Northgate Redevelopment Phase 1, Hunter Street, Chester

Archaeological Evaluation Report

October 2019

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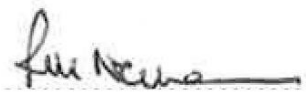
Prepared by:	Paul Dunn (Project Manager)
Checked by:	John Zant (Project Manager)
Edited by:	Rachel Newman (Senior Executive Officer, Research and Publication)
Approved for Issue by:	Rachel Newman (Senior Executive Officer, Research and Publication)
Signature:	

OA South
Janus House
Osney Mead
Oxford
OX2 0ES

t. +44 (0)1865 263 800

OA East
15 Trafalgar Way
Bar Hill
Cambridge
CB23 8SQ

t. +44 (0)1223 850 500

OA North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t. +44 (0)1524 880 250

e. info@oxfordarch.co.uk
w. oxfordarchaeology.com
Oxford Archaeology is a registered Charity: No. 285627

Director and Chief Executive
Gill Hey, BA PhD FSA MCIfA
Private Limited Company, No: 1618597
Registered Charity, No: 285627
Registered Office: Oxford Archaeology Ltd
Janus House, Osney Mead, Oxford OX2 0ES

Northgate Redevelopment Phase 1, Hunter Street, Chester

Archaeological Evaluation Report

Written by Paul Dunn

With contributions from Chris Howard-Davis and Ian Smith, with illustrations by Mark Tidmarsh

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Summary

Oxford Archaeology (OA) North was commissioned by Cheshire West and Chester Council (CWaC) to undertake an archaeological evaluation at the site of a proposed multi-use development, Chester Northgate Redevelopment Phase 1 (SJ 40312 66457). A Written Scheme of Investigation (WSI) was produced by OA North, which detailed the requirements for the necessary work. Four small test-pits (TP 01-04) were excavated in the northern carriageway of Hunter Street, to assess the amount of archaeological disturbance caused by modern service runs beneath the road, to identify the precise positions of these services, and to determine the level, below the modern surface, of any significant archaeology that might have survived. The resulting data were to be used to establish the potential impact, on significant archaeological remains, of new service runs that were planned in respect of the Northgate scheme, and to assist in the positioning of these services to cause the minimum archaeological disturbance. The archaeological fieldwork was undertaken between 12th and 16th August 2019.

Services were found to have extensively truncated the archaeological remains, although significant archaeology was encountered in three of the four test-pits, Test-pits 01, 02 and 03. A probable Roman soil horizon was identified at 0.96m below ground level in Test-pits 02 and 03, with an apparently Roman wall, aligned east-west in Test-pit 01, 0.3m below ground level. No archaeological deposits were identified in Test-pit 04, although a buried soil horizon containing post-medieval ceramics suggests that Roman remains may survive below the excavated depth of the test-pit, 1.15m below ground level.

Acknowledgements

Oxford Archaeology would like to thank Richard Andrews and Magnus Theobald of Cheshire West and Chester (CWaC) Council for commissioning this project, and Kirsty Lloyd of the Cheshire Archaeological Planning Advisory Service (CAPAS), for her help and advice. Thanks are also extended to the operatives from Dunkils, for their assistance on site.

The project was managed for OA North by Paul Dunn, with the fieldwork being directed by Ian Smith. Survey was undertaken by Paul Dunn, with illustrations being produced by Mark Tidmarsh. The report was written by Paul Dunn, with contributions from Chris Howard-Davis and Ian Smith. The report was edited by Rachel Newman.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) North was commissioned by Cheshire West and Chester Council (CWaC) to undertake an archaeological evaluation at the site of a proposed multi-use development, Chester Northgate Redevelopment Phase 1 (SJ 40312 66457; Fig 1).

1.1.2 A Written Scheme of Investigation (WSI) was produced by OA North (*Appendix A*), which detailed the requirements for the necessary work. Four small test-pits (TP 1-4; Fig 2) were to be excavated in the northern carriageway of Hunter Street, to assess the amount of archaeological disturbance caused by modern service runs beneath the road, to identify the precise positions of these services, and to determine the level, below the modern surface, of any significant archaeology that might have survived. The resulting data were to be used to establish the potential impact on significant archaeological remains of new service runs that were planned in respect of the Northgate scheme, and to assist in the positioning of these services to cause the minimum archaeological disturbance. The archaeological fieldwork was undertaken between 12th and 16th August 2019.

1.2 Location, topography and geology

1.2.1 The proposed development area (PDA) forms part of the north-west corner of the historic core of the city of Chester, roughly centred at SJ 4039 6638 (Fig 1). It takes in an area bracketed by Hunter Street to the north, St Martin's Way to the west, Northgate Street to the east, and Watergate Street to the south. For programming purposes, the proposed development scheme was divided into two phases, Phase 1 being in the northern part of the development, between Princess Street and Hunter Street, and Phase 2 covering the area south of Princess Street to Watergate Street. This archaeological evaluation was undertaken along the western half of Hunter Street within the Phase 1 area.

1.2.2 The Northgate site lies wholly within Chester's Area of Archaeological Importance (AAI), as designated under the terms of the Ancient Monuments and Archaeological Areas Act (1979), and is also within the city's zone of Primary Archaeological Character (considered to have the highest potential for significant heritage assets and the highest sensitivity to change), as defined in the Chester Archaeological Plan (Beckley and Campbell 2014). The latter was endorsed by the Cheshire West and Chester Local Development Framework Panel as a Key Evidence Base Document supporting the preparation of the Local Plan (M Leah *pers comm*).

1.2.3 The solid geology of the immediate area is characterised as Triassic sandstone and conglomerate sedimentary bedrock. The overlying drift geology is alluvium, comprising a mix of clay, silt and sand (BGS 2019), which forms soils that are classified as slightly acidic loamy clayey soils (Cranfield University 2019).

1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the site is discussed in detail in the desk-based assessment for the whole development (OA North 2016). The area lies within the north-western quadrant of the Roman legionary fortress, the largest in Britain, and has also provided evidence of early medieval activity, around Princess Street. Whilst the northern part of the site was largely open until the nineteenth century, forming gardens, the southern area was quite densely occupied, and medieval burgage plots extended back from both Northgate Street and Watergate Street (*ibid*).

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives were:

i. to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site;
ii. to determine or confirm the general nature of any remains present;
iii. to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
iv. to quantify the amount of disturbance which has been caused by modern services;
v. to provide sufficient information that a fully and accurately costed subsequent mitigation scheme can be developed, should such remains be identified;
vi. to compile a professional archival record of any archaeological remains within the site.

2.2 Methodology

2.2.1 The project methodology, set out in the WSI (*Appendix A*), was adhered to in full, and was fully compliant with current guidelines and industry best practice (CIfA 2014a: 2014b: 2014c: Historic England 2015). The positions of the test-pits were surveyed by the client and all service checks were undertaken by Dunkils prior to the commencement of excavation. The overburden was excavated by hand to a safe working depth of 1m below ground level, or, where these were encountered at a shallower depth, to the top of significant archaeological remains. The work was supervised by a suitably experienced archaeologist at all times, and cleaning and investigation of any potential archaeological deposits was undertaken manually.

2.2.2 All information identified during the site works was recorded stratigraphically, using a system adapted from that used by the former English Heritage Centre for Archaeology, with an accompanying pictorial record (plans, sections, and digital photographs). Primary records were available for inspection at all times.

2.2.3 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes a photographic record, and accurate large-scale plans and sections at appropriate scales (1:50, 1:20, 1:10).

2.2.4 A full professional archive was compiled in accordance with the WSI, and with current professional guidelines (CIfA 2014c; Historic England 2015). The archive will be deposited with the Grosvenor Museum, Chester.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the evaluation are presented below and include a stratigraphic description of the trenches. The full details of all trenches, with dimensions and depths of all deposits, can be found in *Appendix B*. Finds data and spot dates are tabulated in *Appendices C and D*.

3.2 Test-pit 01

3.2.1 Test-pit 01 was the westernmost of the four pits investigated (Fig 2) and was excavated to a maximum depth of 0.7m (24.53m above Ordnance Datum (aOD). The earliest deposit identified was a seemingly east/west-aligned feature composed of sandstone blocks and fragments (***117***; Fig 3; Pl 1), perhaps the remains of a Roman wall (though it remains undated), at the southern end of the test-pit, the top of which lay at an approximate depth of 0.3m (24.96m aOD). This was cut to the north and south by modern service trenches extending east to west (*Section 3.2.2*).

Plate 1: Test-pit 01, looking south, showing possible sandstone wall **117** *(scales 1m and 0.5m)*

3.2.2 North of ***117***, but separated from it, stratigraphically, by a modern service trench, was a layer of dark soil (***116***; Fig 3), at least 0.55m thick (excavated down to 24.73m aOD), which yielded post-medieval pottery. This was cut by service runs and overlain by deposits associated with the construction of the modern pavement and kerb. To the

south, putative wall ***117*** (*Section 3.2.1*) was also cut by service trenches and overlain by hardcore beneath the modern road surface.

3.3 Test-pit 02

3.3.1 Test-pit 02 (Pl 2) was placed 22.7m east of Test-pit 01 (Fig 2) and was excavated to a maximum depth of 1.02m (25.47m aOD). The earliest deposit identified, at a depth of 0.97m (25.52m aOD), was a soft, mid-brownish-yellow loam (***218***; Fig 4), encountered at the extreme northern end of the trench. This contained almost exclusively Roman ceramics, and is, therefore, likely to represent the top of significant archaeological deposits. It was directly overlain by a dark soil (***217***), up to 0.75m thick, which yielded post-medieval pottery, glass and ceramic building materials, as well as animal bones.

