

Havant Reservoir Portsmouth Havant Thicket Reservoir project

Revised Written scheme of investigation for Archaeological Monitoring – Main Pipeline Works

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1 Introduction

1.1 Project background

- 1.1.1 This Written Scheme of Investigation (WSI) for archaeological monitoring on the construction of a pipeline scheme associated with Havant Thicket Reservoir has been commissioned by Ward and Burke on behalf of Portsmouth Water.
- 1.1.2 Portsmouth Water secured a hybrid planning permission for the reservoir on 15 October 2021, subject to conditions (REF 51680/001 and APP/20/00990). As part of Condition 21, Archaeological Evaluation (Written Scheme), an Archaeological Management Plan (AMP; Atkins 2021) was produced, which outlines the significance, impact and mitigation and scope and requirements for written schemes of investigation for archaeological mitigation.
- 1.1.3 The planning application (APP/24/00405), the subject of this WSI, is a hybrid application seeking:
- Full permission for development of new pipelines to transfer water from Bedhampton Springs comprising: construction of two predominantly underground pipes in tunnels linking the reservoir with the existing pumping station at Bedhampton with associated infrastructure including: emergency drawdown discharge structure at Hermitage Stream; construction of eight access shafts; upgrades to existing culverts close to shafts five, six and eight to manage flood risk; washout and air valve chambers (typically below ground).
 - Outline application for an associated underground cross-connection chamber and above ground kiosk at the reservoir site with vehicular accesses for maintenance.
- 1.1.4 This Written Scheme of Investigation has been prepared reflecting the AMP 2021. Following discussions with the Hampshire County Archaeologist phases of archaeological investigation during main works, corresponding to each construction phase, were agreed to mitigate the impact of the main works comprising the excavation of borrow pits, associated drainage, embankment areas and site compounds through the identification, recording and assessment of heritage assets, achieving ‘preservation by record’.
- 1.1.5 In August 2024 the county archaeologist David Hopkins highlighted an additional area of works (HER 72503) comprising landscape features identified from LIDAR data. An agreement was reached after consultation that a drone survey encompassing these earthworks would be undertaken prior to the start of groundworks and this WSI incorporates the methodology for the drone survey as well archaeological monitoring of groundworks.
- 1.1.6 The construction of the pipeline will require both surface excavation (cut and covered) and bored construction. The areas of the pipeline that are proposed to have a surface excavation element are highlighted within Fig 2 and below ground work within these areas will require archaeological monitoring. The technical drawings provided to MOLA of the pipeline route and construction areas are provided in Appendix 1.
- 1.1.7 The construction area around shaft 1 to the south of the pipeline has a separate archaeological WSI (MOLA 2024) relating to the monitoring and recording in this area and therefore the monitoring of this area is dealt with in that specific document. The area is however included within Fig 2 for completeness and clarity.

- 1.1.8 This document sets out the methodologies which will be followed during the archaeological monitoring and reporting stages. These will follow the Standards and Code of Practice laid down by the Chartered Institute for Archaeologists (CIFA 2020) and the Standard for Archaeological Monitoring and Recording (CIFA 2023) and Historic England Centre for Archaeology Guidelines where appropriate.
- 1.1.9 The term Written Scheme of Investigation now refers to Project Design, however Written Scheme of Investigation (WSI) is a universally recognised planning terminology and may be used internally within wider project design and this how it is referred to throughout this document.
- 1.1.10 Other relevant documents include:
- Havant Thicket Reservoir – Main Works Written Scheme of Investigation – (HTR-ECU-RZ-ZZ-PL-X-002)
 - Archaeological Management Plan (HTR-ECU-RZ-ZZ-PL-X-001)
 - Havant Reservoir Shaft 1 WSI (MOLA 2024)
 - Environmental Statement Volume 4 – Appendices, Appendix A8 Historical Environment, A8.7 Pipeline Archaeological Management Plan, Atkins Doc No.: (HTR-ATK-ZZ-ZZ-RP-Z-0168)
 - Environmental Statement Volume 2 – Main Report, Revised Chapter 8 Historical Environment, Atkins Doc No.: (HTR-ATK-ZZ-ZZ-RP-Z-0108)
 - Middle Park Way, Havant, Method Statement. (Sumo 2024)
- 1.1.11 The results of the watching brief will be set out in a report to be issued within ten weeks of completing the fieldwork. The site archive will be deposited with the Havant Museum and Archaeological Data Service (ADS) within 12 months of issuing the report. A museum accession number has been requested and is pending.

1.2 Planning and legislative framework

- 1.2.1 The revised National Planning Policy Framework (NPPF) was published in December 2023 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF which was published in March 2012 with revisions in 2018 and 2019 and 2021.

Conserving and enhancing the historic environment

- 1.2.2 The NPPF section 16, "Conserving and enhancing the historic environment" is reproduced in full below:

Para 195. Heritage assets range from sites and buildings of local historic value to those of the highest significance, such as World Heritage Sites which are internationally recognised to be of Outstanding Universal Value. These assets are an irreplaceable resource and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations.

Para 196. Plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay, or other threats. This strategy should take into account:

- a) the desirability of sustaining and enhancing the significance of heritage assets, and putting them to viable uses consistent with their conservation;
- b) the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;

- c) the desirability of new development making a positive contribution to local character and distinctiveness; and
- d) opportunities to draw on the contribution made by the historic environment to the character of a place.

Para 197. When considering the designation of conservation areas, local planning authorities should ensure that an area justifies such status because of its special architectural or historic interest, and that the concept of conservation is not devalued through the designation of areas that lack special interest.

Para 198. Local planning authorities should maintain or have access to a historic environment record. This should contain up-to-date evidence about the historic environment in their area and be used to:

- a) assess the significance of heritage assets and the contribution they make to their environment; and
- b) predict the likelihood that currently unidentified heritage assets, particularly sites of historic and archaeological interest, will be discovered in the future.

Para 199. Local planning authorities should make information about the historic environment, gathered as part of policymaking or development management, publicly accessible.

Proposals affecting heritage assets

Para 200. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

Para 201. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal.

Para 202. Where there is evidence of deliberate neglect of, or damage to, a heritage asset, the deteriorated state of the heritage asset should not be taken into account in any decision.

Para 203. In determining applications, local planning authorities should take account of:

- a) the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and
- c) the desirability of new development making a positive contribution to local character and distinctiveness.

Para 204. In considering any applications to remove or alter a historic statue, plaque, memorial or monument (whether listed or not), local planning

authorities should have regard to the importance of their retention in situ and, where appropriate, of explaining their historic and social context rather than removal.

Considering potential impacts

Para 205. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

Para 206. Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:

- a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;
- b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.

Para 207. Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- a) the nature of the heritage asset prevents all reasonable uses of the site; and
- b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and
- c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and
- d) the harm or loss is outweighed by the benefit of bringing the site back into use.

Para 208. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.

Para 209. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

Para 210. Local planning authorities should not permit the loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.

Para 211. Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

Para 212. Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and

within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.

Para 213. Not all elements of a Conservation Area or World Heritage Site will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 200 or less than substantial harm under paragraph 201, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.

Para 214. Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies, but which would secure the future conservation of a heritage asset, outweigh the disbenefits of departing from those policies.

1.3 Local planning policy

- 1.3.1 The Havant Borough Local Plan is made up of the Core Strategy adopted in 2011 and the Site Allocations Plan adopted in 2014. Policy CS11 relates to the historic environment:

Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough

Planning permission will be granted for development that (relevant heritage elements):

1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.

1.4 Geology

- 1.4.1 Due to the length of the area of the proposed pipeline excavations several different underlying geological substrata are noted.
- 1.4.2 The British Geological Survey GeoIndex (BGS 2023) (<http://www.bgs.ac.uk/geoindex>) records the underlying geology of the site to the north of the pipeline to be a mix of the Bognor Sand Member, a Sedimentary bedrock formed between 56 and 33.9 million years ago during the Palaeogene period, Lambeth Group - Clay, silt and sand sedimentary bedrock formed between 59.2 and 47.8 million years ago during the Palaeogene period and London Clay Formations - Clay, silt and sand. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period. No superficial deposits are recorded in this area.
- 1.4.3 To the south of the pipeline the underlying geology is more consistent comprising London Clay Formation - Clay, silt and sand. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period this formation is overlain with superficial deposits of Head formations consisting of clay, silt, sand and gravel. These are

sedimentary superficial deposit formed between 2.588 million years ago and the present during the Quaternary period.

- 1.4.4 The data provided by GeolIndex is low resolution data and should only be considered as a rough guide to the geology of the site.

1.5 Archaeological Background

- 1.5.1 The historic and archaeological background of the Site was detailed within the draft Archaeological Management Plan submitted as part of the planning application (Atkins 2021) and revised in 2024 (Atkins: May 2024 Environmental Statement vol 2: Chapter 8 Historical environment). The following is a summary of the historic and archaeological background as it relates to the site, inclusive of the geographical area of the enabling works.

