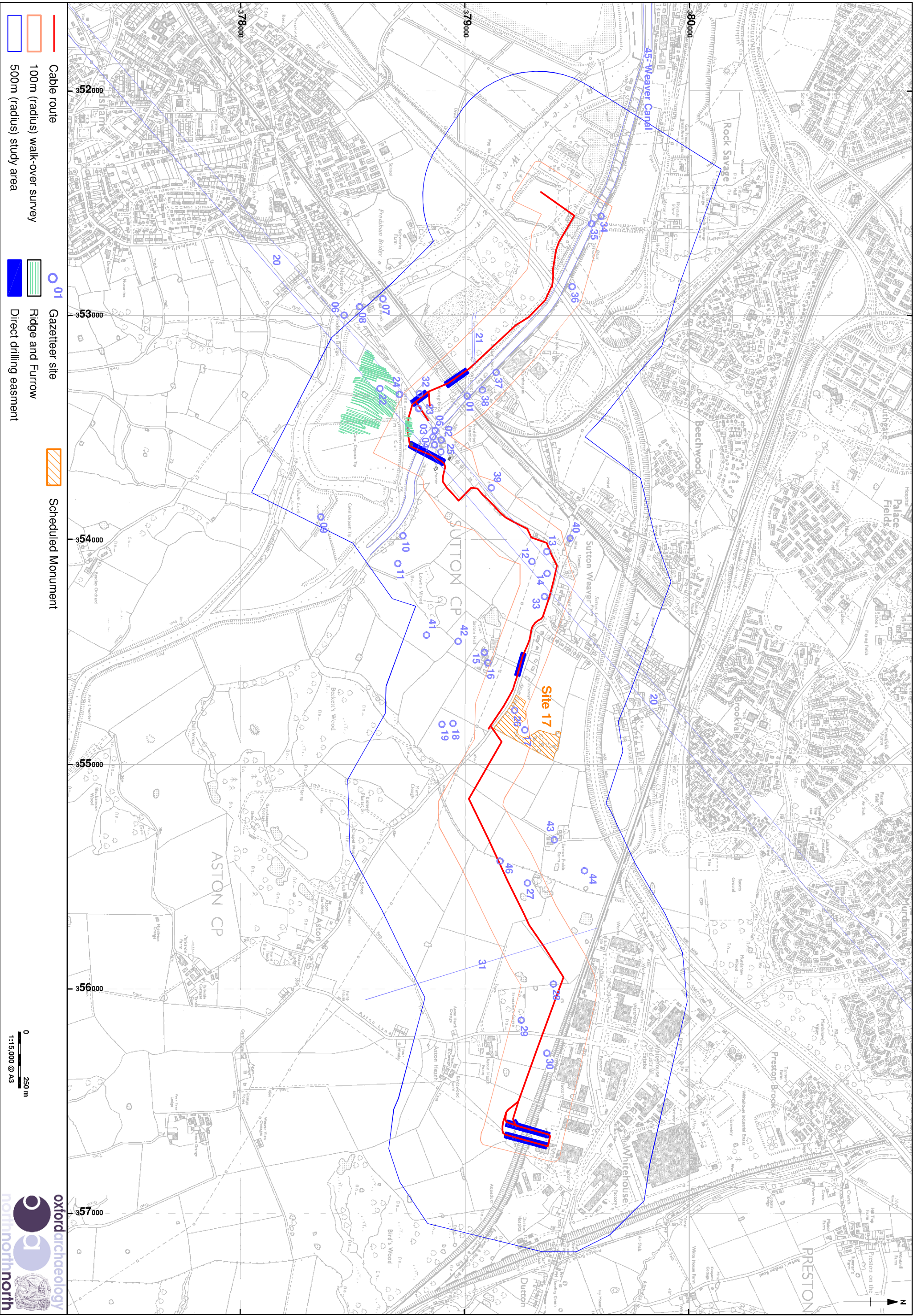


Figure 2: Gazetteer of sites, showing study areas