Plate 2: Test-pit 02, looking east (scale 1m)

3.3.2 To the north, deposit ***217*** was cut by a large, modern service trench (***216***), one of several intercutting service runs that had seemingly removed all earlier deposits in the southern part of the test-pit (at least to the base of the excavation). These were in turn sealed by deposits associated with the construction of the modern road, kerb and pavement. There was also evidence for a possible earlier surface of Hunter Street, in the form of a layer of stone setts (***213***) beneath the modern tarmac.

3.4 Test-pit 03

3.4.1 Test-pit 03 (Pl 3) was excavated 15.12m east of Test-pit 02 (Fig 2) and was opened to a maximum depth of 1.01m (26.31m aOD). The earliest deposit identified, at a depth of 0.96m (26.36m aOD), was a soft, mid-brownish yellow loam (***314***; Fig 4), recorded at the northern end of the trench. This contained exclusively Roman ceramics, and is, therefore, likely to represent the top of significant archaeological deposits, as is also the case with a very similar layer recorded in Test-pit 2 (***218***; *Section 3.3.1*). Deposit

314 was overlain by dark soil ***313***, *c* 0.7m thick, which contained almost exclusively post-medieval ceramics, glass, and ceramic building material, as well as animal bones.

Plate 3: Test-pit 03, looking east (scale 1m)

3.4.2 Deposit ***313*** was cut by several east/west-aligned service trenches, continuations of service runs that had also been identified in Test-pit 02 (*Section 3.3.2*). These included an unprotected electricity cable trench (***315***) that also contained a junction box, as well as a water main and telephone ducts. As in Test-pit 02, the remains of a surface of cobble setts (***306***) were recorded, directly beneath the modern tarmac surface of Hunter Street. All earlier features and deposits were sealed by deposits associated with the construction of the modern road, kerb and pavement.

3.5 Test-pit 04

3.5.1 Test-pit 04 was placed 18.13m east of Test-pit 03 (Fig 2) and was excavated to a maximum depth of 1.15m (27.05m aOD). The trench was filled with a large number of intercutting service runs (Pl 4), and no significant archaeological remains were recorded. The earliest deposit identified was a layer of dark soil (***416***), at least 0.65m thick (it was not bottomed), which contained almost exclusively post-medieval ceramics, glass, and ceramic building material, in addition to animal bones. This can be equated with the identical, and seemingly directly contemporary, deposits recorded in Test-pits 2 and 3 (***217*** (*Section 3.3.1*); ***313*** (*Section 3.4.1*)).

Plate 04: Test-pit 4, looking west (scale 1m)

3.5.2 Deposit ***416*** was cut by a large number of modern service trenches, most of which were continuations of service runs that had been identified in the test-pits further to the west. These included a water main and several telecom and electricity cable ducts. All were sealed by deposits associated with the construction of the modern road surface, kerb and pavement on the north side of Hunter Street.

3.6 Environmental and finds summary

3.6.1 No environmental samples were taken during the fieldwork as there were no suitable deposits. However, several finds were recovered from the trenches, and these are discussed in detail in *Appendices C* and *D*.

4 DISCUSSION

4.1 Reliability of field investigation

4.1.1 In general, the reliability of the archaeological evaluation was good, with archaeological deposits being clearly visible. The weather was variable, the strong sunlight during excavation of Test-pit 04 and the heavy rain during the excavation of Test-pit 01 not being ideal.

4.2 Results and interpretation

4.2.1 The archaeological evaluation undertaken on Hunter Street achieved the principal objectives by providing important new information on the extent of modern disturbance below the road and the northern pavement, and by determining the state of preservation and the level, below the modern surface, of archaeologically significant deposits. These were identified in three of the four pits (Test-pits 01, 02 and 03), and, whilst no significant archaeology was recorded in Test-pit 04, the presence of a thick layer of post-medieval soil (***416*** (*Section 3.4.1*)), also recorded in the other three pits, is significant, since in Test-pits 02 and 03 this demonstrably sealed significant archaeology, in the form of a probable Roman soil horizon (***218*** (*Section 3.3.1*); ***314*** (*Section 3.4.1*)), at 0.96-0.97m below the modern surface. Consequently, it seems highly likely that the dark soil in Test-pit 4 also overlay significant archaeology, though at a greater depth below the surface than further west (in excess of 1.15m at this locale).

4.2.2 In Test-pit 01, significant archaeology took the form of a possible east/west-aligned sandstone wall (***117*** (*Section 3.2.1*)), though this had been badly damaged by modern service runs. Whilst this feature is undated, its form, and its location, suggests that it may have been part of a barrack-block within the Roman legionary fortress. It was of particular note that the top of the putative wall lay only 0.3m below the road surface.

4.2.3 In all four test-pits, disturbance caused by modern services was extensive, with a wide range of services being identified, almost all of which were aligned approximately east/west, having been inserted along the length of the road (the majority were recorded in each of the test-pits (Fig 5)). Test-pit 04 did, however, contain a particularly dense concentration of services.

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APPENDIX A WRITTEN SCHEME OF INVESTIGATION

Northgate Redevelopment Phase 1, Chester

Written Scheme of Investigation Archaeological Evaluation

August 2019

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Checked by:	Paul Dunn (Project Manager)

OA South
Janus House
Osney Mead
Oxford
OX2 0ES

t. +44 (0)1865 263 800

OA East
15 Trafalgar Way
Bar Hill
Cambridge
CB23 8SQ

t. +44 (0)1223 850 500

OA North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t. +44 (0)1524 880 250

e. info@oxfordarch.co.uk
w. oxfordarchaeology.com
Oxford Archaeology is a registered Charity: No. 285627

Director and Chief Executive
Gill Hey, BA PhD FSA MCIfA
Private Limited Company, No: 1618597
Registered Charity, No: 285627
Registered Office: Oxford Archaeology Ltd
Janus House, Osney Mead, Oxford OX2 0ES

Northgate Redevelopment Phase 1, Chester

Written Scheme of Investigation for an Archaeological Evaluation

Centred on SJ 40312 66457

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1 INTRODUCTION

1.1 Project details

1.1.1 Oxford Archaeology (OA) North has been commissioned by Cheshire West and Chester (CWaC) Council to undertake an archaeological evaluation of the site of a proposed multi-use development, Chester Northgate Redevelopment Phase 1 (NGR: SJ 40312 66457).

1.1.2 The city of Chester is renowned as a place of immense historical significance, in recognition of which the buried archaeological remains across much of the historic city centre are afforded statutory protection as an Area of Archaeological Importance (AAI) under the terms of the Ancient Monuments and Archaeological Areas Act (1979). Within the AAI, where all archaeological remains are considered in the same way as scheduled monuments, a planning application has been submitted for the redevelopment of the Northgate area, which lies in the heart of the historic city centre, west of Northgate Street and north of Watergate Street (SJ 4039 6638). The Chester Northgate Project comprises a mix of retail, residential and leisure development extending over an area in excess of 5ha. It is proposed that construction will be undertaken in three phases (Phases 0, 1, 2), with work commencing on the northern part of the site (Phases 0 and 1), between Hunter Street and Princess Street. A detailed planning application in respect of Phases 0 and 1 was submitted to CWaC in June 2016.

1.1.3 In addition to being located within Chester's AAI (*Section 1.1.1*), the Northgate site encompasses all or part of seven of the city's primary Archaeological Character Areas, as defined in the Chester Archaeological Plan (Beckley and Campbell 2014). The Plan, funded by English Heritage (now Historic England) as part of the Chester Urban Archaeological Database (UAD) Project, was endorsed by the Cheshire West and Chester Local Development Framework Panel as a key Evidence Base Document supporting the preparation of the Chester District Local Plan (M Leah *pers comm*).

1.1.4 Within the Northgate site, the character, significance and preservation of buried archaeological remains is generally well understood, since the area has, over the past 25 years, been subject to a range of archaeological investigations, including evaluation trenching, borehole observations and archaeological audits, in respect of earlier proposals (not subsequently progressed) for the redevelopment of the area. At the request of the Development Management Archaeologist for the Cheshire Archaeological Planning Advisory Service (CAPAS), two phases of evaluation trenching were also carried out by Oxford Archaeology North (OA North) in respect of the present scheme (OA North 2015; 2016a), and OA North has also prepared three desk-based assessments (DBAs) for differing aspects of the project. The first of these (OA North 2016b), which collated the results of earlier archaeological interventions in the area, assessed the potential of the surviving archaeology within the site, and presented estimates for the predicted impact of the Northgate scheme on significant archaeological remains, was presented as a technical appendix to the planning application for Phases 0 and 1 (*Section 1.1.1*). The other two DBAs were prepared to inform proposals for the construction of a new surface-water drain linking the

development site with the River Dee (OA North 2016c) and for the construction of an electricity substation to serve the new development (OA North 2016d).

1.1.5 In 1997, a Brief and Specification for archaeological mitigation works within the Northgate site was prepared by the former Chester City Archaeologist in respect of an earlier development proposal (Morris 1997). A substantially revised version of this document, presented as an annex to the development brief for the present Northgate project, identified four zones of differing archaeological potential (Zones 1-4), in terms of the likelihood (or otherwise) for the survival of significant below-ground archaeological remains. Within the zones of greatest archaeological significance (Zones 1 and 2), the brief stipulates that there should be a presumption in favour of *in situ* preservation of archaeological deposits, with an intrusive impact of no more than 3% where damage or destruction of archaeological remains is unavoidable. No such constraints apply to Zone 3 (archaeological potential uncertain) or Zone 4 (archaeological remains believed to be wholly or largely destroyed), but an appropriate level of archaeological mitigation is required where archaeological deposits requiring 'preservation by record', but not of sufficient significance to be preserved *in situ*, are found to exist.