Assessment Assumptions and Limitations

- 1.5.2 This assessment was made with the use of the Historic Environment Record (HER) data from Hampshire County Council. To the knowledge of the author, this data was up to date as of December 2022. However, it is possible unknown archaeology is buried along the route of scheme, which cannot be identified without archaeological investigation.
- 1.5.3 The assumption has also been made that any pre-application archaeological survey and intrusive investigations which may have identified as-yet unknown archaeological remains within the Site has not been undertaken. Consultations with the Hampshire County Archaeologist during the assessment stage determined that the archaeological potential of the Site did not warrant pre- application survey and testing.

Reservoir

- 1.5.4 The study area would have offered prehistoric peoples a rich range of resources including higher areas for agriculture and a reliable water supply. Woodland provided food, fuel, and materials.
- 1.5.5 The Atlas of Hampshire's Archaeology shows that there is a higher frequency of Mesolithic sites on the margins of the chalk downland on the clays close to the coast and reveals a group of settlement sites and findspots that cluster around the water courses north of Hayling Island (HCC). Two notable Mesolithic sites within the study that contained remains include pits, and rare (Hey et. al. 2010) evidence of possible tent-like structures in the form of stakeholes (HER 22917 and 23407) containing flint and charcoal, hearths, and a floor levels.
- 1.5.6 There is the potential for as-yet unknown archaeological remains within the reservoir site (and northern end of pipeline corridor). The Mesolithic remains identified within the study area, combined with the lack of development on the proposed reservoir site and the presence of numerous small streams within it suggest a moderate potential for the presence of Mesolithic remains, though the remains themselves are likely to be of low value. The potential for prehistoric remains, particularly dating to the Mesolithic is related to the small streams that cross the area and may be more likely in the western part of the proposed reservoir site, where such remains have been previously identified.
- 1.5.7 Based on the known Roman remains within the study area, there also exists a moderate potential for evidence of Roman activity within the proposed reservoir site, most likely to be in the form of low-level industrial activity such as clay extraction and pottery production. Such remains

would likely be of low value. The potential for Roman remains is not evenly distributed across the proposed reservoir site but is more likely along the southern and eastern boundaries.

- 1.5.8 A moderate to high potential for as-yet unknown post-medieval archaeology exists within the proposed reservoir site as well. Such remains are likely to be related to landscaping activities in the 19th century as well as timber production and extraction activities of the 19th-20th centuries. This potential is thought to be highest around the area of The Avenue.

The Pipeline

- 1.5.9 The presence of Mesolithic material could suggest a possibility of prehistoric remains being encountered during construction of the northern open cut section of the pipeline which runs through Leigh Park. Further south, it is likely that urban expansion of Bedhampton and Havant could have destroyed or removed pre-existing material.
- 1.5.10 Evidence for later prehistoric occupation of the Study Area outside the area of the reservoir includes three late Bronze Age hearths found during excavations at Wakeford's Copse (HER 23407).
- 1.5.11 To the west of the Scheme, the enclosure at Dunsbury Hill (HER 64922 and 64687) comprises cropmarks that were observed during aerial survey. These appear to extrapolate to a large enclosure circumventing a site in an elevated position in the landscape. Archaeological excavations both north and south of the enclosure identified Late Iron Age and Roman occupation evidence and an Anglo-Saxon Charter of 935 refers to 'dundeburnam', suggested to be a name associated with the hill or sometimes with a fortified settlement. This archaeological and historical evidence suggests that Havant Thicket Reservoir –Written Scheme of Investigation: Phase 1 Northern Access the enclosure is a later prehistoric settlement or hillfort, with later Roman occupation.
- 1.5.12 The pipeline study area is narrow and no prehistoric remains have been found within it. Much of the pipeline will run through an urban environment where the disruption to buried material by construction has likely removed any material within those areas. Even where the pipeline travels south away from the reservoir and cuts through Leigh Park, the evidence of ploughing, and landscaping in the 19th century are still likely to have disturbed the ground and reduce the potential for prehistoric remains to have survived in the study area.

Romano British

- 1.5.13 There is considerable evidence of Romano-British occupation within the wider Study Area, including a possible road, two possible villas and associated remains, a kiln, trackways and a burial. However evidence of Romano-British occupation with the immediate area of the pipeline is sparse.
- 1.5.14 A Roman Road (HER 23355) was identified during trenching in at Oak Park School in 1974, which may represent a segment of the road purported to extend between Rowlands Castle and Havant, and then onto Hayling Island. A Roman villa near Rowlands Castle (HER 23477) was excavated in the early 19th century. Possibly associated within the wider villa estate, scattered Roman pottery and wasters (HER 26718) were found at the suggested site of a Roman tile kiln site (HER 70210; 70211; 70209). Excavation of another kiln site (HER 55706) to the north of the Scheme identified a linear feature containing both late 2nd century - early 3rd century

pottery, a large quantity of ceramic building material and roof tile, and a possible kiln lining formed of large fragments of cracked and chemically weathered ceramic roof tile. A high proportion of these displayed evidence of being exposed to high temperatures and they have been interpreted as the vestigial remains of a furnace chamber and flue. A third associated feature comprises of a possible floor or working surface.

- 1.5.15 There is very little evidence for Romano-British material within the pipeline study area south of the reservoir site. Most of the evidence that has been uncovered is from material found within disturbed deposits during a watching brief carried out at the Bedhampton Social Club (HER 50281). Within the wider study area, more reliable evidence for Romano-British activity persists so its presence cannot be ruled out entirely, but with the size of the pipeline scheme it is unlikely to be uncovered and anything uncovered could be within disturbed contexts. Archaeological material from disturbed material becomes unreliable due to loss of context within the wider archaeological environment.
- 1.5.16 The presence of Roman remains at the northern end of the pipeline study area suggests the pipeline could encounter this material if present. The possibility of encountering Roman material within the pipeline site is very low. It is also most likely to occur to the north of the route however, a watching brief carried out in 2000 at Bedhampton Social Hall towards the south end of the pipeline encountered Roman material in previously disturbed contexts. Even if this material is encountered it is likely to be of low value.

Medieval

- 1.5.17 There is a low to moderate potential for encountering medieval archaeology within the route of the pipeline. This is confirmed by the watching briefs which had previously been carried out within the pipeline study area. The one carried out at Bedhampton Social Hall encountered possible medieval archaeology material in disturbed contexts similar to Roman material as previously discussed. However, as the contexts containing the material had been disturbed it cannot be known if this material originated within the area of the watching brief or if it indicates reuse and possible transportation of the material within these contexts. Saint Chads well (HER 65094) sits very close to the pipeline route, close enough that consideration has already been given as to whether mitigation is required during construction. Possible medieval ridge and furrow and field boundaries (HER 65093) have been identified close to the north of the scheme by a lidar survey in 2022.
- 1.5.18 Possible archaeological evidence of Saxon activity (HER 23464) has been identified within Leigh Park with the identification of an undated ditch and postholes, with Saxon pottery also found in the vicinity. Whilst the asset is no longer in situ, its former presence suggests that there is potential for Saxon occupation evidence to survive within the area.
- 1.5.19 During the medieval period, the study area was associated with the Forest of Bere, though it is unclear as to whether or not it was incorporated into the Forest boundaries or lay just outside of it. Havant Chase (HER 34198), the Bishop of Winchester's hunting grounds within the Forest of Bere, is recorded as having included an area known as 'Havant Thicket', suggesting that at least this part of the study area was within the royal Forest. Warren Deer Park (HER 54151), to the west of the Scheme, is first mentioned in 1334 and its associated medieval hunting lodge (HER 38753) was found during fieldwork. Other known evidence for a deer park comprising a causeway and a dam, both thought to be connected to fishponds. A

substantial causeway (HER 38751), which may be connected to medieval fishponds further to the south, is probably associated with the same medieval landscape.

- 1.5.20 Three Scheduled Monuments dating to the medieval period are located within the reservoir study area: Motte Castle at Motley's Copse (NHLE 1019111), Ringwork and Bailey at Motley's Copse (NHLE 1019110), and The Castle at Rowlands Castle (NHLE 1001923). All three medieval fortification structures and earthworks dating from the 11th to 14th centuries. They may be related to the fortifications and castle-building activities of Robert Belême, earl of Shrewsbury and Arundel, which eventually led to his banishment from England in 1101 by Henry I.
- 1.5.21 Evidence for 19th century clearing of a medieval hamlet in what is now Leigh Park (HER 32423) was identified during excavations in 1992, although this event occurred outside the study area of the pipeline route it provides evidence for settlement of the area during medieval times. Other medieval evidence within the reservoir and pipeline study area includes a circular ditch observed near Leigh Park Gardens (HER 23418) during roadworks in 1971, a hunting lodge associated with Warren Deer Park (HER 38753) and the site of St Chad's well (HER 65094), which may have its origins in the medieval period. The watching brief at the Social Hall which uncovered medieval material amongst other periods in disturbed contexts. The urban character of much of the area that the pipeline will run through could mean loss of previous material.
- 1.5.22 The baseline evidence for the medieval period suggests a low to moderate potential for as-yet unknown archaeological remains relating to the period. These remains are likely to be of low value, though any remains associated with the 11th century uprisings against Henry I could be of medium value.