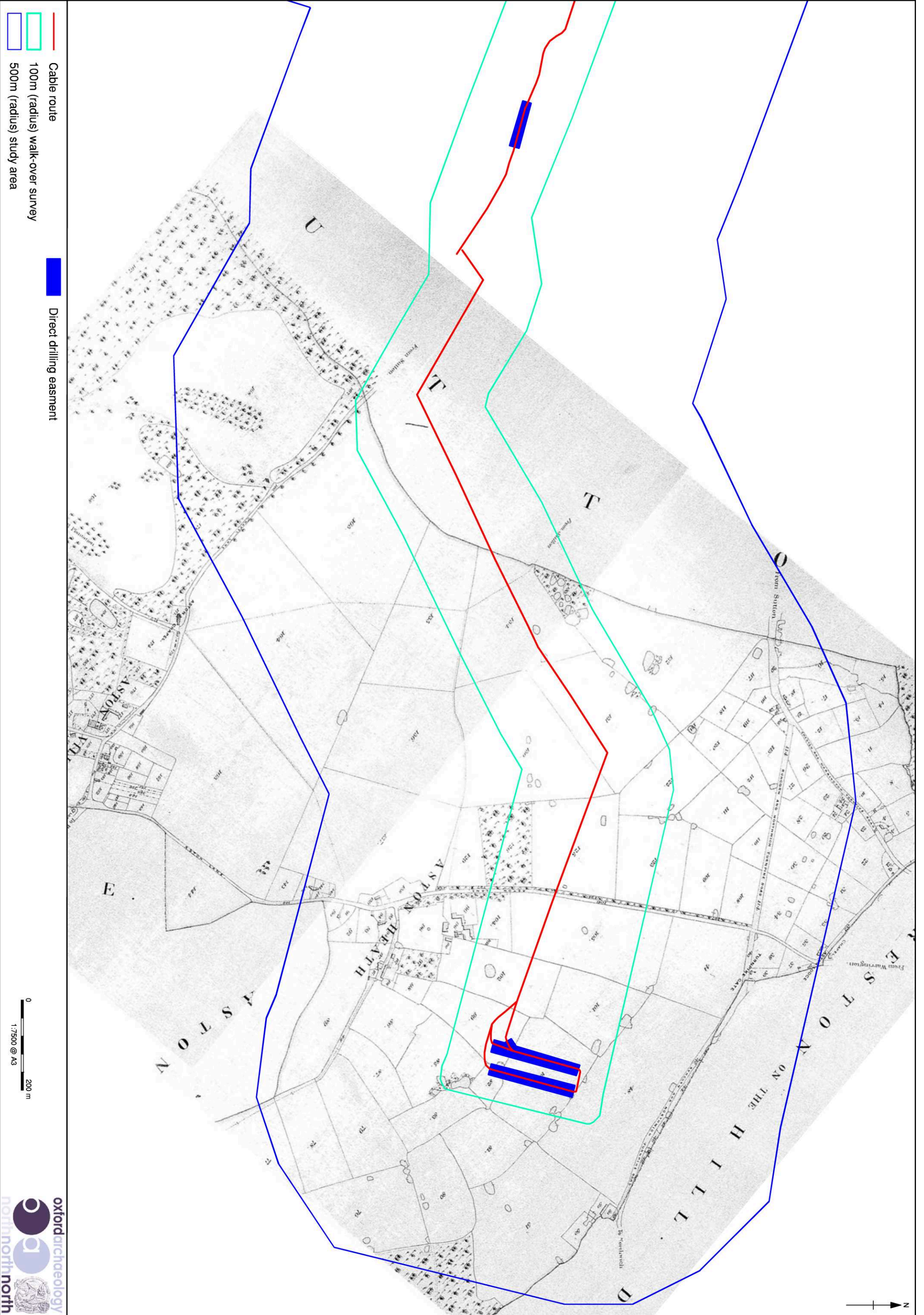
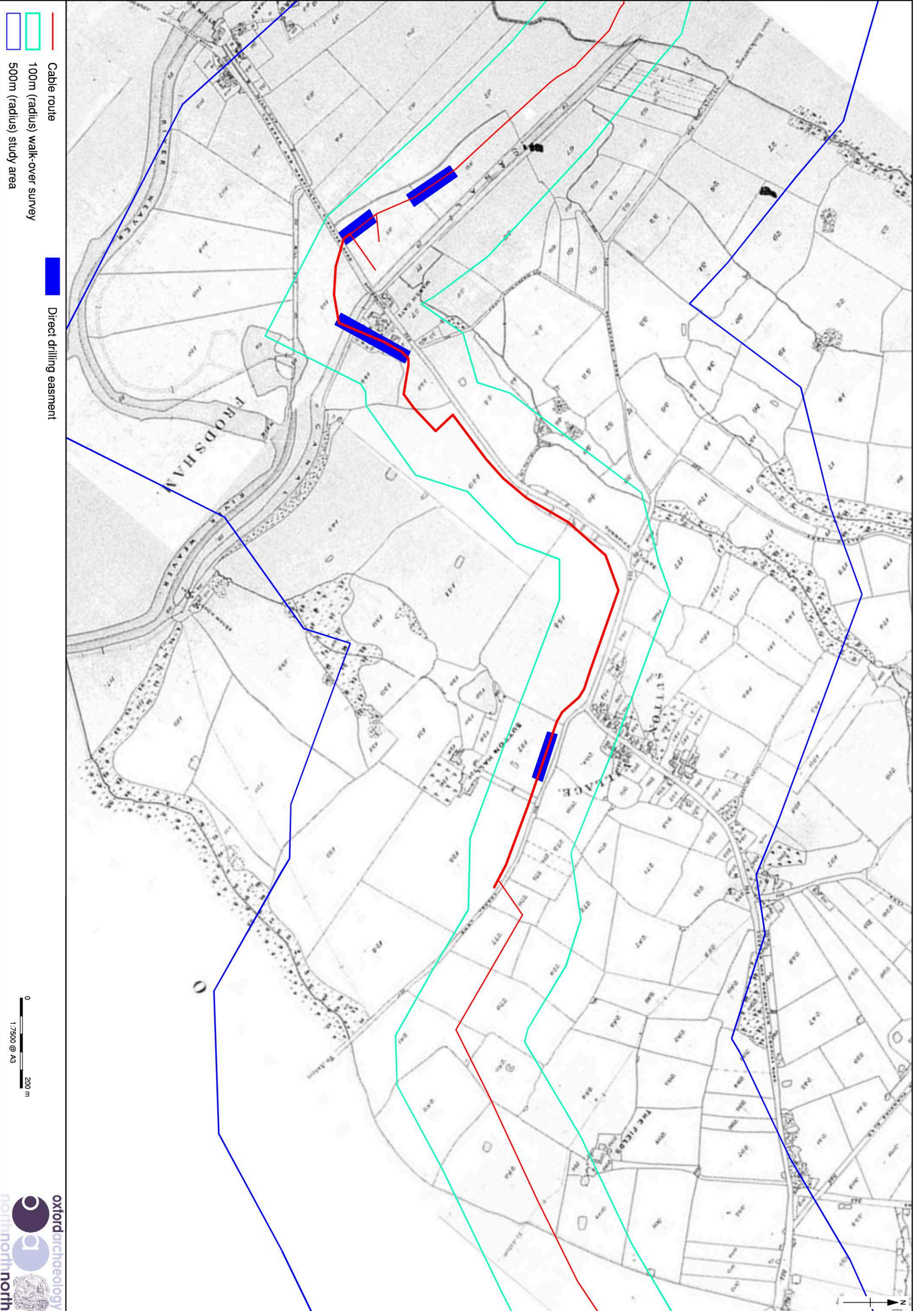