1.1.6 Consequently, the Development Management Archaeologist at CAPAS requested that Written Schemes of Investigation (WSIs) should be prepared, detailing the proposed methodologies for each of the archaeological mitigation strategies (namely *in situ* preservation, excavation, strip-and-record and watching brief) that are to be adopted in respect of Phases 0 and 1 of the Chester Northgate scheme. The present document represents the WSI for archaeological evaluation; this document outlines how OA will implement those requirements.

1.1.7 All work will be undertaken in accordance with local and national planning policies referenced within this document.

1.2 Oxford Archaeology

1.2.1 OA North, based in Lancaster, is the northern office of Oxford Archaeology (Chartered Institute for Archaeologist's (CIfA) registered organisation no 17), the leading archaeological and heritage practice in the country, employing in excess of 250 professionals across three regional offices. OA North is itself the largest archaeological contractor in north-west England. As a registered educational charity, OA is dedicated to maintaining and promoting the highest professional, academic, commercial and ethical standards and to the provision of access to archaeology for all. It has both an established reputation and a philosophical imperative in the pursuit of efficient and cost-effective fieldwork, post-excavation excellence, and high-quality publication and outreach. We pride ourselves on our delivery of accessible outreach, including open days, lectures, information panels, leaflets, *etc*.

1.2.2 With over 40 years of experience in commercial archaeology, OA has undertaken tens of thousands of archaeological investigations of all types, scales and periods, from desk-based assessments to major open-area excavations. OA has particular experience of working closely with principal contractors, consultants, and curators to undertake

high-quality archaeological works within the tight timetables and high-pressure environments of major projects.

2 AIMS AND OBJECTIVES

2.1 Academic Aims

2.1.1 The main aim of this archaeological evaluation of Phase 1 of the Northgate scheme, is to provide a permanent archaeological presence during the hand excavation of several test pits along Hunter Street, St Martin's Way and Princess Street. For the most part, these areas correspond with Zone 1 (*Section 1.1.4*). The main objective of the evaluation should be to identify, expose, excavate and record any archaeological remains that may survive within the targeted areas, in order to aid the design of the redevelopment.

2.1.2 All archaeological work will be carried out in accordance with best practice guidelines, including the following:

- Historic England's Management of research projects in the historic environment, or MoRPHE (2015), with specific reference to the tenets of MoRPHE's Project Planning Note 3: archaeological excavation;
- the second edition of English Heritage's (now Historic England's) Management of archaeological projects, or MAP 2 (English Heritage 1991);
- the European Association of Archaeologist's (EAA's) Principles of conduct for archaeologists involved in contract archaeological works (EAA 1998);
- the CIfA's Code of conduct (2014a); Code of approved practice for the regulation of contractual arrangements in field archaeology (2014b); and Standard and guidance for an archaeological watching brief (2014c);
- the National Planning Policy Framework (NPPF; DCLG 2012).

2.2 Specific aims and objectives

2.2.1 The specific aims and objectives of the evaluation are:

i. to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site;
ii. to determine or confirm the general nature of any remains present;
iii. to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
iv. to quantify the amount of disturbance which has been caused by modern services;
v. provide sufficient information that a fully and accurately costed subsequent mitigation scheme can be developed, should such remains be identified;
vi. to compile a professional archival record of any archaeological remains within the site.

3 PROJECT SPECIFIC EXCAVATION AND RECORDING METHODOLOGY

3.1 Scope of works

3.1.1 The works will involve the hand excavation, by the Principal Contractor, of up to nine test pits, measuring 2.5m long by 1m wide, on Hunter Street, St Martin's Way and Princess Street. The test pits will be excavated to approximately 1.2m or to the top of the archaeological horizon, if encountered first. The main aim of the evaluation being to quantify the amount of disturbance which has ben caused to the archaeological remains in these areas by modern services. Once the trenches have been excavated, they will be hand cleaned and recorded by the archaeologist. Once they have been fully recorded, they will be backfilled by the Principal Contractor.

3.2 Programme

3.2.1 It is anticipated that the fieldwork will take nine days to complete, by a project officer, Ian Smith, under the management of Paul Dunn, Project Manager.

3.2.2 All fieldwork undertaken by OA North is overseen by the Operations Manager, Alan Lupton MCIfA.

3.3 Site specific methodology

3.3.1 ***Evaluation***: the nine test pits will be hand dug by operatives provided by Principal Contractor, under constant supervision of the OA North archaeologist. The hand excavation will proceed to the first significant archaeological horizon or a safe working depth, whichever is encountered first.

3.3.2 Once the trenches have been fully excavated, they will be cleaned by hand sufficiently to enhance any features or stratigraphy. All information identified in the course of the site works will be recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage. Results of the evaluation will be recorded on *pro-forma* context sheets and will be accompanied with sufficient pictorial records (plans, sections and digital photographs) to identify and illustrate individual features. The site archive will include plans and sections at appropriate scales (plans 1:20 and sections 1:10).

3.3.3 A full and detailed photographic record of individual contexts will be maintained and similarly general views from standard viewpoints of the overall site at all stages of the evaluation will be generated. Photography will be undertaken using 16 or 18 mega-pixel digital SLR or hybrid compact digital cameras, and all frames will include a graduated metric scale (Historic England 2015b). The images will be taken in JPEG and RAW formats. Photograph records will be maintained on special photographic *pro-forma* sheets.

3.3.4 ***Human remains***: are not expected to be present, but if they are found relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the Burials Act 1857 and industry best practice.

3.3.5 ***Treasure***: any gold and silver artefacts recovered during the course of the works will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act 1996.

3.3.6 ***Finds Policy***: finds recovery and sampling programmes will be in accordance with best practice (following current Chartered Institute for Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. Finds will be recorded and reported on by appropriately qualified staff.

3.3.7 ***Environmental Policy***: the strategy for palaeo-environmental and other specialist sampling will be developed on site, in consultation with appropriate specialists, as necessary. The environmental sampling strategy will therefore evolve from discussion between those specialists and the field team and will be in accordance with current best practice. In broad terms, however, the sampling strategy will be aimed at recovering palaeobotanical, palaeo-zoological and pedological evidence, from appropriately stratified contexts, should any such features be identified during the course of the excavation.

3.3.8 ***Backfilling***: the test pits will be backfilled once they have been fully recorded by the OA North archaeologist.

4 PROJECT SPECIFIC REPORTING AND ARCHIVE METHODOLOGY

4.1 Programme

4.1.1 A copy of the report in Adobe Acrobat (.pdf) format will be provided to the client and the CAPAS archaeologist for review and approval. A digital copy of the report will also be made available through OASIS.

4.2 Report Content

4.2.1 An interim report will be produced detailing the findings of the evaluation and will be submitted within a week of completion of the fieldwork. A draft copy of a written synthetic post-excavation assessment report will be submitted to the client for comment within six weeks of completion of the fieldwork, although the time frame for production of the report can be tailored to the client's requirements upon prior agreement. 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 detailed above and present an assessment of the history of the site. The report will include the following:

- A title page detailing site address, 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 watching brief and evaluation trenches, showing the archaeological features exposed. The site location will be plotted with at least 4 12-figure national grid references on the site plan at a scale of 1:2500;
- 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;

- Illustrative material will include a location map, site map, site plans and pertinent photographs.

4.3 Specialist input

4.3.1 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 *Section 7*; in the event that additional input should be required, an updated list of specialists can be supplied.

4.4 Archive

4.4.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current Historic England guidelines (2015a), and in accordance with the Guidelines for the Preparation of Excavation Archives for Long-Term Storage (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Centre for Archaeology format

4.4.2 The site archive will be deposited with the Grosvenor Museum, Chester following the completion of the project. This will follow appropriate industry guidelines (CIfA 2014c). The Arts and Humanities Data Service (AHDS) online database project Online Access to index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project.

5 HEALTH AND SAFETY

5.1 General

5.1.1 The 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, Ian Smith, who implements these on a day to day basis. Paul Dunn and Ian Smith are supported by OA North's Health and Safety Advisor, Fraser Brown.

5.1.2 The Director with responsibility for Health and Safety at OA is Dan Poore Tech IOSH (Chief Business Officer).

5.2 Method statement and risk assessment

5.2.1 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.

5.2.2 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).

5.2.3 The archaeological contractor should be fully familiar and will comply with all current and relevant legislation, including, but not limited to:

- The Health and Safety at Work Act (1974);
- Management of Health and Safety at Work Regulations (1999);
- Manual Handling Operations Regulations 1992 (as amended in 2002);
- The Construction (Design and Management) Regulations (2015);
- The Control of Asbestos Regulations (Revised 2012);
- Confined Spaces Regulations (1997);
- The Workplace (Health, Safety and Welfare) Regulations (1992);
- Construction (Health, Safety and Welfare) Regulations (1996);
- The Work at Height Regulations (2005);
- The Control of Substances Hazardous to Health Regulations (2002);
- The Health and Safety (First Aid) Regulations (1981);
- The Regulatory Reform (Fire Safety) Order (2005);
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (1995);
- The Provision and Use of Work Equipment Regulations (1998);
- Lifting Operations and Lifting Equipment Regulations (1998).

5.3 Services and Other Constraints

5.3.1 Service plans will be provided by the client or Principal Contractor and will be available on site. However, the identification and marking of any services will be the responsibility of the principal contractor. The OA North archaeologist will be made aware of any services encountered.

5.4 Contamination

5.4.1 Any known contamination issues or specific health and safety requirements on site will be made known by the Principal Contractor to ensure all procedures can be met, and that the risk is dealt with appropriately. Should any presently unknown contamination be discovered during the works, it may be necessary to halt the works and reassess the risk assessment.

