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WATKIN JONES GROUP

HUNTER STREET, CHESTER

WRITTEN SCHEME OF INVESTIGATION FOR MITIGATION

JULY 2017

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WATKIN JONES GROUP

HUNTER STREET, CHESTER

WRITTEN SCHEME OF INVESTIGATION FOR MITIGATION

JULY 2017

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APPENDICES

DRAWINGS

1 INTRODUCTION AND CONTEXT HISTORY

1.1.1 Wardell Armstrong (WA) has been commissioned by Watkin Jones Group (hereafter referred to as 'the client') to prepare a Written Scheme of Investigation (WSI) for a programme of archaeological investigations at Hunter St, Chester, Cheshire (Centred on NGR: SJ 4026 6650; Figure 1).

1.1.2 The fieldwork is required in respect of proposals for the erection of student accommodation with associated services, vehicular access and landscaping for which planning permission has been received from Cheshire West and Chester Council (15/04014/FUL).

1.1.3 The site has previously been subject to an Archaeological Desk Based Assessment (Wardell Armstrong 2015a) which informed the necessity of pre-determination fieldwork. This comprised archaeological monitoring of ground investigation works, an archaeological evaluation and deposit modelling to assess the impact of the development and establish depths for the top of significant archaeology (Wardell Armstrong 2015b).

1.1.4 The pre-determination investigations demonstrated the presence of well-preserved deposits across parts of the application site, whilst previous archaeological investigations undertaken in the 1980s had affected the survival of archaeological remains within the remainder of the site.

1.1.5 Based on this information a detailed preservation in-situ strategy has been formulated through discussions with it was established with the Cheshire West and Chester Council Development Management Archaeologist. The details of this strategy are shown on Figures 3 and 10-13 of the evaluation report and are reproduced within this report as Appendix 1.

1.1.6 As part of the preservation in-situ strategy an archaeological watching brief will be maintained during ground works and will record minor and less significant archaeological deposits as they are revealed. In addition, a programme of targeted and strictly limited excavation will be undertaken in three areas where the development proposals will require the removal of a very limited quantity of more significant strata. These areas comprise the northern stairwell; the stairwell on the stairwell on the St Martin's Way frontage and the location of the attenuation tank in the east of the development site.

1.1.7 This document provides a methodology for the implementation of the archaeological preservation in-situ strategy and comprises the archaeological monitoring of ground reduction works and for the detailed archaeological excavation and recording of limited areas of archaeological strata. The WSI conforms to the guidelines and standards laid down in the following documents:

- *Standard and Guidance for an Archaeological Excavation*, Chartered Institute for Archaeologists: Reading (CIfA 2014a);
- *Standard and Guidance for an Archaeological Watching Brief*, Chartered Institute for Archaeologists: Reading (CIfA 2014b);
- *Code of Approved Conduct for the Regulation of Arrangements in Field Archaeology*, Chartered Institute for Archaeologists (CIfA 2014c);
- *Wardell Armstrong: Excavation Manual*, Wardell Armstrong Archaeology, internal document, edition 4 (Wardell Armstrong 2016);
- *An Archaeological Research Framework for Chester*, Cheshire Archaeology Planning Advisory Service (CAPAS 2013a);
- *Chester Archaeological Plan*, Cheshire Archaeology Planning Advisory Service (CAPAS 2014);
- *Guidance and general conditions for archaeological contractors and consultants in Cheshire (*Cheshire County Council 2003);
- *Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental component of archaeological evaluations in England* (AEA 1995);
- *Geoarchaeology: using earth sciences to understand the archaeological record* (English Heritage 2007);
- *Environmental archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2011).

2 BACKGROUND

2.1 Location and Geological Context

2.1.1 The site is situated to the north of Hunter Street in the centre of Chester. It is bound to the north and east by domestic properties and their associated parking/vehicle access, to the south by Hunter Street and green space and by St Martin's Way to the west.

2.1.2 The area of investigation is rectangular in shape and is approximately 850m^2 and is presently utilised as a car park (Figure 1).

2.1.3 The ground drops from the northeast to the southwest with the site ranging from c.24.60m AOD (Above Ordnance Datum) at its northeast tip down to c.23.20m AOD in the southwest corner.

2.1.4 The underlying solid geology is mapped as pebbly/gravelly sandstone of the Chester Pebble Beds Formation. No superficial deposits are mapped within the site although Devensian till is mapped within the immediate vicinity (BGS 2017).

