



A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East Cultural Heritage Asset Management Plan

August 2022

Client: Graham Construction

Issue No: V. 1

OA Reference No: L11309

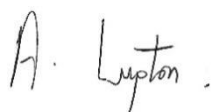
NGR: SJ 90712 78307



Client Name: Graham Construction Ltd
Document Title: A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East
Document Type: Cultural Heritage Asset Management Plan (CHAMP)
Report No. 2022-23/2219
Grid Reference: SJ 90712 78307
Planning Reference: 16/4436M
Site Code: PRR20
Invoice Code: L11309

OA Document File Location: X:\Paul\Projects\L11309_Poynton_Relief_Road\Report\CHAMP
OA Graphics File Location: X:\Paul\Projects\L11309_Poynton_Relief_Road\OAN_CAD

Issue No: V 1
Date: August 2022
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A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East

Cultural Heritage Asset Management Plan (CHAMP)

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1 INTRODUCTION

1.1 Project details

- 1.1.1 Oxford Archaeology (OA) North was commissioned by Graham Construction Ltd to undertake archaeological investigations, comprising buildings and landscape recording, evaluation trenches, targeted excavation areas, strip, map and record, and watching brief along the proposed Poynton Relief Road, starting just south of Kitt's Moss, Stockport Metropolitan Borough Council (SMBC; NGR: SJ 89939 83800) and continuing south to just west of Butley Town, Cheshire East Council (CEC; NGR: 90754 78097; Fig 1).
- 1.1.2 In accordance with Planning Condition 41 set by SMBC (planning ref: DC/063174) and Condition 39 set by CEC (planning ref: 16/4436M), which stated: *no development shall take place until the applicant or their agents or their successors in title have secured the implementation of a programme of archaeological works*. As such, Arcadis Consulting (UK) Limited, as archaeological consultants for the project, produced an Archaeological Mitigation Strategy (2020) for Graham Construction on behalf of CEC and SMBC. In consultation with Greater Manchester Archaeological Advisory Service (GMAAS) on behalf of SMBC and Cheshire Archaeological Planning Advisory Service (APAS) on behalf of CEC, the mitigation strategy outlined proposals for a programme of archaeological works to mitigate the impact of the scheme on heritage assets that lay within the road corridor.
- 1.1.3 The Environmental Impact Assessment for the scheme (EIA; Jacobs 2016) had identified a physical effect on a bowl barrow (Asset 35) which was a Scheduled Monument National Heritage List for England (NHLE) 1007379 and thus was protected by designation legislation under the 1979 Ancient Monuments and Archaeological Areas Act. A baseline/condition survey of the monument was undertaken (including geophysical survey), and in consultation with Historic England, a mitigative strategy of preservation *in situ* was agreed, documented and subject to Scheduled Monument Consent (S00206079; Jacobs 2016). Among standard stipulations, the SMC stated that *(ii) no ground works were to take place until a programme of works was commissioned in accordance with a Written Scheme of Investigation submitted and approved by the Secretary of State advised by Historic England*.
- 1.1.4 As part of the wider programme of archaeological investigation for the scheme, mitigation for the *in situ* preservation of the bowl barrow (Asset 35) comprised:
- Stage 2A: Photographic Survey
 - Stage 2B: Protection During Construction
 - Stage 2F: Detailed WSI for Scheduled Monument
 - Stage 2G: Defined Strip, Map and Record Excavation (SMR)
 - Stage 3B: Scheduled Monument Watching Brief
 - Stage 4A: Cultural Heritage Asset Management Plan
 - Stage 4B: Post-Excavation Assessment
 - Stage 5: Post-Excavation Analysis, Reporting and Archiving
 - Stage 6: Publication

1.2 Purpose of the Plan

1.2.1 This document, compiled by OA North, comprises Stage 4A, Cultural Heritage Asset Management Plan (CHAMP) for Asset 35 the Scheduled Bowl Barrow (NHLE 1007379). This has been compiled as stated in DMRB (Highways England 2019) and OA North's 2020 Written Scheme of Investigation. This states that following completion of the watching brief and construction in the vicinity of the Scheduled Bowl Barrow (Asset 35), a Cultural Heritage Asset Management Plan (CHAMP) will be produced. This will be reviewed by the Client and the Monitoring Archaeologists, and ultimately submitted to the Client as part of the 'as-built' information.

1.2.2 The CHAMP will include information on the long-term management of the Scheduled Monument, including:

- a description and brief overview of the archaeological background of the monument;
- legal status;
- current condition, including the results of the photographic survey (Stage 2a), the means of its preservation *in situ* (Stage 2b), and the results of the watching brief (Stage 3b);
- aims and objectives of the management plan; and
- proposals for monitoring and review of both its condition and the effectiveness of the CHAMP in maintaining preservation.

1.3 Legal Status of the Scheduled Monument

1.3.1 *Bowl Barrow 60m North of Junction of London Road and Bonis Hall Lane, Poynton, Cheshire, SK10 4DY* is a Scheduled Monument National Heritage List for England (NHLE) 1007379 and thus was protected by designation legislation under the 1979 Ancient Monuments and Archaeological Areas Act. It was scheduled in 1993.

1.3.2 *The National Planning Policy Framework (NPPF)* sets out national planning policies relating to historic environment conservation (MHCLG 2021). Valued sites of archaeological or cultural heritage that merit consideration in planning decisions are grouped as 'heritage assets' and are an 'irreplaceable resource', the conservation of which can bring wider social, cultural, economic and environmental benefits (MHCLG 2021, section 16.189-90). The policy framework states that the 'significance of any heritage assets affected, including any contribution made by their setting' should be understood in order to assess the potential impact of any development (MHCLG 2021, section 16.194).

1.3.3 The NPPF draws a distinction between designated heritage assets and other remains considered to be of lesser significance; 'great weight should be given to the asset's conservation' (and the more important the asset, the greater the weight should be) (MHCLG 2021, section 16.199). 'Substantial harm to or loss of a grade II listed buildings or grade II registered parks or gardens should be exceptional; assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, Grade I and II* buildings, Grade I and II* registered parks and gardens, and

World Heritage Sites, should be wholly exceptional' (MHCLG 2021, section 16.200). Therefore, preservation *in situ* is the preferred course in relation to such sites, unless exceptional circumstances exist.

1.3.4 The UK has had ancient monument legislation in place since 1882, which protects heritage assets that have archaeological interest. Scheduling is restricted to the most important examples of each type of monument, and to those for which this type of designation provides the most appropriate protection (DCMS 2013).

1.3.5 To be included in the Schedule (at the discretion of the Secretary of State in consultation with Historic England), a monument must first meet the 1979 Act's definition of a monument (DCMS 2013), which is:

- any building, structure or work, whether above or below the surface of the land, and any cave or excavation;
- any site comprising the remains of any such building, structure or work or of any cave or excavation; or
- any site comprising, or comprising the remains of, any vehicle, vessel, aircraft or other movable structure or part thereof which neither constitutes nor forms part of a monument as defined above.

1.3.6 The 1979 *Ancient Monuments and Archaeological Areas Act* (DCMS 2013) affords statutory protection to Scheduled Monuments by making it a criminal offence to:

- destroy or damage a Scheduled Monument;
- execute or cause or permit to be executed works, including operations of any description undertaken for purposes of agriculture or forestry, that would demolish, destroy, damage, remove, repair, alter or add to a Scheduled Monument, or to carry out any flooding or tipping operations on land in, on or under which there is such a monument, without the prior written consent of the Secretary of State;
- use a metal detector or remove any object of archaeological or historical interest which has been discovered by the use of a metal detector, without prior consent from Historic England.

2 ARCHAEOLOGICAL BACKGROUND

2.1 Location, topography and geology

- 2.1.1 The Scheduled Monument is located on the western side of the A523 London Road and approximately 65m north of the junction with Bonis Hall Lane at SJ 9072 7835 and 105.2m Above Ordnance Datum (AOD).
- 2.1.2 The solid geology of this section of the route consists of Pebbly (gravelly) Sandstone of the Chester Formation, deposited during the Triassic Period (British Geological Survey (BGS) 2020). The overlying superficial deposits are classified as Sand and Gravel, Glaciofluvial Sheet Deposits, deposited during the Devensian Period (*ibid*). The soils are classified as freely draining slightly acid loamy soils (Cranfield University 2022).
- 2.1.3 The monument is relatively low-lying, located on undulating pasture and positioned 300m south of the River Dean and 130m north of an un-named stream. The low-lying position and alignment with a major river valley routeway compares with similar round barrows, and alignments thereof, within the Cheshire region (Mark Leah pers comm, cited Jacobs 2016, 4).

2.2 Monument History

- 2.2.1 An account of the discovery of a barrow at what is believed to be this location was recorded by George Ormerod in volume 3 of his History of the County Palatine and City of Chester (1819, 279). According to Ormerod, it was identified by men prospecting for gravel “in Butley in a field adjoining the high road between Stockport and Macclesfield” (*ibid*). The location north of the junction between London Road and Bonis Hall Lane was fixed by the Ordnance Survey in 1873, when the first edition 1:2,500 map indicated an antiquity labelled ‘Site of Cairns: Urn and Human remains Found Here’ (Cheshire, Sheet 28.16). The Cheshire Historic Environment record (CHER 1557/1) notes that the finds are now lost. Jacobs 2016 adds that ‘It is not possible to definitively say that it was this barrow that was excavated’ (2016, 5).
- 2.2.2 The barrow was scheduled in 1993 with the following reasons cited for its designation:
‘Bowl barrows, the most numerous form of round barrow, are funerary monuments dating from the Late Neolithic period to the Late Bronze Age, with most examples belonging to the period 2400-1500 BC. They were constructed as earthen or rubble mounds, sometimes ditched, which covered single or multiple burials. They occur either in isolation or group as cemeteries and often acted as a focus for burials in later periods. Despite some spreading of the monument by past ploughing, the bowl barrow survives reasonably well. It will contain undisturbed archaeological deposits within the mound and upon the old landsurface beneath’ (Historic England 2022, NHLE 1007379)

2.3 Baseline Condition

- 2.3.1 Whilst the listing description states that the monument has maximum dimensions of 26 x 25m, a 3D laser scanning survey of the site established that it is oval in plan and measures approximately 37m from north to south, by 35m from west to east and was up to 1.2m high (Jacobs 2016; Figs 2-4). The 3D laser scanning survey also established

that the barrow is mostly located outside the Scheduled area as mapped by Historic England (Jacobs 2016; Figs 2-4).

- 2.3.2 The barrow has an even, convex profile and there is no obvious sign of a surrounding ditch (Jacobs 2016; Figs 2-4), a fact that Historic England has interpreted as evidence for historic ploughing of the monument (NHLE 1007379). This is supported by the geophysical survey which identified linear trend anomalies aligned from north to south and indicative of historic ploughing (Headland 2016, 4 and Illus 34). Linear spreading of the monument by ploughing is also exhibited on Environment Agency Lidar coverage of the site.
- 2.3.3 Whilst geophysical survey (Headland 2016, 4) did not identify any *obviously* archaeological anomalies (no mound or surrounding ditch were visible), anomalies of *potential* archaeological origin were noted, which could relate to sub-surface features. The geophysical survey results suffered disturbance due to the presence of a strongly magnetic buried service which crossed the south-eastern quadrant of the scheduled area on a south-west to north-east alignment (*ibid*). This is believed to be a sewer (Jacobs 2016).
- 2.3.4 To the west of the bowl barrow, the railway (L&NWR Macclesfield; opened 1869) is set upon a high embankment. Its construction may have impacted upon the monument. To the east of the bowl barrow, the A523 London Road is raised above the natural land surface on an artificial embankment and its construction may already have affected archaeological remains to the east edge of the barrow (Jacobs 2016). One of two gates giving access to the field from the A523 London Road is immediately adjacent to the barrow and visible wheel-ruts may have damaged the surface of the monument (*ibid*, plate 2).

2.4 Setting and Significance

- 2.4.1 The setting of a heritage asset is described in National Planning Policy Framework (NPPF annex 2, glossary; MCHLG 2019) as the surroundings in which a heritage asset is experienced; its extents are not fixed and may change as the asset and its surroundings evolve. The Environmental Statement (ES) Chapter assessment of the setting of heritage assets was undertaken in accordance with the guidance provided in *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets* (Historic England 2015). The ES chapter concluded that ‘the current setting of this asset is defined by the nearby London Road and Bonis Hall Lane, a railway line, and modern housing. These elements sever the asset from its wider landscape and original setting’. (2016, section 2.3.2) This is echoed by Jacobs (2016, section 4.1.5) in the indication that the setting of the barrow is not considered to contribute to its significance.
- 2.5.1 Given that the setting of the scheduled barrow is not considered to contribute to its significance, this significance as stated in its listing description, is based on its physical form and assumed contents. In addition to generic monument class description, the reasons for designation in the monuments listing description state: ‘*Despite some spreading of the monument by past ploughing, the bowl barrow 60m north of the junction of London Road and Bonis Hall Lane survives reasonably well. It will contain*

undisturbed archaeological deposits within the mound and upon the old ground surface beneath' (Historic England 2022; NHLE 1007379).

3 MITIGATION

3.1 Decision-making and Reporting

3.1.1 As detailed above, Jacobs (2016) undertook a detailed condition survey for the monument, supported by a geophysical survey undertaken by Headland Archaeology (2016). The baseline conditions (and the small size and the peripheral nature of the affected area) formed the basis of decisions made to preserve the remains of the monument *in situ*, and the Scheduled Monument Consent (SMC) S00206079. Preservation of the affected part of the barrow *in situ* beneath the widened highway earthwork was considered to be appropriate mitigation provided that a strategy could be devised whereby the barrow could be protected and the new highway earthwork constructed without the need for excavation or removal of the topsoil. OA North were subsequently commissioned to produce a WSI for works including the Scheduled Monument (*Appendix A*; Phase 2F). The individual elements, reported upon separately (OA North 2021; 2022a; 2022b) are summarised below.

3.2 Stage 2a: Photographic Survey

3.2.1 Photographic survey of Asset 35 the scheduled bowl barrow recorded baseline conditions pending its protection (Stage 2b) during the construction and operation phases of the development (i.e., preservation *in situ*; OA North 2021).



Plate 1: Photographic survey, Asset 35, facing north

3.3 Stage 2b: Protection During Construction

3.3.1 The Scheduled Monument Consent clearly stated that the bowl barrow (Asset 35) should be adequately protected and signed during all stages of the works, including restrictions on the operation of equipment and machinery, vegetation clearance and erection of fencing. The Mitigation Strategy (Jacobs 2016) states how the monument

will be preserved *in-situ* throughout the construction and operation phases. All construction works involving ground disturbance or the potential to cause accidental damage to the buried archaeological remains within the protected area were monitored by a qualified and experienced archaeologist. These works included erection of temporary and permanent fencing, installation of geotextile separator and deposition of fill (stone) material (OA North 2022b). Monitoring of hedge-line and tree removal was reviewed but not considered necessary owing to the removal and felling above ground and at stump level.