5.5 Ground Conditions

5.5.1 Areas of unstable and infilled ground may be encountered during the evaluation, for example within, or in the vicinity of, infilled cellars/basements or large, deep service runs. This may limit access to some areas, and/or require the use of shoring or similar, particularly if limited archaeological remains are exposed at the base of deep cellars or basements (*eg* the truncated remains of deep pits, wells or ditches). The stability of the ground should be constantly monitored during the works and should it be deemed that work be halted for health and safety reasons, the Client, CAPAS and Historic England should be informed immediately.

5.5.2 Archaeological personnel should not enter individual features that are more than 1.2m deep (or shallower features that are narrow and/or potentially unstable), but if access to such a feature proves necessary, the sides should first be appropriately shored, and a safe means of access and egress (*eg* a properly secured ladder) should be provided.

5.6 Staff Issues

5.6.1 All staff will be provided with appropriate Personal Protective Equipment (PPE), including steel toe and mid-soled boots, high-visibility vest, and a hard hat. All staff will be CSCS qualified, proof of which will be provided in the form of their CSCS card.

5.6.2 Welfare facilities, including a toilet and hand-washing facilities, will be provided by the Principal Contractor.

5.6.3 The Northgate area is located in the centre of Chester, and it is assumed that the site will be appropriately secured by the Principal Contractor.

5.7 Monitoring of works

5.7.1 At least 10 days' notice of the commencement of the archaeological evaluation will be given to Mark Leah, Planning Archaeologist for Cheshire Archaeology Planning Advisory Service (CAPAS).

5.7.2 CAPAS will have free access to the site (subject to Health and Safety considerations) and all records to ensure the works are being carried out in accordance with this WSI and all other relevant standards.

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7 LIST OF SPECIALISTS REGULARLY USED BY OA

7.1.1 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
Lisa Brown	Early Prehistoric pottery	BA, PGDip, MLitt, MCIfA
Paul Booth	Iron Age and Roman pottery	BA, FSA, MCIfA
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
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 Mairead Rutherford	Pollen	BSc, MSc
Lee Broderick	Animal bone	BA (hons), MA, MSc, FZG, SAC Dip (ecology)
Julia Meen	Charred and waterlogged plant remains and charcoal	BSc (Hons), MA
Dr Denise Druce	Charred plant remains, charcoal and pollen	BA (Hons), PhD, MCIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Ian Smith	Animal Bone	BA (Hons), Msc
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	D.Phil, BA, MCIfA
Helen Webb	Human Bone	MSc, BSc
Mark Gibson	Human Bone	MSc, BA
Dr Lauren McIntyre	Human Bone	D.Phil, MSc, BSc

External archaeological specialists regularly used by OA

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)

Specialist	Specialism	Qualifications
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 Sylvia Peglar	Pollen	PhD
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

oxfordarchaeology

Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com

APPENDIX B TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Test-pit 01						
General description					**Orientation**	N-S
Significant archaeological remains identified at a depth of 0.3m below ground level, comprising what may have been the remains of an east/west-aligned sandstone wall (***117***), conceivably (but not certainly) of Roman date. A post-medieval relict soil horizon was also identified, cut and overlain by modern services and deposits.					**Length (m)**	2.64
					Width (m)	1.2
					Avg depth (m)	0.7
Context No	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
100	Layer	1.73	0.07	Tarmac, modern road surface of Hunter Street	-	Modern
101	Layer	1.1	0.06	Flagstone footpath	-	Modern
102	Structure	0.1	0.28	Kerbstone	-	Modern
103	Layer	0.37	0.36	Pale pink hardcore within service trench ***104*** for grey ducting	-	Modern
104	Cut	0.37	0.36	Cut of service trench for grey ducting	-	Modern
105	Layer	0.23	0.58	Dark grey hardcore within service trench ***106*** for green ducting	-	Modern
106	Cut	0.23	0.58	Cut of service trench for green ducting	-	Modern
107	Layer	1.1	0.04	Pale yellow sand bedding layer for flagstone footpath ***101***	-	Modern
108	Layer	1.1	0.19	Pale yellow-brown hardcore levelling layer for footpath ***101***	-	Modern
109	Fill	0.28	0.12	Fill of cut ***110*** for ceramic drain	-	Modern
110	Cut	0.28	0.12	Cut for ceramic drain	-	Modern
111	Layer	0.1	0.08	Concrete bedding layer for kerbstone ***102***	-	Modern
112	Cut	0.74	0.32	Cut for footpath ***101***	-	Modern
113	Layer	1.2	0.06	Dark grey hardcore, levelling layer for tarmac ***100***	-	Modern
114	Layer	0.96	0.48	Crushed sandstone and brick fill of service trench for electric cable ***115***	-	Modern
115	Cut	0.96	0.48	Cut of service trench for electric cable	-	Modern

Context No	Type	Width (m)	Depth (m)	Description	Finds	Date
116	Layer	0.77	0.26	Dark brown/black, friable, homogeneous loam. Post-medieval relict soil horizon	Ceramics, animal bone, glass, ceramic building material	Post-medieval
117	Structure	0.6	-	East/west-aligned sandstone structure (unbonded), perhaps a wall. Significant archaeology, the top of which lay only 0.3m below the surface.	-	Roman?

Test-pit 02						
General description					**Orientation**	N-S
Significant archaeological remains identified at a depth of 0.97m below ground level, comprising a deposit containing Roman ceramics. This was sealed by a post-medieval relict soil horizon, which was itself cut and overlain by modern service trenches and other deposits.					**Length (m)**	2.43
					Width (m)	1
					Avg depth (m)	1
Context No	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
200	Layer	2.05	0.08	Tarmac, modern road surface of Hunter Street	-	Modern
201	Layer	0.4	0.2	Concrete footpath	-	Modern
202	Structure	0.1	0.28	Kerbstone	-	Modern
203	Layer	0.3	0.08	Tarmac, within service trench ***205*** for grey ducting	-	Modern
204	Layer	0.28	0.2	Pale pink hardcore fill of service trench ***205*** for grey ducting	-	Modern
205	Cut	0.3	0.45	Cut of service trench for grey ducting	-	Modern
206	Structure	0.2	0.24	Cobble sett surface, blue-grey limestone setts. Likely to be an earlier surface of Hunter Street	-	Modern
207	Layer	0.65	0.28	Mixed backfill of cut ***208*** for cobble sett surface ***206*** and kerbstone ***202***	-	Modern
208	Cut	0.65	0.28	Cut for cobble sett surface ***206*** and kerbstone ***202***	-	Modern
209	Layer	0.56	0.43	Pale white hardcore fill of service trench ***211*** for green ducting	-	Modern

Context No	Type	Width (m)	Depth (m)	Description	Finds	Date
210	Layer	0.3	0.6	Pale grey hardcore fill of service trench ***211*** for green ducting	-	Modern
211	Cut	0.5	0.6	Cut of service trench for green ducting	-	Modern
212	Layer	0.45	0.08	Pale grey hardcore beneath tarmac ***200***	-	Modern
213	Layer	0.49	0.16	Layer of bricks	-	Modern
214	Layer	0.7	0.28	Crushed sandstone and brick fill of service trench ***216*** for electric cable	-	Modern
215	Layer	0.45	0.36	Dark brown/black silt with frequent sandstone flecks within trench ***216*** for electric cable	-	Modern
216	Cut	0.7	0.66	Cut of service trench for electric cable	-	Modern
217	Layer	1.23	0.6	Dark brown/black, friable, homogeneous loam. Post-medieval relict soil horizon	Ceramics, animal bone, glass, ceramic building material	Post-medieval
218	Layer	0.4	0.06	Soft, mid-brownish-yellow loam. Probably a Roman soil deposit. Significant archaeology at 0.97m below ground level	Ceramics	Roman

Test-pit 03						
General description					**Orientation**	N-S
Significant archaeological remains identified at a depth of 0.96m below ground level, comprising a soil deposit containing Roman ceramics. Sealed by a post-medieval relict soil horizon that was in turn cut and sealed by modern service trenches and other deposits.					**Length (m)**	2.75
					Width (m)	1
					Avg depth (m)	1.01
Context No	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
300	Layer	1.06	0.15	Concrete footpath	-	Modern
301	Layer	-		Tarmac, filling narrow trench ***302*** in footpath	-	Modern
302	Cut	-	0.34	Cut of narrow trench in footpath	-	Modern
303	Structure	0.15	0.3	Kerbstone	-	Modern
304	Layer	1.4	0.15	Tarmac, modern road surface of Hunter Street	-	Modern
305	Layer	1.0	0.15	Pale grey hardcore levelling for tarmac ***304***	-	Modern

Context No	Type	Width (m)	Depth (m)	Description	Finds	Date
306	Structure	0.4	0.1	Cobble sett surface, blue-grey limestone setts. Likely to be an earlier surface of Hunter Street	-	Modern
307	Structure	0.27	0.1	Concrete bedding layer for kerbstone ***303***	-	Modern
308	Layer	0.6	-	Redeposited sandstone and ceramic building material	-	Modern
309	Layer	0.15	0.35	Pale grey hardcore backfill of service trench ***310***	-	Modern
310	Cut	0.15	0.45	Cut for modern service trench	-	Modern
311	Layer	0.15	0.1	Tarmac overlying hardcore ***309***, within modern service trench ***310***	-	Modern
312	Layer	1.06	0.1	Pale brownish-yellow sand bedding layer for concrete footpath ***300***	-	Modern
313	Layer	0.97	0.62	Dark brownish-grey, friable, homogeneous loam. Post-medieval relict soil horizon	Ceramics, animal bone, glass and ceramic building material	Post-medieval
314	Layer	0.15	0.06	Soft, mid-brownish-yellow loam, probably a Roman soil horizon. Significant archaeology at 0.96m below ground level	Ceramics	Roman
315	Cut	0.32	0.5	Cut for modern electric service	-	Modern
316	Deposit	0.32	0.5	Fill of modern service trench ***315***	-	Modern

