



SILVERDALE BROOK, NEWCASTLE- UNDER-LYME, STAFFORDSHIRE

Archaeological Watching Brief



Oxford Archaeology North

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SUMMARY

A watching brief was undertaken by Oxford Archaeology North (OA North) in January 2006 at Silverdale Brook, Newcastle-under-Lyme, Staffordshire (centred on NGR SJ 3831 3463). The Environment Agency proposed to reduce flooding on the Silverdale Brook by the construction of a flood defence bank, aligned approximately east/west to the south of Silverdale Road. This area lies within an area of recognised archaeological potential, being on the site of Knutton Mill, which dates back to at least 1775. After an initial assessment by the Environment Agency in December 2004, the Environment Agency Archaeologist commissioned OA North to undertake the programme of observation during the groundworks for the flood defence bank.

Two distinct corridors, one to the west of the access track and one to the east of an access track, were subject to topsoil stripping to a maximum depth of 0.10m. A trench, 0.7m wide and excavated to a depth of 0.75m from the surface, was positioned along the centre line of this corridor. These groundworks revealed that the site had been subject to disturbance from the dumping of material from a colliery, to the south of the site, which had formed a levelling layer. This had the effect of obscuring and damaging any evidence of surviving archaeological remains, therefore, no significant archaeological remains were encountered during the course of the observations. The pottery fragments and glass bottles recovered dated from the nineteenth and twentieth centuries and are typical of the waste materials found within an agricultural context.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Ed Wilson and Gary Tustin of the Environment Agency for support help during the setting up of the project, and to Alan Chell for his assistance on site.

The watching brief was undertaken by Andy Lane, who also wrote the report. The finds section was written by xxxxxxxxxxxx, who examined the finds. The drawings were compiled by Jamie Quartermaine. The project was managed by Jamie Quartermaine who edited the report, along with Alan Lupton.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Following the proposal of a scheme to reduce flooding on the Silverdale Brook, to the west of Newcastle-under-Lyme, Staffordshire (centred on NGR SJ 831463) (Fig 1), the Environment Agency issued a formal brief recommending that an archaeological watching brief be conducted during any associated groundworks (*Appendix 1*). In accordance with this, a project design (*Appendix 2*) was supplied by Oxford Archaeology North (OA North) for an evaluation. In the event the archaeological requirements was downgraded from an evaluation to a watching brief, which was undertaken in two days during January 2006. The present reports sets out the results of this watching brief.

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 The project design (*Appendix 2*) for an archaeological evaluation was approved by The Environment Agency. However, in the event the specification for the archaeological works was down graded to a watching brief, for which there was no written specification. The watching brief was, however, undertaken in accordance with the procedures of the Institute of Field Archaeologists and generally accepted best practice.

2.2 WATCHING BRIEF

- 2.2.1 Close liaison was maintained between OA North staff and the Environment Agency during the watching brief. The programme of field observation accurately recorded the location, extent, and character of any surviving archaeological features. This work comprised observation during the groundworks, the examination of any horizons exposed, and the accurate recording of all archaeological features, horizons and any artefacts found during the excavations. The ground works were effected by a tracked mechanical excavator with a 1.8m toothless bucket for the topsoil stripping and a 0.35m toothed bucket for the key trench.
- 2.2.2 The recording comprised a full description and preliminary classification of the features / structures revealed on OA North *pro-forma* sheets, and their accurate location in plan. In addition, a photographic record in colour slide and monochrome formats was compiled.

2.4 ARCHIVE

- 2.4.1 A full archive of the work undertaken has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Staffordshire Record Office, and a copy of the report will be forwarded to the Staffordshire Sites and Monuments Record.

3. BACKGROUND

3.1 LOCATION

- 3.1.1 Silverdale Brook lies to the south of Silverdale Road, to the west of Newcastle-under-Lyme, Staffordshire (centred on NGR SJ 3831 3463) (Fig 1). The brook runs through a gentle valley consisting of an extensive area of open pasture, with housing belonging to the Knutton settlement to its north and a former quarry to its south.

3.2 TOPOGRAPHY AND GEOLOGY

- 3.2.1 The underlying solid geology consists of Westphalian Western Coalfield Keele Formation (British Geological Survey 1993). With glacial drift giving rise to stagnogley soils. Fireclays, pottery clay and coal lie near the surface along the principle valleys of the area, with Newcastle-under-Lyme lying in part on a coalfield (Countryside Commission 1998, 37).