3.3.2 **Communication:** all personnel involved in the construction phase were briefed as to nature and sensitivity of the barrow, its legal status as a Scheduled Monument and the measures which are being taken to protect it during construction. Prominent signage was also displayed.

3.3.3 **Fencing:** the lines of the temporary fencing and the permanent highway boundary fence are illustrated on Figure 2. The line of the temporary fence ran through the protected area. This was Heras security fencing, with non-intrusive feet/bases. The permanent highway boundary involved timber uprights, driven to a depth of approximately 0.7m below the existing ground level (Highways England 2016). Two pits were required for gate posts within the scheduled methodology area. These were hand-excavated, under the supervision of a qualified and experienced archaeologist, with no archaeological remains encountered (OA North 2022b).



Plate 2: Location of permanent highway fence line with Asset 35 behind

3.3.4 **Separator Layer:** the protected area of the monument, where it lay within the construction zone, was covered with a textile membrane and overlaid with overlapping, geogrid separator, then covered with approximately 0.25m of stone. The

use of a geotextile separator reduced the degree of ground preparation required for the construction of the earthwork embankment and also prevented the mixing of the embankment material with the underlying formation layers. All vehicle movements across the protected area were prohibited, until fenced and covered; all stone was tipped from the existing access until an area large enough to allow access for the machined excavator could be laid. The plant used was a 13.5 cwt rubber wheeled excavator, to minimise compaction of the fill material, underlying soils and reduce the risk of accidental damage to the monument. Following installation of the permanent fence-line (*Section 3.3.3*), the separator layer was further covered by a layer of sandy clay fill material, approximately 1m in thickness.

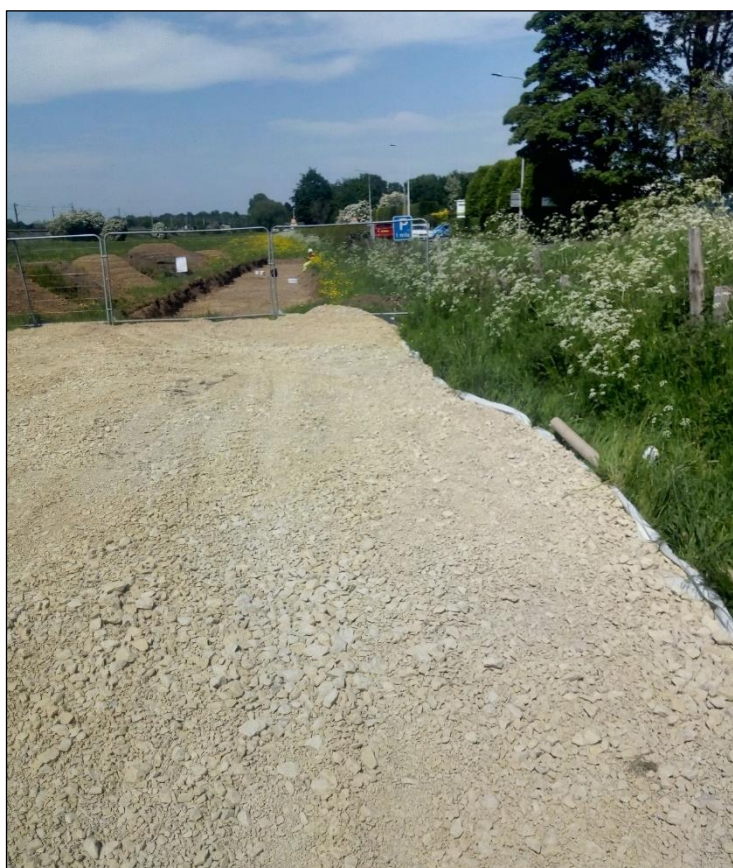


Plate 3: Separator layer

3.4 Stage 2g: Defined Strip, Map and Record Excavation (SMR)

- 3.4.1 A Strip, Map and Record (SMR) was undertaken in two excavation areas at land affected by the A523/Bonis Hall Lane junction works, split north (35N) and south (35S) of Bonis Hall Lane in the areas around the scheduled Bowl Barrow. This was due to the high potential for further archaeological remains to be present in this area, outside of the Scheduled Monument Boundary. Archaeological remains were found, although potentially not related to the monument (OA North 2022a).
- 3.4.2 ***Asset 35 north of Bonis Hall Lane (north of monument)***: a small area, approximately 37m long by a reducing width between 4.7m and 3.2m, immediately north of the scheduled bowl barrow (NMR: 1007379) was machine excavated. A single oval-shaped pit, **3505**, was identified towards the southern end of this area (OA North 2022a).

- 3.4.3 **Asset 35 north of Bonis Hall Lane (south of monument):** a slightly larger area, approximately 49m long by a reducing width of 4.5m and 3.6m, was excavated to the south of the scheduled bowl barrow (NMR: 1007379). Two archaeological features were identified in this area, ditch **3507** and posthole **3509**; there was no dating evidence recovered from either feature (OA North 2022a).
- 3.4.4 **Asset 35 south of Bonis Hall Lane:** a 140 by 12m area was machine excavated from south to north, turning west, along Bonis Hall Lane, for approximately 50m and reducing to a width of 2m. A single linear feature was encountered in this area, ditch **3502** (OA North 2022a). Post-medieval pottery sherds were identified in association with the feature.

3.5 Stage 3b: Scheduled Monument Watching Brief

- 3.5.1 Archaeological monitoring was conducted within the scheduled area whilst permanent fence lines were installed. The installation of a new 'cattle proof' gate required foundation pits for the gate posts in the scheduled monument methodology area, directly opposite the current field access. Foundation pits for the gate posts within the scheduled monument methodology area measured 0.50 by 0.50m in plan and were excavated to a depth of 0.80m, only subsoil and topsoil layers were recorded within the pits (OA North 2022b).
- 3.5.2 Excavation works were also monitored for the widening of the highway and the installation of new surface water drainage. An area approximately 4m wide, at the northern end, and 6m wide, at the southern, immediately to the west of the existing highway was excavated to a depth of between 0.9 and 1.4m below road level. The works primarily removed the former road embankment and a sandy clay fill material which had been laid over the separator layer. The edge of the separator layer was broken, and topsoil was removed, exposing the underlying subsoil, no archaeological features or finds were encountered (OA North 2022b).
- 3.5.3 The final element of watching brief involved the monitoring of the excavation of two pits for the installation of lamp posts, outside of the scheduled monument area, but within the scheduled monument methodology area, both measured 1 by 1m and were excavated to a depth of 1.8m. Both pits were excavated through the silty clay fill material and the separator layer into the underlying topsoil, and the northern pit was excavated through the topsoil into the underlying subsoil, although no archaeological features were encountered (OA North 2022b)

4 THE MANAGEMENT PLAN

4.1 Aims and Objectives

4.1.1 Previous documents have stated and reiterated that the decisions to preserve the small area of the scheduled bowl barrow Asset 35 *in situ* derive from the moment's current setting and condition and aim to preserve and protect any surviving sub-surface archaeological deposits from harm. The legal protection imparted by the scheduling designation (*Section 1.3*) remains in place. The aims of the following section are to highlight possible future threats and impacts to the monument and its objectives are the proposal of management and monitoring strategies that will ensure its protection.

4.2 Threats and vulnerabilities

4.2.1 **Ownership:** The present status of the bowl barrow is that two thirds of it (including the central upstanding element) remains under pasture to the west of a permanent, gated fenceline. The eastern extent of the earthwork (east of and including the fenceline) is covered by terram, stone, topsoil, and turf. Land to the east of the fenceline is owned by Cheshire East Council and the pasture of the west by the farmer, David Hooley. The main set of threats and vulnerabilities relate to changes in ownership, disjoints between management either side of the fence, and disjoints in maintenance/treatment of the roadside verge.

4.2.2 **Scheduling boundary:** There is also a threat to the monument relating to the positioning of the scheduling boundary, which earthwork/condition survey (Fig 2) has illustrated to be slightly erroneous. Damage could occur to the monument in the future unless a note is made to the scheduling description, or the boundary positioning is revised.

4.3 Potential operational impacts

4.3.1 Potential operational impacts on the eastern side (road side) of the bowl barrow include damage through:

- verge maintenance, and aftercare;
- maintenance of drainage;
- maintenance/replacement of fencing and boundaries;
- rutting around the gateway accessing the field; and
- road users (collision damage, vandalism).

4.3.2 Potential operational impacts on the western side (field side) of the bowl barrow include damage thorough:

- changes in agricultural regime (ie from pasture to arable);
- cattle puddling near/through the gateway; and
- cattle puddling near feeder placement (high points within fields/near gateways are often used).

4.4 Recommendations

4.4.1 Section 3 of DMRB (2019) *LA116 Cultural Heritage Asset Management Plans* maintenance methodology states that:

- The preservation and enhancement of cultural heritage assets shall be undertaken as part of planned programme of repairs and maintenance (section 3.3);
- Cultural heritage asset management actions shall be recorded and their effectiveness evaluated so as to enable the Overseeing Organisation to report to government (section 3.4); and
- A four-year cycle of inspection and reporting, proposals for and implementation of actions and monitoring and review is recommended (section 3.4, Note 1).

4.4.2 The following recommendations relate primarily to the area of the bowl barrow to the east of the fence (ie that in the road construction area under the ownership of Cheshire East Council). It is accepted that ownership of the land including the bowl barrow is split between two parties. Any agreements between the two parties regarding access through the fenceline should re-iterate the legal protection imparted by the scheduling designation and include a copy of this report/maintenance plan.

4.4.3 **Maintenance plan:** there should be a maintenance plan put in place specifically stating and operationalising the requirements for routine monitoring and checking of condition within the timeframes stated below. This should re-iterate the legal protection imparted by the scheduling designation and include a copy of this report. The plan should also include contact details for Historic England in order that any damage is reported and appropriate repairs put in place. The implementation of the maintenance plan both in the short and longer term is of supreme importance. The plan should include provision that appropriate line managers of any maintenance crews to be tasked with condition checking be responsible for recording that the tasks have been achieved and any changes in condition have been logged and reported.

4.4.4 **Short term:** checks that the landscaping, stone covering and teram remain in place, and for vehicular and foot erosion either side of the fence and around the gateway. According to a four year cycle, checks to take place every six months for first two years, then annually after two years.

4.4.5 **Long term:** regular monitoring and review of the maintenance plan and logging and reporting of any changes to condition.

4.5 Monitoring and Review

4.5.1 Regular monitoring can provide a useful opportunity to bring together the different people involved in the overall management to check that objectives are being followed, monitor progress of planned works, and identify any changed circumstances, including to the bowl barrow on the western side of the fence. This is also an opportunity to amend the work programme if necessary.