Test-pit 04						
General description					**Orientation**	N-S
No significant archaeological remains were identified, though the presence of a relict post-medieval soil, identical to those sealing probable Roman levels in Test-pits 02 and 03, suggests that significant remains may have survived at a greater depth (over 1.15m below the surface). The soil was cut and overlain by modern service runs and other deposits.					**Length (m)**	2.1
					Width (m)	1.2
					Avg depth (m)	1.15
Context No	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
400	Layer	1.2	0.1	Tarmac	-	Modern
401	Layer	0.78	0.14	Tarmac	-	Modern

Context No	Type	Width (m)	Depth (m)	Description	Finds	Date
402	Layer	0.78	0.03	Bedding sand	-	Modern
403	Layer	0.78	0.3	Mixed mortar-rich sand	-	Modern
404	Layer	0.9	0.2	Sand backfill of modern service trench	-	Modern
405	Structure	0.13	0.3	Kerbstone	-	Modern
406	Layer	1.2	0.4	Hardcore beneath modern road surface	-	Modern
407	Layer	0.86	0.08	Pale yellowish-white sand associated with services. Likely to be the same as ***414***		Modern
408	Layer	0.8	0.18	Mid-brownish-yellow sand associated with services. Likely to be the same as ***415***	-	Modern
409	Layer	0.4	0.39	Mixed backfill overlying cast-iron water main	Oyster shell	Modern
410	Layer	0.1	0.02	Concrete associated with modern pavement	-	Modern
411	Layer	0.1	0.05	Mid-brownish-yellow sand, part of modern surface make-up	-	Modern
412	Layer	0.1	0.05	Fine hardcore beneath pavement	-	Modern
413	Layer	0.1	0.28	Hardcore beneath pavement	-	Modern
414	Layer	0.1	0.5	Pale yellow sand associated with services. Likely to be the same as ***407***	-	Modern
415	Layer	0.1	0.5	Mid-brown orange sand associated with services. Likely to be the same as ***408***	-	Modern
416	Layer	0.44	0.8	Dark grey/black sandy silt, likely to be a post-medieval relict soil horizon	Ceramics	Post-medieval
417	Cut	1.0	0.5	Modern service trench, likely to be the same as ***418***	-	Modern
418	Cut	0.9	0.7	Modern service trench, likely to be the same as ***417***	-	Modern

Context No	Type	Width (m)	Depth (m)	Description	Finds	Date
419	Cut	0.08	0.75	Modern service trench for telecommunications ducting	-	Modern
420	Cut	0.56	0.45	Modern service trench	-	Modern

APPENDIX C FINDS REPORTS

C.1 Ceramic

By Chris Howard-Davis

C.1.1 All of the pottery has been examined and recorded following the basic guidelines laid down in *A Standard for Pottery Studies in Archaeology* (MPRG *et al* 2016), with the data being recorded in an Excel Spreadsheet. Diagnostic sherds (rims and bases) were too infrequent to justify the calculation of EVEs.

C.1.2 ***Romano-British pottery****:* there are, in total, seven fragments of Romano-British pottery, together weighting 111.1g. The overall average sherd weight is 15.8g, but if amphora is excluded, this falls to an average sherd weight of 10.3g for coarseware and samian together, giving some idea of its fragmentary condition. Despite this, the sherds are not heavily abraded. The proportion of ware-types (Table 1), and their distribution between trenches (Table 2), has been calculated.

	No Frags	Weight (g)	Av weight (g)	Percentage total by count	Percentage total by weight
Greywares	1	7.3	7.3	14.28	6.5
Orange oxidised wares	2	20.8	10.4	28.58	18.7
White/cream wares	2	28	14	28.58	25.2
Samian	1	6	6	14.28	5.4
Amphora	1	49	49	14.28	44.2
Complete assemblage	*7*	*111.1*	*15.8*		

Table 1: Romano-British ware-types represented

	Greywares	Orange oxidised wares	White/cream wares	Samian	Amphora	*Totals*
Test-pit 01			2	1		*3*
Test-pit 02		1				*1*
Test-pit 03		1			1	*2*
Test-pit 04	1					*1*
Totals	*1*	*2*	*2*	*1*	*1*	*7*

Table 2: Distribution of Romano-British ware-types between test-pits

C.1.3 There is a single fragment of samian ware, representing an undecorated vessel, from Test-pit 01 (relict soil ***116***). It appears to be South Gaulish in origin, but its precise source has not been determined, although it can be identified as a dish of form Dr 18, a mid-late first-century form (Webster 1996).

C.1.4 A single fragment of amphora was recovered from Test-pit 03 (relict soil ***313***). The fabric suggests it to be from a Dr 20-type olive oil container, a common type, dominant in the first to third centuries AD (Williams 2014). Only a single fragment of greyware was found securely stratified, in Test-pit 04 (from relict soil ***416***), but it cannot be dated with any precision.

C.1.5 Considered together, the Romano-British pottery might suggest a very general mid- to late first- to fourth-century AD date.

C.1.6 ***Medieval pottery***: in total, 14 fragments of medieval pottery were found, together weighing 192g, and giving an overall average sherd weight of 13.7g, remarkably similar to that of the Romano-British pottery. This also gives some idea of its quite fragmentary condition. All this pottery came from relict soil ***217*** within Trench 2. It is, for the most part, a sandy, oxidised orange fabric with a patchy green glaze, most likely to be of mid-twelfth- to mid-fourteenth-century date (McCarthy and Brooks 1988). The incised or combed decoration on two of the fragments (OR 1010, OR 1029) might suggest an origin of the late thirteenth- to early fourteenth-century kilns at Ashton (Rutter 1977). The fully reduced green-glazed fabrics generally dominant in the mid-fourteenth to sixteenth centuries are absent from the group.

C.1.7 ***Post-medieval and more recent pottery***: there are, in total, 31 fragments of post-medieval and more recent pottery, together weighing 449.2g, giving an overall average sherd weight of 14.4g, although this varies appreciably between ware groups, with the black-glazed redwares, characteristically appearing as kitchen wares and storage vessels, having, predictably, a heavier average sherd weight, at 32.1g (*Table 3*). The distribution of wares between trenches is shown in *Table 4*.

	No frags	**Weight (g)**	**Av weight (g)**	**Percentage total by count**	**Percentage total by weight**
Black-glazed redware	5	160.5	32.1	16.2	35.8
Creamware	1	20.6	20.6	3.2	4.5
Orange oxidised, sandy	1	20	20	3.2	4.4
Orange with self-glaze	1	9.5	9.5	3.2	2.1
Refined white earthenware	21	222.6	10.6	67.8	49.6
Staffordshire slipware	2	16	8	6.4	3.6
	31	*449.2*	14.4		

Table 3: Post-medieval and more recent ware-types represented

	Black-glazed redware	**Creamware**	**Orange oxidised, sandy**	**Orange with self-glaze**	**Refined white earthenware**	**Staffordshire slipware**	***Totals***
Test-pit 01	1						*1*
Test-pit 02	1			1	2	2	*6*
Test-pit 03			1				*1*
Test-pit 04	3	1			19		*23*
Totals	5	1	1	1	21	2	*31*

Table 4: Distribution of post-medieval and later ware-types between test-pits

C.1.8 There is nothing exceptional in the assemblage. Little in the group need date before the middle of the eighteenth century, although it is possible that some of the harder-fired black-glazed redwares are earlier, as there is a continuum from late medieval

Cistercian wares, through to the blackwares of the eighteenth and even nineteenth centuries (Brears 1971). Staffordshire slipwares typically originate in the later seventeenth century (Barker 1993), but appear only in small amounts. Similarly, mid-late eighteenth-century material is only sparsely represented, by white salt-glazed ware, and by Creamware, typical of the late eighteenth/early nineteenth century (Noel Hume 1969; Cotter 2000). The remainder of the group comprises refined white earthenwares (Cotter 2000), some transfer-printed, which are of nineteenth-century date or more recent. The high sherd count from Test-pit 04 is skewed by the presence of 13 sherds from a transfer-printed jug.

C.2 Ceramic Building Material

By Chris Howard-Davis

C.2.1 In total, 69 fragments of ceramic building material were recovered, weighing a total of 4.087kg. Of this, 15 fragments (2.187kg), representing 21.7% of the group by count and 53.5% by weight, was unstratified. For the most part the material is very fragmentary and on occasion quite worn. A large proportion of the tile was relatively thin (*c* 20mm), suggesting it to be roof tile, and most fragments were sand-cast. It retains few diagnostic features that might enable it to be dated, but there is some evidence to suggest the presence of Roman roof tiles, both imbrices and tegulae (Table 5), and the presence of one flat roof tile with a well-defined nib indicates the presence of later tiles, probably of early post-medieval date.

	Undiagnostic	Tegula	Post-medieval	Modern
Test-pit 01				
Test-pit 02	*	*		
Test-pit 03	*		*	
Test-pit 04	*			*
US	*	*		

Table 5: Distribution of ceramic building material between test-pits

C.3 Metal

By Chris Howard-Davis

C.3.1 Metalwork was sparse in all the trenches, with only a single, probably hand-forged, nail from Test-pit 02 (relict soil ***217***).

C.4 Glass

By Chris Howard-Davis

C.4.1 A small group of glass (two fragments) derived mainly from dark olive green wine/beer bottles of late seventeenth- to eighteenth-century date. The fragment from Test-pit 04 (relict soil ***416***) was an undiagnostic body sherd, whilst the fragment from Test-pit 03 (relict soil ***313***) is likely machine-blown, and thus later in date.