2.2 Historical and Archaeological Background

2.2.1 An archaeological desk-based assessment (Wardell Armstrong 2015a) on the historical and archaeological background of the site and immediate vicinity. It is not intended to repeat the same information here and what follows is a brief overview of that document, for more information please refer to the original report.

2.2.2 The site lies within the 'Area of Archaeological Importance' and 'Archaeological Character Zone 4 – St Martin's Field'. It is described as 'a key area within the Area of Archaeological Importance and planning and development here should be approached with particular sensitivity to the high potential for significant archaeological remains of at least a national level' (CAPAS 2013b).

2.2.3 The site is located within 'Inner Area – A8 Markets' as identified in the Chester Characterisation Study whose character is described as 'Almost entirely post-war area containing some empty sites and The Forum development which includes the covered market' (Young 2011, 61). The site is also located within the wider Chester City Centre Conservation Area.

2.2.4 The site lies within the walls of the former Roman legionary fortress, in an archaeologically sensitive location. It is known that this area was occupied by military barracks, which took the form of linear buildings aligned north-south. Behind the

defences - between the Roman defences which essentially follow the line of the east side of St. Martin's Way, and the eastern edge of the barracks – lay the intervallum, a wide strip of ground that ran round the perimeter of the interior of the fortress. Occupying the inner third of the intervallum lay the *Via Sagularis*, a road which also ran round the entire perimeter of the fortress' interior; a large sewer ran around the inner edge of the road. The intervallum zone was also occupied by the cookhouses and bread-ovens.

2.2.5 The only previous excavations to have occurred within the site boundary are unfortunately poorly recorded with little or no archive available. The exact location of the earlier investigations are also unclear, with the area merely being described as 'derelict land on the north side of Hunter Street, at its western end' (CAB 8, 1982: 38). These seasonal works occurred between 1982 and 1984/5 and identified a sewer bounding the eastern side of the *Via Sagularis*, which was later rediscovered during investigation in 2005 (Earthworks Archaeology, 2010).

2.2.6 The 1980s excavations also identified a multi-phase Roman granary on the site with at least one earlier timber phase followed by a stone built granary which 'cannot have been constructed before c. AD150' (CAB 9, 1983: 53) incorporating re-used column bases and capitals from a possible barrack veranda in its northern wall. This building survived substantially intact into the early medieval period when it was robbed of its masonry (CAB 9, 1983: 53).

2.2.7 A watching brief and excavation were undertaken immediately to the north of the site during drainage works (Earthworks Archaeology, 2010) which identified multi-phased activity of Roman, and possibly sub-Roman date. The aforementioned *Via Sagularis* and associated roadside sewer were identified. The top of significant archaeology was encountered at 1.7m below ground level (bgl) in Trench 1, approximately 0.9m bgl in Trench 2 and approximately 1.8m bgl in Trench 3.

2.2.8 An evaluation and deposit modelling exercise were undertaken by Wardell Armstrong (2015) which identified that the archaeology within the site was highly truncated by modern activity. Trenches 3, 4, 5 and 6 were truncated to approximately 1.80-1.90m below ground surface with the remaining archaeology, where present, being heavily disturbed or truncated. These extensive truncations are likely due to previous poorly recorded archaeological excavations, conducted during the early 1980s.

2.2.9 Trenches 1, 2, 7 and 8 contained significant archaeology at approximately 1m below ground surface; with Trenches 1 and 2 containing remnants of the Roman rampart;

Trench 7 possibly containing the remains of the *Via Sagularis* and a truncated wall foundation; and Trench 8 containing a relatively well preserved surface, made from re-used roof tiles, possibly associated with an intervallum building.

3 SCOPE OF WORK AND AIMS AND OBJECTIVES

3.1 Scope of Work

3.1.1 The archaeological evaluation and deposit modelling identified that a significant amount of truncation and disturbance has occurred across the majority of the site associated with archaeological excavations conducted during the early 1980s and the widening of St Martins Way in 1985.

3.1.2 The archaeological preservation strategy has been designed to monitor all intrusive works undertaken during the installation of the ground beams and pile caps, the excavation of the lift pit, service runs and attenuation tank and removal of underground obstructions during the drilling of piles. In three discrete locations, full archaeological excavation and recording will be undertaken; these areas comprise

- The northern stairwell;
- The stairwell in the St Martin's Way frontage; and
- The location of the attenuation tank in the east of the development site.

3.1.3 The three specified locations are shown on Figure 2.

3.1.4 In the remainder of the site where a preservation in-situ strategy is to be adopted, appropriate archaeological methodologies will be undertaken as part of a wider holistic programme. These will monitor all intrusive works associated with the development and, where archaeological remains are present, investigate, characterise and interpret them.