Post Medieval

- 1.5.23 The post-medieval historic environment within the study area builds on its medieval uses. The Forest of Bere continued to be used as a hunting ground, as well as producing timber for revenue.
- 1.5.24 The most noticeable change to the landscape was the creation of Leigh Park (NHLE 1000112) by Sir George Staunton. The area was initially enclosed and improved in 1802 by William Garrett, but it was Staunton's purchase of the estate in 1820 and subsequent landscaping that created the current Grade II* Registered Park and Garden (RPG). The tithe map of 1842 shows Staunton's development of Leigh Park, with the reservoir site to the north depicted as open land with scattered trees.
- 1.5.25 Industry in the post-medieval period continued to make use of the quality clay soils in the area, with six heritage assets in the study area relating to brick-making activities (HER 37008, 54718, 54723, 54724, 54722, and 22929)
- 1.5.26 Increases in use during the post-medieval period and the improvements made to the house and grounds at Leigh Park, and the surviving buildings within the Bedhampton Conservation Area, indicate that there is a moderate potential for as-yet unknown archaeological remains dating to the post-medieval period within the Scheme red line boundary. These are expected to be of low value but may be able to contribute to the wider archaeological interest of the RPG and Conservation Area.

Undated features

- 1.5.27 A system of earthworks HER 72503 is present towards the north of the

works located to the immediate north of Leigh Park gardens. These earthworks consist of a series of parallel earthworks orientated on a broadly east-west orientation and these considered to represent 'ridge and furrow' that potentially date to the medieval period. In addition, several potential ditches are also present with this localised area, located to the north and east of the 'ridge and furrow' and these features may represent field boundaries or enclosures.

1.6 MOLA team and other responsibilities

- 1.6.1 In the document below the following terms should be understood:
- 1.6.2 *MOLA* (Museum of London Archaeology) is a company limited by guarantee registered in England and Wales with company registration number 07751831 and charity registration number 1143574. Registered office: Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED.
- 1.6.3 *Project Manager* - MOLA office-based manager who is the client's principal point of contact and who has overall responsibility for the project budget and delivery.
- 1.6.4 *Site Supervisor* - MOLA site-based manager who is responsible for the direction of the field team. Site supervisors on larger sites will tend to be Project Officers in grade, whilst on other sites they will be Senior Archaeologists. On some sites there may be both a Project Officer and/or one or more Senior Archaeologists.
- 1.6.5 *Archaeologists* - MOLA excavation staff responsible on site for archaeological excavation.
- 1.6.6 *Field Manager* - MOLA office-based manager responsible for allocation of staff and supply of equipment and resources.
- 1.6.7 *Health and Safety Manager* – The MOLA manager with sole responsibility for site inspections, reporting and issuing of recommendations for the Site Supervisor and Project Manager to implement. Reports directly to MOLA CEO
- 1.6.8 *Principal Contractor* - appointed directly by the Client with overall responsibility for site H&S under CDM regulations.
- 1.6.9 *Attendance Contractor* - the contractor responsible for providing such attendances to MOLA as are deemed necessary to carry out their archaeological work. These might for instance include but not be restricted to shoring, lighting, facilities, fencing, additional labour, spoil removal, etc The Attendance Contractor may be the same as the Principal Contractor, or it may be subcontracted to the Principal Contractor or it may sub-contracted to MOLA.
- 1.6.10 *Sub-contractor* – where this term is used in this document it refers to any contractor employed directly by MOLA during the course of its work on the site.

2 Objectives of the Archaeological Monitoring and Recording

2.1 General considerations

- 2.1.1 The purpose of a program of archaeological monitoring and recording as defined by the Chartered Institute for Archaeologists in Universal guidance for archaeological monitoring and recording (ClfA 2023b) as ‘a formal programme of observation, investigation and recording conducted during works carried out for non-archaeological reasons, where there is a possibility that archaeological deposits may be disturbed or destroyed. This will be within a specified area or site on land, in an inter-tidal zone or under water. This definition and Standard do not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains in situ’.
- 2.1.2 A program of archaeological monitoring and recording (watching brief) is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.
- 2.1.3 Further to para 2.1.2, if during the course of the program of archaeological monitoring and recording it is determined by the local authority that ‘controlled excavation’ is the appropriate mitigation strategy for a given area the appropriate additional objectives and methodologies will be followed, see 2.1.5.
- 2.1.4 The archaeological brief will entail the attendance of a monitoring archaeologist during the excavation of below ground works unless in areas where previous groundworks have provably completely truncated any potential archaeological deposits. The scope of the works is essentially limited to establishing where, if at all, archaeological deposits survive (presence/absence), recording archaeological deposits where necessary, and to ensuring that the proposed groundworks do not involve the destruction of any archaeological deposits of national significance.
- 2.1.5 Where archaeological remains survive which require more detailed investigation and excavation than can be undertaken on watching brief, an agreed area will be set aside for ‘controlled excavation’. Agreement must be reached on a) the research aims for ‘controlled excavation’; b) the size and safe demarcation of any such agreed area; and c) appropriate time and resources allocated by the client for the ‘controlled excavation’ to take place. The scheme and scope of these works will be agreed in an WSI that will cover the aims and objectives and methodology of the addition works. Controlled excavation will then be carried out, finds will be recovered and samples taken in accordance and complying with the ClfA Standard and universal guidance for excavation (2023c) and for the Collection, Documentation, Conservation and Research of Archaeological Materials (2020a).

2.2 Site specific objectives

- 2.2.1 The development of the site may have an impact on buried deposits.
- 2.2.2 The archaeological monitoring and recording are essentially limited to establishing where, if at all, archaeological deposits survive

(presence/absence), recording where necessary, and recovering datable material if possible.

- 2.2.3 The limited nature of the proposed works and the archaeological monitoring a recording upon them makes it difficult to establish many specific archaeological research objectives. Nevertheless a few research questions can be outlined:

General expectations

- To identify and record any archaeological deposits, structures or built fabric within the identified areas of interest.
- To determine the extent, condition, character, significance and date of any encountered or exposed archaeological remains;
- To accurately record the location and stratigraphy of areas excavated during groundworks.
- To recover artefacts disturbed by the site works;
- To recover samples from sealed waterlogged contexts (if present) for environmental processing; and
- To prepare a comprehensive record and report of archaeological observations during the site work.

Period/Area specific expectations

- To identify the presence of any Mesolithic artefacts within the Scheme – This is particularly relevant where the pipeline passes through the area of the reservoir, the land is as yet undeveloped and as such has a greater potential to encounter prehistoric archaeology.
- To establish the geology and environmental background of the works within the South East Research Framework.
- To record the profile and deposits of the earthworks of a past field system and enclosure as represented by HER 72503 both through drone survey and hand excavation/recording. (Figure 3) to create a permanent record of the earthworks and potentially provide broad dating evidence.
- To establish the location of clay extraction pits and to retrieve possible dating evidence to establish a broad date range for extraction works

- 2.2.4 While the specific nature of archaeological deposits and features that may be observed during the archaeological monitoring along the route of a pipeline are unknowable, potential regional and national research frameworks that the works may be relevant to are:

- South East Research Framework
- Solent Thames Research framework
- Greater Thames Estuary Research Framework
- A Mesolithic Research and Conservation Strategy for England
- Research Framework for the Archaeology of the Extractive Industries in England

- 2.2.5 The presence or absence of archaeological deposits or artefacts would be of some relevance to the broad scope of the above research frameworks and in the event of significant archaeological deposits, additional site-specific objectives could be established within the research frameworks.

- 2.2.6 The archaeological monitoring and recording will involve a MOLA Site Supervisor in attendance on the Principal Contractor's (or any other contractor employed by them or the client) activities and able to make such records as may be possible. This may typically include taking photographs, making sketches or written records, creating measured drawings tied to the OSNGR (Ordnance Survey Nation Grid Reference), retrieval of finds and taking levels on observations. The primary purpose of monitoring and recording will normally be the identification of the limits of features - size, depth, alignment, and a broad interpretation of the nature of the feature within the limited scope of the exposed deposits.

3 Archaeological Monitoring and Recording Methodology

3.1 Archaeological considerations

- 3.1.1 Archaeological monitoring and recording is not recommended in circumstances where important or complex archaeological remains are liable to be discovered, resulting in a risk of conflict between the need to record archaeological finds and the need to allow building works to proceed.
- 3.1.2 Subject to 2.2 and 3.1.1 above, where archaeological deposits survive in any area of the proposed groundworks, the contractors will allow the MOLA archaeologist(s) reasonable time and access to record deposits as required.

Coverage

- 3.1.3 Archaeological monitoring will take place throughout the intrusive ground works across the areas highlighted in figure 2 and should archaeologically significant features, or deposits be identified, adequate time provision will be made to investigate and record the feature and deposits.
- 3.1.4 Initial breaking out and/or ground clearance by the Principal Contractor will be monitored by MOLA staff.
- 3.1.5 During the archaeological monitoring and recording the attending archaeologist(s) will observe the excavation of topsoil/overburden until the first archaeological horizon, formation depth or the upper surface of the natural geology is exposed, whichever is first.
- 3.1.6 Archaeological investigation and recording may involve the attending archaeologist entering the working areas to examine and clean archaeological deposits, recover any finds and to record either as notes or on proforma context sheets the deposits, scale drawings on permatrace may also be required.
- 3.1.7 If archaeological deposits of significance are observed then groundworks with the immediate area of the potential significant deposit will cease until the county archaeologist and if required other stakeholders are consulted on an appropriate mitigation strategy which may include modification of the works to allowing for the preservation of archaeological remains 'in situ,' or further archaeological works outside the scope of archaeological monitoring.
- 3.1.8 In the event that deposits, relating to the Mesolithic period e.g., Mesolithic flint scatter are encountered, then work within the localised area of these deposits will cease and the county archaeologist and relevant stakeholders will be immediately informed. Work within these areas will not proceed until an appropriate mitigation strategy is agreed upon and is in place. This would be likely to include recording of all flint scatters, artefactual recovery and environmental sampling. The mitigation strategy could potentially include adjustment of the works to allow for preservation 'in situ.'