C.5 Clay Tobacco Pipe

By Chris Howard-Davis

C.5.1 In total, two fragments of clay tobacco-pipe were recovered, both in relatively good condition, with surfaces well-enough preserved to distinguish burnishing. The two fragments were small undiagnostic fragments of pipe stem, from Test-pit 02 (relict soil ***217***) and Test-pit 04 (backfill of water main ***409***).

APPENDIX D ENVIRONMENTAL REPORTS

D.1 Animal Bone

By Ian Smith

D.1.1 A small quantity of mammal bones and teeth (53 fragments, *c* 404g) was recovered from the test-pits (Table 6). Identifications of all fragments to species, anatomical element, and side were attempted. Diagnostic zones of mammal bones were recorded following Serjeantson (1996) and anatomical terminology followed Sisson and Grossman (1938). Bone-surface texture was assessed according to the York system (Harland *et al* 2003).

Context	OR	Common name	*Taxa*	Element	Side	NISP	Serjeantson zones (or note)
114	1016	cattle	*Bos taurus*	radial carpal	right	1	NA
114	1016	large mammal, *cf* cattle	Mammalia	humerus	indeterminate	1	NA, fragment
114	1016	large mammal, *cf* cattle	Mammalia	femur	indeterminate	2	NA, fragments
114	1016	large mammal	Mammalia	indeterminate	indeterminate	6	NA
114	1016	mammal	Mammalia	indeterminate	indeterminate	2	NA
below ***114***	1024	pig	*Sus* sp	calcaneus	right	1	1, 2, 3, 4, 5, 6, 7
below ***114***	1024	pig	*Sus* sp	canine, male	left	1	NA
below ***114***	1024	lge/med mammal	Mammalia	long bone	indeterminate	3	NA
below ***114***	1024	large mammal	Mammalia	vertebral	both	2	*cf* chopped sacrum, and thoracic vertebra part
below ***114***	1024	large mammal	Mammalia	indeterminate	indeterminate	8	NA
116	1012	large mammal (probable cattle)	Mammalia	lumbar vertebra	both	1	1, 2 , 7, 8
116	1013	pig	*Sus* sp	mandibular canine	left	1	NA
217	1009	cattle	*Bos taurus*	mandibular molar	left	1	NA
217	1006	cattle	*Bos taurus*	scapula	left	1	4
217	1004	large mammal	Mammalia	*cf* tibia	indeterminate	2	possible 7/8
217	1022	large mammal	Mammalia	long bone	indeterminate	4	NA, fragments
217	1022	lge/med mammal	Mammalia	indeterminate	indeterminate	1	NA, fragments
313	1021	cattle	*Bos taurus*	femur	left	1	8
313	1021	cattle	*Bos taurus*	pelvis	left	1	5,6
313	1021	cattle	*Bos taurus*	first phalanx	indeterminate	1	2, 4, 6, 8
313	1021	sheep/goat	*Ovis/Capra*	humerus	right	1	5
313	1021	mammal	Mammalia	indeterminate	indeterminate	1	NA
416	1027	cattle	*Bos taurus*	radius	right	1	4
416	1027	horse	*Equus* sp	incisor	indeterminate	1	NA
416	1027	cattle	*Bos taurus*	intermediate carpal	right	1	NA
416	1027	large mammal	Mammalia	indeterminate	indeterminate	7	NA

Table 6: Faunal remains from the Test-pits

D.1.2 ***Preservation***: many of the bone surfaces or edges in each context group have been affected by recent (excavation) or post-depositional damage or fractures. However, the majority of surfaces unaffected in this manner are well preserved and would be classified as 'good' with regard to surface texture (Harland *et al* 2003).

D.1.3 ***Species and anatomical elements***: the remains from Test-pit 01 originate from service trench fill ***114***, with a group (OR 1024) from below ***114*** and relict soil ***116***. Those from **114**, a brick-rich post-medieval context, comprise a cattle (*Bos taurus*) right-hand-side radial carpal (*sensu* Sisson and Grossman 1938), with recent damage but also fine cut marks that, given their location, almost certainly relate to dismemberment. The other fragments include a humerus shaft-fragment, most probably of cattle and with evidence for an ancient chop mark, and fragments of probable cattle femur, also chopped in antiquity. The bones from below ***114*** (OR 1024) include parts of pigs, comprising a canine from a male, and a calcaneus. Other parts from the same context (OR 1024) include a heavily chopped vertebral element.

D.1.4 Relict soil ***116***, a 'dark earth' deposit at the north end of Test-pit 01, produced a large mammal (probable cattle) lumbar vertebra (with cranial and caudal epiphyses fused). This has evidence for butchery that may relate to a jointed part, possibly to a longitudinally divided carcase section.

D.1.5 Test-pits 02 and 03 produced further cattle bones from relict soils ***217*** and ***313***. Large mammal fragments also came from relict soil ***416*** in Test-pit 04.

D.1.6 It is plausible that the cattle bones in Test-pit 01, from brick-rich ***114***, had been disturbed from early contexts when services work was undertaken. Although it is highly probable that they were redeposited in ***114***, the small size of the damaged cattle radial carpal, and the nature of the butchery amongst the few long-bone fragments, suggests that these bones may originate from Roman contexts. The pig and butchered (chopped) large mammal bones from below ***114*** (OR 1024) appear to be from a largely undisturbed context adjacent to (butting) sandstone wall ***117***, and therefore most plausibly of Roman date.

D.1.7 The cattle bones from the relict soil in Test-pits 02, 03 and 04 may plausibly be of ancient origin. However, their dating is problematic, given the nature of the material in which they were found. In this area, it may have been subject to much (horticultural) reworking.

D.1.8 Few conclusions can be drawn from this small hand-collected assemblage, but all of the remains are either of domesticates or probable domesticated mammals. Despite obvious recent and post-depositional damage, their presence demonstrates that bone survives in the deposits of Hunter Street, including amongst sub-Roman or late Roman contexts.

D.1.9 There is little further potential for this material in isolation, since the numbers of specimens are not sufficient for significant conclusions to be drawn. However, since many such small interventions have taken place across the Northgate redevelopment area (and more are planned in the near future), syntheses of such small groups may be possible in the future. The bones should thus be retained as work continues across this area.

APPENDIX E SITE SUMMARY DETAILS

Site name:	Chester Northgate Redevelopment Phase 1, Hunter Street
Site code:	CNGPD19
Grid Reference	SJ 40312 66457
Type:	Evaluation
Date and duration:	12–16th August 2019; 5 days
Location of archive:	The archive is currently held at OA North, Mill 3, Moor Lane, Lancaster, LA1 1QD, and will be deposited with the Grosvenor Museum, Chester, upon completion.
Summary of Results:	Four test-pits were excavated along the western half of Hunter Street, with the principal aim of quantifying the level of truncation caused by modern services, and also to establish where archaeological remains survived. The test-pits were all excavated to an approximate length of 2.5m, a width of 1.2m and a maximum depth of 1.15m, on the northern side of Hunter Street. Services were found to have extensively truncated the archaeological remains, with significant archaeology being encountered in three of the four test-pits (01, 02 and 03). This was identified as a probably Roman soil horizon, at 0.96m below ground level, in Test-pits 02 and 03, with an east/west-aligned wall, possibly Roman, in Test-pit 01, 0.3m below ground level. No archaeological remains were identified in Test-pit 04, although a buried soil horizon, containing post-medieval ceramics, suggests that Roman archaeology may survive below the excavated depth of the test-pit, 1.15m below ground level.