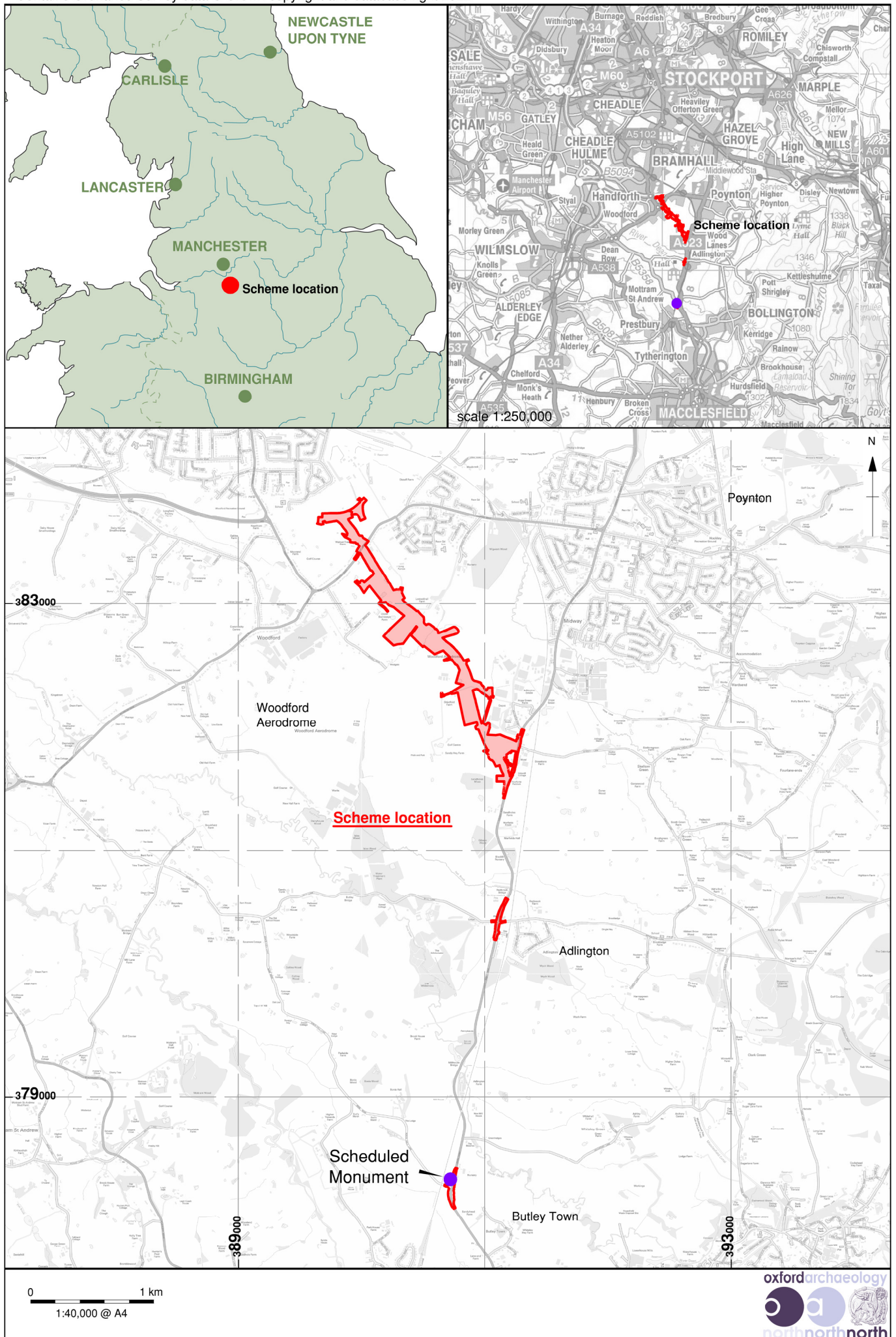


Figure 1: Site location

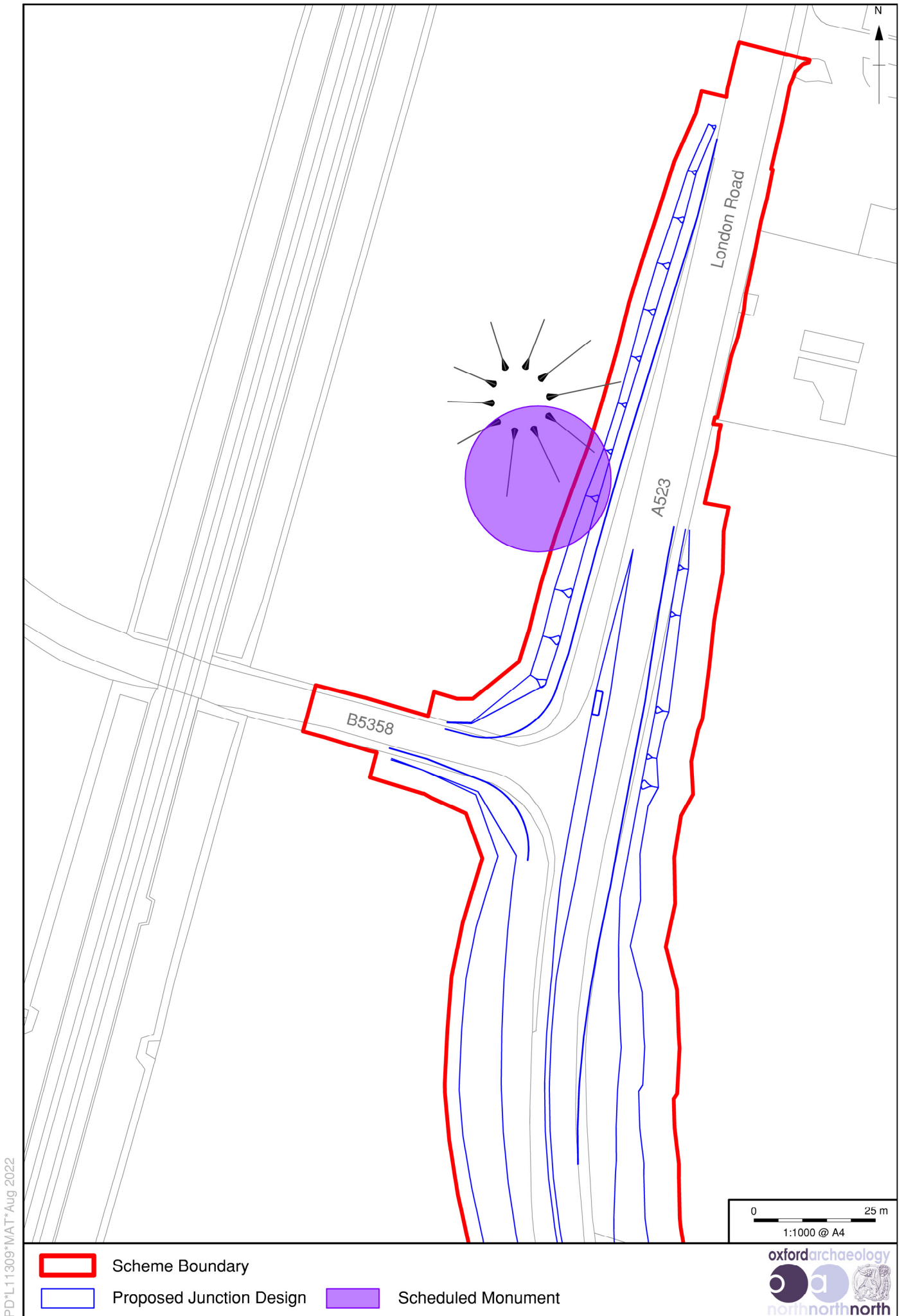
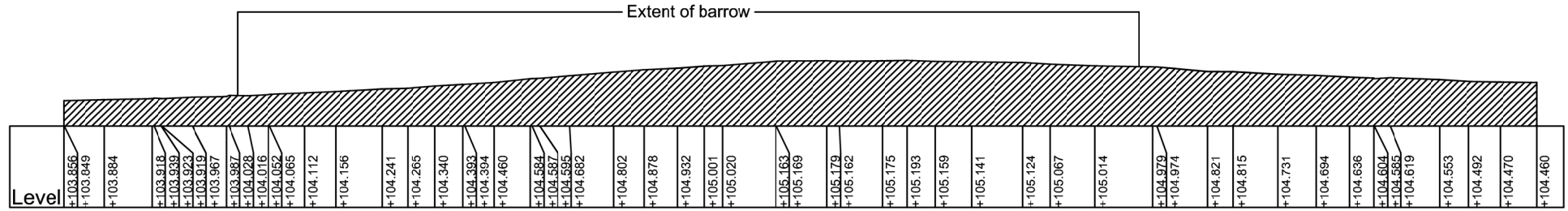


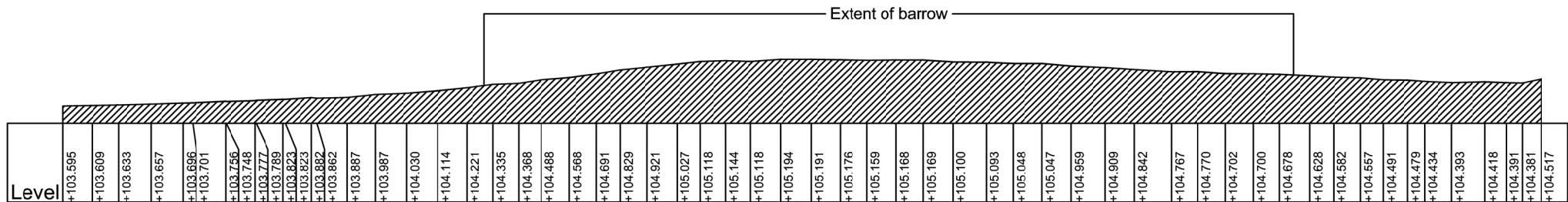
Figure 2: Hachure plot of earthwork survey and location of scheduled area (after Jacobs 2016)



Figure 3: Shaded model of earthwork survey (after Jacobs 2016)



Profile A-A: East-facing



Profile B-B: South-facing

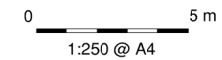
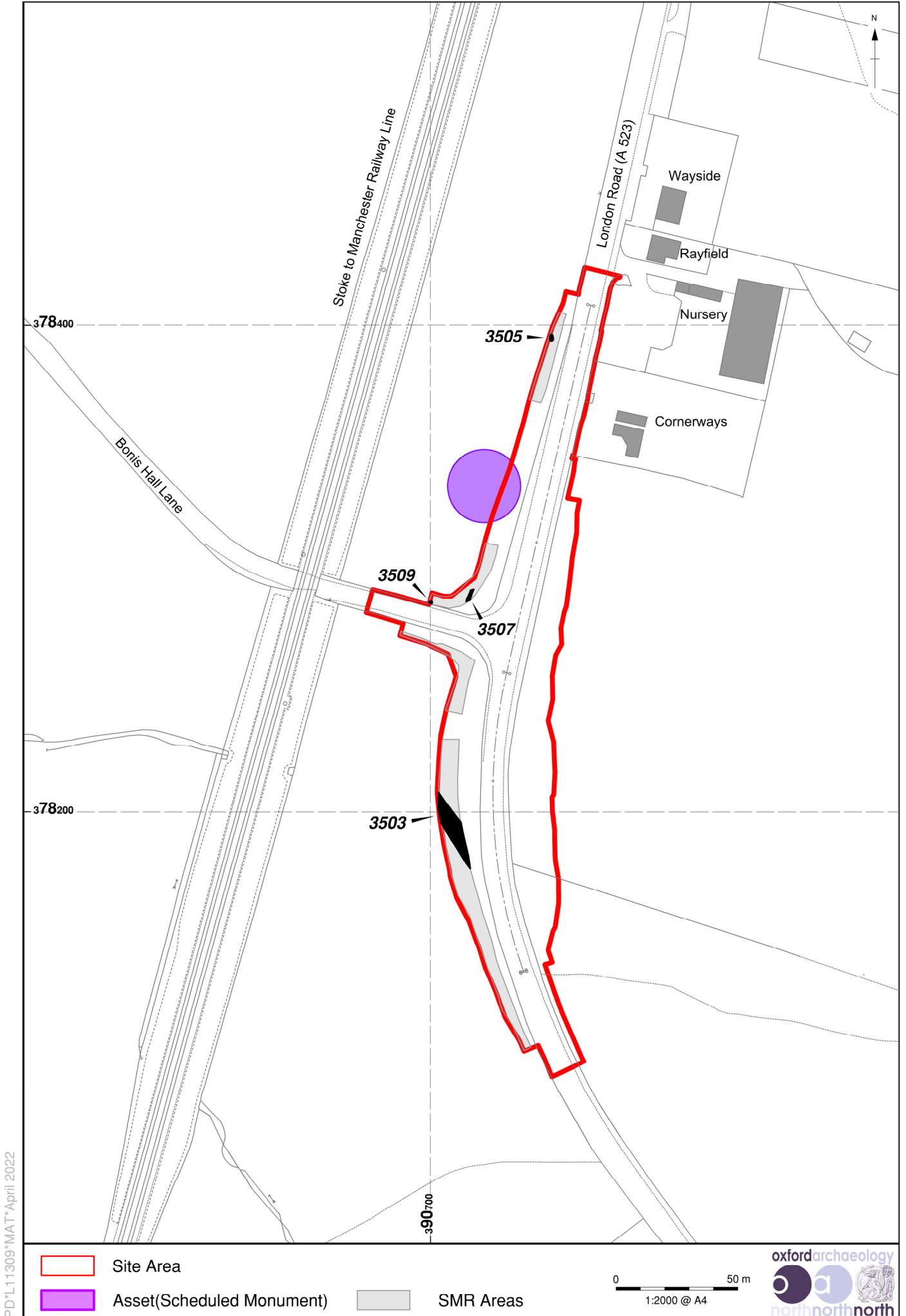
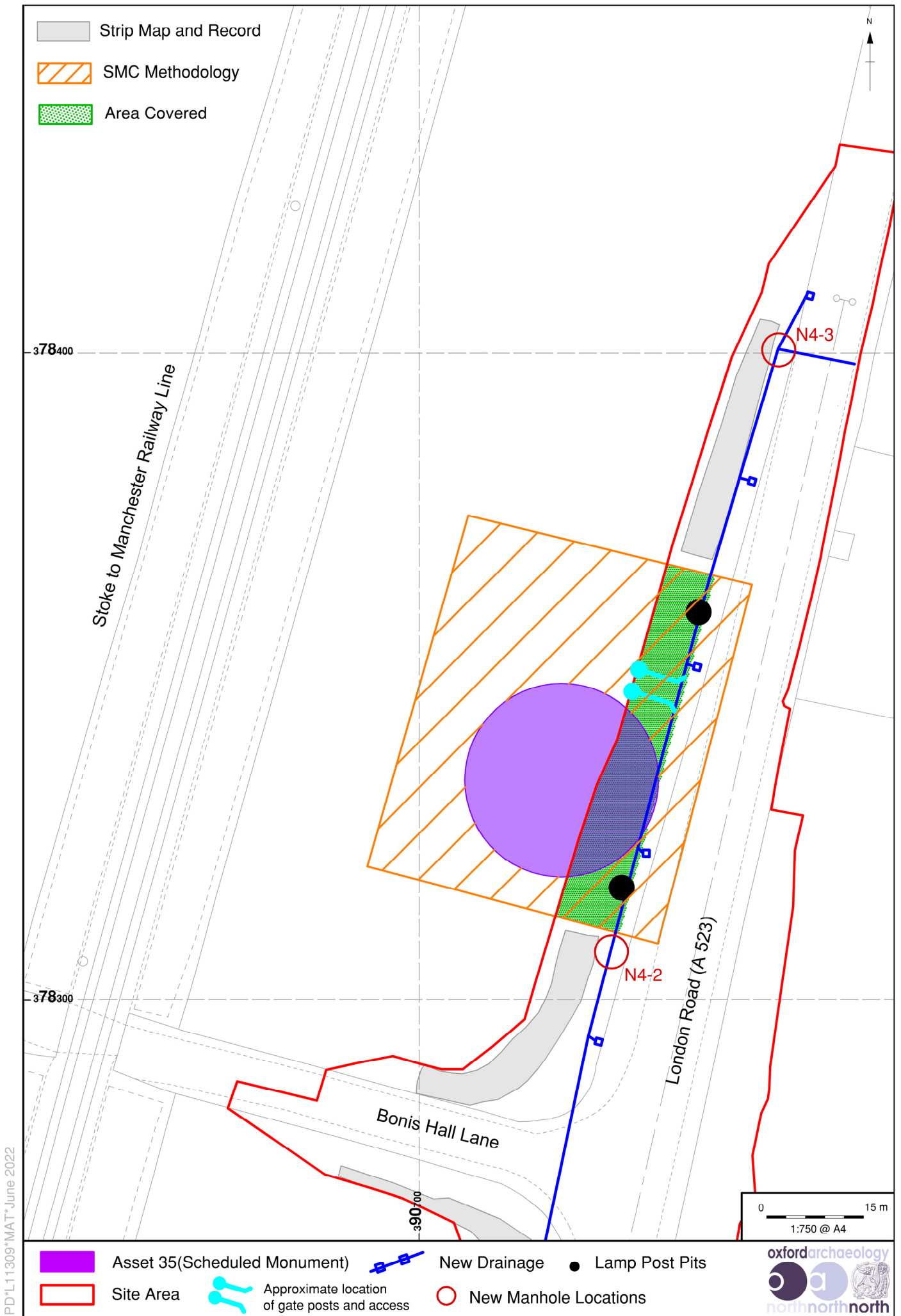


Figure 4: Profiles of the barrow (after Jacobs 2016)



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Figure 5: Location of SMR areas around Asset 35



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Figure 6: Watching brief elements monitored around Asset 35

APPENDIX A

WRITTEN SCHEME OF INVESTIGATION



A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East

Written Scheme of Investigation Archaeological Investigation

June 2020

Client: Graham Construction

Issue No: V. 2

OA Reference No: L11309

NGR: SJ 90712 78307



Client Name: Graham Construction
Document Title: A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East
Document Type: Written Scheme of Investigation
Grid Reference: SJ 90712 78307
Planning Reference: 16/4436M
Site Code: PRR20
Invoice Code: L11309

OA Document File Location: X:\Paul\Projects\Poynton_Relief_Road\WSI
OA Graphics File Location: X:\Paul\Projects\Poynton_Relief_Road\WSI\Figs

Issue No: V. 2
Date: June 2020
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A523 Poynton Relief Road, Asset 35 Bowl Barrow, Cheshire East

Written Scheme of Investigation for an Archaeological Investigation

Centred on SJ 90712 78307

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1 INTRODUCTION

1.1 Project details

1.1.1 Oxford Archaeology (OA) North has been commissioned by Graham Construction to undertake an archaeological investigation of the site of the proposed Poynton Relief Road, starting just south of Kitt's Moss, Stockport Metropolitan Borough Council (SMBC; NGR: SJ 89939 83800) and continuing south to just west of Butley Town, Cheshire East Council (CEC; NGR: 90754 78097).