Machine Supervision and Direction

- 3.1.9 During the archaeological monitoring and recording the attending archaeologist will maintain a safe distance from excavating plant, this should be at least 1m beyond the outermost reach of the mechanical excavator's arm at full stretch.
- 3.1.10 During this works it may be necessary for machining to cease to allow the archaeologist safe access to the works area.

- 3.1.11 The archaeologist(s) will require that excavation works pause in order to allow the safe inspection of any exposed deposits of archaeological potential. Prior to investigating any potential archaeological features present during the archaeological monitoring and recording the archaeologist will signal to the driver to stop. They will only approach the potential archaeological feature once the excavator has acknowledged the direction of the attending archaeologist and lowered the excavator bucket to the ground.
- 3.1.12 Adequate time will be afforded to the archaeologist to characterise any archaeological remains present before groundworks continue in that area.
- 3.1.13 It is expected that overburden is removed as 'cleanly' as possible in archaeological monitoring and recording areas, to facilitate the identification of any significant archaeological remains present.

Investigation and Recording

- 3.1.14 Any archaeological deposits revealed will be recorded in the appropriate manner, (plans, sections, field notes and/or pro-forma 'context sheets'). Any necessary photographic records will be made using digital or conventional media as deemed appropriate and a full record of all photographs taken will be maintained throughout the works. All recording will be carried out in accordance with national standards (CIFA 2020a).
- 3.1.15 For some archaeological deposits site specific strategies may be employed for a more complete recording of deposits this may involve material excavated from archaeological deposit to be temporarily stockpiled for techniques that may involve but limited to: scanning with a metal detector, close hand inspection, or potential bulk soil sampling.
- 3.1.16 Archaeological deposits associated with **HER 72503** will be photographed, accurately drawn on drawing film at an appropriate scale and recorded on MOLA context sheets.
- 3.1.17 In the event that significant remains are identified during the groundworks within the area of **HER 72503**, advice will be sought for then development archaeologist on how to proceed with the monitoring and recording of this feature and related deposits. This discussion may involve consideration of measures to reduce damage to existing earthworks.

Environmental Sampling

- 3.1.18 Bulk finds will not normally be recovered in the archaeological monitoring and recording areas, though finds of specific and unique intrinsic interest may be considered good candidates for environment sampling in which case the following methodology will be applied.
- 3.1.19 During the monitoring works archaeological deposit may be encountered that would be a good candidate for environment sampling, these deposits would typically have a high charcoal content or be waterlogged and have a high potential for preserved environmental remains.
- 3.1.20 Bulk soil sample will be taken under the initiative of the monitoring archaeologist where they consider the sample to have the potential to further understanding of the archaeological deposits and depositional process. Processing of deposit would only be undertaken after consultation with relevant stakeholders and after funding is secured.
- 3.1.21 The monitoring archaeologist will be in contact with MOLA's geotechnical and environmental specialist and if the monitoring archaeologist observes deposits are encountered that they think may benefit from specialist sampling, then photographs and a description will be provided to the appropriate specialist and if they agree that specialist sampling would be

beneficial. Then the project manager will contact the relevant stakeholders and the county archaeologist and if appropriate the regional HE science advisor to discuss what works may be required. This would likely involve an appropriate specific visiting the site to take the sample and arrange for processing. This would not take place until agreement and funding is secured.

Finds Recovery

- 3.1.22 Artefact recovery will only be possible in circumstances where it is safe to do so and the artefactual remains are not subject to contamination.
- 3.1.23 Finds of potential significance will be recovered from secure stratified contexts in accordance with relevant finds procedures. (MOLA 2006)
- 3.1.24 No processing or assessment of artefactual remains will be undertaken until agreement and funding is secured.

Drone survey and DEM modelling

- 3.1.25 Prior to the start of works with and around HER 72503 (see **figure 3**) a drone survey include multi-spectral imaging will be undertaken within this area to produce a digital elevation model (DEM) of the features seen during previous LIDAR surveying. No works will be undertaken within this area prior to the drone flight.
- 3.1.26 Approximately 6 to 8 GPS targets (plastic mats) will be placed around the perimeter of the site and surveyed by a GPS unit to facilitate georeferencing to OS coordinates.
- 3.1.27 Aerial photogrammetry will be employed by use of an Unmanned Aircraft System (UAS), or 'drone'. The aircraft, a DJI Mavic 3 Multispectral, will be operated in a grid across the site, with a nadir viewing camera. RGB photographs will be captured with an overlap of >70%.
- 3.1.28 Images will be taken in RAW format and edited in the office using Adobe Photoshop before being processed in photogrammetry software, Agisoft Metashape. The outputs will include a digital 3D model, orthomosaic image, and Digital Elevation Model (DEM) of the site as well as a processing report for reference.
- 3.1.29 Multispectral images will also be collected however, for the purposes of this project, they will be rejected or else analysed at SUMO GeoSurveys' discretion.
- 3.1.30 All site work and reporting will be carried out in accordance with the latest guidance documents issued by Historic England Photogrammetric Applications for Cultural Heritage, Guidance for Good Practice (HE 2017)

Human Remains

- 3.1.31 If human remains are encountered, then works within the immediate area will cease and the Project Manager will be informed who will immediately inform all relevant stakeholders.
- 3.1.32 Recording of human remains will be carried out under best practice detailed in (Mitchell and Brinkley 2017)
- 3.1.33 If removal of human remains is required, then a licence to exhume will be sought and no works will be undertaken until this is in place.
- 3.1.34 If removal is essential, it can only take place under appropriate Faculty jurisdiction, Ministry of Justice (Coroner's Division) licence, environmental health regulations, coroner's permission, and if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act. Prior written notice will also be given to the local planning authority. It will be necessary to ensure that adequate security is provided.

3.1.35 Exhumation will be carried out under current best practice (APABE and Historic England 2017)

3.1.36 No excavation or recording of human remains will take place until agreement and funding is secured.

Treasure

3.1.37 A greater range of material is covered under the Treasure Act than under the former common law of treasure trove. It includes objects not of precious metal, but found in association with it, gold and silver objects that were accidentally lost or buried in a grave, all coin hoards and prehistoric base metal objects where two or more of these were found together. The act defines treasure as:

- objects other than coins: any object other than a coin provided that it contains at least 10 per cent of gold or silver and is at least 300 years old when found
- coins: all coins that contain at least 10 per cent gold or silver by weight of metal and that come from the same find provided they are at least 300 years old when found
- all coins with less than 10 per cent of gold or silver when they are at least ten such coins from the same find and they are at least 300 years old when found
- the following groups of coins will normally be regarded as coming from the same find:
 - hoards that have been deliberately hidden
 - smaller groups of coins, such as the contents of purses, that may have been accidentally lost
 - votive or ritual deposits
 - Single coins are not treasure unless found with other objects of treasure, or unless there is evidence that they were buried with intention of recovery
- associated objects: any object, of whatever composition, that is found in the same place as, or that had previously been together with, another object that is treasure
- objects that would have been treasure trove: any object that would previously have been treasure trove but does not fall within the categories above. These objects must be substantially of gold or silver; have been buried with the intention of recovery; and their owner or their heirs be unknown (ownerless coin hoards less than 300 years old would fall into this category)
- all prehistoric base metal objects from the same find, provided two or more were found together

3.1.38 In the event that archaeological remains that would be considered treasure under current legislation are encountered then all works within the immediate area will cease and the project manager will be informed. The project manager will immediately inform the relevant stakeholders for the works and an appropriate mitigation strategy and will be agreed upon.

3.1.39 All works will be carried out under best practice (DCMS 2023).

3.1.40 If necessary, agreement and funding will be sought for specialist finds excavation and retrieval, stabilisation and cleaning, post excavation assessment and archiving.

General Considerations

- 3.1.41 MOLA will liaise with the county archaeologist David Hopkins and update them throughout the ongoing works.
- 3.1.42 Because MOLA is providing a monitoring service to an on-going construction programme, the timing of which can vary considerably, it remains the client's responsibility to ensure that their Principal Contractor informs MOLA no later than one week in advance of the start of any proposed groundworks where an archaeological monitoring and recording is required.