List of Figures

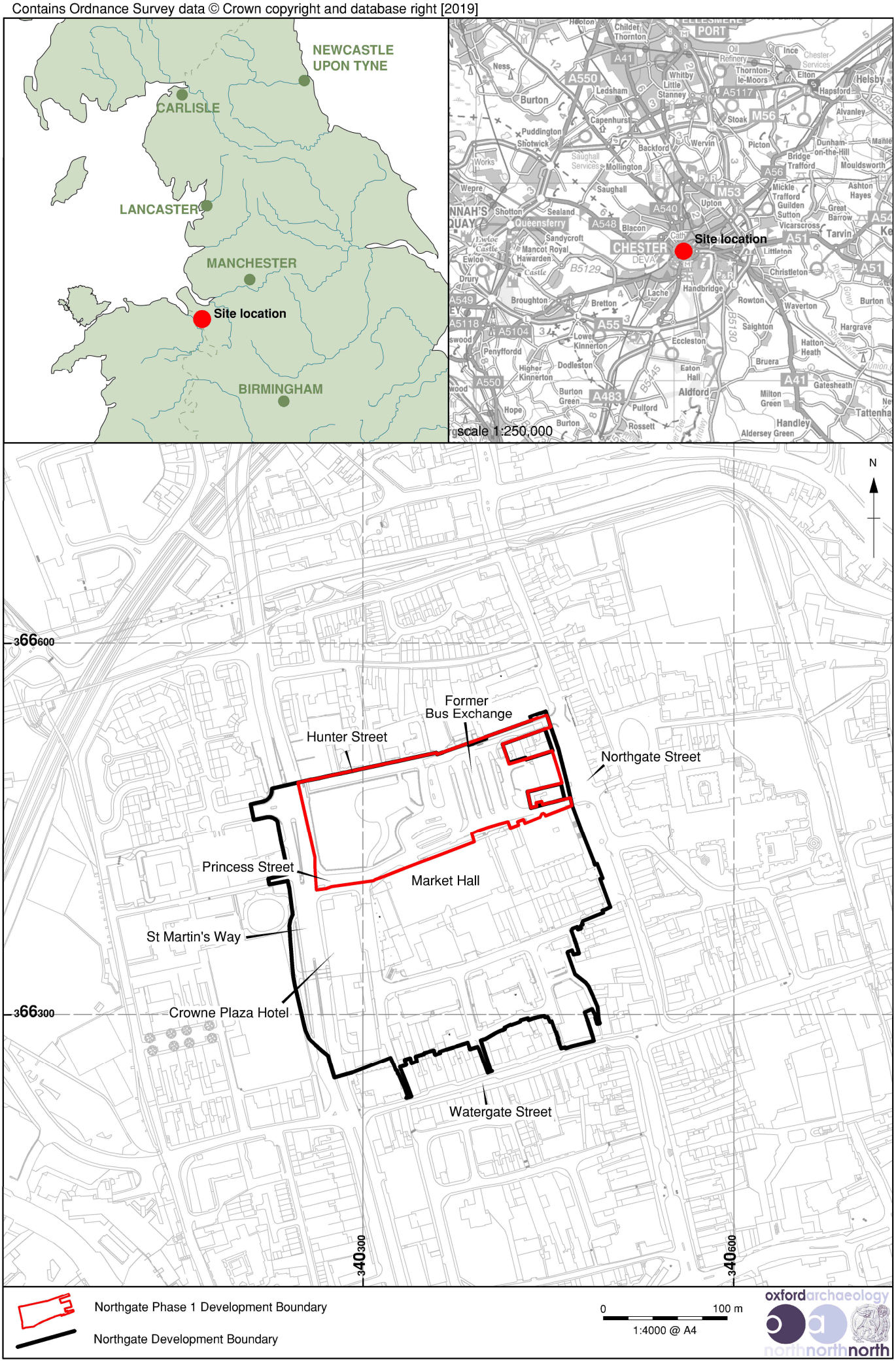

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Figure 1: Chester Northgate development location

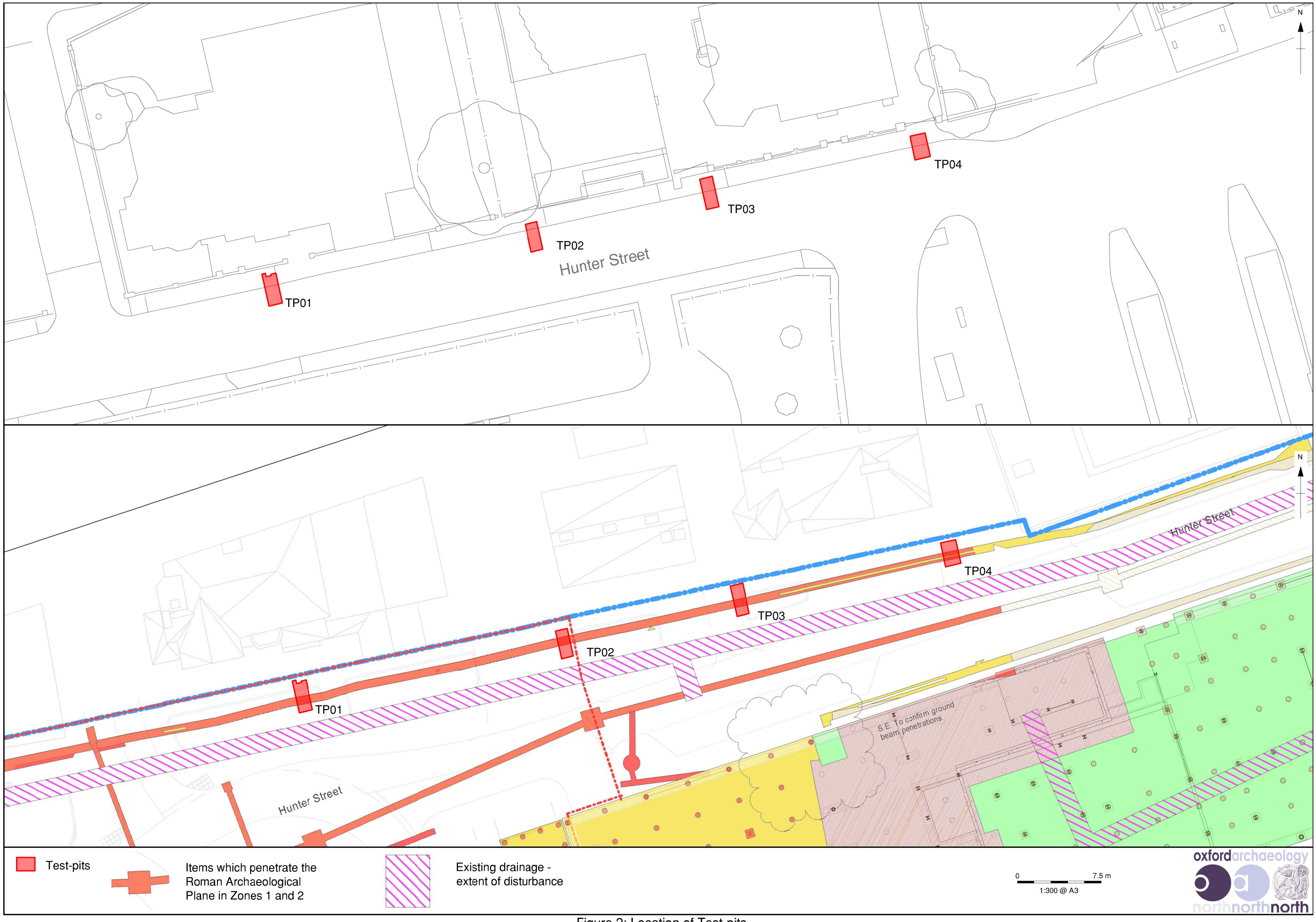


Figure 2: Location of Test-pits

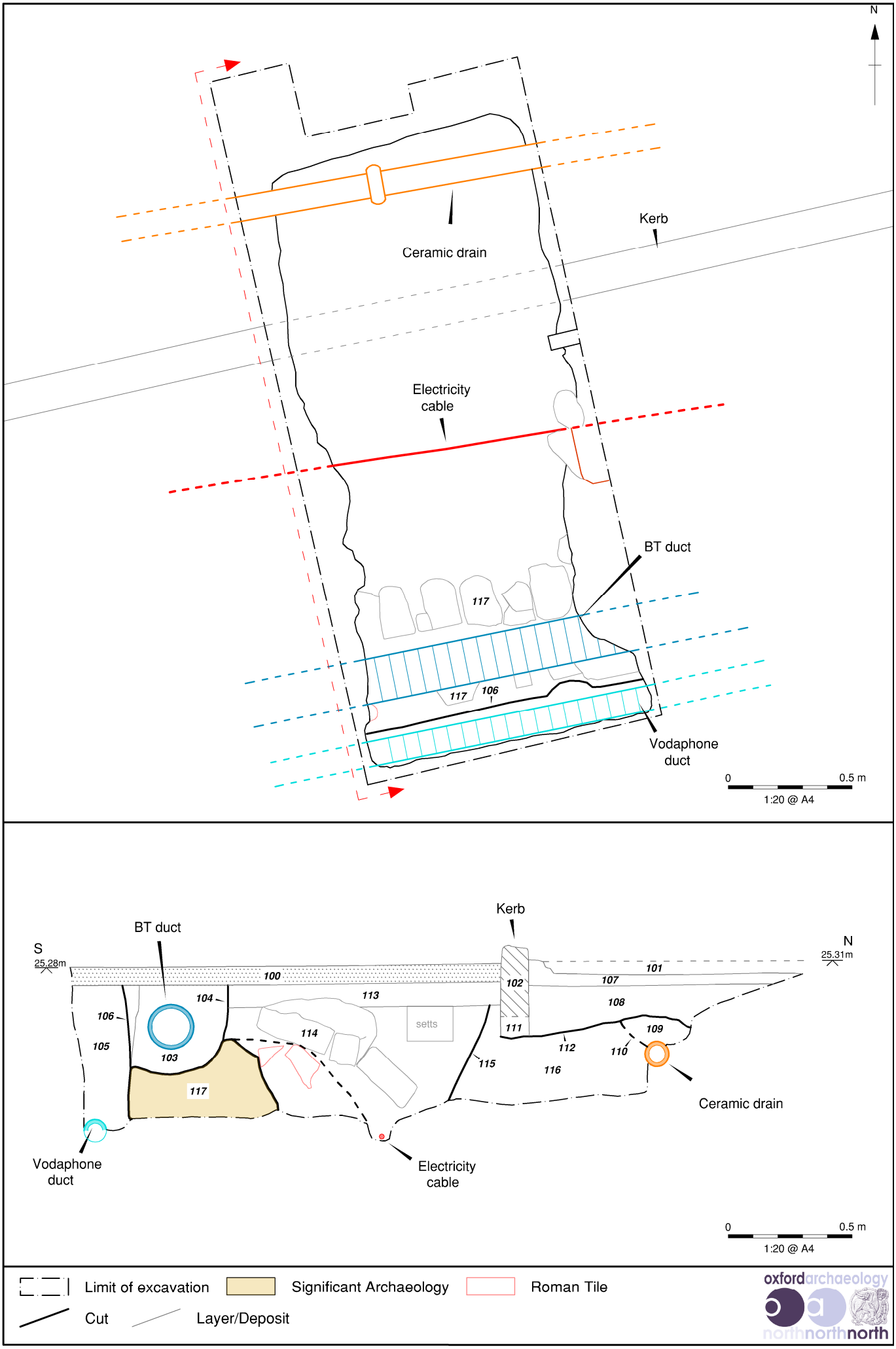
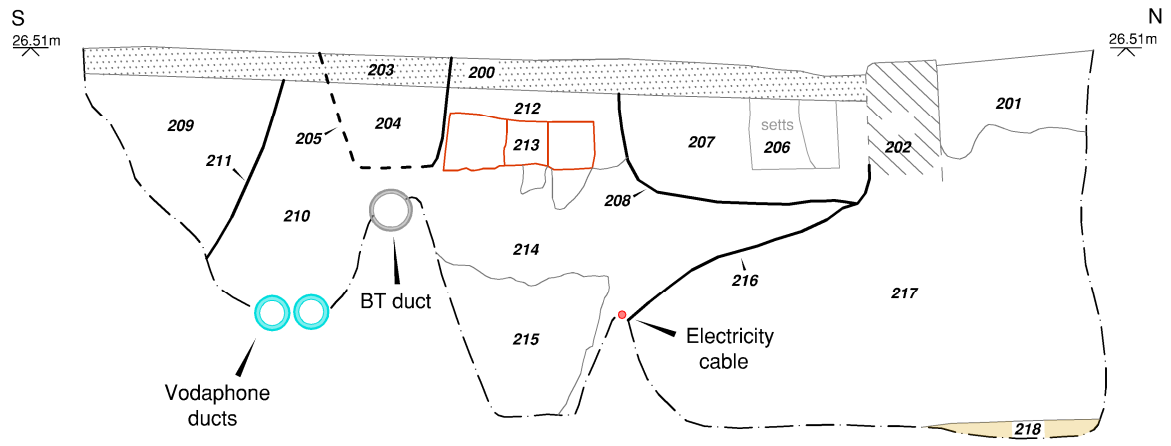
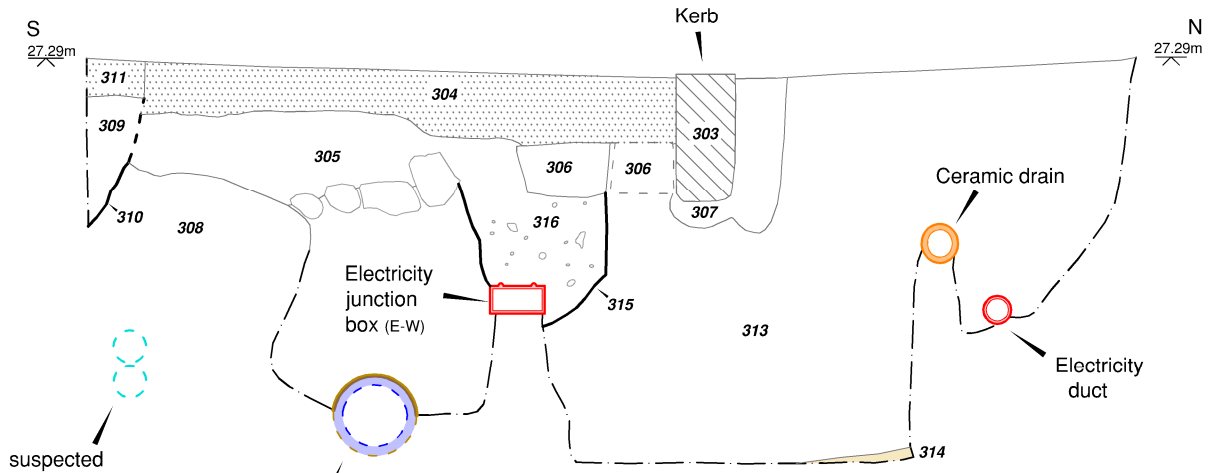