3.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.3.1 Silverdale Brook has been subject to alterations in the later half of the twentieth century, as there are significant changes to the line of the present day brook by comparison with that shown on an aerial photograph from 1963 (Environment Agency 2004). The western end of the brook has been culverted and straightened and a central section has been straightened. The brook has also been subject to a number of dredging events, and mineral extraction within the wider landscape has caused subsidence in the vicinity of the scheme. Nevertheless, archaeological remains in the form of earthworks do survive within the site boundary (*ibid*).
- 3.3.2 **Knutton Mill:** prior to the recent alterations, the brook was identified as the location of a former mill called Knutton Mill, which was known from cartographic sources (Yates 1775) to date from at least 1775, where it was shown with an associated pool upstream. Post-medieval mill buildings often mark the site of medieval mills, and it is therefore possible that the mill's history extends back into this earlier period. There is, however, no evidence for any activity in the area predating the mill.
- 3.3.3 A plan of Knutton Mill, dated to 1789 (SCRO/1789), shows two buildings adjacent to a mill pool, fed by Silverdale Brook; one of these buildings is annotated 'Mill' (Environment Agency 2004). Downstream of the mill are two principal channels, the former mill stream and a new outfall channel. A further overflow channel extends out from the brook immediately up stream of the mill pool (*ibid*). The mill appears to have gone out of use by the late nineteenth century, as the Ordnance Survey second edition map (1890) shows that the building was no longer annotated 'mill', the mill-pond had silted up and the over flow channel was no longer shown. By 1924 (Ordnance Survey third edition 1:2500 map (1924)) a building was still shown on the site of the

former mill and similarly an aerial photograph from 1963 shows the building intact (HSL UK 6392).

- 3.3.4 There are no remains of the mill or its associated buildings now visible, and the buildings appear to have been finally demolished in the latter part of the twentieth century (Environment Agency 2004). Earthworks relating to the mill complex do, however, survive: a depression has been identified, and interpreted, as the remnants of the mill-pond, and cartographic sources show that the mill was positioned immediately downstream of the pond, with an adjacent water-meadow system adjacent that survive as earthworks (*ibid*). It is possible that the channels introduced by the time of the 1789 map (SCRO/178) were in part intended to flood the water meadow (Environment Agency 2004).
- 3.3.5 **Wider Industrial Landscape:** the mill was located within a largely industrial landscape as indicated on historic mapping; Knutton Iron Foundry stood immediately north of the site (OS Second Edition 6" map (1890) (Fig 2); OS Second Edition 25" map (1900) (Fig 3)), a brick and tile works was located to the south of the site and a nineteenth century sewerage system, still visible as masonry remains, was to the south-east. A further mill is shown to the west of Knutton Mill on a map dated 1817-9 (Mudge and Colby map of Staffordshire (1817-19)). The industrial landscape has largely disappeared, and the area is now for the most part residential.

4. RESULTS

4.1 WATCHING BRIEF RESULTS

- 4.1.1 **Introduction:** a programme of archaeological observation was maintained during ground works intended to reduce flooding of Silverdale Brook over two days in January 2006. Firstly a c6m corridor was stripped of topsoil along the line of the proposed flood defence bank and a key trench was excavated down the centre line of the proposed bank. This groundwork was implemented in two areas; the first was to the west of the access track, north of the culverted brook, and the second was to the east of the access track, and to the north of the open brook (Fig 4).
- 4.1.2 **Topsoil Strip:** the area to the west of the access track measured approximately 124m in length, 6m in width, and tapered to the west; it was excavated to a maximum depth of 0.10m to remove topsoil (Plate 1). The topsoil was 0.1m thick and comprised a mid-brown silty-clay with moderate amounts of brick rubble and concrete with frequent inclusions of post-medieval pottery and glass bottles (Section xxx). No archaeological deposits or features were encountered during this phase although, shale, which was waste material from the colliery to the south of the site was observed.
- 4.1.3 A similar topsoil was identified during the topsoil strip to the east of the access track (Plate 2) within an area that was approximately 70m in length, 4m in width, and was excavated to 0.1m in depth. The topsoil contained slightly more clay with moderate amounts of modern rubbish, and was 0.1m in depth. No archaeological finds features or deposits were identified during this stage.
- 4.1.4 **Key Trench:** the key trench ran down the centre of both areas stripped of topsoil; it was intended to key in the flood bank and was excavated to a depth of 0.75m from the surface, and was 0.7m in width. The western area of the site (Plate 3) revealed a deposit of mid-reddish-brown silty-sand subsoil, which was 0.65m thick, and underlay the topsoil. This deposit was not seen after 9m from the western extent of the key trench and was overlain by grey/black shale mixed with a 0.65m thick red-brown silty-clay deposit. This was a levelling/dumped layer of colliery waste and was cut at c44m from the western extent of the trench, by a modern disused service trench, that was filled with buff crushed sandstone and mid-brown silty-sand. The trench was aligned north-east/south-west across the trench, and was observed for a length of 9m. The stratigraphy to the east of this point was a mixture of grey/black shale mixed with red-brown silty-clay and various dumped deposits of mid-red-brown sandy-silt with inclusions of orange clay and lenses of a mid-orange sand; within these deposits were occasional inclusions of brick rubble, concrete and pink sandstone. These deposits contained post-medieval pottery fragments and a glass beer bottle. These deposits were overlain by topsoil and waste from the nearby colliery to the south which was used to level the area. No archaeological features or deposits were located at this stage.
- 4.1.5 The eastern area of site (Plate 4) revealed a 0.65m thick grey shale mixed with grey-brown silty-clay (colliery waste) (Plate 5). This was overlain with a light

to mid-orangey-brown silty-clay subsoil that was observed intermittently and had a maximum thickness of c0.20m. This in turn was overlain by topsoil. No archaeological features or deposits were located at this stage.