1.1.2 In accordance with Planning Condition 41 set by SMBC (planning ref: DC/063174) and Condition 39 set by CEC (planning ref: 16/4436M), no development shall take place until the applicant or their agents or their successors in title have secured the implementation of a programme of archaeological works. As such, Arcadis Consulting (UK) Limited produced an Archaeological Mitigation Strategy (2020) for Graham Construction on behalf of CEC and SMBC. In consultation with the Greater Manchester Archaeological Advisory Service (GMAAS; engaged by SMBC to provide advice on cultural heritage matters) and Cheshire Archaeological Planning Advisory Service (CAPAS; engaged by CEC to provide advice on cultural heritage matters), and the Archaeological Mitigation Strategy outlined proposals for a programme of archaeological works to mitigate the impact of the scheme on heritage assets that lay within the road corridor. As currently envisaged, this work comprises:

- Stage 1: Approach and Overarching Written Scheme of Investigation (WSI)
- Stage 2A: Photographic Survey
- Stage 2B: Protection During Construction
- Stage 2C: Earthwork Survey
- Stage 2D: Archaeological Evaluation
- Stage 2E: Defined Targeted Archaeological Excavation
- Stage 2F: Detailed WSI for Scheduled Monument
- Stage 2G: Defined Strip, Map and Record Excavation (SMR)
- Stage 3A: Potential Targeted Archaeological Excavation
- Stage 3B: Scheduled Monument Watching Brief
- Stage 4A: Cultural Heritage Asset Management Plan
- Stage 4B: Post-Excavation Assessment
- Stage 5: Post-Excavation Analysis, Reporting and Archiving
- Stage 6: Publication

1.1.3 This document, compiled by OA North, comprises Stage 2f, detailed WSI for Scheduled Monument (often referred to as a Project Design in archaeological guidance documents (e.g. Historic England's *Management of Projects in the Historic Environment* (MoRPHE; 2014)). It presents detailed methodologies for the archaeological works to be undertaken in advance of and in association with the development in the vicinity of the Scheduled Bowl Barrow (NMR 1007379). It has been compiled in accordance with the requirements of the *National Planning Policy Framework* (NPPF; Ministry of Housing, Communities and Local Government 2018) and standard guidance produced by the Chartered Institute for Archaeologists (CIfA) and Historic England (HE), including:

- *The Code of Conduct* (ClfA 2019);
- *Management of Projects in the Historic Environment* (MoRPHE; HE 2014);
- *Understanding historic buildings; a guide to good recording practice* (HE 2016);
- *Standard and guidance for archaeological excavation* (ClfA 2014a);
- *Standard and guidance for archaeological watching brief* (ClfA 2014b)
- *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (ClfA 2014c).

1.1.4 In addition to the above documents, salient information and direction acquired through liaison with the local authority planning archaeologist to SMBC (GMAAS) and CEC (CAPAS) will be incorporated as appropriate, and the WSI will be submitted for approval by GMAAS and CAPAS and the Principal Archaeologist at Arcadis, who has been engaged by Graham Construction to supervise the archaeological works. GMAAS, CAPAS and Arcadis are henceforth referred to as 'the Monitoring Archaeologists'.

1.1.5 Archaeological investigation is a staged and often iterative process, where the early stages of work (such as those that seek to characterise the nature of heritage assets) can influence and feed into the approaches and methodologies utilised for succeeding stages (such as those that seek to mitigate the effects of development upon a characterised asset, i.e. targeted or detailed excavation). Accordingly, it is expected that there would be regular liaison with the client and the Monitoring Archaeologists, and that any amendments to the archaeological strategy arising from such liaison would be incorporated into this WSI. Thus, whilst the first iteration of the WSI will be a comprehensive document, written to cover a range of situations, it should be seen as a working document that would be periodically updated to reflect any evolution in the scope of works or changes to fine detail.

1.2 Location, topography and geology

1.2.1 The Scheduled Monument is located on the western side of the A523 London Road and north of Bonis Hall Lane (Fig 1). The part of the route which includes the scheduled monument is located on undulating pasture (Arcadis 2020).

1.2.2 The solid geology of this section of the route consists of Pebbly (gravelly) Sandstone of the Chester Formation, deposited during the Triassic Period (British Geological Survey (BGS) 2020). The superficial deposits are classified as Sand and Gravel, Glaciofluvial Sheet Deposits, deposited during the Devensian Period (*ibid*). The soils are classified as freely draining slightly acid loamy soils (Cranfield 2020).

1.3 Oxford Archaeology North

1.3.1 OA North, formerly the Lancaster University Archaeological Unit (LUAU), has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout northern England during the past 44 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.

- 1.3.2 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 a Chartered Institute for Archaeologists (CIfA) registered organisation, registration number 17, and all its members of staff operate subject to the CIfA Code of Conduct (2014a).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND AND POTENTIAL

2.1 Archaeological and historical background

- 2.1.1 A detailed synopsis of the known archaeological resource within the development area is presented in the Archaeological Mitigation Strategy (Arcadis 2020) and will not be reiterated here. A total of 52 heritage assets were identified within the study area, consisting of 19 archaeological remains, 23 historic buildings and 10 historic landscapes (*ibid*).
- 2.1.2 The Bowl barrow listing states that although there has been some spreading of the monument by past ploughing, the bowl barrow survives reasonably well and it is likely to contain undisturbed archaeological deposits within the mound and upon the old land surface beneath (Historic England 2020). Bowl barrows are specifically circular earthen mounds with profiles reminiscent of “inverted pudding bowls” (Field 2011), surrounded by a ditch and sometimes a bank but with no intervening berm (Jacobs 2016b). They generally date from the Late Neolithic to Early Bronze Age periods, with many examples belonging to the period 2,400-1,500 BC, and they are considered to be the most numerous form of round barrow (*ibid*). They are often located in prominent positions in the landscape, and many have acted as a focus for later burials, particularly dating to the early medieval period (Field 2011). Their prominence has led to their incorporation into field and parish boundaries (*ibid*).
- 2.1.3 A barrow was found at what is believed to be this location by men prospecting for gravel in 1809, and an account of the discovery was recorded by George Ormerod in volume 3 of his *History of the County Palatine and City of Chester* (1819). He describes the location rather loosely (*ibid*), the current location was fixed by the Ordnance Survey in 1873 (Jacobs 2016a). The Cheshire Historic Environment record notes that the finds are now lost.
- 2.1.4 A geophysical (magnetometer) survey was conducted in 2016 and covered approximately 11 hectares of agricultural land within the scheme boundary in order to provide additional information on the archaeological potential (Headland 2016). No anomalies of clear archaeological origin had been identified within the survey, although a cluster of ambiguous anomalies around the Scheduled Bowl Barrow (NMR: 1007379; Asset 35) were interpreted as being of possible archaeological origin (*ibid*). Historic England are of the opinion that undisturbed archaeological deposits may be preserved within the mound, and on the historic land surface beneath it.

3 PROJECT AIMS

3.1 General

3.1.1 The overall aims and objectives for the programme of archaeological works are:

- to further establish the extent and nature of the archaeological resource within the proposed development area for mitigation works;
- to mitigate potential impacts of the project through archaeological recording;
- to attempt to establish the date of any deposits encountered through the recovery of artefacts and ecofacts;
- to establish the environmental significance of deposits by targeted environmental sampling, processing, and assessment; and
- to place any archaeological discoveries into the local and, where appropriate, regional/national context. In addition, the implications of any such discoveries for our current understanding of the development of settlement in the area can be assessed.

3.2 Specific aims and objectives

3.2.1 The specific aims and objectives are:

- to generate an archive which will allow future research of the remains to be undertaken if appropriate; and
- to disseminate the results of the work in a format and manner proportionate to the significance of the findings, if necessary.

4 METHOD STATEMENT

4.1 Introduction

- 4.1.1 The following work programme is submitted in line with the aims and objectives summarised above, in accordance with the *Archaeological Mitigation Strategy* (Arcadis 2020), and with the guidance of the Chartered Institute for Archaeologists (CifA 2014a; 2014b; 2014c; 2014d). OA North’s general methodologies are presented in the *Appendices*. Chapter 8, Cultural Heritage, of the Environmental Statement which was produced for the project (Jacobs 2016b) stated that the mitigation of Asset 35 would be by preservation *in-situ*. As such, the key principals of this WSI will be to preserve the bowl barrow *in-situ*.
- 4.1.2 A specific Mitigation Strategy document had been produced by Jacobs (2016a) for preservation *in-situ* of Asset 35. As part of the production of the Mitigation Strategy, consultation between Jacobs and Historic England were held and it was ultimately decided that due to the small size and peripheral nature of the monument, that preservation of the monument *in situ* was suitable mitigation (*ibid*).

4.2 Key Roles, Responsibilities and Interfaces

- 4.2.1 All stakeholders must understand their responsibilities and roles.

Stakeholder	Key Responsibilities in respect of the works
Graham Construction	The Client: funding a programme of works that meets the requirements of the conditions of planning permission. Establish site access, including vegetation clearance and liaison with landowners and stakeholders. Assist with liaison with specialist contractors to undertake civils works that would facilitate, but otherwise lie outside the scope of archaeological works
Arcadis	Archaeological Advisor to Graham Construction: Monitor the archaeological works on behalf of Graham Construction to ensure that they are appropriate, efficient and meet the requirements of the conditions of planning permission
Cheshire Archaeology Planning Advisory Service (CAPAS)	Monitor the archaeological works on behalf of CEC, to ensure that they meet the requirements of the conditions of planning permission
OA North - general	Undertake programme of works in accordance with this WSI, while adhering to a safe system of working (under regular review with Graham Construction)
OA North Senior Project Manager	Manage the on-site and off-site archaeological investigation, analysis and reporting, including aspects of programming, logistics, staffing, liaison with client, contractors and the Monitoring Archaeologists, health and safety, cost management and archaeological methodology
OA North Operations Manager	Ensure that staffing requirements are met and to oversee the overall quality and cost-effectiveness of the archaeological work
OA Health and Safety Advisor	Provide advice and consultation to the Project manager
OA North Site Director	Oversee and co-ordinate the efficient undertaking of on-site fieldwork being undertaken by teams at several locations at once in order to meet the project programme
OA North Site Supervisors	Responsible for directing teams at individual investigation areas

OA North Specialists	In-house finds and palaeoenvironmental specialists (many of whom would be involved with the Poynton Relief Road to dispense advice and undertake specialist assessment and analyses
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Table 1: Summary of Key Stakeholders, Roles and Responsibilities

4.2.2 **Communications and monitoring:** all communications will follow an agreed protocol. Stakeholders will be notified when responses are required in response to specific matters. Monitoring of the works will be undertaken on behalf of Graham Construction by Arcadis, on behalf of CEC by CAPAS. Monitoring of the archaeological works may also be undertaken by the Historic England Regional Inspector of Monuments and Regional Science Advisor, who will be afforded reasonable access to the site, if required.

4.2.3 Monitoring meetings will be established with Graham Construction, the Monitoring Archaeologists, and OA North as required. The following is anticipated:

- at the beginning of the programme;
- during the fieldwork (the frequency of such visits will be dictated to some extent by the finds on site);
- at the completion of each fieldwork activity;
- during the design of the post-excavation programme to ensure that the proposed post-excavation works are appropriate, meet the relevant requirements and any other conditions, sufficiently resourced and adequately programmed; and
- at appropriate points during the post-excavation work.

4.2.4 In addition, the OA North Project Manager will:

- provide notification of all proposals, start and completion dates, as well as regular updates on findings and progress, and any requested changes to the programme and scope of the works. Particularly close liaison will be required prior to the commencement of works, in order to ensure that all health and safety measures and welfare facilities are in place;
- health and safety documents would be compiled well in advance of the fieldwork and will be distributed appropriately;
- maintain regular email contact to ensure that any significant results/matters during any stage of the works, are brought to the attention of Graham Construction as soon as is practically possible and in any event within 24 hours, to address specific issues, highlight findings, provide information, communicate when sites were completed and could be returned to the landowner, or to seek guidance;
- compile and circulate Monitoring Reports at appropriate intervals, which will present updates on archaeological finds and progress, including when sites were completed and ready for handover, health, safety and environment matters, other matters, such as logistics, correspondence and

communications; summaries of resources deployed to the project; works planned for the next period;

- compile Early warnings, with spreadsheets presenting details of projected costs and variations, at appropriate points;
- make applications for payment on a monthly basis to meet the project schedule. These could be clearly correlated with supporting information, including the timesheet data in the weekly monitoring reports, and the spreadsheets dealing with cost variations.

4.2.5 **Key Dates:** the key dates for the completion of the archaeological works will be established with Graham Construction.

4.2.6 **Interdependencies and programming:** reflect the following:

- no works can commence until this **Written Scheme of Investigation** has been compiled and approved (Stage 2f);
- compilation of **Risk Assessment and Method Statements (RAMS)** for each task will also commence upon commissioning. These will be submitted for approval and updated with new information throughout the works;
- it is expected that access arrangements for the different archaeological works will commence early in the programme.

4.2.7 **Access:** access arrangements will be made by Graham Construction, CEC and will be communicated to OA North. OA North will adhere to all such access arrangements, traffic plans, and agreed routes.

4.2.8 **Setting out:** Graham Construction will undertake setting out and service checking of the wider archaeological areas, including any associated access tracks, and also areas for spoil bunding and, where required, areas to be used for welfare and haul roads. Within those wider areas, OA North will set out any specific investigation areas (for example, individual targeted excavation trenches).

4.2.9 **Site set-up and welfare facilities:** the location of welfare facilities will be agreed with Graham Construction. It is expected that the welfare area will include:

- office and filing facilities for the archaeological site director and surveyor, enabling them to download and process survey data into GIS and print out the result plans;
- toilet, changing, drying and washing facilities adequate for four people, dependent on agreed scope of works and timetables with due consideration to the requirements of male and female staff;
- mess/rest room adequate for four people;
- storage for tools and finds;
- parking for works vehicles;
- transport between work and welfare areas will be by 4x4 vehicles fitted with metal bulkheads or with a crewcab/storage arrangement;

- additional facilities will be deployed where necessary in order to accommodate any expansion of the archaeological field team to meet the work programme.