3.1.5 In instances where preservation in-situ is not appropriate or the existing methodology not sufficient to deal with the potential archaeological resource, then discussions will be held with the LPA and Client and the methodology will be altered accordingly.

3.2 Aims and Objectives

3.2.1 The objectives of the programme of archaeological investigations are:

- To limit the loss of archaeological remains within the site above and beyond the agreed impact of development (see below);
- To ensure the adequate recording of any archaeological remains revealed during ground works associated with the proposed development;

- To identify and understand, as far as reasonably possible, the nature, depth, extent, date, character and relationship of each of the features encountered across the site;
- To secure the analysis, conservation and long-term storage of any artefactual/ecofactual material recovered from the site;
- To integrate the results of the works with the previous archaeological fieldwork undertaken and to address the *Archaeological Research Framework for Chester* (CAPAS 2013a) where applicable; and
- To ensure that an accurate and comprehensive record and report of any archaeological deposits found during works is produced and disseminated to the appropriate organisations.

3.3 Agreed Impact of Development

3.3.1 Based upon a site area of *c* 850m^2; the sinking of 105 CFA piles of 300mm diameter, is estimated to result in a loss of approximately 7.455m^2 or 0.88% of the site area.

3.3.2 The above calculation is based solely on the area of the pile and does not include a buffer zone around the pile as Historic England guidance indicates that "CFA piling should not damage deposits outside the area of the auger…compared with driven circular, square- and H-section piles (Historic England 2015, 26)". It also indicates that this method significantly reduces the potential of pile wall collapse therefore lessening the likely impact on the archaeological resource.

3.3.3 The staircase midway down the western side of the site is estimated to result in a 12.00m^2 or 1.41% of the site area based upon a 4 metre by 3 metre area of impact. These dimensions were calculated based upon the identified truncation of archaeological remains in Trench 2 and the design of the staircase as indicated in Foundation Layout WL_819 022.

3.3.4 The northern staircase has been reduced from the previously consented scheme and now measures c6.50m^2 reduced from 13.30m^2. These dimensions were calculated based upon the identified truncation of archaeological remains in Borehole 2 and Trench 6 and the design of the staircase as indicated in Foundation Layout WL_819 022. It should be noted that this is a maximum figure as it likely that the modern disturbance/ truncation identified in Borehole 2 (associated with the widening of St Martins Way) extends further eastwards than is presently established.

3.3.5 The combined figure for the estimated total area lost associated with the CFA piles and the staircases is approximately 25.955m^2 or 3.05%. This figure is a liberal estimate and is likely to be higher than the loss in reality due to the extensive truncation associated with the widening of St Martins Way and the previous 1980s excavations, the true extents of which are not truly established due to the piecemeal and irregular nature of these previous disturbances.

3.3.6 The volume of archaeological loss could not be calculated as the evaluation halted at the top archaeological horizon and therefore the depth/thickness of archaeological deposits was not recorded.

3.3.7 Alterations to the final design have been made by the Client including an amendment in the final slab level to ensure that archaeological remains were left undisturbed *in situ*. In addition, discussions between the Client and the lift suppliers have determined that, despite archaeological remains being identified in the area of Trench 8, depth will not be an issue and the lift pit can be accommodated within the constraints imposed by archaeological remains.

4 METHOD STATEMENT

4.1 General Methodology

4.1.1 In accordance with discussions held between Wardell Armstrong and the Development Management Archaeologist, Cheshire West and Chester Council, a scheme for an archaeological programme of investigations has been designed in order to satisfy the stated objectives of the project as set out under Section 3 above.

4.1.2 Prior to commencement, a Tool Box Talk will be carried out by the Lead Archaeologist in order to inform all site operatives of the specific archaeological requirements at the site. The Tool Box Talk will also be presented as a document which will be presented to all new operatives at the site as part of their induction.

4.1.3 In advance of any fieldwork, WA will request the client has demonstrated that all reasonable measures have been taken to identify any constraints and that they have provided all reasonable information regarding the presence of services, any ecological constraints, the presence of Public Rights of Way, any areas of potentially contaminated land and/or any other known risks to health and safety.