4.2 FINDS

4.3 XXX

5. CONCLUSION

5.1 DISCUSSION AND INTERPRETATION

- 5.1.1 The topsoil strip and the excavation of the key trench revealed no deposits or features of archaeological significance. It was observed, however, that the site had been altered by the dumping of waste material from the colliery, which lay to the south of the site, and had served to level the area, or even build it up, so as to alleviate the potential of flooding. It is also evident that the general area has been substantially disturbed and landscaped since the time of the mill, and has obliterated or obscured any evidence for the mill. The proliferation of post-medieval pottery within the topsoil and dumped/levelling layers suggest the usual accumulation of material deposited by night soiling.

6. BIBLIOGRAPHY

6.1 PRIMARY SOURCES

British Geological Survey, 1993 *Stoke-on-Trent, Solid Geology, Sheet 123*

Mudge and Colby Map of Staffordshire (1817-19 and 1829-31)

Ordnance Survey Second Edition 6" to 1 mile map (1890) Sheet 17

Ordnance Survey Second Edition 25" to 1 mile map (1900) Sheet 17/3

Ordnance Survey Third Edition 25" to 1 mile map (1924) Sheet 17/3

SCRO/1789 Plan of Knutton Mill dated 1789

Yates Map of Staffordshire, 1775

6.2 AERIAL PHOTOGRAPHS

HSL UK 6392 (1963) Vertical air photograph taken July 1963, Run 37/9729

6.3 SECONDARY SOURCES

Countryside Commission, 1998 *Countryside Character, Vol 5: Potteries and Churnet Valley*, Cheltenham

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

Environment Agency, 2004 *Knutton Mill, An initial Assessment*, unpubl rep

Institute of Field Archaeologists (IFA), 1992 *Guidelines for data collection and compilation*, London

SCAUM (Standing Conference of Archaeological Unit Managers), 1991 *Health and Safety Manual*, Poole

United Kingdom Institute for Conservation (UKIC), 1990 *Guidelines for the preparation of archives for long-term storage* London

United Kingdom Institute for Conservation (UKIC), 1998 *First Aid for Finds* London

APPENDIX 1: PROJECT BRIEF

APPENDIX 2: PROJECT DESIGN

1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 The Environment Agency (hereafter the 'client') are currently proposing a scheme to reduce flooding on the Silverdale Brook, to the west of Newcastle-under-Lyme, Staffordshire (NGR SJ 3831 3463). The works include the proposed de-culverting of a length of the water-course to the south of Knutton, a settlement to the north-west of Newcastle-under-Lyme. The culverted and straightened section of the water-course is approximately 500m in length; the brook runs through a gentle valley consisting of an extensive area of open pasture, with housing relating to the settlement of Knutton to its north and a former quarry to its south.
- 1.1.2 The archaeology of the river valley has been identified as a possible constraint associated with the scheme. The Environment Agency Archaeologist has therefore recommended that a programme of archaeological works be undertaken prior to the scheme taking place. An initial assessment of the site, undertaken by the Environment Agency in December 2004, has demonstrated the likelihood of the survival of archaeological deposits within the site boundary. Consequently the Environment Agency have requested that OA North submit proposals to undertake an archaeological evaluation of the site, prior to the anticipated works taking place; the following document represents a project design to undertake the task as defined by a project brief prepared by the Environment Agency Archaeologist.

1.2 ARCHAEOLOGICAL BACKGROUND

- 1.2.1 Silverdale Brook has been subject to alterations in the latter half of the twentieth century, as there are significant alterations to the present day brook when compared with it as shown on an aerial photograph from 1963; the western end of the brook culverted and a central section have both been straightened. The brook has also been subject to a number of dredging events, and mineral extraction within the landscape has caused subsidence in the vicinity of the scheme. Nevertheless, archaeological remains in the form of earthworks do survive within the site boundary.
- 1.2.2 Prior to the recent alterations, the brook was identified as the location of a former mill called Knutton Mill, which is known from cartographic sources to date from at least 1775; post-medieval mill buildings often mark the site of medieval mills, and it is possible the mill's history may stretch into this period. There is little evidence, however, for any activity in the area predating the mill. The mill's function is at present unknown. Settlement deposits are not anticipated in the locality, due to the proximity to the water-course, and the corresponding potential for flooding. Palaeoenvironmental deposits may, however, be encountered within the river channel.
- 1.2.3 No evidence of the mill or its associated buildings are now visible, and the buildings appear to have been finally demolished in the twentieth century. Earthworks relating to the mill complex survive: a depression has been identified and interpreted as the remnants of the mill-pond, and cartographic sources show that the mill was positioned immediately downstream of the pond, with a water-meadow system adjacent. The water-meadow system also survives as earthworks. The mill appears to have gone out of use by the late nineteenth century, with cartographic sources dated to 1900 showing the mill-pond silted up.
- 1.2.4 The mill was located within a largely industrial landscape as indicated on historic mapping; Knutton Iron Foundry stood immediately north of the site, a brick and tile works was located to the south of the site and a nineteenth century sewerage system, still visible as masonry remains, was to the south-east. A further mill is also shown to the west on a map dated 1817-9. The industrial landscape has now largely disappeared, and the area is now residential.