4.2.10 **Fencing requirements:** where welfare and storage areas are not within secured areas (for example, within a farmer's yard or works compound), they will be secured with heras fencing. It is understood that Graham Construction will secure the works areas for intrusive archaeological investigation with heras or similar fencing. Within those areas, any areas of deeper excavation can be demarcated with netlon or hazard tape supported on plastic posts or road pins until they have been recorded and backfilled.

4.2.11 **General notes applicable to all fieldwork methodologies:** throughout the archaeological works, OA North staff will:

- as appropriate, liaise with Graham Construction and Arcadis;
- prepare and update RAMS;
- undergo Graham Construction project induction;
- in advance of each works component, be inducted on the OA North RAMS and briefed on their tasks, roles and responsibilities for that work component;
- understand and comply with access arrangements, agreed routes, exclusion zones;
- comply with project protocols and site rules;
- wear appropriate personal protective equipment, including branded OA North high-visibility clothing and carry project identification;
- where required to do so, present themselves for introduction to landowners/tenants.

4.3 Stage 2a: Photographic Survey

4.3.1 The aim of the investigations is to record the structures in appropriate detail so that there is a record of their appearance and characteristics, pending an adverse impact from the development. Where access can be granted and a view cannot be gained from nearby land, this will be clearly stated within the final report.

4.3.2 **Photography:** an indexed photographic archive will be produced utilising a high-resolution digital SLR camera (18 megapixel). It will record:

- the external appearance and setting of the structures, including a mixture of general shots and detailed views taken from perpendicular and oblique angles;
- a photo location plan, showing the positions from which the photographs were taken.

4.3.3 **Report:** following completion of the surveys and fieldwork, a report on the findings along with evidence of successful protection of assets during construction will be produced at Stage 5. The survey of Assets 35 will be incorporated into the Archaeological Report.

4.4 Stage 2b: Protection During Construction

- 4.4.1 The Scheduled Monuments Consent clearly states that the Scheduled Bowl Barrow (Asset 35) should be adequately protected and signed during all stages of the works, including restrictions on the operation of equipment and machinery, vegetation clearances and erection of fencing. The Mitigation Strategy (Jacobs 2016a) states how the monument will be preserved *in-situ* throughout the construction and operation phases.
- 4.4.2 **Communication:** all personnel involved in the construction phase of works will be briefed in the nature and sensitivity of the barrow, specifically its legal status as a Scheduled Monument and the measures which are being taken to protect it during construction. Prominent signage will be displayed, stating that no construction activity is to proceed in the protected area without authorisation. The signs will also include information on the barrows legal status and the measures being taken to protect it during construction. The signs will be affixed to temporary fences or barriers demarcating the protected area, prior to the erection of the permanent boundary fences.
- 4.4.3 **Fencing:** the lines of the temporary fencing (solid blue line) and the permanent highway boundary fence (red dashed line) are shown on figure 2. The line of the temporary fence is shown running through the protected area, this fencing should be heras-style security fencing, so as not to impact upon the monument. The permanent highway boundary is likely to involve timber uprights driven to a depth of 0.7m below the existing ground level (Highways England 2016). If foundation pits are required to be excavated within the protected area, their excavation will be monitored by a suitably qualified and experienced archaeologist to ensure archaeological remains are identified and recorded, as per OA's standard recording methodologies (*Appendix A*).
- 4.4.4 **Vegetation Clearance:** before the commencement of the construction works, trees and shrubs associated with existing hedges will be removed using hand-held power tools, this will avoid any accidental damage to buried archaeological remains. This work will also be carried out during a dry period to minimise the risk of damage to the topsoil and underlying archaeological remains. All works will be undertaken under supervision by a suitably qualified and experienced archaeologist, they will ensure that the works are undertaken to this methodology and that if any archaeological remains are identified they will record them, as per OA's standard recording methodologies (*Appendix A*).
- 4.4.5 **Separator Layer:** liaison with the client has suggested that the construction works will be undertaken from the existing carriageway, rather than requiring to cover the monument to allow the construction works to be undertaken. However, if the monument is to be covered during construction works, a geotextile separator layer shall be laid directly onto the *in situ* topsoil throughout the protected area with an overlap between the sheets of 0.5m. The use of a geotextile separator will reduce the degree of ground preparation required for construction of the earthwork embankment, and also prevent the mixing of embankment material with the underlying formation layers.

- 4.4.6 **Earthwork Construction:** all vehicle movements across the protected area will be prohibited, which as stated above will be demarcated by fencing and signage. If the monument is to be covered, to protect it during the construction works, the sub-grade fill material will be end-tipped by dump truck and spread in layers by a 360° tracked mechanical excavator working from the existing carriageway. End-tipping onto the geotextile separator layer will minimise damage to the protector layer and the underlying archaeological remains, then end-tipping onto previously laid material once a start area had been formed. To bridge areas of soft ground, and reduce the potential of compaction of the below ground, a load spreading geogrid may be installed above the geotextile separator layer.
- 4.4.7 The plant used for the compaction of the fill material will be carefully selected to minimise the risk of accidental damage to the monument and also to minimise the potential for avoidable compaction of the underlying soils. It is considered that a tandem roller of between 2,300 kg and 2,900 kg would be sufficient to achieve an acceptable level of compaction without harming the buried archaeological remains.
- 4.4.8 **Drainage:** it is anticipated that a new drainage system will be required and will replicate the existing system, being constructed within the fill material of the highway earthwork. This would avoid the need for excavation within the protected area as well as ensuring limited change to the local groundwater regime.
- 4.4.9 **Planting works:** following completion of the construction works, the earthwork will be covered with a layer of topsoil, which shall be sown with grass seed of a similar mix to that already present on the site. A hedgerow of native plants will also be planted within the permanent highway boundary fence. However, no planting will take place within the protected area. The setting out and preparation of the hedgerow and tree planting works will be monitored by a suitably qualified and experienced archaeologist, this will ensure compliance with this agreed methodology.
- 4.4.10 **Monitoring:** all construction works involving ground disturbance, or the potential to cause accidental damage to the buried archaeological remains, within the protected area shall be monitored by a suitably qualified and experienced archaeologist to ensure compliance with the proposed methodology. These works will include, but not be limited to: erection of temporary and permanent fencing, vegetation clearance, installation of geotextile separator, deposition and compaction of fill material and the planting of hedgerow and trees.

4.5 Stage 2g: Defined Strip, Map and Record Excavation (SMR)

- 4.5.1 The methodology for Stage 2g SMR, has already been detailed in the Overarching WSI, however, it will be repeated here for completeness. SMR will be undertaken at one location, land affected by the A523/Bonis Hall Lane junction works in the areas around the Scheduled Bowl Barrow (Asset 35; Fig 2). This is due to the high potential for further archaeological remains to be present in this area, outside of the Scheduled Monument boundary.
- 4.5.2 The aim of the investigation is to expose the extent of archaeological remains within the development footprint, to map those remains, characterise them and, where appropriate, establish and then enact, a programme of more detailed investigation in

agreement with the Client and the Monitoring Archaeologists. By the completion of the works, the remains will have been investigated and recorded in a manner that allows them to be understood, allowing development groundworks to proceed.

- 4.5.3 **Stripping and ground reduction:** of the uppermost levels of modern topsoil and subsoil down to the top of the first significant archaeological level will be undertaken by an appropriately sized 360 mechanical excavator fitted with a toothless ditching bucket, operating under the direct supervision of a suitably experienced archaeologist. Topsoil will be removed in a series of spits no greater than 0.1m thick, but the final 'take' down to the top of the uppermost archaeological horizon or the surface of the natural substrate (whichever is encountered first) will aim to leave a smooth, even and clean stripped surface, with a minimum of smearing, polishing and rutting, across a wide area which can then be inspected by the attendant archaeologist for any features of archaeological interest. As far as practicable, the excavated arisings will be inspected in order to collect any topsoil finds. Where there is a subsoil interface horizon above the surface of the natural drift geology, this too will be removed by machine, ensuring that the final 'take' leaves the uppermost surface of the drift geology smooth, even and clean, with a minimum of smearing, polishing and rutting. Topsoil and subsoil will be removed and stored separately adjacent to the excavation area.
- 4.5.4 Spoil from the excavation will stored in designated stockpiles, ready to be returned to the excavation area upon completion of the archaeological works. Fitted with appropriate-sized toothless buckets, the machine will be used to carefully define the extent of any surviving post-medieval structures and other remains, and to remove demolition and overburden deposits between any post-medieval structural remains. Thereafter, structural remains will be cleaned manually to define their extent, nature, form and function.
- 4.5.5 **Pre-excavation plan:** an accurate, detailed survey plan of the three-dimensional position of archaeological structures and features will be generated through, as appropriate, dGPS, TST and/or a mosaic of overhead photography tied to surveyed fixed points and synthesised in an appropriate computer programme. This process will generate scaled plans within AutoCAD or GIS software, which will then be subject to manual survey enhancement, annotation on site and additional detailed survey as appropriate. The drawings will be generated at an accuracy appropriate for 1:20 scale, but can be output at any scale required.
- 4.5.6 **Intrusive sample investigation:** the aim of the sample investigation is to characterise the nature of the remains revealed by the programme of stripping. Accordingly, an allowance has been made for the excavation of ten interventions per hectare of stripped ground. Where there is a very low density of archaeological remains, the sample excavation may be sufficient to investigate and record the features in enough detail to mitigate the impact of the development. Otherwise, the sample excavation should yield sufficient information to characterise the archaeological remains and to inform proposals for a programme of more detailed excavation.
- 4.5.7 A selection of accessible uncontaminated features of archaeological significance will be sample-excavated in a series of slots. Unless agreed otherwise with the Monitoring Archaeologists, all investigation of intact archaeological deposits will be exclusively

manual and, where possible, will be completely excavated down to naturally occurring deposits or impact depth, whichever is encountered first. Following characterisation and recording, a machine would be used to remove extensive homogenous deposits, or those that could not be effectively removed by hand.

- 4.5.8 All investigation slots through features that aim to cut across the profile of the feature will be at least 1m wide, unless that would preclude examination of termini or relationships with other features. Following standard OA health and safety procedures, slots will be initially excavated to a maximum safe depth of 1m below the surface of the surrounding substrate, or to a more shallow depth, dependent on the stability of that material (information relating to deep excavation will be included within the site-specific Health and Safety RAMS). Where the bottom of the feature is not reached within a safe depth, the sections will be recorded, and any soil samples taken, and the top of the slot will be widened using an appropriate mechanical excavator. Deeper hand excavation will then resume, repeating the process as necessary.
- 4.5.9 General methodologies for recording, palaeoenvironmental sampling, finds recovery, human remains and treasure are outlined in the *Appendices* and would be utilised as appropriate to meet the aims and scope of the SMR.
- 4.5.10 **Monitoring:** depending on the results, CAPAS may carry out monitoring visits to inspect the fieldwork. On completion, a site meeting between the Monitoring Archaeologists is likely to be required to agree completion of the SMR. Once permission has been granted by CAPAS, the SMR area will be released for construction. As SMR will be taking place in four locations around the junction, if required to expedite the construction programme, efforts will be made to release individual areas for construction while archaeological works continue in other areas.
- 4.5.11 **Reporting:** will follow OA North's general methodologies presented in *Appendix F*.

4.6 Stage 3b: Scheduled Monument Watching Brief

- 4.6.1 A watching brief adhering to the SMC methodology, will be required in the vicinity of Asset 35, in areas demarcated for preservation *in situ*. All construction works involving ground disturbance within the protected area will be monitored by a suitably qualified and experienced archaeologist to ensure compliance with the proposed methodology. It is expected that at least one archaeologist will be deployed to monitor the works. A daily record will be maintained throughout the watching brief, recording the areas being worked upon, the nature and amount of plant being used and to what purpose, and the number of archaeologists deployed.
- 4.6.2 In the unlikely event that archaeological remains are discovered during the watching brief, localised construction activities will be paused (to a reasonable extent to enable the archaeologists to work), with a suitable buffer zone, fencing off the areas with high visibility netlon fencing supporting on plastic poles. Methodologies for recording, palaeoenvironmental sampling, finds recovery, human remains and treasure, outlined in the *Appendices* and would be utilised as appropriate to meet the aims and scope of the investigation.

5 PROJECT SPECIFIC REPORTING AND ARCHIVE METHODOLOGY

5.1 Programme

- 5.1.1 The reporting will follow OA North's standard methodology outlined in *Appendix F*. There are three stages relating to the post-excavation works, Stage 4a Cultural Heritage Asset Management Plan; Stage 4b Post-Excavation Assessment; Stage 5 Post-Excavation Analysis, Reporting and Archiving; and Stage 6 Publication.
- 5.1.2 Copies of the reports will be provided in Adobe Acrobat (.pdf) format to the Client and the Monitoring Archaeologists for review and approval. Once approved, a digital copy of the report will also be provided to the Historic Environment Record Officers for CAPAS, for inclusion within the Historic Environment Record.

5.2 Stage 4a: Cultural Heritage Asset Management Plan

- 5.2.1 Following completion of the watching brief and construction in the vicinity of the Scheduled Bowl Barrow (Asset 35), a Cultural Heritage Asset Management Plan (CHAMP) will be produced, it will then be reviewed by the Client and the Monitoring Archaeologists. The CHAMP will be submitted to the Client as part of the 'as-built' information.
- 5.2.2 The CHAMP will include information on the long-term management of the Scheduled Monument, including:
- a description and brief overview of the archaeological background of the monument;
 - legal status;
 - current condition, including the results of the photographic survey (Stage 2a), the means of its preservation *in situ* (Stage 2b), and the results of the watching brief (Stage 3b);
 - aims and objectives of the management plan; and
 - proposals for monitoring and review of both its condition and the effectiveness of the CHAMP in maintaining preservation *in situ*.

5.3 Stage 4b: Post-Excavation Assessment

- 5.3.1 An assessment of the archive will be undertaken, and the resource requirements for analysis (Stage 5) and publication (Stage 6) will be defined, in accordance with the guidelines of MAP2 (English Heritage 1991). This will involve an assessment of the dataset, followed by a review of the project archive to establish the potential for further analysis. The assessment will take place in close consultation with the client, and the format for the final report will also be agreed at this stage of the work. The Harris Matrix, largely produced during the excavation programme, will be completed and checked as part of the assessment. The assessment will involve the compilation of a brief archive report, outlining the significance of the stratigraphic, artefactual and environmental evidence, and presenting recommendations for further analysis, as

appropriate. The report will also include a short summary of the stratigraphic history of the site.

5.3.2 The project assessment will include an updated project specification, which will comprise a full project design for a programme of full analysis and publication, and will be in accordance with MAP2 (English Heritage 1991). This document will be submitted to the client within six months of the completion of the fieldwork.