4.1.4 Based upon the findings of the archaeological evaluation (WA 2015b), the following depths for the top of significant archaeology were agreed:

- Trench 1 – 0.85m bgl 23.05m AOD;
- Trench 2 – 1.50m bgl 22.30m AOD;
- Trench 3 – 1.75m bgl 22.55m AOD;
- Trench 4 – 1.85m bgl 22.55m AOD;
- Trench 5 – 1.56m bgl 22.59m AOD;
- Trench 6 – 1.85m bgl 23.03m AOD;
- Trench 7 – 1.30m bgl 23.20m AOD;
- Trench 8 – 1.30m bgl 22.90m AOD.

4.1.5 WA will request all intrusive works using a mechanical excavator are undertaken with a toothless bucket to maximise the chance for identification of any archaeological remains should they be present. However, it is noted that a toothed bucket may be required in areas where substantial obstacles are present, the LPA will be made aware of any such variations as appropriate. All intrusive works will be monitored by a suitably experienced archaeologist.

4.1.6 Machine excavation will be undertaken to the top of the significant archaeology, to the top of the natural substrate or limit of development intrusion, whichever is higher.

4.1.7 All archaeological remains or deposits will be cleaned, investigated and recorded by hand to retrieve artefactual material and environmental samples, as well as to determine the character, significance and date of the archaeology. Once this has been completed a mechanical excavator will then be used to help reached the next level where the strategy will be repeated. This methodology will continue to the top of the natural substrate or limit of development intrusion, whichever is higher.

4.1.8 In areas where a preservation in-situ methodology is to be employed all intrusive works will be monitored by a suitably experienced archaeologist who will highlight any potential archaeological features revealed to the groundworkers. Should this occur, then the client will provide the archaeologist with sufficient time to allow suitable investigation by hand. All surfaces will be cleaned, inspected and potential features/deposits excavated to retrieve artefactual and ecofactual material, as well as determine their character, significance and date.

4.1.9 Potentially significant archaeological deposits will not be removed by machine until their character is reasonably understood and where the procedure has been agreed by the Development Control Archaeologist, Cheshire West and Chester Council.

4.2 Investigation and Sampling Strategy

4.2.1 Archaeological features will be sampled sufficiently to characterise, date them and determine their significance i.e. 10% of fills of linear features (unless the linear features are substantial in which case an alternative sampling strategy will be discussed with the LPA) and 50% of pit fills. Smaller discrete features such as postholes will be 100% sampled.

4.2.2 During the programme of archaeological investigations every attempt will be made to ensure that sampling of archaeological features causes as little disturbance as possible to the archaeological resource that would otherwise not be disturbed within the development area. The aim being to protect the integrity of the archaeological resource.

4.2.3 Structural features such as walls and floor surfaces will be cleaned, photographed and planned appropriately and their physical and stratigraphic relationships will be determined.

4.2.4 Measures will be taken to protect particularly significant, valuable or sensitive archaeological remains from exposure, accidental damage and/or theft.

4.3 Recording

4.3.1 Archaeological deposits and features will be recorded according to accepted professional standards using the format set out in the WA archaeological field manual (WA 2016) and *Guidance and general conditions for archaeological contractors and consultants in Cheshire* (Cheshire County Council 2003), and sufficient data will be recorded to allow for a full characterisation of the context and its relationships to be made and allow for future studies to query and compare the dataset with confidence.

4.3.2 Archaeological contexts will be recorded and numbered individually on *pro-forma* context sheets. In addition, a further, more general record of the work comprising descriptions and discussions of the archaeology is to be maintained as appropriate. Context sheets are to be primarily filled in by the archaeologist excavating the feature/deposit.

4.3.3 All features will be recorded using a Trimble TSC3 GPS unit (or equivalent) with sub-centimetre accuracy with each point recorded in relation to the OSGB36 geod model and coded to an internal WA database to provide a dataset that records feature type, context number, associated drawing numbers and any other feature specific information that may be relevant. This plan will also provide a three dimensional geo-referenced visual representation on the archaeology present. In addition, features the require more detailed illustration will be undertaken by hand in relation to a feature specific geo-referenced baseline and drawn at an appropriate scale on polyester based drafting film and labelled in relation to a site specific drawing register.

4.3.4 Should the archaeology revealed be suitable then the use of multi-image photogrammetry will be discussed with the client and LPA to capture high resolution three dimensional models with high quality surface texturing and sub-centimetre accuracy. This technique is an extremely versatile, rapid and cost-effective methodology to capture complex features or structures accurately. All images will be taken using a Nikon D60 digital SLR camera with a 10.2megapixel resolution, and processed using AgiSoft PhotoScan software to produce a three dimensional point mesh frame model that can be accessed using a web browser.