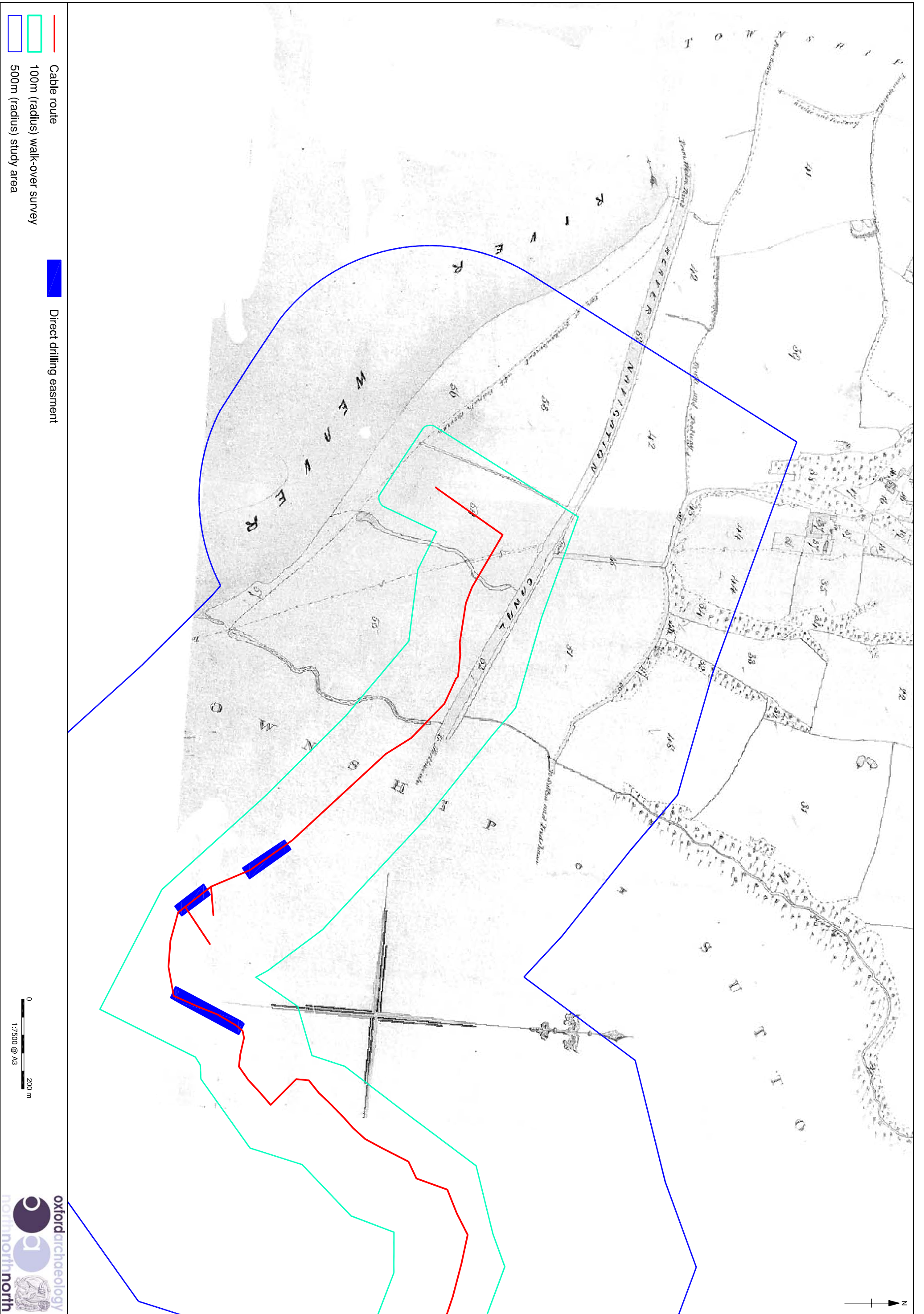
Figure 3: Aston by Sutton Tithe Map, 1844