3.2 Ownership of finds

- 3.2.1 Finds will be treated and cleaned in accordance with the relevant guidance given the Chartered Institute for Archaeologists' Standard and Guidance (2020a-d), the UK Institute and Conservators Guidelines Conservation Guideline No.2 and the Museums and Galleries Commissions Standards in the Museum Care of Archaeological Collections (1992) excepting where they are superseded by statements made below.
- 3.2.2 All finds will be treated in accordance with Historic England (2011; 2018) and ClfA (2020b) guidance, and the requirements of Hampshire County Council Arts & Museum Services (Hampshire County Council Arts & Museum Services 2012).
- 3.2.3 The client (or their agent) will make arrangements for the signing of the Transfer of Title form by the client or, if the landowner is different to the client, by the landowner.
- 3.2.4 These approvals, licences and permissions shall be confirmed in the Agreement and Contract regulating the archaeological work.
- 3.2.5 The client (or their agent) will make arrangements for the signing of the Deed of Transfer Form by the client or, if the landowner is different to the client, by the landowner.
- 3.2.6 Notwithstanding the above, subsequent arrangements may be made if required between the client and the Museum for the conservation, display, provision of access to or loan of selected finds in or near their original location.

3.3 Reports and archives

- 3.3.1 *An Archaeological Monitoring and Recording report* will be made available to the client and the Local Planning Authority within ten weeks of the completion of fieldwork.
- 3.3.2 The report will comprise:
 - A non-technical summary
 - Planning background
 - The aims and objectives of the project
 - The circumstance and date at which work was undertaken
 - The identity of the organisation and individuals carrying out the work (in particular the names of the project director, site supervisor and any specialists)

- Methodology of works
- A summary written account of the monitoring strategy and the results of the project with appropriate supporting illustrations.
- A site location plan at 1:2500 or 1:10000 as appropriate, showing all monitored areas.
- Location plans showing areas where archaeological deposits were observed with features locations located with respect to nearby fixed structures and roads.
- Supporting photographs
- A 1:2500 or 1:10,000 scale plan indicating areas surveyed by each method; present landuse; geology and topography.
- A DEM (digital elevation model) of earthworks surveyed during drone photography.
- A summary of physical and health and safety constraints
- An objective summary statement of results,
- A conclusion, including a confidence rating
- An index to and the proposed location of the archive
- References
- Detailed description and plans (at appropriate scales) of any surveys which provided significant archaeological information.
- Finds quantification and assessment
- Supporting data – tabulated or in appendices to include; Context information, Any stratigraphic information, Index to archive and details of archive location; Bibliography, Confirmation of archive transfer arrangements, A copy of the OASIS form

- 3.3.3 A short summary of the results of the program of archaeological monitoring and recording will be submitted to the local HER (using the appropriate OASIS archaeological report form) and for publication in an appropriate academic journal.
- 3.3.4 Details of the project will be submitted to the online database maintained by the Online Access to the Index of Archaeological Investigations (OASIS) Project
- 3.3.5 GIS data will also be made available to the HER.
- 3.3.6 Finds and records will be curated by Havant Museum and be available for

public consultation in a site archive compatible with other archaeological archives and adhering to standards set out in the following:

- Archaeological Archive Forum, Archaeological Archives: a guide to best practice in creation, compilation transfer and curation (2011)
- Museums and Galleries Commission's Standards in the Museum Care of Archaeological Collections (1992),
- Society of Museum Archaeologists' draft Selection, Retention and Dispersal of Archaeological Collections (1992).
- Society of Museum Archaeologists (1995) Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales.
- United Kingdom Institute for Conservation Guidelines for the preparation of excavation archives for long term storage (1990)

3.3.7 Copyright of the written archive will be vested in the Museum.

3.3.8 Pursuant to these agreements the archive will be presented to the archive officer or relevant curator of the Museum within 12 months of the completion of fieldwork (unless alternative arrangements have been agreed in writing with the local planning authority).

4 Programme, staffing and attendances

4.1 Timetable and staffing

- 4.1.1 The drone survey of earthworks HER 72503 will be carried out prior to any groundworks taking place. This will be carried out by an accredited and qualified drone operative and will entail a Digital Elevation Model (DEM) of the area as well as multi-spectral imaging.
- 4.1.2 The drone will be piloted by Simon Batesman PCIfA and analysis will be carried out by Dr Scott Williams MCIfA
- 4.1.3 The project will be managed Jake Warrender, a MOLA project manager.
- 4.1.4 All staff attending site will be suitably qualified for their role and prior to deployment will be briefed on the archaeological background and context of there are of the works.
- 4.1.5 The timing and overall duration of the program of archaeological monitoring and recording on the groundworks will be determined by the contractor's programme and the nature and extent of any surviving remains however archaeological attendance will be required on site during all intrusive groundworks including the removal of all topsoils and subsoils unless provably not required.
- 4.1.6 It is envisaged that a Senior Archaeologist will monitor the groundworks, with Archaeologists to assist with any recording work if required. Other archaeological specialists or project managers may be called in if necessary. (see section 4.3 for a list of specialists)

4.2 Attendances

- 4.2.1 For archaeological monitoring and recording, the attendances required by MOLA tends to be minimal as archaeologists are in fact attending the on-site works. However, some provision for welfare and working conditions will need to be anticipated. Some or all of the following attendances may be required and supplied by the client.
- 4.2.2 If additional 'controlled excavation' is required as per para 2.1.1 (as per 4.2.3) there may be a need for additional or more extensive attendances. These will have to be discussed and agreed between the client and MOLA but will be as appropriate to and necessary for safe working conditions and adequate site facilities for any additional staff required.
- 4.2.3 If a greater density or archaeological features are present within any area than a single member of staff could reasonably be expected to adequately investigate additional staffing may be required. Additional funding will have to be discussed and agreed between the client and MOLA, before any additional deployment but will be as appropriate to the works and necessary for safe working conditions and adequate site facilities for any additional staff will be required.
- 4.2.4 If a controlled excavation is considered the most appropriate mitigation method than an addition WSI would be required to establish the aims and objectives, methodology and scope of works for the excavation prior to the works. No further excavation would be permitted within this area prior to the archaeological excavation.
- 4.2.5 Consideration will be given to safe working practices within the monitoring areas, these may involve such measures as safety guard-rails and suitable access points into the site and areas of excavation, away from any site traffic and machinery.

4.3 Environmental and Finds Specialists

4.3.1 MOLA will make use of its own in-house specialists and specialist teams whenever it can. CVs can be supplied on request.

4.3.2 On this site it is envisaged that the following additional external specialists may also be called upon:

Dr Mike Allen, MCIFA LFA FSA PhD	Specialist consultant, Paleoenvironmental and geoarchaeology
Dr Philip Armitage	Specialist consultant, faunal remains
Paul Blinkhorn BTech	Specialist consultant, Saxon, medieval and post-medieval ceramics
Dr Nick Branch	Specialist consultant, pollen
Steve Critchley, MSc	Specialist consultant, geology
Sarak Inskip MSc	Specialist consultant, human remains
Val Fryer BA MCIFA	Specialist consultant, plant macrofossils
Ed McSloy BA MCIFA	Specialist consultant, Iron Age and Roman ceramics
Rob Perrin BA PGCE MLitt	Specialist consultant, Iron Age and Roman ceramics
Iain Soden BA MCIFA	Specialist consultant, medieval and post-medieval ceramics
Damian Goodburn (external)	Specialist consultant – waterlogged wood – structural

4.3.3 If specialist reporting or site visits are required then this will only take place after agreement has been sought and secured from the client.

5 Funding

5.1.1 Agreement on funding for the program of archaeological monitoring and recording has been sought via a separate document.

6 Acknowledgements

- 6.1.1 MOLA wishes to thank Ward and Burke for commissioning the work and David Hopkins, Archaeological Officer for Hampshire for providing guidance on archaeological works.