4.3.5 Hand drawn sections will be drawn at an appropriate scale, primarily 1:10. Likewise, plans of archaeological features will be drawn at a suitable scale to record them in detail. If appropriate a larger site plan will be produced at a scale between 1:100 and

1:1,250 to show the location of monitored works, detailed plans and sections and any other information appropriate. This plans will be accurately related to the National Grid.

4.3.6 All plans and sections will be levelled in respect to AOD and are to be drawn on polyester based drafting film and clearly labelled.

4.3.7 A full digital photographic record of the work is to be kept. All images are to be taken using a Nikon D60 digital SLR camera with a 10.2-megapixel resolution. The photographic record is to be regarded as part of the site archive and the digital files will be labelled appropriately and cross-referenced in relation to a site specific photography register.

4.3.8 WA will ensure that the complete site archive including finds and palaeoenvironmental samples is to be kept in a secure place throughout the period of fieldwork and post-excavation process.

4.4 Human Remains

4.4.1 In the event that human remains, both inhumations and/or cremations, are exposed during the course of the archaeological investigations then all works are to cease immediately and the local police and coroner informed. The area will be screened from view and discussions will be held with the client and LPA on options for their appropriate preservation in-situ or for their removal in accordance with professional standards and guidelines once the antiquity of the remains has been suitably proven.

4.4.2 Wardell Armstrong will have an appropriately qualified and experienced osteoarchaeologist available to supervise the excavation and removal of any human remains (where this is necessary) from the site.

4.4.3 In the event that human burials are discovered, a Ministry of Justice Licence will be required (in accordance with Section 25 of the Burial Act 1857) before the remains can be lifted. The need for a Ministry of Justice Licence applies to both inhumation and cremated remains. Application for a Licence will be made by WA.

4.5 Finds recovery and processing

4.5.1 All artefacts recovered during the course of the archaeological investigations are the property of the landowner/client. They will be suitably bagged, boxed and marked in accordance with the *Standards and Guidance for the Collection, Conservation and Research of Archaeological Materials* (CIFA 2014c), the *Standard and Guide to Best Practice for Archaeological Archiving in Europe* (Perrin et al. 2014) and *Guidance and*

general conditions for archaeological contractors and consultants in Cheshire (Cheshire County Council 2003).

4.5.2 On completion of the project, modern material, unstratified remains and objects that have been assessed as having no obvious grounds for retention will be discarded after a period of six months, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository).

4.5.3 The primary archive records will clearly state how all artefact assemblages have been recovered, sub-sampled and processed.

4.6 Treatment of treasure

4.6.1 Finds falling under the statutory definition of treasure (as defined by the Treasure Act of 1996 and its revision of 2002) will be reported immediately to the relevant Coroner's Office, the landowner/client and the LPA. A treasure receipt (obtainable from either the FLO or the DCMS website) will be completed and a report submitted to the Coroner's Office and the FLO within 14 days of understanding that the find is treasure. Failure to report within 14 days of discovery is a criminal offence.

4.6.2 The treasure receipt and report will include the date and circumstances of the discovery in addition to the identity of the finder (put as WA/site contractor) and the location of the find in relation to Ordnance Survey.

4.7 Palaeoenvironmental Sampling

4.7.1 A structured programme of palaeoenvironmental sampling appropriate to the specific aims of the project will be implemented. The strategy and methodology for the sampling of deposits will be in accordance with English Heritage (Now Historic England) Centre for Archaeology Guidelines "*Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation"* (2011).

4.7.2 Where deposits are dry, bulk samples for the recovery of charred plant remains, small bones and finds, will be taken from sealed and datable features such as pits, ditches, hearths and floors. Each context will be sampled in isolation. The size of the sample is expected to be in the range of 40-60 litres per context or 100% of smaller contexts. Samples will not be taken from the intersection of features or where context horizons are not fully defined.

4.7.3 Mollusc samples of two litres each will be taken vertically from appropriate sections to investigate the changes of vegetation through time.

4.7.4 Where deposits are wet, waterlogged or peaty, monoliths will be taken along cleaned vertical surfaces for the retrieval of pollen, diatoms, ostracods and foraminifera. The numbers to be taken will be agreed with the client and LPA. Where bulk samples are to be taken a minimum of 20 litres will be taken from visible layers or spits for the retrieval of plant macro-remains and insects.

4.7.5 Environmental samples from dry deposits will normally by processed by floatation following the fieldwork and the residues will be sorted to retrieve small bones, small finds and charcoal that has not floated. Environmental samples from wet deposits will normally be sent to specialists for processing in laboratory conditions.