- Cable route
- 100m (radius) walk-over survey
- 500m (radius) study area
- Direct drilling easement

Figure 4: Sutton (Runcorn) Tithe Map, 1844

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- Cable route
- 100m (radius) walk-over survey
- 500m (radius) study area
- Direct drilling easement

Figure 5: Clifton Tithes Map, 1845

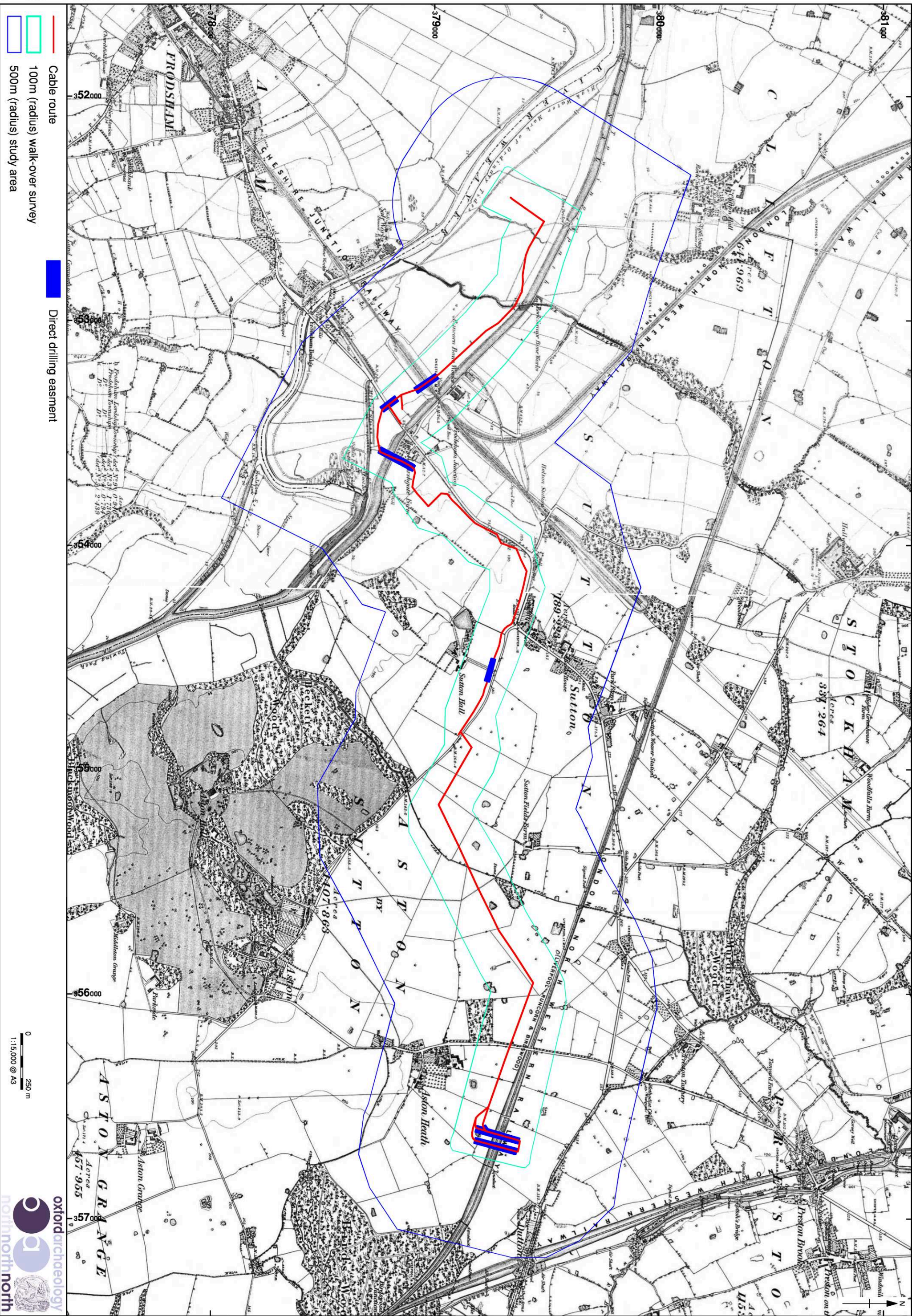


Figure 6: Ordnance Survey, First Edition 6":1 mile map, 1870-5

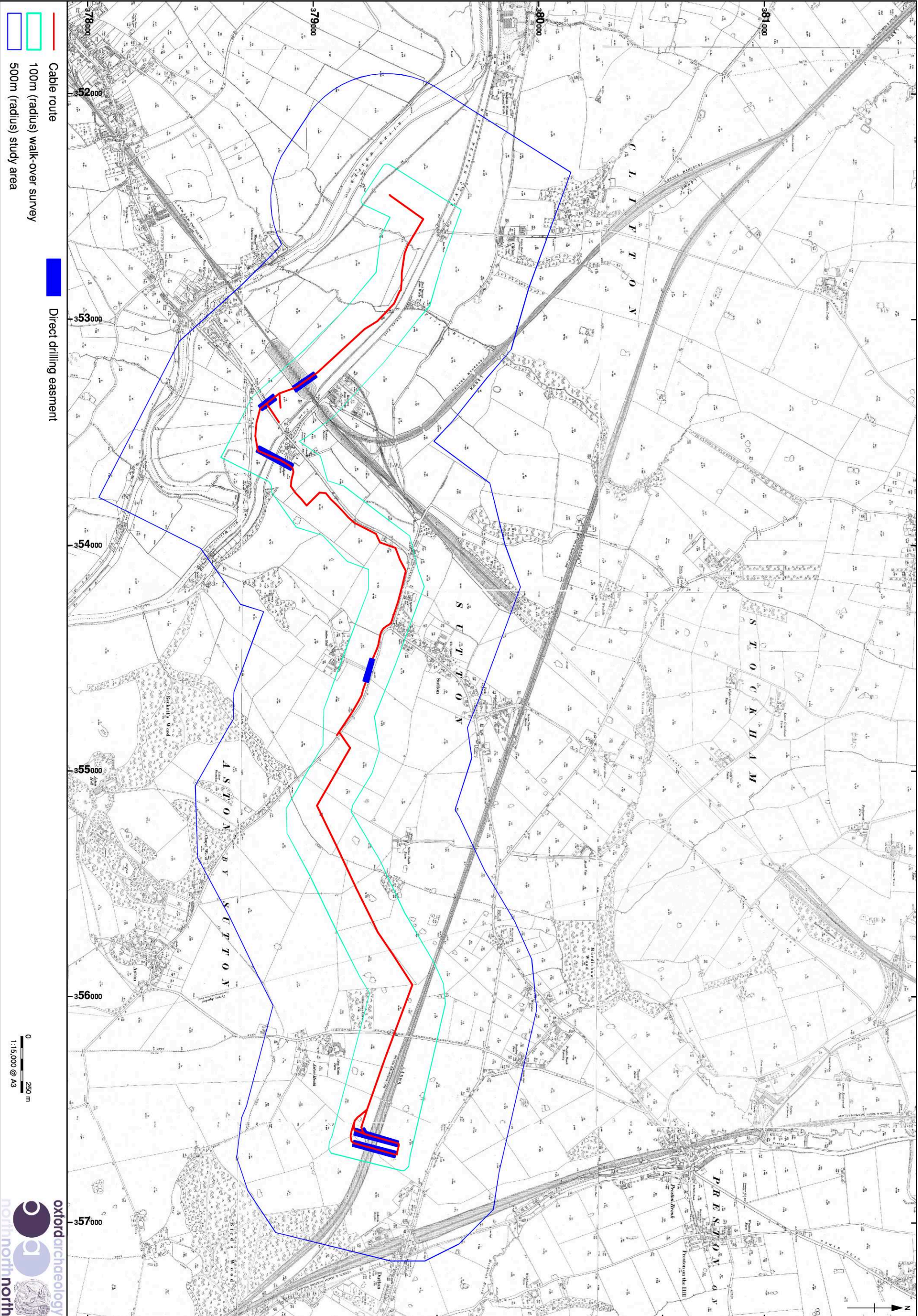
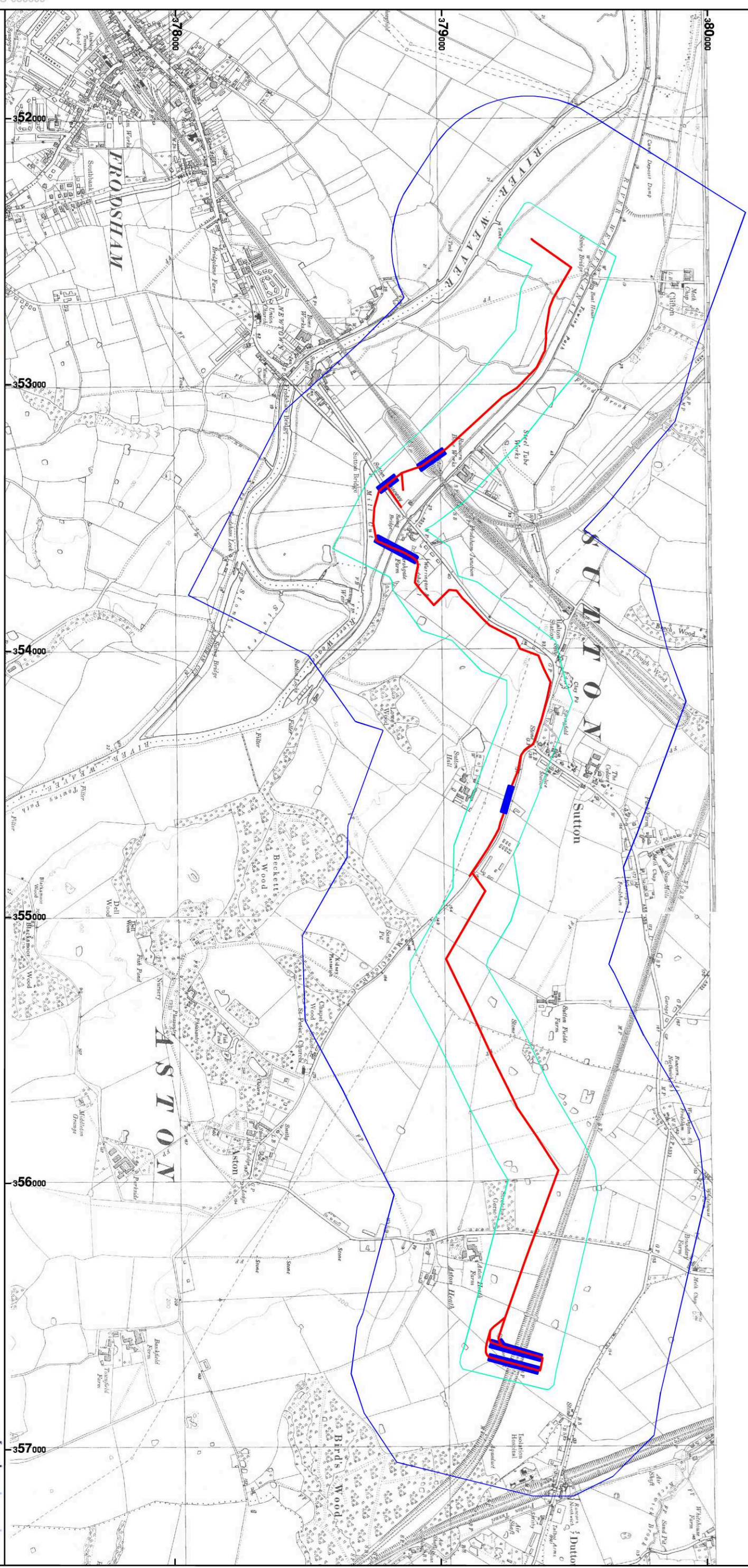