5.3.3 The report will include a copy of this WSI, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme and present an assessment of the history of the site. The report will include the following:

- a title page detailing site address, National Grid Reference (NGR), author/originating body, client's name and address;
- full content's listing;
- a non-technical summary of the findings of the fieldwork;
- a description of the archaeological background;
- a detailed account of the historical development of the site, as appropriate;
- a description of the topography and geology of the site;
- a description of the methodologies used during the fieldwork;
- a description of the findings of the fieldwork;
- detailed plans of the archaeological areas, showing the archaeological features exposed.
- interpretation of the archaeological features exposed and their context within the surrounding landscape;
- specialist analysis reports on the artefactual/ecofactual/industrial remains from the site;
- appropriate photographs of specific archaeological features. Appropriate photographs of specific finds of interest will also be included, if needed;
- a consideration of the importance of the archaeological remains present on the site in local, regional and national terms;
- a complete bibliography of sources consulted;
- appendices to include a detailed list of all recorded contexts, all retrieved finds, all samples taken, all drawings produced and all photographs taken;
- illustrative material will include a location map, site map, site plans and pertinent photographs.

5.4 Stage 5: Post-Excavation Analysis, Reporting and Archiving

5.4.1 An Archaeological Report will be produced detailing the results of the earthwork surveys, archaeological fieldwork, and the photographic surveys of archaeological

assets. The reports will be issued to the archaeological consultant, principal contractor and the client for their review, prior to submission to CAPAS.

- 5.4.2 An appropriate programme of analysis should then be undertaken to prepare a research archive, as detailed in Appendix 6 of MAP2; the precise scope for this element will be defined within the updated project specification. Following the analysis of the excavation results, a report will be written which will present, summarise, and interpret the results of the programme and will incorporate specialist reports on artefact assemblages and environmental reports. It will include an index of archaeological features identified in the course of the project, with an assessment of the site's development. It will incorporate appropriate illustrations, including copies of the site plans and section drawings all reduced to an appropriate scale. The archive report will be submitted within 12 months of the completion of the fieldwork.
- 5.4.3 The archive will conform to guidelines described in the Management of Research Projects in the Historic Environment (MoRPHE; Historic England 2006), ClfA's Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives (ClfA 2014c). The project archive represents the collation and indexing of all data and material gathered during the course of the project. The paper and digital archive will be deposited with the relevant record offices following completion of the project. An OASIS summary will also be produced, with a copy of the final reports being issued to the Historic Environment Record. A summary of OA North's general approach to documentary archiving can be found in *Appendix H*.

5.5 Stage 6: Publication

- 5.5.1 Depending upon the results of the fieldwork there may be a requirement for the publication of all or part of the findings of the archaeological work. The scope of the publication will be agreed between the Archaeological Consultant, the Principal Contractor and the Client, following this agreement, the scope of the publication will be agreed with CAPAS.

5.6 Specialist input

- 5.6.1 OA has a large pool of internal specialists, as well as a network of external specialists with whom OA have well established working relationships. A general list of these specialists is presented in *Appendix G*; in the event that additional input should be required, an updated list of specialists can be supplied.

6 HEALTH AND SAFETY

6.1 Roles and responsibilities

- 6.1.1 The Senior Project Manager, Paul Dunn, has responsibility for ensuring that safe systems of work are adhered to on site. Elements of this responsibility will be delegated to the Project Officer or Supervisor, who implements these on a day to day basis. Paul Dunn and the Project Officer or Supervisor are supported by OA North's Health and Safety Advisor, Fraser Brown.
- 6.1.2 The Director with responsibility for Health and Safety at OA is Dan Poore Tech IOSH (Chief Business Officer).

6.2 Method statement and risk assessment

- 6.2.1 A summary of OA's general approach to health and safety can be found in *Appendix I*. A site-specific risk assessment and method statement has also been undertaken and approved and will be kept on site, along with OA's standard Health and Safety file, which will contain all relevant health and safety documentation. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant Health and Safety documentation will be available on site at all times.

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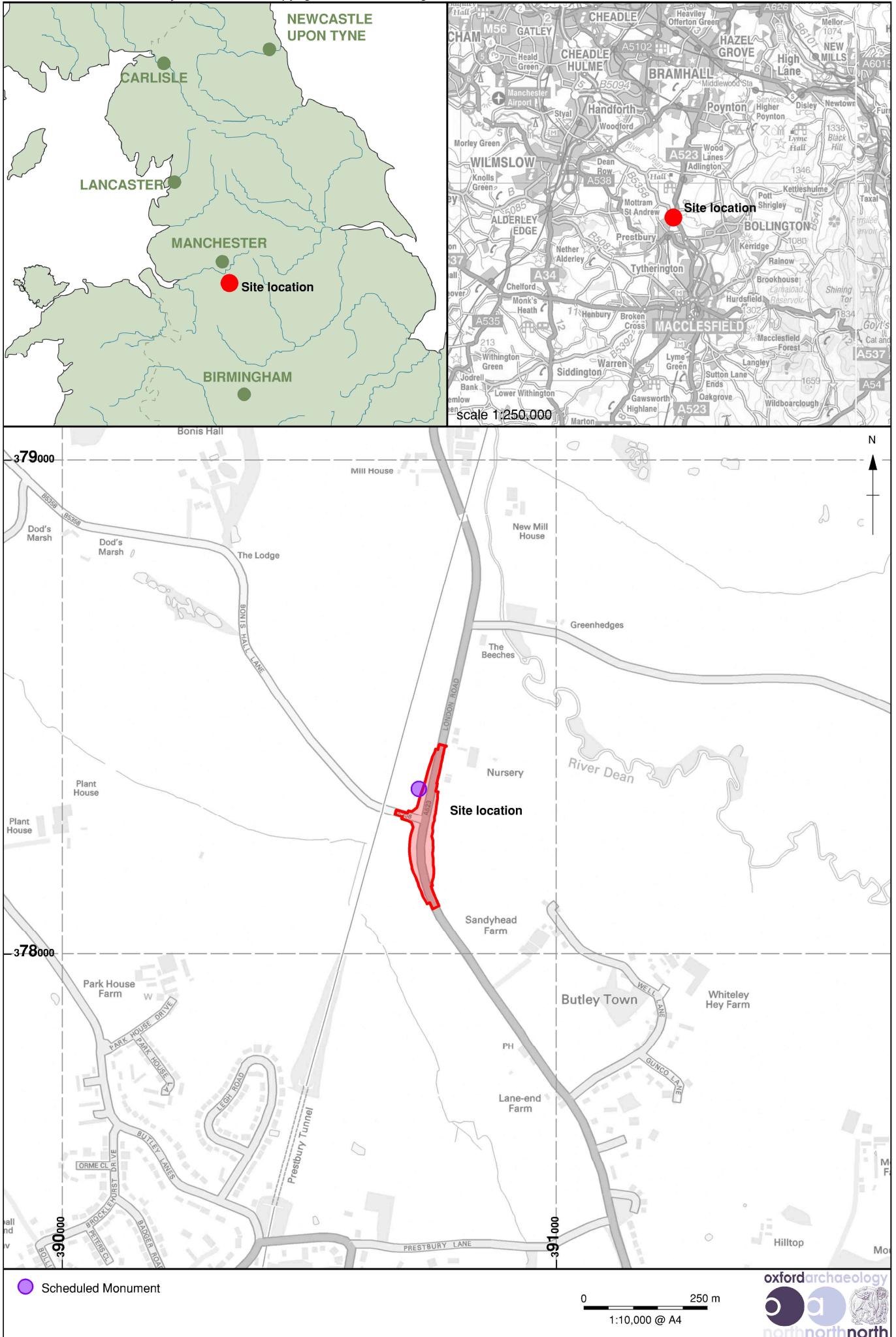


Figure 1: Site location

OA STANDARD FIELDWORK METHODOLOGY APPENDICES

The following methods and terms will apply, where appropriate, to all OA fieldwork unless varied by the accompanying detailed Written Scheme of Investigation.

Copies of all OA internal standards and guidelines referred to below are available on request.

APPENDIX A GENERAL EXCAVATION AND RECORDING METHODOLOGY

A.1 Standard methodology – summary

Mechanical excavation

- A.1.1 An appropriate mechanical excavator will be used for machine excavation. This will normally be a JCB or 360° tracked excavator with a 1.5 m to 2 m wide toothless ditching bucket. For work with restricted access or working room a mini excavator may be used.
- A.1.2 All mechanical excavation will be undertaken under direct archaeological supervision.
- A.1.3 All undifferentiated topsoil or overburden of recent origin will be removed down to the first significant archaeological horizon, in successive, level spits.
- A.1.4 Following mechanical excavation, all areas that require examination or recording will be cleaned using appropriate hand tools.
- A.1.5 Spoil heaps will be monitored in order to recover artefacts to assist in the analysis of the spatial distribution of artefacts. Modern artefacts will be noted but not retained.
- A.1.6 After recording, evaluation trenches and test pits will usually be backfilled with excavated material in reverse order of excavation, and compacted as far as is practicable with the mechanical excavator. Area excavations will not normally be backfilled.

Hand excavation

- A.1.7 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.
- A.1.8 Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.
- A.1.9 In the case of evaluations, it is not necessarily the intention that all trial trenches will be fully excavated to natural stratigraphy, but the depth of archaeological deposits across the site will be assessed. The stratigraphy of a representative sample of the evaluation trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation in situ.

Recording

- A.1.10 Written descriptions will be recorded on proforma sheets comprising factual data and interpretative elements.
- A.1.11 Where stratified deposits are encountered a Harris matrix will be compiled during the course of the excavation.
- A.1.12 Plans will normally be drawn at 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Detailed plans will be at an appropriate scale. Burials will be drawn at scale 1:10 or recorded using geo-referenced digital photography.
- A.1.13 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.
- A.1.14 A register of plans will be kept.
- A.1.15 Long sections of showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.
- A.1.16 A register of sections will be kept.
- A.1.17 Generally, all sections will be tied in to Ordnance Datum.
- A.1.18 A full photographic record, illustrating in both detail and general context the principal features and finds discovered will be maintained. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work.
- A.1.19 Photographs will be recorded on OA Photographic Record Sheets.

A.2 Relevant industry standards and guidelines

- A.2.1 The Chartered Institute for Archaeologists Standard and Guidance notes relevant to fieldwork are:
- Standard and Guidance for Archaeological Field Evaluation
 - Standard and Guidance for Archaeological Excavation
 - Standard and Guidance for an Archaeological Watching Brief.
- A.2.2 These will be adhered to at all times.

A.3 Relevant OA manual and other supporting documentation

- A.3.1 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming).
- A.3.2 Further guidance is provided to all excavators in the form of the OA 'Fieldwork Crib Sheets - a companion guide to the Fieldwork Manual'. These have been issued ahead of formal publication of the revised Fieldwork Manual.

APPENDIX B GEOMATICS AND SURVEY

B.1 Standard methodology - summary

- B.1.1 The aim of OA methodology is to provide comprehensive survey cover of all investigation areas. Additionally, it is designed to provide coverage for any areas, beyond the original scope of the project, which arise as a result of further work. It provides digital plans of all required elements of the project and locates them within an overall grid.
- B.1.2 It also maintains all necessary survey data and ensures that the relevant information is copied into the primary record, in order to ensure the integrity of the project archive. Furthermore, it ensures that all core data is securely stored and backed up. It establishes accurate project reference systems utilising a series of control stations and permanent base lines.
- B.1.3 The survey will be conducted using a combination of Total Station Theodolite (TST) survey utilising Reflectorless Electronic Distance Measurement (REDM) where appropriate, hand-measured elements and GPS (Global Positioning System), or photogrammetry.
- B.1.4 Before the main work commences, a network of control stations will be laid out encompassing the area. Control stations will be tied in to known points or existing features using rigorous metric observation. The control network will be set in using a TST to complete a traverse or using techniques as appropriate to ensure sufficient accuracy. A GPS, or other appropriate method, will be used to orientate the control network to National Grid or other recognised coordinate system.
- B.1.5 All control stations will be checked by closed traverse and/or GPS, as appropriate. The accuracy of these control stations will be accessed on a regular basis and re-established accordingly. All stations will be recorded on Survey Control Station sheets.
- B.1.6 Each control station will be marked with a PGM (Permanent Ground Marker). Witness diagrams will include the full 3-D co-ordinates generated, a sketch diagram and measurements to at least three fixed details, written description of the mark and a photograph of the control point in its environs.
- B.1.7 Prior to entry into the field all equipment will be checked, and all pre-survey information will be logged onto the field computer and uploaded onto survey equipment as appropriate. The software in the field computer will be verified and all cabling between the GPS and/or TST and computer will be checked. Prior to conducting the survey, the site will be reconnoitred for locations for a viable control network and check the line of sight and any possible hindrance to survey. Daily record sheets will be kept to record daily tasks and conditions.
- B.1.8 All spatial data will be periodically downloaded onto a field computer, and backed up onto CD, or DVD. It will be cleaned, validated and inspected.
- B.1.9 All survey data will be documented on daily survey record sheets. Information entered on these sheets includes key set up information (Instrument height etc.) as well as daily variables and errors/comments. All survey data will be digitally recorded in a raw

format and translated during the download process this shall allow for any errors to be cross referenced with the daily survey record and corrected accordingly.

- B.1.10 A weekly summary of survey work will be produced to access development and highlight problems. This information also will be recorded on the weekly survey journal. Technical support for the survey equipment and download software shall be available at all times. In those instances, where sites are remotely operated, all digital data will be backed up regularly and a copy returned to Oxford on a weekly basis.
- B.1.11 A site plan will initially be created by a rapid survey of relevant archaeological features by mapping their extent using a combination of TST and GPS. This will form the basis for deciding excavation strategy and will be updated as the excavation clarifies the extent of, and relationships between, archaeological features.
- B.1.12 Excavated archaeological interventions and areas of complex stratigraphy will be hand drawn. At least two Drawing Points (DPs) will be set in as a baseline and measurements taken off this by tape and offset. The hand drawn plans will be referenced to the digitally captured pre-site plan by measuring in the DPs with a TST or GPS. These hand drawn elements will then be scanned in, geo-referenced using the DPs as reference points and digitised following OA's digitising protocols. For further details on hand planning procedure please refer to the fieldwork guidelines.
- B.1.13 Where appropriate photogrammetry or rectified photography may be used to record standing structures or burials. This will be carried out in line with Standard OA procedures for photogrammetry or rectified photography.
- B.1.14 Survey data recorded in the field will be downloaded using appropriate downloading software, and saved as an AutoCAD Map DWG file, or an ESRI Shapefile. These files will be regularly updated and backed up with originals being stored on an OA server in Oxford.
- B.1.15 All drawings will be composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and OA Geomatics protocols. Once created, additional GIS/CAD work will normally be carried out at the local OA central office or at on-site remote locations when appropriate. Support for all GIS/CAD work will be available from OA's Oxford Office during normal office hours. The aim of the GIS/CAD work is to produce workable draft plans, which can be produced as stand-alone products, or can be readily converted to GIS format. Any hand-drawn plans will be scanned and digitised on site in the first instance. Subsequent plans will be added to the main drawing as it develops.
- B.1.16 All plan scans will be numbered according to their plan site number. Digital plans will be given a standard new plan number taken out from the site plan index.
- B.1.17 All digital data will be backed up incrementally on CD or DVD. On each Friday the entire data directory will be backed up and returned to Oxford where it will be copied onto the OA projects server. Each CAD drawing will contain an information layout which will include all the relevant details appertaining to that drawing. Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all raw measurements will be made available as hard copy for archiving purposes.