4.7.6 Where guidance is relevant the appropriate English Heritage (Now Heritage England) papers will be followed (EH 2005; 2006; 2007 & 2011).

4.8 Reporting

4.8.1 Upon completion of the programme of archaeological investigations, WA will produce an appropriate report, a draft of which be supplied to the client for comment in the first instance. Once approved by the client a copy of the report will be forwarded to the Local Planning Authority.

4.8.2 Should little or no archaeology be revealed then it is expected that the production and submitting of a suitable report will be completed within 4/5 weeks of the completion of the fieldwork. If significant and/or substantial archaeological deposits are revealed, then the submission will take longer to allow for the necessary specialist input. In this event, discussions will be held with the LPA about the possibility of submitting an interim report to aid in the discharge of the planning condition.

4.8.3 External specialists will only be called upon during the compilation of the report if the of the archaeological resource cannot be adequately determined without their input.

4.9 Archive Preparation and Deposition

4.9.1 WA will make provisional arrangements for the deposition of the site archive with all documents, artefacts and any other material associated with the project will be marked with an HER reference number to be confirmed prior to fieldwork commencing**.** Following completion of the fieldwork preparation of the site archive will follow *Guidance and general conditions for archaeological contractors and consultants in Cheshire* (Cheshire County Council 2003) from the recipient museum regarding deposition. Any variation will be agreed with the Local Planning Authority before being implemented.

4.9.2 In addition, WA will use an internal site code during the course of the archaeological investigations which shall also be placed on all documents, artefacts and any other items that may be associated with the project. The internal site code is **HUN-B**.

4.9.3 The site archive will include all project records and cultural material produced by the watching brief, and will be prepared in accordance with *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (Brown 2011), A *Standard Guide to Best Practice for Archaeological Archiving in Europe* (Perrin *et al* 2014) and *Guidance and general conditions for archaeological contractors and consultants in Cheshire* (Cheshire County Council 2003).

4.9.4 Should no archaeology be revealed then the final report will be provided to the local HER and entered into the online access to the index of archaeological investigations database (See below).

4.10 **Monitoring and Liaison**

4.10.1 WA will allow the site records to be inspected and examined at any reasonable time during or after the archaeological fieldwork by the client or any designated representative of the Local Planning Authority.

4.10.2 WA will liaise closely with the LPA throughout the course of the project and will arrange for onsite meetings at key decision points.

4.11 **Dissemination**

4.11.1 This project has been registered with the **O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S** (**OASIS**) under a reference to be confirmed and a digital copy of the archaeological report will be made available upon its completion.

4.11.2 A summary of the work will be submitted to the editor of any relevant journals agreed with the LPA should the results of the fieldwork warrant this.

4.12 **Health and Safety**

4.12.1 WA maintains a Health and Safety Policy and has available appropriate expertise in Health and Safety Advice. Site staff will have an appropriate level of training to enable them to carry out fieldwork safely.

4.12.2 WA will abide by the client's health and safety methodology as well as producing their own internal risk assessment document for each phase of works as required, all WA staff will assist the client in maintaining the site in a safe condition. Hazards will be

appropriately identified and managed including identification of buried and above ground services/utilities.

4.12.3 In addition to the risk assessment which will be undertaken prior to commencement of each phase of investigation, where appropriate a COSHH assessment will also be undertaken. Once on site these documents will be assessed and any variations will be highlighted and added to the appropriate assessment. These will be re-evaluated periodically during the course of the fieldwork to make sure that they remain consistent to the site specific risks. All members of WA and visitors will be required to be inducted and sign these documents on first arrival to site to show that they have read and understood the contents and any variations will be communicated as required.

4.12.4 In addition to the risk assessment which will be undertaken prior to commencement of fieldwork, where appropriate a COSHH assessment will also be undertaken. Once on site these documents will be assessed and any variations will be documented and added to the appropriate document. These will be re-evaluated as periodically during the course of the excavations to make sure that they remain consistent to the site specific risks. All members of WA and visitors will be required to be inducted and sign these documents on first arrival to site to show that they have read and understood the contents and any variations to the documents will be communicated as required.

4.12.5 During the fieldwork, appropriate safety clothing will be worn by WA staff at all times. The client will be requested to provide details of their own risk assessment before fieldwork commences. If there is conflict between the client's risk assessment and that of WA then the client's will take priority, unless it is perceived to be placing the field team at greater risk.

4.12.6 The client will be asked to provide all information reasonably obtainable on contamination and the location of live services before the archaeological works commence.