Figure 7: Ordnance Survey, Third Edition 25"=1 mile map, 1911

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no data available



SR*L9868*AMS*050609

- Cable route
- 100m (radius) walk-over survey
- 500m (radius) study area

Direct drilling easment

Figure 8: Ordnance Survey, Fifth Edition 6":1 mile map, 1954

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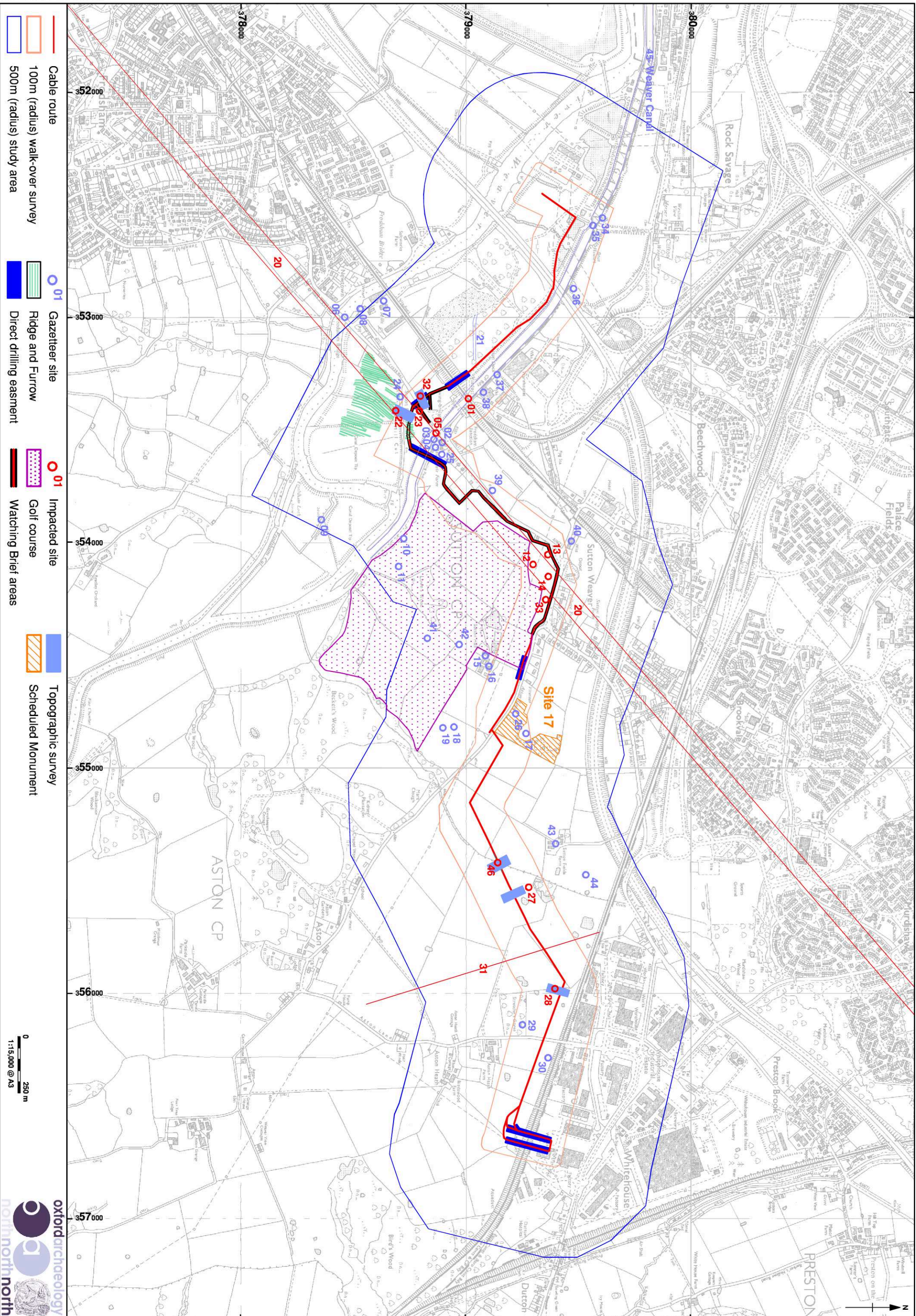