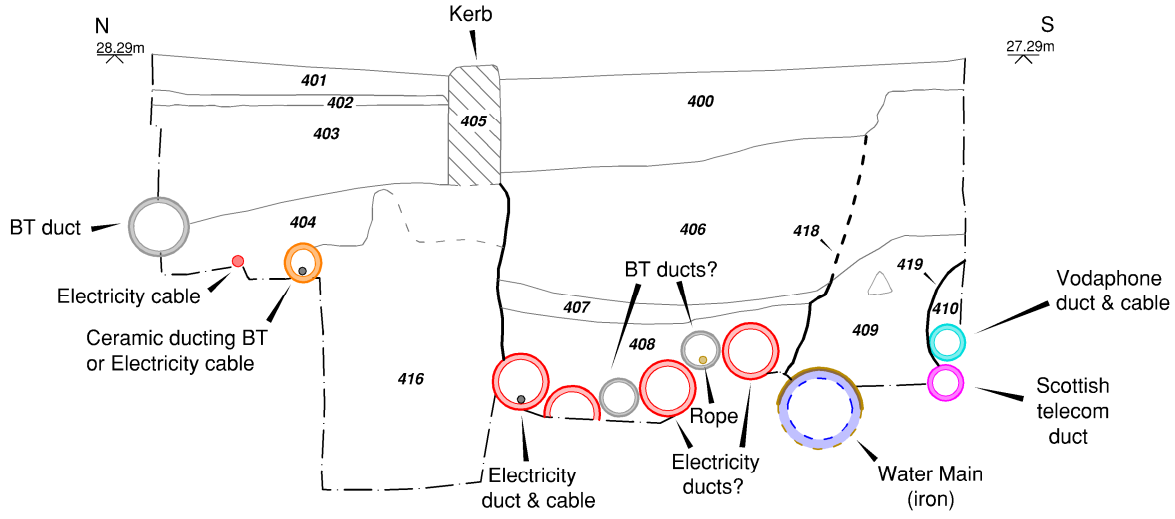
Figure 3: Plan and east-facing cross-section of Test-pit 01



East-facing cross-section of Test-pit 02



East-facing cross-section of Test-pit 03



West-facing cross-section of Test-pit 04

Limit of excavation

Cut

Layer/Deposit

0 0.5 m

1:20 @ A4

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Figure 4: Cross-sections of Test-pits 02-04

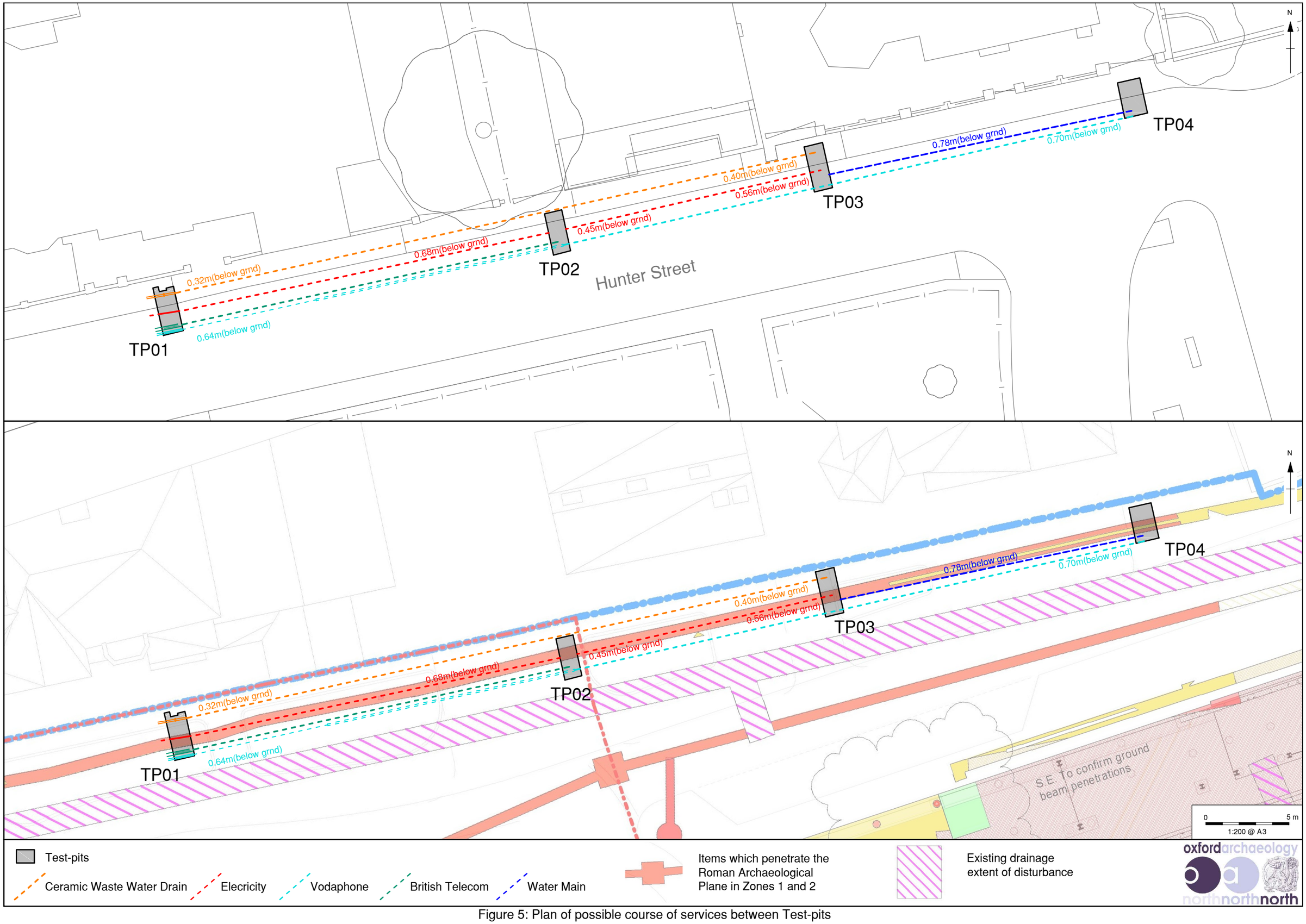

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Figure 5: Plan of possible course of services between Test-pits

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Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com