4.13 **Staffing**

4.13.1 The project will be directly managed by a full Member of the Chartered Institute for Archaeologists or an archaeologist of equivalent standing.

4.13.2 The standards and codes of conduct of the Chartered Institute for Archaeologists will be adhered to at all times.

4.13.3 The following members of the WA team will be available, if necessary to advise when necessary:

- Environmental Archaeology: Emma Tetlow PhD, Mphil, BSc, MCIfA.
- Finds and Archives Officer: Megan Stoakley M.A., BA.
- Flint Expert: David Jackson BA Hons.
- Osteoarchaeologist: Damian Churchill M.A., BA Hons.
- Numismatics: Frank Giecco MCIfA, DipArch, BA Hons.
- Geoarchaeology and Pollen: Nick Daffern MSc, BA (Hons).
- Post Roman - late post medieval ceramics - Stephanie Ratkai.
- Late post medieval ceramics, metalwork, leather - Quita Mould.
- Clay pipes - Peter Hammond.

4.13.4 External specialists will be utilised as appropriate.

5 REFERENCES

BGS (2017) *Geology of Britain Viewer,* http://mapapps.bgs.ac.uk/geologyofbritain/home.html, British Geological Survey, Accessed April 2017.

Brown, D.H. (2011) *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*, Archaeological Archives Forum.

CAB (1982) Hunter Street, *Chester Archaeological Bulletin 1982*, 8, 38-29

CAPAS (2013a) *An Archaeological Research Framework for Chester*, http://www.cheshirearchaeology.org.uk/wp-content/uploads/UAD-Chester-Research-Frameworks.pdf , Cheshire Archaeology Planning Advisory Service, Accessed April 2017.

CAPAS (2013b), *Chester's Archaeological Character Zone 4: St. Martin's Field*, http://www.cheshirearchaeology.org.uk/wp-content/uploads/HCH16744.pdf, Cheshire Archaeology Planning Advisory Service, Accessed April 2017.

CAPAS (2014) *Chester Archaeological Plan* http://www.cheshirearchaeology.org.uk/wp-content/uploads/Chester_Archaeological_Plan.pdf, Cheshire Archaeology Planning Advisory Service, Accessed April 2017.

Cheshire County Council (2003) Guidance and General Conditions for Archaeological Contractors and Consultants in Cheshire, Chester.

CIfA (2014a) *Standard and Guidance for an Archaeological Excavation*, Chartered Institute for Archaeologists, Reading.

CIfA (2014b) *Standard and Guidance for an Archaeological Watching Brief*, Chartered Institute of Field Archaeologists, Reading.

CIfA (2014c) *Code of Approved Conduct for the Regulation of Arrangements in Field Archaeology,* Chartered Institute for Archaeologists, Reading.

Earthworks Archaeology (2010) *Installation of a new sewer system on land at the rear of King's Mews, St. Martin's Way, Chester – watching brief and rapid archaeological excavation,* unpublished report, EAS doc. Ref: E762RPT, dated October 2010.

Historic England (2005) *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England*, English Heritage, London.

Historic England (2006) *Science for Historic Industries; Guidelines for the investigation of 17th to 19th century industries,* English Heritage, London.

Historic England (2007) *Understanding the Archaeology of Landscapes: A Guide to good recording practice*, English Heritage, Swindon.

Historic England (2011) *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*, English Heritage, London.

Historic England (2015) *Piling and Archaeology,* Historic England, London.

Perrin, K., Brown, D. H., Lange, G., Bibby, D., Carlsson, A., Degraeve, A., Kuna, M., Larsson, Y., Pálsdóttir, S. U., Stoll-Tucker, B., Dunning, C. & Rogalla von Bieberstein, A. (2014) *The Standard and Guide to Best Practice for Archaeological Archiving in Europe* (EAC Guidelines 1). http://european-archaeological-council.org/files/arches_v1_gb.compressed.pdf

Wardell Armstrong (2016) *Wardell Armstrong Archaeology: Excavation Manual,* Wardell Armstrong Archaeology, Unpublished internal document, Edition 4.

Young, T. (2011) *Characterisation Study of Chester City Centre and Approaches*, Chester.