- 1.2.5 Evaluation of the site has been recommended in order to define the extent of existing buried archaeological deposits in the vicinity of, and their relationship with, the culvert; modern disturbance caused by the culverting of the brook should also be established. The evaluation will inform any future engineered solution to de-culvert the brook and any associated archaeological mitigation strategy.

1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 OA North, in its former guise as the LUAU, has considerable experience of excavation of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past 24 years. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an **Institute of Field Archaeologists (IFA) registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.
- 1.3.2 OA North has particular experience of working with the client; works undertaken have included: watching briefs and evaluations on flood prevention schemes, for example at Walton-le-Dale and Ribchester, Lancashire; assessment and walk-over surveys on sea defences at Pilling and Cockerham, Lancashire; and extensive rapid identification surveys on the Croal Irwell, and Roch, Irk and Medlock, river catchments in Greater Manchester.

2. OBJECTIVES

2.1 PROGRAMME

- 2.1.1 The following programme has been designed to evaluate the archaeological deposits affected by the proposed development of the site. The required stages to achieve these ends are as follows:

2.2 VISUAL INSPECTION

- 2.2.1 In conjunction with the assessment information provided by the client, a visual inspection of the site will be undertaken to relate the existing landscape to any research findings. The survey will note;
- any features of potential archaeological interest,
 - any areas of potentially significant disturbance, such as recently cut ditches or geological test-pits,
 - and hazards and constraints to undertaking the evaluation fieldwork on site (including the siting of live services and Tree Preservation Orders).

2.2 ARCHAEOLOGICAL EVALUATION

- 2.2.1 To undertake evaluation trenching, it is proposed to excavate 3 trenches across the site to determine the quality, extent and importance of any archaeological remains, and assessing the likelihood of truncation of these deposits by modern disturbance. The trenches will be sited as outlined in the brief, with particular reference to earthworks features identified during the visual inspection.

2.3 POST-EXCAVATION AND REPORT PRODUCTION

- 2.3.1 An evaluation report will be produced for the client within eight weeks of completion of the fieldwork, unless it is decided that any potential mitigation should be immediately undertaken. A site archive will be produced to English Heritage guidelines (1991) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

3. METHODS STATEMENT

- 3.1 The following work programme is submitted in line with the stages and objectives of the archaeological work summarised above.

3.2 ARCHAEOLOGICAL EVALUATION

- 3.2.1 In accordance with the brief, the site will be subject to evaluation in the form of 3 trenches equating to 90m² as per Table 1 below, with an additional 10m² as a contingency for selected trenches should the results warrant additional investigation.

Trench No	Measurement (e-w/n-s)	Area (m ²)
1	15m x 2m	30
2	15m x 2m	30
3	15m x 2m	30
Total		90

Table 1: Evaluation trench sizes (taken from proposed trench location plan by The Environment Agency)

- 3.2.2 The uppermost topsoil of each trench will be removed by machine (fitted with a toothless ditching bucket) under archaeological supervision to the surface of the first significant archaeological deposit or natural soils. Thereafter, the trenches will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions. The elevation of underlying natural soils where exposed will be recorded. The spoil heaps from each trench will be scanned for finds using a metal detector.
- 3.2.3 Any investigation of intact archaeological deposits will for the most part be manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features which appear worthy of preservation *in situ*.
- 3.2.4 The trenches will not be excavated deeper than 1.2m to accommodate health and safety constraints; any requirements to excavate below this depth will involve recosting. All trenches will be excavated in a stratigraphical manner, whether by machine or by hand. Trenches will be located by use of a total station and will be plotted with respect to nearby roads and buildings.
- 3.2.5 Any large features, such as pits, quarries, or sink holes likely to extend deeper than 1.2m below the surface will be augered using a gauge auger to investigate their approximate depth.
- 3.2.6 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 3.2.7 Results of all field investigations will be recorded on *pro forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration. The archaeology within the trenches will be manually surveyed, and the trenches will be located by differential GPS, which is accurate to +/- 0.25m.
- 3.2.8 A Harris Matrix diagram is required prior to leaving site to show visible relationships amongst contexts, and any concordances between trenches.