Figure 9: Proposed areas of further investigation

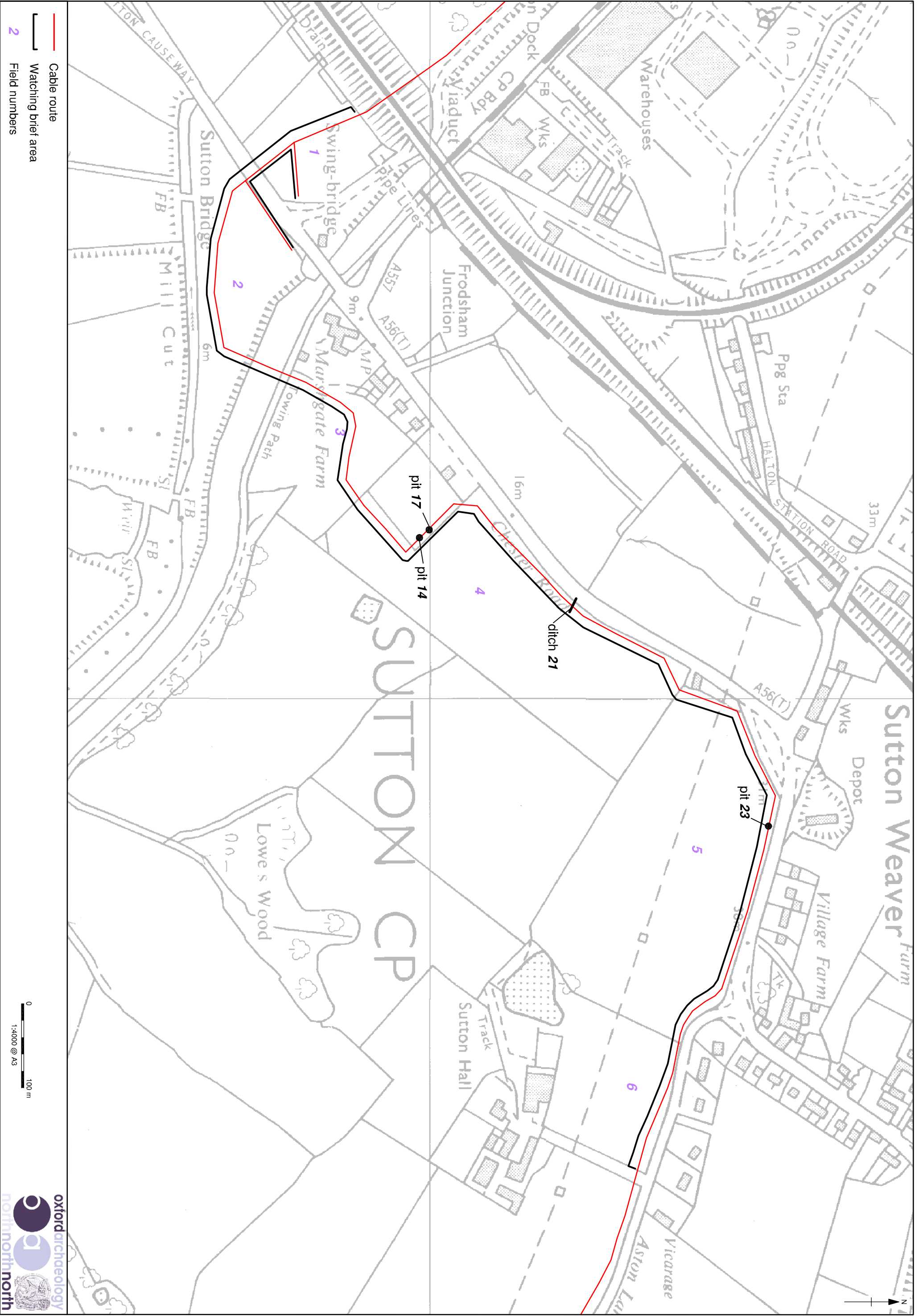


Figure 11: Detail of watching brief area, showing field numbers and location of identified features