B.2 Relevant industry standards and guidelines

- B.2.1 Historic England (2007) Understanding the Archaeology of Landscapes A Guide to Good Recording Practice.
- B.2.2 Historic England (2015), Metric Survey Specifications for Cultural Heritage.
- B.2.3 Historic England (2016), Understanding Historic Buildings A Guide to Good Recording Practice.
- B.2.4 Historic England (2017), Photogrammetric Applications for Cultural Heritage. Guidance for Good Practice.

B.3 Relevant OA manual and other supporting documentation

- B.3.1 OA South Metric Survey, Data Capture and Download Procedures
- B.3.2 OA South Digitising Protocols
- B.3.3 OA South GIS Protocols
- B.3.4 These will be superseded by the OA South Geomatics Manual (in progress).

APPENDIX C ENVIRONMENTAL EVIDENCE

C.1 Standard methodology – summary

- C.1.1 Different environmental and geoarchaeological sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Where possible an environmental specialist(s) will visit the site to advise on sampling strategies. Sampling methods will follow guidelines produced by Historic England and Oxford Archaeology. A register of samples will be kept. Specialists will be consulted where non-standard sampling is required (e.g. TL, OSL or archaeomagnetic dating) and if appropriate will be invited to visit the site and take the samples.
- C.1.2 Geoarchaeological sampling methods are site specific, and methodologies will be designed in consultation with the geoarchaeological manager on a site by site basis.
- C.1.3 Bulk soil samples, where possible of 40 litres or 100% of a deposit if less is available, will be taken from potentially datable features and layers for flotation for charred plant remains and for the recovery of small bones and artefacts. Larger soil samples (up to 100L) may be taken for the complete recovery of animal bones, marine shell and small artefacts from appropriate contexts. Smaller bulk samples (general biological samples) of 10-20 litres will be taken from any waterlogged deposits present for the recovery of macroscopic plant remains and insects. Series of incremental 2L samples may be taken through buried soils and deep feature fills for the recovery of snails and/or waterlogged plant remains, depending on the nature of the stratigraphy and of the soils and sediments. Columns will be taken from buried soils, peats and waterlogged feature fills for pollen and/or phytoliths, diatoms, ostracods and foraminifera if appropriate. Soil samples will be taken for soil investigations (particle size, organic matter, bulk chemistry, soil micromorphology etc.) and possibly for metallurgical analysis in consultation with the appropriate specialists.
- C.1.4 Bulk samples from dry deposits will be processed by standard water flotation using a modified Siraf-style machine and meshes of 0.25mm (flot) and 0.5 or 1mm depending on sediment type and like modes of preservation (residue). Heavy residues will be wet sieved, air dried and sorted. Samples taken exclusively for the recovery of bones, marine shell or artefacts will be wet sieved to 2mm. Waterlogged samples (1L sub-sample) and snail samples (2L) will be processed by hand flotation with flots and residues collected to 0.25mm (waterlogged plants) and 0.5mm (snails) respectively; these flots and residues will be sorted by the specialist. Samples specifically taken for insects, pollen, other microflora and microfauna, metallurgy and soil analysis will be submitted as whole earth to the appropriate specialists or processed following their instructions.

C.2 Relevant industry standards and guidelines

- C.2.1 Historic England 2010. Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.
- C.2.2 Historic England 2011. Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post excavation, (2nd ed)

- C.2.3 Historic England 2004. Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (revision due 2020).
 - C.2.4 University of Bradford 2019 Archaeomagnetism: Magnetic Moments in the Past <https://www.brad.ac.uk/archaeomagnetism/>
 - C.2.5 Historic England 2008. Luminescence Dating. Guidelines on Using Luminescence Dating in Archaeology (revision due 2020).
 - C.2.6 Historic England 2008. Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (currently being revised).
 - C.2.7 Historic England 2015. Archaeometallurgy. Guidelines for Best Practice.
 - C.2.8 Historic England 2015 Geoarchaeology. Using Earth Sciences to Understand the Archaeological Record.
 - C.2.9 Historic England 2017. Organic Residue Analysis and Archaeology.
 - C.2.10 Baker, P and Worley, F 2019. Animal Bones and Archaeology: Recovery to Archive. Historic England
- C.3 Relevant OA manual and other supporting documentation**
- C.3.1 Oxford Archaeology 2017. Environmental Sampling Guidelines, 4th ed.

APPENDIX D ARTEFACTUAL EVIDENCE

D.1 Standard methodology - summary

- D.1.1 Before a site begins arrangements concerning the finds will be discussed with the Finds Team Leader. Information will be provided by the project manager about the nature of the site, the expected size and make-up of the finds assemblage and any site specific finds retrieval strategies. On-site requirements will be discussed and a conservator appointed who can be called on to make site visits if required. Special requirements regarding particular categories of material will be raised at this early stage for instance the likelihood of recovering assemblages of waterlogged material, large timbers, quantities of structural stone or ceramic building material. Specialists may be required to visit sites to discuss retrieval strategies.
- D.1.2 The project manager will supply the Finds Team Leader with contact details of the landowner of the site so that consent to deposit any finds resulting from the investigation can be sought.
- D.1.3 The on-site retrieval, lifting and short term packaging of bulk and small finds will follow the detailed guidelines set out in the OA Finds Manual (sections 2 and 3), First Aid for Finds and the UKIC conservation guidelines No.2.
- D.1.4 All finds recovered from site will be transported to an OA regional office for processing; local sites will return finds at the end of each day, away based sites at the end of each week. Special arrangements can be discussed for certain sites with the Team Leader before the start of a project. Larger long running sites may in some instances set up on-site processing units to deal with the material from a particular site.
- D.1.5 All finds qualifying as Treasure will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act (1996), and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.
- D.1.6 Each box of finds will be accompanied by a finds context checklist itemising the finds within each box. The number of bags of finds from each context and individual small find from each context will be recorded. A member of the processing team will check the list when it arrives in the department. There are separate forms for finds recovered from fieldwalking.
- D.1.7 The processing programme is reviewed on a weekly basis and priorities are worked out after discussions with the Fieldwork Team Leader and the Post-excavation Team Leader. Project managers will keep the Finds Team Leader informed of any pressing deadlines that they are aware of. All finds from evaluations are dealt with as a matter of priority.
- D.1.8 All bulk finds are washed (where appropriate), marked, bagged and boxed by the processing team according to the guidelines set out in section 4 and 5 of the OA Finds Manual, First-aid for finds and the UKIC guidelines No.2. They must also take into account the requirements of the receiving museum. Primary data recording count and weight of fragments by material from each context is recorded on the site database.

- D.1.9 Unstable and sensitive objects are recorded onto the database and then packaged and stored in controlled environments according to their individual requirements. The advice of a conservator will be sought for sensitive objects in need of urgent conservation. All metalwork will be x-rayed prior to assessment (and to meet the requirements of most receiving museums).
- D.1.10 Finds recovered from the environmental sample processing will be incorporated into the main assemblage and added to the database.
- D.1.11 On completion of the processing and data entry a finds file for each archaeological investigation will be produced, a summary of which is available for the project manager. The assemblage is allocated an OA number for storage purposes. Bulk finds are stored on a roller racking system, metals in a secure controlled storage and organic finds are refrigerated where possible.
- D.1.12 The movement of finds in and out of the storage areas is strictly monitored and recorded. Carbon copy transit forms exist to record this information. Finds will not be removed from storage without the prior knowledge of the Finds Team Leader.
- D.1.13 Finds information summarised in the finds compendium is used to assess the finds requirements for the post excavation stages of the project. The Team Leader holds a list of all specialists used by OA (see below) both internal and external.
- D.1.14 On completion of the post excavation stage of the project the team prepares the finds assemblage for deposition with the receiving museum. Discussions will be held with the museum, the excavator and the Finds Team Leader to finalise any selection, retention or discard policy. Most museums issue strict guidelines for the preparation of archives for deposition with their individual labelling, packaging and recording requirements.

D.2 Relevant industry standards and guidelines

- D.2.1 UKIC, 1983, Packaging and Storage of Freshly-Excavated Artefacts from Archaeological Sites. Conservation Guidelines No.2. Archaeology Section, United Kingdom Institute for Conservation.
- D.2.2 UKIC, 1988, Excavated Artefacts and Conservation: UK sites Revised Edition. Conservation Guidelines No.1. Archaeology Section, United Kingdom Institute for Conservation.
- D.2.3 Society of Museum Archaeologists, 1993, Selection, retention and dispersal of Archaeological Collections. Download available via <http://www.socmusarch.org.uk/publica.htm>)
- D.2.4 Watkinson, D E & Neal, V, 1998, First Aid for Finds (3rd edition). RESCUE & UKIC

D.3 Relevant OA manual and other supporting documentation

- D.3.1 Allen, L, and Cropper, C (internal publication only) Oxford Archaeology Finds Manual.

APPENDIX E HUMAN REMAINS

E.1 Standard methodology - summary

- E.1.1 Human remains will not be excavated without a relevant licence/faculty and, where applicable (for example, a post medieval cemetery), a risk assessment from the local environmental officer.
- E.1.2 All human remains will be treated with due care and regard to the sensitivities involved, and will be screened from the public throughout the course of the works.
- E.1.3 Excavation will be undertaken in accordance with ClfA (Roberts and McKinley 1993), Historic England (2018), the Advisory Panel on the Archaeology of Burials in England (APABE, 2015, 2017) and British Association of Biological Anthropology and Osteoarchaeology Code of Practice (2019) and Code of Ethics (2019). For crypts and post-medieval burials, the recommendations set out by the ClfA (Cox 2001) and by the Association of Diocesan and Cathedral Archaeologists and APABE (2010) are also relevant.
- E.1.4 In accordance with recommendations set out in the Historic England and Church of England (2005) and updated by the Advisory Panel on the Archaeology of Burials in England (2017), skeletons will not be excavated beyond the limits of the trench, unless they are deemed osteologically or archaeologically important.
- E.1.5 Where any soft tissue survives and/or materials (for example, inner coffins, mattresses and other paddings) soaked in body liquor, no excavation or handling of the remains will take place until an appropriate risk assessment has been undertaken. Relevant protocols (i.e. Cox 2001) for their excavation, recording and removal will be adhered to.
- E.1.6 OA does not excavate or remove modern burials (those less than 100 years old) and does not remove or open sealed lead coffins. Appropriate PPE (e.g. chemical suit, latex gloves) will be worn by all staff when working with lead coffins.
- E.1.7 Graves and their contents will be hand excavated in plan. Each component (for example, skeleton, grave cut, coffin (or remains of), grave fill) will be assigned a unique context number from a running sequence. A group number will also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate).
- E.1.8 Soil samples will be normally taken during the excavation of inhumations, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, right foot and left foot. Infants (circa. less than 5 years) will normally be recovered as bulk samples. Soil samples will also be taken from graves that appear to contain no human bone.
- E.1.9 Burials (including the skeleton, cremation, coffin fittings, coffin, urn, grave goods / other) will be recorded by photographic and written record using specialised pro forma context sheets, although these records may only include schematic representations of the location and position of the skeletons, depending on the nature and circumstances of the burial.

- E.1.10 Where digital imaging is used it will be done in accordance with the British Association of Biological Anthropology and Osteoarchaeology Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (2019).
- E.1.11 Where necessary, hand drawn plans (usually at 1:10, sometimes 1:5) will be made, especially of contexts where required details cannot be adequately seen using photography (for example, urned cremations; undisturbed hob nails).
- E.1.12 Levels will be taken. For inhumations this will be on the skull, pelvis and feet as a minimum.
- E.1.13 Human remains that are exhumed will be bagged and labelled according to skeletal region and carefully packed into suitable containers (for example, acid free cardboard boxes) and transported to a suitable storage location. Any associated coffins and coffin fittings will be contained with the human remains wherever possible.
- E.1.14 Urned cremations will not usually be half sectioned, but excavated in spits and/or quadrants (i.e. large deposits or spreads), or recovered as a bulk sample.
- E.1.15 Wherever possible, urned cremations will be carefully bandaged, recovered whole and will be excavated in spits in the laboratory, as per the recommendations of McKinley (2004, 2017).
- E.1.16 Unless deemed osteologically or archaeologically important disarticulated bone / chanel will be collected and reserved for re-burial if immediate re-internment as close to its original position is not practicable. In some instances, a rapid scan of this material may be undertaken by a qualified osteologist, if deemed relevant.
- E.1.17 If undisturbed, pyre sites will normally be excavated in quadrants, at the very least in 0.5 m blocks of 0.5 m spits.
- E.1.18 Pyre debris dumps will be half sectioned or quadrant and will be subject to 100% sampling.
- E.1.19 Wooden and lead coffins and any associated fittings, including fixing nails will be recorded on a pro forma coffin recording sheet. All surviving coffin fittings will be recorded by reference to Reeve and Adams (1993) and the unpublished master catalogue that is being compiled by OA. Where individual types cannot be paralleled, they will be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible departum plate inscriptions will be recorded and further documentary research will be made.
- E.1.20 Funerary structures, such as brick shaft graves and/or vaults will be recorded by photogrammetry or hand-drawn at a scale of 1:10 or 1:20, as appropriate. Location, dimensions and method of construction will be noted, and the structure added to the overall trench plan.
- E.1.21 Memorials, including headstones, revealed within the areas of development will be recorded irrespective of whether they are believed to be in situ.
- E.1.22 Where required, memorials will be accorded an individual context number and will also be included as part of the grave group, if the association with a burial is clear.