- 3.2.9 **Environmental Sampling:** environmental assessment will be carried out concurrently to inform excavation and recording techniques, and to indicate any further sampling requirements. An assessment of the environmental potential of the site will be undertaken through the examination of suitable deposits by the in-house palaeoecological specialist, who will examine the potential for further technological, pedological and chronological analysis as appropriate. The assessment would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect if good deposits are identified and will be subject to the agreement of the client.
- 3.2.10 If necessary, access to conservation advice and facilities can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeoecology specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.
- 3.2.11 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. The Environment Agency and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations.
- 3.2.12 **Treatment of finds:** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) guidelines. This includes finds removed from the overburden/unstratified deposits. All metal finds will be X-rayed to determine their character, the cost of which has been included as a contingency. The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner prior to the work taking place. Except for items subject to the Treasure Act, all artefacts found during the course of the project will be donated to an appropriate recommended museum.
- 3.2.13 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 3.2.14 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the curator of an appropriate recommended museum

3.3 POST-EXCAVATION AND REPORT PRODUCTION

- 3.3.1 **Archive:** the results of Stage 3.2 will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects*, 2nd edition, 1991) and the Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.
- 3.3.2 The curator of an appropriate recommended museum will be contacted as soon as the project is commissioned. This will enable an appropriate strategy for archiving and accession number. The curator will be invited to undertake a site visit in order to monitor the works prior to the archive compilation. The paper and material archive will be deposited with an appropriate recommended museum within six months of the completion of the fieldwork.

- 3.3.3 **Report:** one bound and collated copy of the final report will be submitted to the client and to the Staffordshire County Council Historic Environment Officer, and four to the Staffordshire County Sites and Monuments Record within eight weeks of the completion of the fieldwork, unless a decision is taken to move straight on to mitigation.
- 3.3.4 The final evaluation report will include;
- a site location plan related to the national grid
 - a front cover to include the NGR
 - the dates on which the fieldwork was undertaken
 - a concise, non-technical summary of the results
 - an explanation to any agreed variations to the brief
 - a description of the methodology employed, work undertaken
 - interpretation and assessment of the significance of the remains in relation to the research aims
 - plans and sections at an appropriate scale showing the location and position of deposits and finds located
 - a catalogue of and dates for any finds recovered
 - a description and interpretation of the deposits identified
 - a description of any environmental or other specialist work undertaken and the results obtained
 - recommendations concerning any subsequent mitigation strategies and/or further archaeological work following the results of the field evaluation will be included,
 - a copy of the brief as an appendix
 - a copy of this project design as an appendix
 - the report will also include a complete bibliography of sources from which data has been derived.
- 3.3.6 **Confidentiality:** the final report is designed as a document for the specific use of the client, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4 OTHER MATTERS

4.1 REINSTATEMENT

- 4.1.1 following completion of the evaluation, the trenches will be backfilled with the material removed in their excavation. Any other form of land reinstatement will be the responsibility of the client.

4.2 ACCESS

- 4.2.1 it is assumed access will be arranged by the client for OA North. The site should be protected from public access where possible.

4.3 CONTINGENCY

- 4.3.1 There is uncertainty as to the depth and survival of archaeological deposits and this will have an implication on the resourcing of the excavation. A contingency costing may be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of artefacts which require specialist removal, use of shoring to excavate important

features close to the excavation sections etc. Similarly there will be a recourse to a contingency if substantial waterlogged deposits are recovered.

3.2.15 Thus, in accordance with the Institute of Field Archaeologists guidance, these contingency costs to cover variation from those circumstances that are predictable from any earlier results are defined in the costings section.

3.2.16 A preliminary assessment of features and deposits, their origin or function, probable date and importance for further recording will be used in consultation with the Local Government Archaeological Officer and the Environment Agency Archaeologist, to agree further targeted investigation in relation to the research aims of the evaluation. This will be undertaken in conjunction with a site visit. The evaluation should be able to provide a predictive model of surviving archaeological remains detailing zones of relative importance against known damage from the proposed scheme. In this way, an impact assessment can be provided.

4.4 HEALTH AND SAFETY

4.4.1 **Risk assessment:** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be forwarded to the client prior to the commencement of works.

4.4.2 **Service location and mapping:** the client is requested to provide information relating to services in the vicinity of the trenches, from which information OA North will also undertake a CAT scan in advance of site commencement.

4.4.2 **Fencing:** if there is public access to the site and a risk to the general public from open trenches then appropriate fencing will be erected around the trenches. The costs for the evaluation assume that there is no requirement for fencing, and any requirement for trenching would entail a variations to the costs.

4.4 **Working depth:** should it be necessary to excavate below the health and safety depth of 1.2m, then either the trenches will be expanded to allow stepping in, or shoring will be used to allow the safe excavation to greater depth. Any recourse to shoring will entail a variation to the costs.

4.5 INSURANCE

4.5.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

5. WORK TIMETABLE

5.1 **Archaeological Evaluation;** this element is expected to take two days to complete.

5.2 **Post-Excavation and Report Production;** an evaluation report will be submitted within eight weeks of the completion of the fieldwork.