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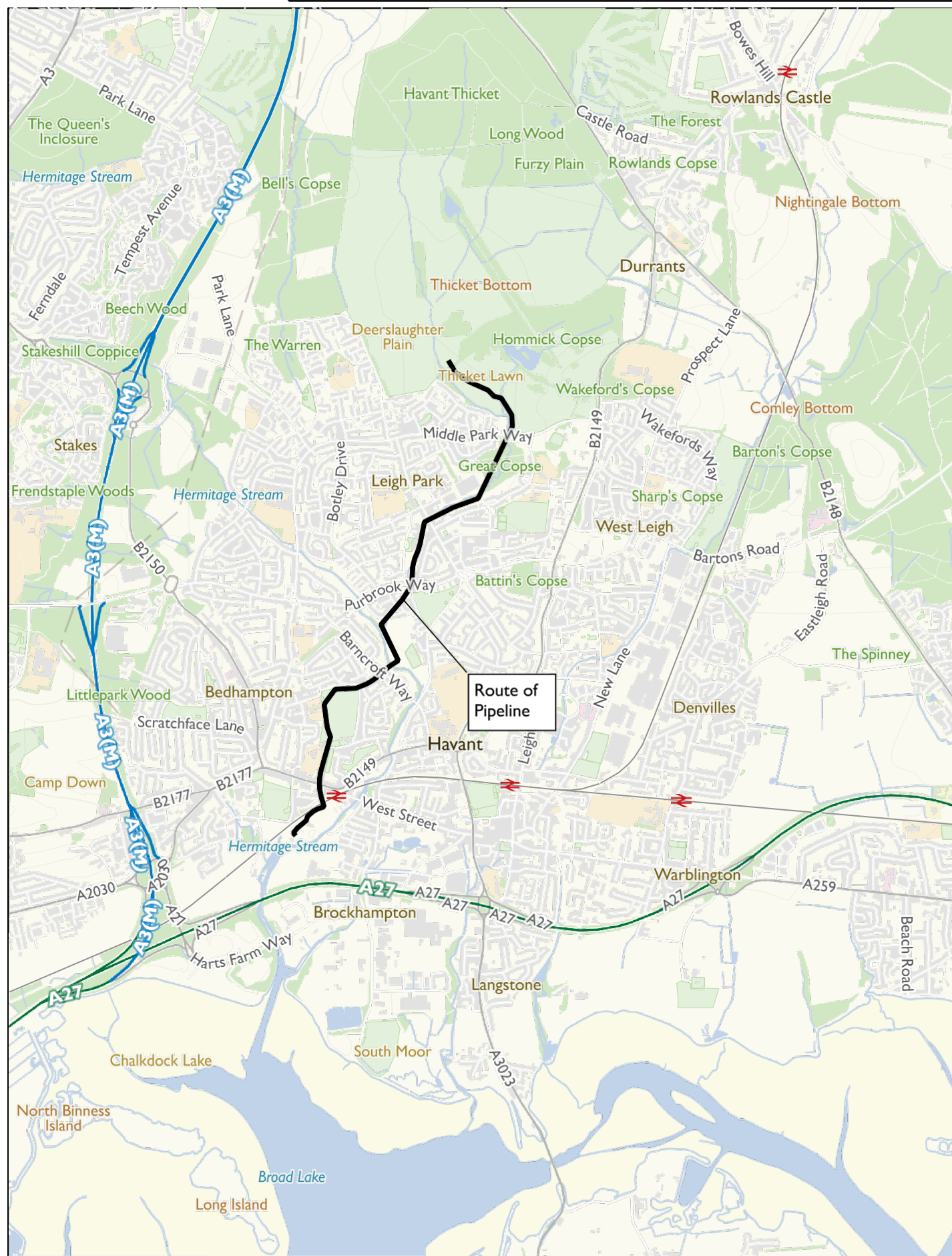
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8 Health and Safety Risk Assessment and Method Statement (RAMS)

A *Health & Safety Risk Assessment and Method Statement* will be prepared by MOLA to accompany this WSI but will be printed out and submitted separately as appropriate.

9 Figures

FIGURE I // Site Location - General



0 500 m



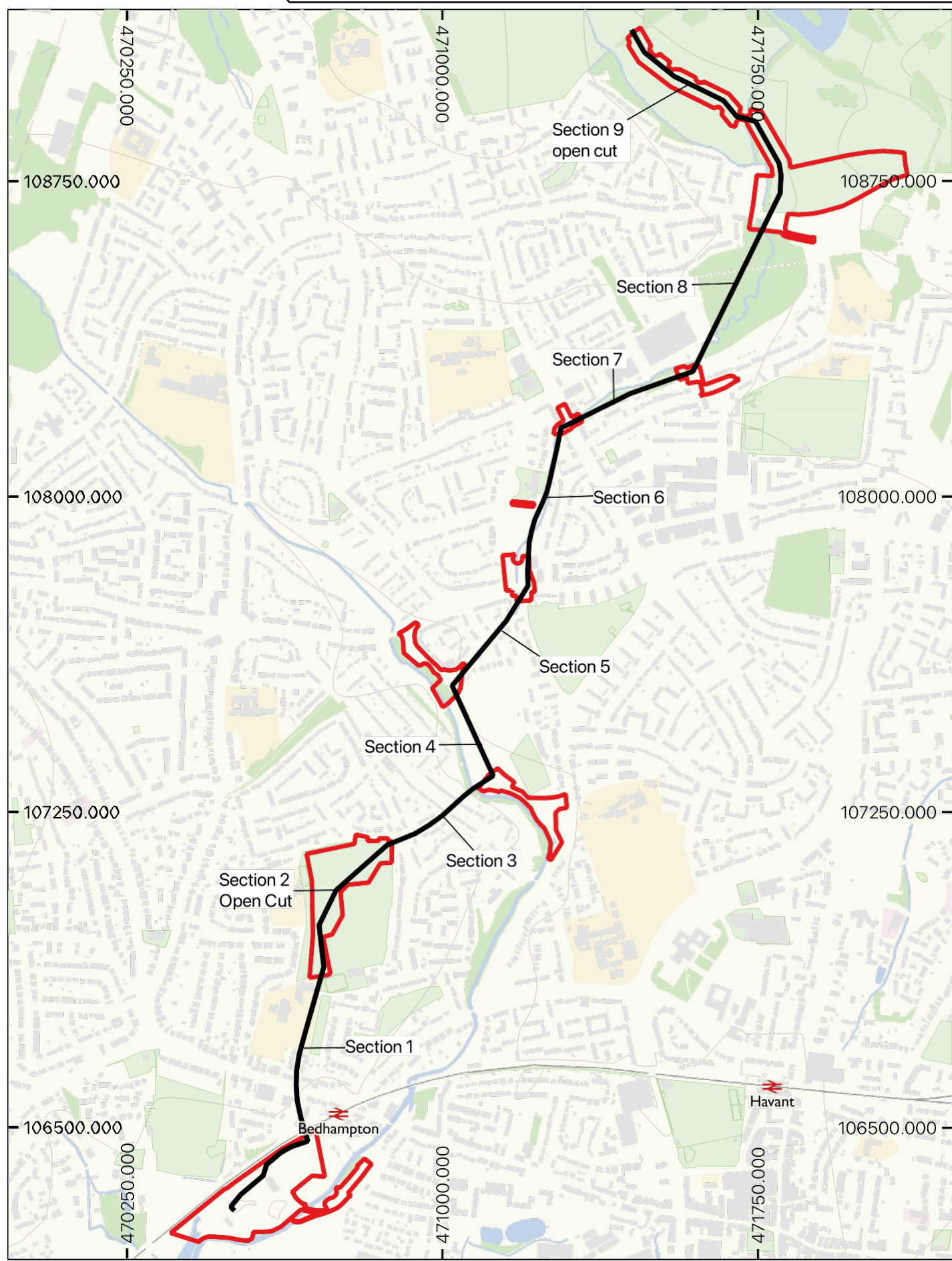
PROJECT // 5028L - Havant Thicket Reservoir, Portsmouth

DESCRIPTION // Site Location

Contains OS data © Crown Copyright 2024 Open Government Licence 3.0

DOC REF: LP5028L-WSI-v2.1

FIGURE 2 // Site Location - Detail



— pipeline
□ Working areas

0 500 m



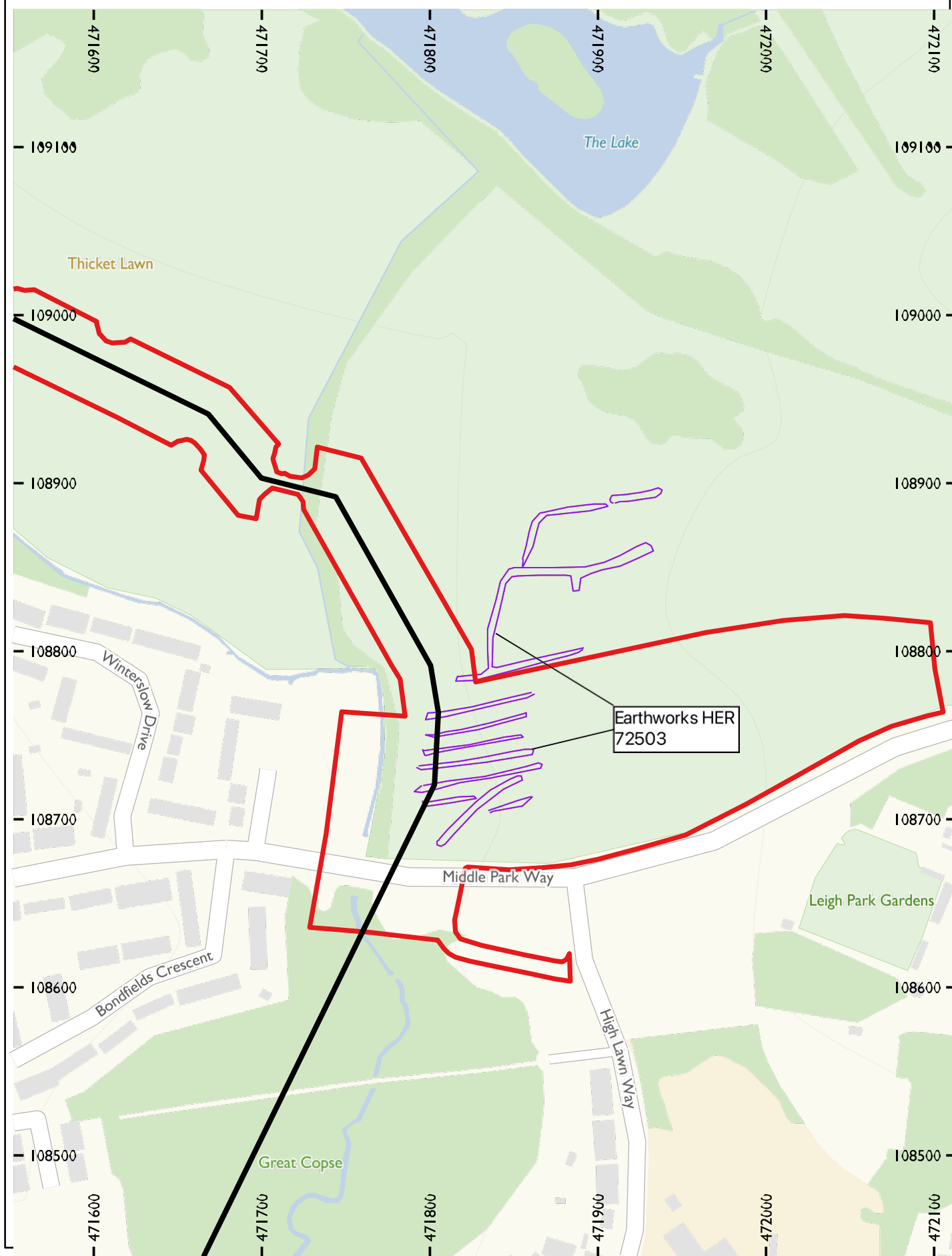
PROJECT // 5028L - Havant Thicket Reservoir, Portsmouth