Plate 1: Frodsham viaducts 53 and 54 (Site **1**) facing north-west



Plate 2: the hollow-way constituting Site **21**, facing south-west



Plate 3: aerial photograph from Google Earth showing the course of the hollow-way (Site 21) running east to west across a wooded topographic rise in the landscape



Plate 4: Ridge and furrow at site 22 facing south-west



Plate 5: Aerial photograph from Google Earth showing the ridge and furrow at Site **22** overlain by the field boundaries and truncated by the Mill Cut (Site **24**) running east to west at the top of the image



Plate 6: Sutton Bridge (Site **24**) facing north-west



Plate 7: the causeway over the Mill Cut (Site **24**) facing south-east



Plate 8: a large drainage ditch (Site **28**) at the eastern end of the study area, facing south



Plate 9: Moss-covered bricks at Site 29, facing west



Plate 10: Deposits revealed within Field 3 and 4



Plate 11: Tree branch within waterlogged deposit *19*



Plate 12: Working shot of trench through Field 4



Plate 13: Pit **14** identified in Field 4



Plate 14: Feature **21** identified in Field 4



Plate 15: Working shot in Field 5

APPENDIX 1: SUMMARY CONTEXT LIST

Context	Depth (m)	Form	Description
1	0.3	Deposit	Topsoil; mid-greyish-brown sandy silt
2	1.0	Deposit	Subsoil/Ploughsoil; mid-orange/brown silty sand
3	1.7	Deposit	Light brownish-orange sand
4		Deposit	Mid-greyish-yellow sand
5		Deposit	Mid-reddish-brown sandy clay
6		Deposit	Mid-pinkish-brown sandy clay
7	0.5	Deposit	Reddish clay layer
8	0.4	Deposit	Mid-grey/brown mottled clay
9	0.5	Deposit	Light brownish-cream sand
10	0.7	Deposit	Dark brown sand
11		Deposit	Mid-yellowish-grey sand
12	1 – 1.5	Deposit	Mid-yellowish-brown clay
13	0.2	Deposit	Mid-grey clayey sand
14	0.6	Cut	Pit
15	0.2	Deposit	Primary fill of pit 14
16	0.4	Deposit	Secondary fill of pit 14
17	1 +	Cut	Pit
18		Deposit	Fill of pit 17
19	0.8	Deposit	Mid-blackish-grey sandy clay layer
20		Deposit	Light pinkish-grey sandy clay
21	1 +	Cut	Linear feature possibly associated with field drainage
22	1 +	Deposit	Fill of feature 21
23	0.15	Cut	Base of possible furrow
24	0.15	Deposit	Fill of furrow 23
25	0.5+	Deposit	Mid-orange/brown sand and stones

APPENDIX 2: FINDS CATALOGUE

Context	OR No	Count	Material	Description	Period
<i>1</i>	1001	12	Ceramic	Fragments of table- and kitchen-ware vessels, including a Staffordshire slipware bowl with a pie-crust rim, English stoneware vessels, and brown- and black-glazed earthenwares.	Late 17th - 19th century
<i>1</i>	1002	1	Flint	One fragment of flint.	Undated
<i>22</i>	1003	1	Ceramic	Four small and abraded fragments of dark-glazed earthenware vessels.	18th - 19th century
<i>1</i>	1004	3	Ceramic	Three fragments of ceramic vessels, including the rim of a dark-glazed earthenware jar, an under-glaze transfer-printed ware plate, and another table-ware vessel.	19th – 20th century
<i>1</i>	1005	3	Clay tobacco pipe	Three fragments of a clay tobacco pipe bowl, probably from the same pipe.	19th century
<i>1</i>	1006	3	Ceramic	Three fragments of table-ware vessels.	19th – 20th century
<i>1</i>	1007	5	Ceramic	Self-glazed, buff-bodied earthenware	18th - 19th century
<i>2</i>	1008	3	Ceramic	Three co-joining fragments of a medieval Gritty ware vessel with a splashed green glaze.	12th – early 13th century
Unstrat.	1009	8	Ceramic	Eight small and abraded fragments of pottery, comprising seven of a medieval date and one fragment of Staffordshire slipware. The medieval material includes a single fragment of Gritty ware, representing the earliest shed, a Partially-reduced Greyware, probably part of a slender jug, and oxidised wares.	12th – 18th century
<i>19</i>	1010	1	Animal bone	Fragment of a radius from a small horse, with evidence for butchering.	Undated