5.3 OA (North) can execute projects at very short notice once an agreement has been signed with the client. One week notice would be sufficient to allow the necessary arrangements to be made to commence the task.

6. STAFFING PROPOSALS

6.1 The project will be managed by **Jamie Quartermaine** (OA North Senior Project Manager) to whom all correspondence should be addressed. Jamie has been a project manager since 1995, and has been involved in the management of over 300 projects.

6.2 Excavation of the evaluation trenching is likely to be supervised by either an OA North project officer or project supervisor. All OA North project officers and supervisors are experienced field archaeologists who have undertaken supervision of numerous small and large-scale evaluation and excavation projects.

- 6.3 Assessment of the finds from the evaluation will be undertaken under the auspices of OA North's in-house finds specialist **Christine Howard-Davis** (OA North project officer). Christine has extensive knowledge of finds from many periods, although she does have considerable experience with Roman finds, being involved with the excavations at Ribchester and at present with the Carlisle Millennium Project.
- 6.4 Assessment of any palaeoenvironmental samples which may be taken will be undertaken by or under the supervision of **Elizabeth Huckerby MSc MIFA** (OA North project officer) and **Denise Druce PhD** (OA North project officer). Elizabeth has extensive knowledge of the palaeoecology of the North through her work on the English Heritage-funded North West Wetlands Survey, and has acted as palaeoenvironmental consultant to all OA North projects over the last 10 years. Denise is an experienced environmental archaeologist who has extensive knowledge in palynology. Denise has also undertaken research for CADW and is currently involved in the OA North Upland Peats project funded by English Heritage.
7. MONITORING
- 7.1 Monitoring of the project will be undertaken by the Local Government Archaeological Officer and the Environment Agency Archaeologist. Access to the site for monitoring purposes will be afforded to both at all times.
- 7.2 The Curator of an appropriate recommended museum will be notified of the project commencement for purposes of the archive monitoring.

ILLUSTRATIONS

FIGURES

Figure 1: Location map

Figure 2: Ordnance Survey 6" to 1 mile map (1890) of Silverdale Brook

Figure 3: Ordnance Survey 25" to 1 mile map (1900) of Silverdale Brook

Figure 4: Watching brief on the line of the proposed flood defence bank

PLATES

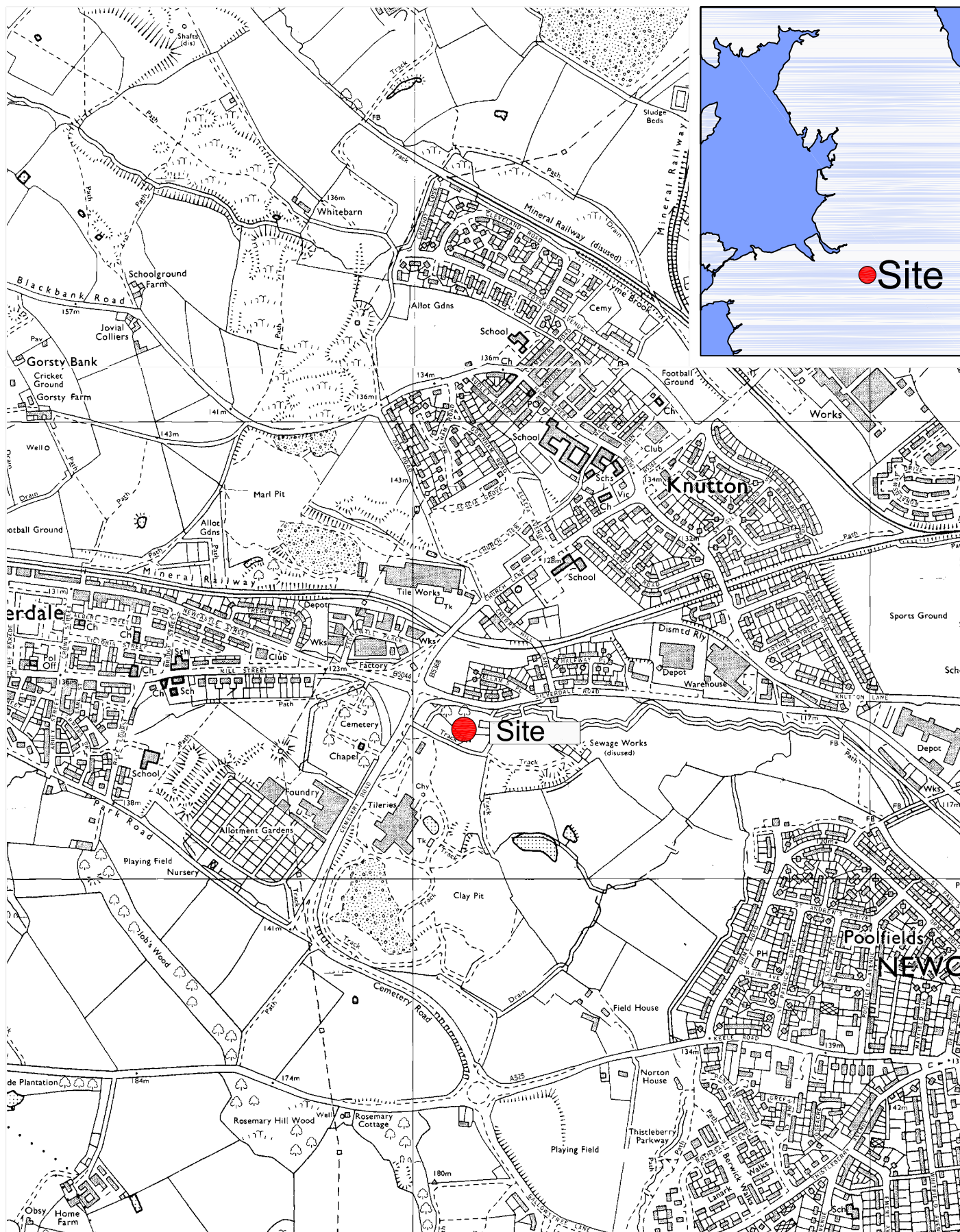
Plate 1: Topsoil stripped area to the west of the access track, looking east