DESCRIPTION // Site Location detail showing pipeline and areas of surface excavation

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DOC REF: LP5028L-WSI-v2.1

FIGURE 3 // HER 72503



0 50 m



PROJECT // -

DESCRIPTION // Earthworks associated with HER 72503

DOC REF: LP-AER-v

Appendix 1: Data Management Plan

Project details				
Project Name	Havant Thicket reservoir Works – Main Pipeline			
Project Manager	Jake Warrender			
Project Site code	P24-102	ADS Ref	TBC	
Accession Code	TBC	Oasis ID	TBC	
Project covered stages				
Related Policies	CIFA DigDigital guidance, MOLA Forthcoming Digital Preservation Policy, DM01; MOLA Forthcoming Digital Data Selection, Appraisal and Discard Policy, DM08, MOLA			
Version control				
Version	Author(s)	Date:	Status	Summary of Changes
1	JW	30/09/2024	Draft	For comment
Data Collection/Creation				
Data to be Collected/Created	All file formats created will meet the standards set out in MOLA's Data Management Procedure and Fieldwork Manual. - The digital documentary archive for this phase of works will consist of: - Text: PDF/A documents comprising completed site report, WSI, Brief - Spreadsheets: extracted ORACLE data, including site records and registers - Survey data: GIS shp files, - Illustration files: AutoCAD DWG, PDF/A, MapInfo files - Image files: JPEG and high quality non-proprietary raw files (DNG) /TIFF and - Metadata files for the above - On site recording of trenches, horizons, and archaeological contexts will be undertaken using a combined method of digital/paper records - The recording of all archaeological contexts encountered will be made as paper/digital records on site. Digital registers will be made to record contexts, digital photos, samples, levels, burials, small finds, as appropriate. - Plans and sections will be hand drawn and created digitally during post excavation. All planning will be recorded digitally, and data will be stored as .shp or similar file types.			

	Overall photographic shots of the site and each excavation area will be taken prior to excavation and after completion, with detailed shots being made of individual features and groups as appropriate. The photographic record will consist of high-quality digital uninterpolated images. Digital photographs intended for archive purposes will comply with best practice i.e. high quality non-proprietary raw files (DNG) or TIFF images.
How Data will be Collected/ Created	The data will be created according to MOLA's Fieldwork Manual, MOLA'S Data Management Procedure, and in accordance with project specific agreements within the Written Scheme of Investigation (WSI) and best practice guidance. Drawings, plans and sections will be drawn on 5m grid permatrace and then captured digitally during post excavation and added to the digital archive. The grid will be set up by MOLA Geomatics team using a Total Station. Images will be taken using a high resolution DLSR camera. Total Station survey data and on-site drawings will be used to create digital illustrations using AutoCAD, ArcGIS, CorelDraw X7 and/or MapInfo software. File structure will be created automatically by Union Square Knowledge Management System and ORACLE CDE databasing. Version control will be managed by a strict file-naming structure and by Union Square Knowledge Management System's inbuilt version control manager.
Documentation and Metadata	
Metadata	Metadata will be created to the standard set out in MOLA's Data Management Procedure. Metadata tables will be updated throughout the course of the project and will be archived along with the digital data at the end of the project.
Documentation	The data will be accompanied by the site report, polyester film sheets, databases, survey data and processed illustrations as PDFs.
Ethical and Legal Compliance	
Data Security Issues	The dataset may contain commercially sensitive data. MOLA will not make data available to any persons outside of the approved MOLA project team without discussion and approval with the client. MOLA will communicate data and updates to the client who will be responsible for distributing any relevant data to any other third parties.
Intellectual Property Rights	The copyright of any written, graphic or photographic records and reports will be transferred to the Museum of London. The data and reports created by any external specialists will be MOLA Copyright; this will be managed through their contracts. Other data not owned by MOLA, such as OS data, HER datasets or historic maps, will be used under license.
Data Storage	
Storage and Backup	- Quality assurance processes will include regular review of the collected data on site. - Records will be checked in the office during post-excavation procedures.

	• MOLA will retain a back-up of the digital data of the project for a minimum of five years following the deposition of the site archive, in accordance with MOLA's Digital Management Procedure. • Paper archives and documentation will be deposited with the relevant Museum Archive • All data collected digitally will be backed up at the end of each day on the MOLA server.
Access and Security	• Data recording platforms used (including iPad Pro tablets, tabletop computers and laptops) will be password protected to prevent unauthorised access. • Data will be made available to the project team through the Union Square knowledge management system and controlled via password access, maintained and managed by MOLA IT support.
Selection and Preservation	
Selection	It is understood that not all data accumulated needs to be retained and deposited with the Archaeological Archives. The physical and digital archives will be constructed in accordance with local and national guidelines, and specifically with reference to MOLA's Physical and Digital Data Retention/Discard policies. Discarded data that has been identified for deletion will be recorded as such within the metadata and site records, as appropriate. A minimum this will include is: – All relevant on site and Post-excavation images – All relevant copies of on-site recording sheets (including any relevant sketches or explanatory notes) – All relevant survey data – All relevant copies of reports associated with the life of the project
Preservation Plan	The physical and digital archives will be constructed in accordance with local and national guidelines, and specifically with reference to MOLA's Physical and Digital Data Retention/Discard policies. Discarded data that has been identified for deletion will be recorded as such within the metadata and site records, as appropriate. The physical site archive for this phase of works will be temporarily stored at MOLA offices. Upon completion of full analysis, the physical project archive, and hard copies, will be deposited with the relevant Museum. The archive site code is (pending) and upon completion of full analysis, the physical archive, hard copy of the reports and paper records will be deposited with the Museum of London Archaeological Archive. The digital project archive, ORACLE database, digital photographs, survey data and metadata tables will be deposited with the appropriate repository in line with the MOL guidelines. Further archiving decisions will be made in discussion with the client, Hampshire Museum at the project completion stage.
Data Sharing	

Data Sharing Plan	During the project, site data is likely to be shared with the LPA's archaeological advisor and possibly the landowner or their representative. Photographs may also be shared. Site data may also need to be shared with external persons who will be given access to copies of data and not original documentation. The data generated from this project will be made publicly available through submission to the local archive. A digital report will be uploaded to ADS and an OASIS form will be submitted to the Online Access to the Index of archaeological investigations (OASIS). The file types submitted will comply with the designated digital repository guidelines in-line with the FAIR principles. Proposals for publication and dissemination of the archaeological remains are at this stage restricted to Grey Literature style report.
Data Sharing Restrictions	There are no known restrictions on the use of this data after project completion although data will be kept confidential during the project.
Responsibilities and Resources	
Responsibilities	A dedicated Digital Data Officer, the Project Manager and the Senior Archaeological Archivist are responsible for ensuring the data management plan is followed.
Resources	Guidance on digital data will be given throughout the project by the Chief Digital Officer, supported by MOLA IT and Geomatics staff. Requirements for training in digital data collection techniques will be managed by MOLA. The costs of deposition of the digital archive will be covered within the project budget.
References	ClfA, 2020b Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives, Chartered Institute for Archaeologists ADS/Digital Antiquity (2011) Archaeology Data Service/Digital Antiquity Guides to Good Practice. Archaeological Data Service/Digital Antiquity. Museums and Galleries Commission (1992) Standards in the Museum Care of Archaeological Collections. London: Museums and Galleries Commissions. Museum of London, 2009 General Standards for the preparation of archaeological archives deposited with the Museum of London Society of Museum Archaeologists (1995) Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales. Walker, K. (1990) Guidelines for the preparation of excavation archives for long term storage. London: United Kingdom Chartered Institute for Conservation.