E.1.23 Memorials will be recorded on pro-forma context sheets, based on and following the guidelines set out by Mytum (2002), and will include details of:

- Shape
- Dimensions
- Type of stone used
- Condition, completeness and fragmentation of stones, no longer in original positions
- Iconography (an illustration may best describe these features)
- Inscription (verbatim record of inscription; font of the lettering)
- Stylistic type

E.2 Relevant industry standards and guidelines

- E.2.1 Advisory Panel on the Archaeology of Burials in England, 2013, Science and the Dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis. English Heritage Publishing.
- E.2.2 Advisory Panel on the Archaeology of Burials in England, 2017 Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England
- E.2.3 Advisory Panel on the Archaeology of Burials in England, 2015 Large Burial Grounds. Guidance on sampling in archaeological fieldwork projects
- E.2.4 Association of Diocesan and Cathedral Archaeologists and APABE, 2010 Archaeology and Burial Vaults. A guidance note for churches. Guidance Note 2
- E.2.5 British Association of Biological Anthropology and Osteoarchaeology. 2019a Code of Practice (<http://www.babao.org.uk/index/ethics-and-standards>)
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- E.2.7 British Association of Biological Anthropology and Osteoarchaeology, 2019c Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (<http://www.babao.org.uk/index/ethics-and-standards>)
- E.2.8 Cox, M, 2001 Crypt archaeology. An approach. ClfA Paper No. 3
- E.2.9 English Heritage, 2002 Human Bones from Archaeological Sites. Guidelines for producing assessment documents and analytical reports
- E.2.10 Historic England, 2018 The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon, Historic England
- E.2.11 McKinley, J, and Roberts, C, 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, ClfA Technical Paper No. 13

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- E.2.15 Mytum, H, 2000 Recording and Analysing Graveyards. CBA Handbook No. 15
- E.2.16 Reeve, J, and Adams, M, 1993 The Spitalfields Project. Volume I – The Archaeology Across the Styx. CBA Research Report No. 85
- E.2.17 The Human Tissue Act 2004

E.3 Relevant OA manual and other supporting documentation

- E.3.1 Loe, L, 2008 The Treatment of Human Remains in the Care of Oxford Archaeology. Oxford Archaeology internal policy document
- E.3.2 Oxford Archaeology 2018 *Fieldwork Manual Human Remains* unpublished

APPENDIX F REPORTING

F.1 Standard methodology - summary

F.1.1 For Watching Briefs and Evaluations, the style and format of the report will be determined by OA, but will include as a minimum the following:

- A location plan of trenches and/or other fieldwork in relation to the proposed development.
- Plans and sections of features located at an appropriate scale.
- A section drawing showing depth of deposits including present ground level with Ordnance Datum, vertical and horizontal scale.
- A summary statement of the results.
- A table summarising the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation.
- A reconsideration of the methodology used, and a confidence rating for the results.
- An interpretation of the archaeological findings both within the site and within their wider landscape/townscape setting.

F.1.2 For Excavations, a Post-Excavation Assessment and Project Design will generally be prepared, as prescribed by Historic England Management of Research Projects in the Historic Environment (MoRPHE) 2006, Section 2.3. This will include a Project Description containing:

- A summary description and background of the project.
- A summary of the quantities and assessment of potential for analysis of the information recovered for each category of site, finds, dating and environmental data. Detailed assessment reports will be contained within appendices.
- An explicit statement of the scope of the project design and how the project relates to any other projects or work preceding, concurrent with or following on from it.
- A statement of the research aims of the fieldwork and an illustrated summary of results to date indicating to what extent the aims were fulfilled.
- A list of the project aims as revised in the light of the results of fieldwork and the current post-excavation assessment process.

F.1.3 A section on Resources and Programming will also be produced, containing:

- A list of the personnel involved indicating their qualifications for the tasks undertaken, along with an explanation of how the project team will communicate, both internally and externally.
- A list of the methods which will be used to achieve the revised research aims.

- A list of all the tasks involved in using the stated methods to achieve the aims and produce a report and research archive in the stated format, indicating the personnel and time in days involved in each task. Allowance should be made for general project-related tasks such as monitoring, management and project meetings, editorial and revision time.
- A cascade or Gantt chart indicating tasks in the sequence and relationships required to complete the project. Due allowance will be made for leave and public holidays. Time will also be allowed for the report to be read by a named academic referee as agreed with the County Archaeological Officer, and by the County Archaeological Officer.
- A report synopsis indicating publisher and report format, broken down into chapters, section headings and subheadings, with approximate word lengths and numbers and titles of illustrations per chapter. The structure of the report synopsis should explicitly reflect the research aims of the project.

F.1.4 The Project Design will be submitted to the County Archaeological Officer or equivalent for agreement.

F.1.5 Under certain circumstances (e.g. with very small mitigations), and as agreed with the County Archaeological Officer or equivalent, a formal Assessment and Project Design may not be required and either the project will continue straight to full analysis, or a simple Project Proposal (MoRPHE 2006 Section 2.1) will be produced prior to full analysis. This proposal may include:

- A summary of the background to the project
- Research aims and objectives
- Methods statement outlining how the aims and objectives will be achieved
- An outline of the stages, products and tasks
- Proposed project team
- Estimated overall timetable and budget if appropriate.

F.1.6 Once the post-excavation Project Design or Project Proposal has been accepted, the County Archaeological Officer or his appointed deputy will monitor the progress of the post-excavation project at agreed points. Any significant variation in the project design will be agreed with the County Archaeological Officer.

F.1.7 The results of the project will be published in an appropriate archaeological journal or monograph. The appropriate level of publication will be dependent on the significance of the fieldwork results and will be agreed with the County Archaeological Officer. An OASIS (Online Access to the Index of Archaeological Investigations) form will be completed for each project as per Historic England guidelines.

F.2 Relevant industry standards and guidelines

F.2.1 Oxford Archaeology (OA) adheres to the national standards in post-excavation procedure as outlined in Historic England's Management of Research Projects in the Historic Environment (MoRPHE; EH 2006). Furthermore, all post-excavation projects

take into account the appropriate regional research frameworks as well as national research agendas such as the Framework for Historic Environment Activities & Programmes in Historic England (SHAPE; EH 2008).

APPENDIX G LIST OF SPECIALISTS REGULARLY USED BY OA

G.1.1 Below are two tables, one containing 'in-house' OA specialists, and the other containing a list of external specialists who are regularly used by OA.

Internal archaeological specialists used by OA

Specialist	Specialism	Qualifications
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Dr Alex Davies	Prehistoric Pottery	BA (Hons), MA, PhD, ACIfA
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
Kate Brady	Roman Pottery	BA, ACIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Ian Scott	Metalwork and Glass	BA (Hons)
Leigh Allen	Metalwork and worked bone	BA (Hons), PGDip
Dr Ruth Shaffrey	Worked stone artefacts	BA, PhD, MCIfA
Julian Munby	Architectural Stone	BA, FSA
Dr Rebecca Nicholson	Fish and Bird Bone	BA (Hons), MA, D.Phil, MCIfA, FSA Scot
Dr Lee Broderick	Animal bone	BA (Hons), MA, MSc, FZG, SAC Dip (ecology), PhD
Dr Mairead Rutherford	Pollen	BSc, MSc
Ian Smith	Animal Bone	BA (Hons), MSc, PCIfA
Dr Martyn Allen	Animal Bone	BA (Hons), MA, PhD
Dr Denise Druce	Charred plant remains, charcoal and pollen	BA (Hons), PhD, MCIfA
Sharon Cook	Charred plant remains	BSc, MSc, ACIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	BA PhD, MCIfA, BABAO
Helen Webb	Human Bone	BSc, MSc, MCIfA, BABAO
Mark Gibson	Human Bone	BA, MSc, ACIfA, BABAO
Dr Lauren McIntyre	Human Bone	BSc, MSc, PhD, MCIfA, BABAO
Ui Choileain	Human Bone	Pg Dip, MA, Msc, BABAO
Natasha Dodwell	Human Bone	BA, MSc, BABAO

External archaeological specialists regularly used by OA

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)
Quita Mould	Leather	BA, MA
Penelope Walton Rogers, The Anglo Saxon Laboratory	Identification of Medieval Textiles	FSA, Dip.Acc
Dana Goodburn-Brown	Conservation	BSc (Hons), BA, MSc
Steve Allen, York Archaeological Trust	Conservation	BA, MA, MAAIS
Dr Richard Macphail	Soils, especially Micromorphology	BA (Hons), MSc, PhD
Dana Challinor	Charcoal	MA, MSc
Dr Nigel Cameron	Diatoms	BSc, MSc, PhD
Dr David Smith	Insects	BA (Hons), MA, PhD
Professor Adrian Parker	Phytoliths and pollen	BSc (Hons), D.Phil
Dr David Starley	Metalworking Slag	BSc (Hons), PhD
Wendy Carruthers	Charred and waterlogged plant remains	BA (Hons)
Dr John Whittaker	Ostracods and Foraminifera	BA (Hons), PhD
Dr John Crowther	Soil Chemistry	MA, PhD
Dr Martin Bates	Geoarchaeology	BSc, PhD
Dr Dan Miles	Dendrochronology	D.Phil, FSA
Dr Jean-Luc Schwenninger	Optically Stimulated Luminescence Dating	PhD
Dr David Higgins	Clay Pipe	BA, PhD, MCIfA
Dr Hugo Anderson- Wymark	Flint	BSc, PhD, FSA Scot, MCIfA
Dr Damian Goodburn- Brown	Ancient Woodwork	BA, PhD

APPENDIX H DOCUMENTARY ARCHIVING

Standard methodology – summary

- H.1.1 The documentary archive constitutes all the written, drawn, photographic and digital records relating to the set up, fieldwork and post-excavation phases of the project. This documentary archive, together with the artefactual and environmental ecofact archive collectively forms the record of the site. The report is part of the documentary archive, and the archive must provide the evidence that supports the conclusions of the report, but the archive may also include data which exceeds the limitations of research parameters set down for the report and which could be of significant value to future researchers.
- H.1.2 At the outset of the project OA Archive manager will contact the relevant local receiving museum or archive repository to notify them of the imminent start of a new fieldwork project in their collecting area. Relevant local archiving guidelines will be observed and site codes, which integrate with the receiving repository, will be agreed for labelling of archives and finds.
- H.1.3 Where there is currently no receiving museum for the project archive, although responsibility for the archive ultimately lies with the client, OA will hold the archive on their behalf for a period of up to 3 years after completion of the report, after which time (in the event that a suitable depository has not been secured) provision for further storage of the archive will be made in agreement with Oxford Archaeology, the client and the relevant planning archaeologist.
- H.1.4 During the course of the project the Archive team will assist the Project Manager in the management of the archive including the cataloguing and development technique suitable for photographic archive requirements.
- H.1.5 The hard copy site archive will be security copied by scanning to PdFA and a copy of this will be housed on the OA Archive Server. A full digital copy of the archive, including scanned hard copy and born digital data, will be deposited with and made publicly available on-line through the ADS. A further copy will be maintained on the OA server and if requested a copy on disk will also be sent to the receiving museum with the hard copy. This will act as a safeguard against the accidental loss and the long-term degeneration of paper records and photographs.
- H.1.6 Born digital data will only be printed to hard copy for the receiving museum where practical. Archive elements that need maintaining in digital form will be sent to ADS in accordance with Arches Standard and ADS guidelines. A copy will be sent to the receiving museum by CD and back-up copies will be stored on the OA digital network. In most cases a digital copy of the report will be included in the OASIS project library hosted by ADS.
- H.1.7 Prior to deposition the Archive team will contact the museum regarding the size and content of the archive and discuss any retention and dispersal policies which may be applicable in line with local and SMA Guidelines ' Selection, Retention & Dispersal of Archaeological Collections' 1993.

- H.1.8 The site archive will then be deposited with the relevant receiving museum or repository at the earliest opportunity unless further archaeological work on the site is expected. The documentary archive will include correspondence detailing landowner consent to deposit the artefacts and any copyright licences in accordance with the receiving museum guidelines. Deposition charges will be required from the client as part of the project costs but the level of the fee is set by the receiving body, and may be subject to change during the lifespan of the project. Changes to archiving charges beyond OA's control will be passed across to the client.
- H.1.9 Oxford Archaeology will retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it will provide the receiving repository or museum for the archive with a full licence for use to the client in all matters directly relating to the project as described in the Written Scheme of Investigation, and in line with the relevant receiving body guidelines.
- H.1.10 OA will advise the receiving repository or museum for the archive of 3rd party materials supplied in the course of projects which are not OA's copyright.
- H.1.11 OA undertakes to respect all requirements for confidentiality about the client's proposals provided that these are clearly stated. It is expected that such conditions shall not unreasonably impede the satisfactory performance of the services required. Archaeological findings and conclusions can be kept confidential for a limited period but will be made publicly available in line with the above procedure either after a specified time period agreed with the client at the outset of the project, or where no such period is agreed, after a reasonable period of time. It is expected that clients respect OA's general ethical obligations not to suppress significant archaeological data for an unreasonable period.

H.2 Relevant industry standards and guidelines

- H.2.1 At the end of the project the site archive will be ordered, catalogued, labelled and conserved and stored according to the following national guidelines:
- H.2.2 The 2014 EAC Guidelines A Standard and Guide to the Best Practice for Archaeological Archiving in Europe (GB) Perrin K, Brown E et al.
- H.2.3 The 2014 CIFA Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives.
- H.2.4 The 2011 AAF guide Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation. Brown D.
- H.2.5 The UKIC's Guidelines for the preparation of excavation archives for long-term storage.
- H.2.6 The MGC's Standards in the museum care of archaeological collections.
- H.2.7 Local museum guidelines such as Museum of London Guidelines: (<http://www.museumoflondonarchaeology.org.uk/English/ArchiveResearch/DeposRe> source) will be adopted where appropriate to the archive collecting area.
- H.2.8 The site archive will be prepared to at least the minimum acceptable standard defined in Management of Archaeological Projects 2, Historic England 1991.

H.3 Relevant OA manual and other supporting documentation

H.3.1 The OA Archives Policy.

APPENDIX I HEALTH AND SAFETY

I.1 Standard Methodology - summary

- I.1.1 All work will be undertaken in accordance with the current OA Health and Safety Policy, the OA Site Safety Procedures Manual, a site-specific Risk Assessment and, if required, Safety Plan or Method Statement. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant H and S documentation will be available on site at all times. The Health and Safety documentation will be read in conjunction with the project WSI.
- I.1.2 Where a project falls under the Construction (Design and Management) Regulations (2015), all work will be carried out in accordance with the Principal Contractor's Construction Phase Plan (CPP).

I.2 Relevant industry standards and guidelines

- I.2.1 All work will be carried out according to the requirements of all relevant legislation and guidance, including, but not exclusively:
 - I.2.2 The Health and Safety at Work Act (1974).
 - I.2.3 Management of Health and Safety at Work Regulations (1999).
 - I.2.4 Manual Handling Operations Regulations 1992 (as amended).
 - I.2.5 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (2013).
 - I.2.6 The Construction (Design and Management) Regulations (2015).
 - I.2.7 Relevant OA manual and other supporting documentation
 - I.2.8 The OA Health and Safety Policy.
 - I.2.9 The OA Site Safety Procedures Manual.
 - I.2.10 The OA Risk Assessment templates.
 - I.2.11 The OA Method Statement template.
 - I.2.12 The OA Construction Phase Plan template.



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APPENDIX B BIBLIOGRAPHY

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