Plate 2: Topsoil stripped area to the east of the access track, looking east

Plate 3: Key trench to the west of the access track, looking west

Plate 4: Key trench east of the access track, looking west

Plate 5: South facing sample section of key trench to the west of access track



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Figure 1: Location Map

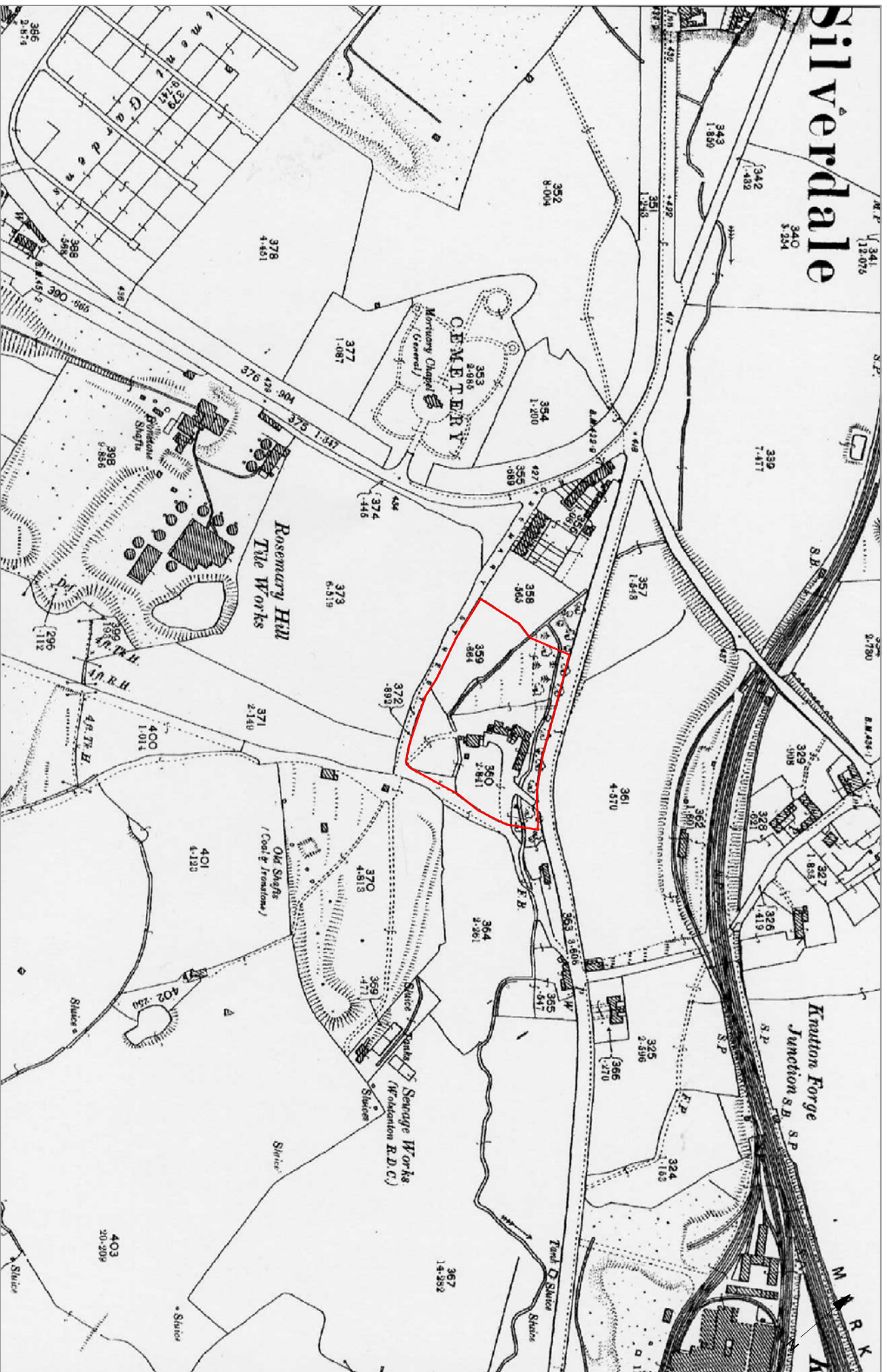
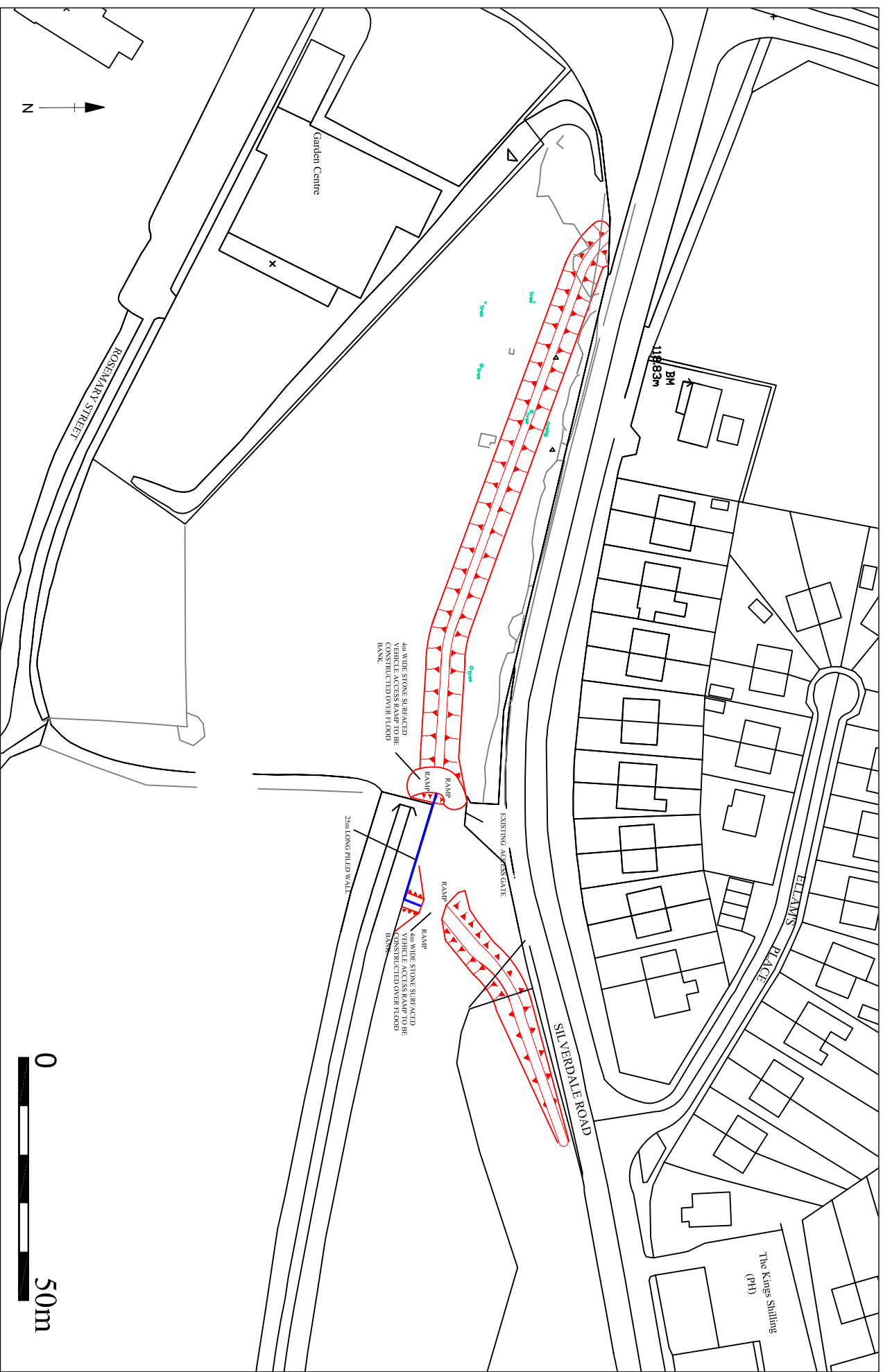


Figure 3: Ordnance Survey 25" to 1 mile map (1900) of Silverdale Brook



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After Environment Agency Silverdale Brook Drawing GT/06/06

Figure 4: Location of watching Brief on the line of the proposed flood defence banks





Plate 1: Topsoil stripped area to the west of the access track, looking east



Plate 2: Topsoil stripped area to the east of the access track, looking east



Plate 3: Key trench to the west of the access track, looking west



Plate 4: Key trench east of the access track, looking west



Plate 5: South-facing sample section of key trench to the west of access track