Appendix 2: Draft Transfer of finds ownership form

DATED

[]

-AND-

**THE BOARD OF GOVERNORS OF
THE MUSEUM OF LONDON**

TRANSFER AGREEMENT
of Finds excavated at

Site Code

THIS TRANSFER AGREEMENT is made on the day of 20

BETWEEN: -

[], whose registered office is situated at [] (“the Site Owner”);

AND

THE LOCAL ARCHIVE

WHEREAS

- A.** The Site Owner is the owner of a property at [] known by its site code [] whereupon an archaeological intervention has been carried out (“Excavation”) and the Site Owner has granted a developer permission to undertake works on the site (“the Developer”).
- B.** The Site Owner is the owner of any items of archaeological interest found during the Excavation.
- C.** The Site Owner wishes to transfer to the Museum title to the items referred to in Recital B.
- D.** The LOCAL ARCHIVE has agreed to provide facilities for the accommodation and, at its discretion, the display of the items referred to in Recital B on condition that the same are assembled as an archive in accordance with the provisions of this Agreement

each a “Party” and together the “Parties”.

NOW IT IS HEREBY AGREED as follows: -

1. PREPARATION AND DELIVERY OF THE ARCHIVE

- 1.1 The Parties acknowledge and agree that the Developer shall:
 - 1.1.1 procure the preparation of the items of archaeological interest found during the Excavation in accordance with the requirements of the Museum’s *General Standards for the Preparation of Archaeological Archives deposited with the Museum of London*, a copy of which is available to the Site Owner for inspection, and generally in accordance with best archaeological practice; and
 - 1.1.2 prepare a full inventory of the items of archaeological interest discovered during the Excavation (“the Finds Inventory”) and a list of the boxes and other containers in which those items will be transported to the Museum (“the Final Transfer Summary”). The items of archaeological interest listed in the Finds Inventory are hereinafter referred to as “the Finds”.
- 1.2 The Site Owner is content for the Museum in coordination with the Developer to arrange for delivery of the Finds, Finds Inventory and the Final Transfer Summary to the Museum without cost to the Site Owner, in accordance with the Museum’s preferences as to the method and time of delivery.
- 1.3 In consideration of £1 (whether demanded or not) title to the Finds will, with full title guarantee, pass to the Museum on delivery of the Finds to the Museum in accordance

with clause 1.2. Risk in the Finds will also pass to the Museum on completion of delivery of the Finds to the Museum in accordance with clause 1.2.

2. GENERAL

- 2.1 **Governing law and jurisdiction.** This Agreement will be governed by and construed in accordance with the Laws of England and Wales regardless of the place of execution or performance. The English Courts will have exclusive jurisdiction to deal with any dispute or other difference arising out of or in connection with this Agreement unless the Museum chooses to invoke, or voluntarily submits to, the jurisdiction of some other tribunal.
- 2.2 **Further assurance.** The Site Owner at its own expense shall, and shall use all reasonable endeavours to procure that any necessary third party shall, promptly execute and deliver such documents and perform such acts as may reasonably be required for the purpose of giving full effect to this Agreement and to cure any defects in the title to the Finds.
- 2.3 **Applicable laws.** The Parties agree to comply with all applicable laws. The Site Owner acknowledges that the Museum as a leading museum of the United Kingdom and centre of archaeological research encourages reporting of all archaeological material and compliance with the Treasure Act 1996 and Treasure Act Code of Practice both as amended from time to time, and where reasonably applicable agrees to facilitate the Museum in the aforementioned.

IN WITNESS of which the Parties hereto have signed this agreement on the date first written above:

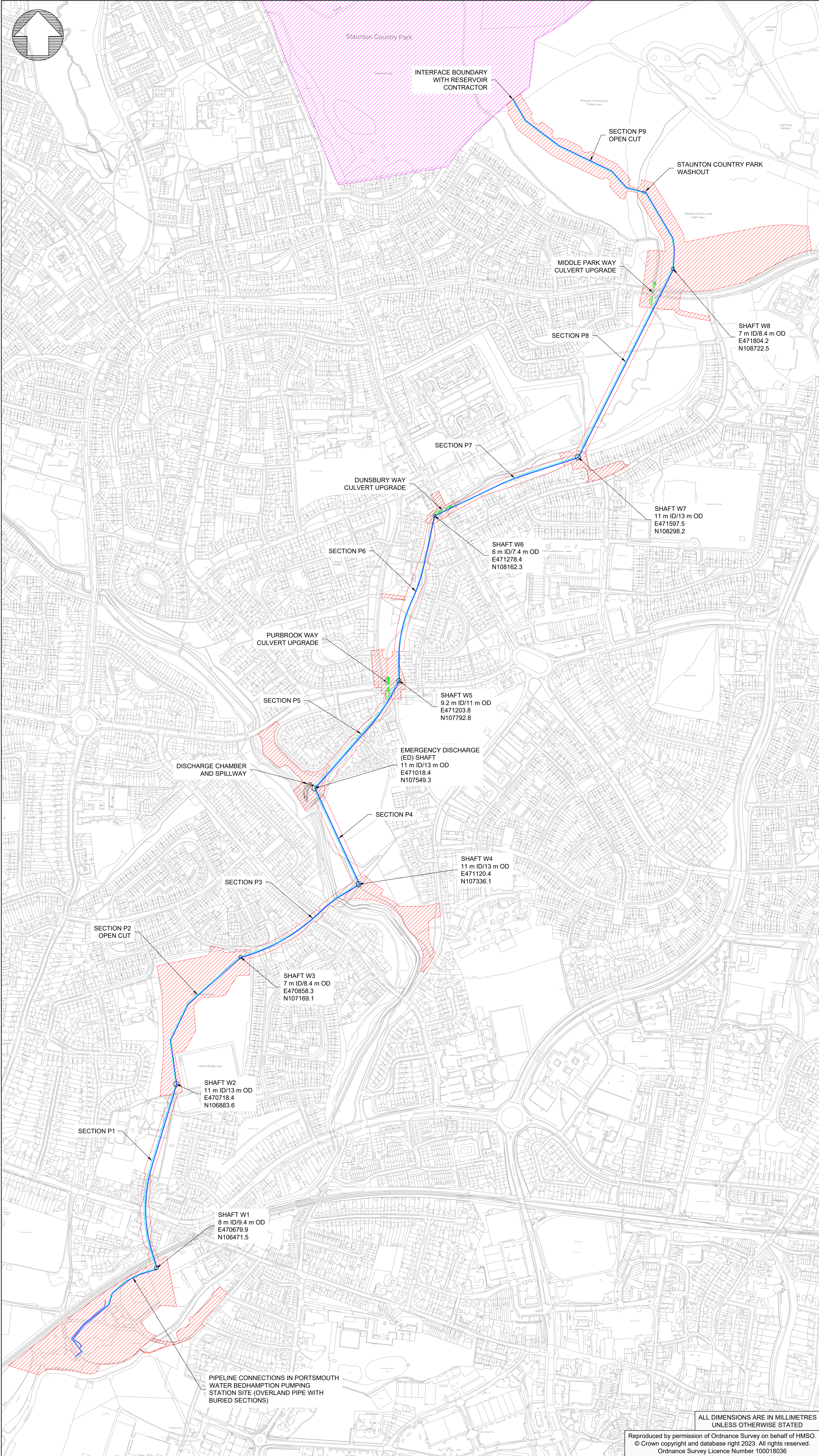
Signed by Name.....

Job Title..... Date
for and on behalf of the **LOCAL ARCHIVE**

Signed by Name.....

Job Title..... Date
for and on behalf of the **Site Owner**

Appendix 3: Map of pipeline route provided by client



Notes:

- REDLINE BOUNDARY - SURFACE AND UNDERGROUND WORKS
- REDLINE BOUNDARY - UNDERGROUND WORKS ONLY
- FILL PIPELINE
- RETURN PIPELINE
- FARLINGTON CONNECTION PIPELINE
- APPROVED RESERVOIR APPLICATION BOUNDARY
- CULVERT UPGRADES

	FILL PIPELINE	RETURN PIPELINE
PIPE SIZE	DN800	DN1200
INSTALLATION METHOD - SECTIONS P2 AND P9	OPEN CUT	OPEN CUT
INSTALLATION METHOD - SECTIONS P1, P3, P4, P5, P6, P7 AND P8	WITHIN 1200 ID / 1490 OD TUNNEL	WITHIN 1650 ID / 2050 OD TUNNEL

ID = INNER DIAMETER
OD = OUTER DIAMETER

0 80 160 240 320 400 m

SCALE 1:4000

Rev	Drn By	Ckd By	Apv By	Description	Date
P04 S4	JT	BP	BC	DUAL PIPELINE OPTION	14/09/23
P03 S4	RD	BP	BC	UPDATED DRAWING NUMBER	27/04/23
P02 S4	JT	BP	BC	DETAILED DESIGN DEVELOPMENT	03/03/23

WARD & BURKE

Drawing Suitability: FOR CONSTRUCTION APPROVAL

Status: S4

Contractors Drawing Number: HTR-WAB-ZZ-ZZ-DR-T-0001

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Date:	Scale:	Sheet:	Sheet Size:
14/09/23	1:4000	01 of 01	A1

Project Title: HAVANT THICKET RESERVOIR

Drawing Title: PIPELINE SCHEME OVERVIEW

Portsmouth Water Drawing Number: P04

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

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