Appendix 1
Figures from 2015 Evaluation Report

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Wardell Armstrong
Archaeology
2015

PROJECT: Land at Hunter Street, Chester

SCALE: 1:250 at A4

REPORT No: CP 11363

CLIENT: Watkin Jones Group

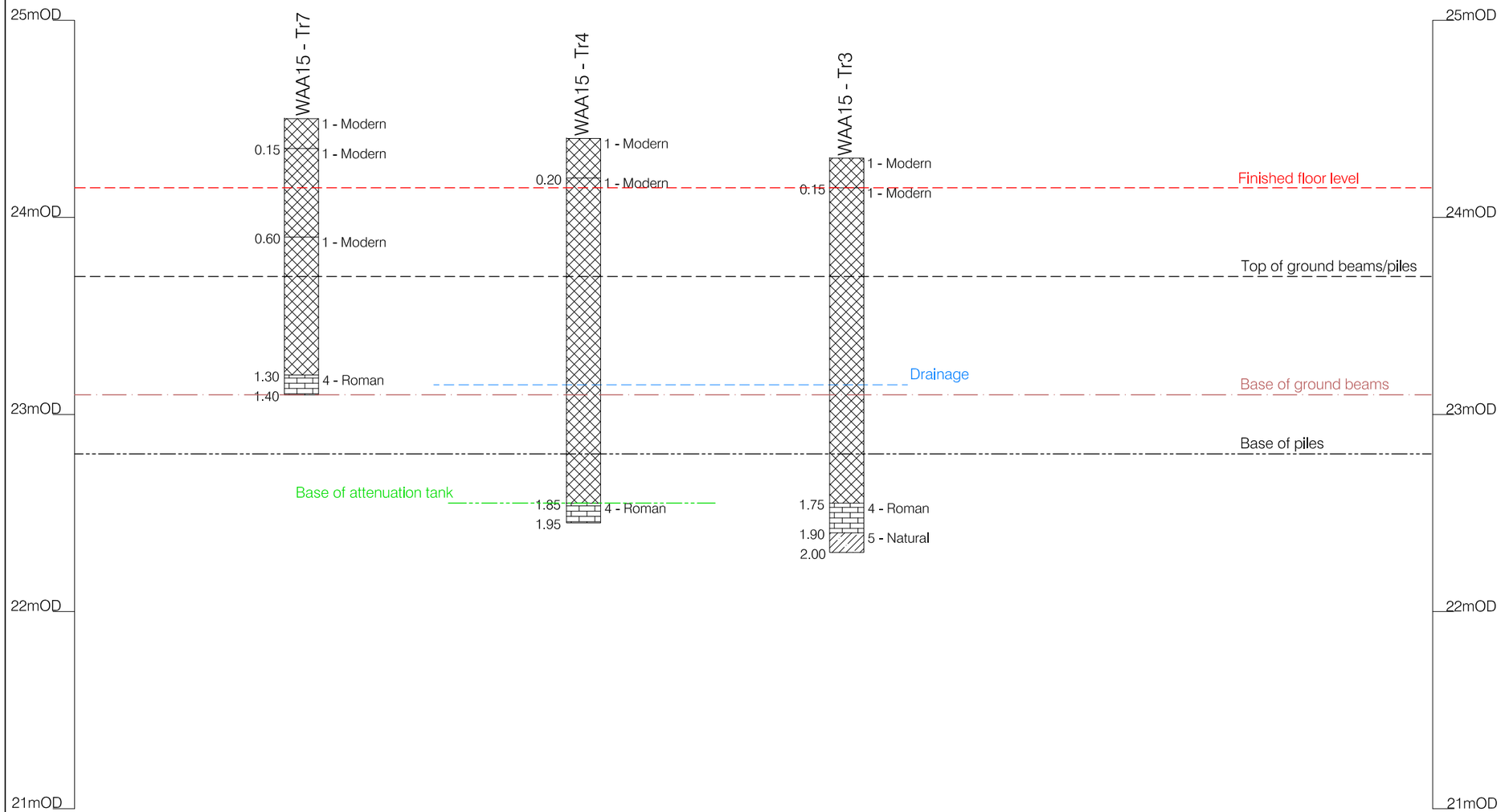
DRAWN BY: JW

DATE: September 2015

KEY:

- Evaluation Trench
- Previous excavation
- Projected route of metalled surface
- Projected route of wall
- Projected route of drain
- Projected route of rampart
- Projected route of modern truncation
- Foundation route including piles
- Drainage route
- Attenuation Tank
- Area of Investigation

Proposed development in relation to archaeology



Wardell Armstrong Archaeology 2015

PROJECT:

Hunter Street, Cheshire, Chester

CLIENT:

Watkin Jones

SCALE: Vertical 1:25/ Horizontal 1:250 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

Made ground
Archaeology
Natural

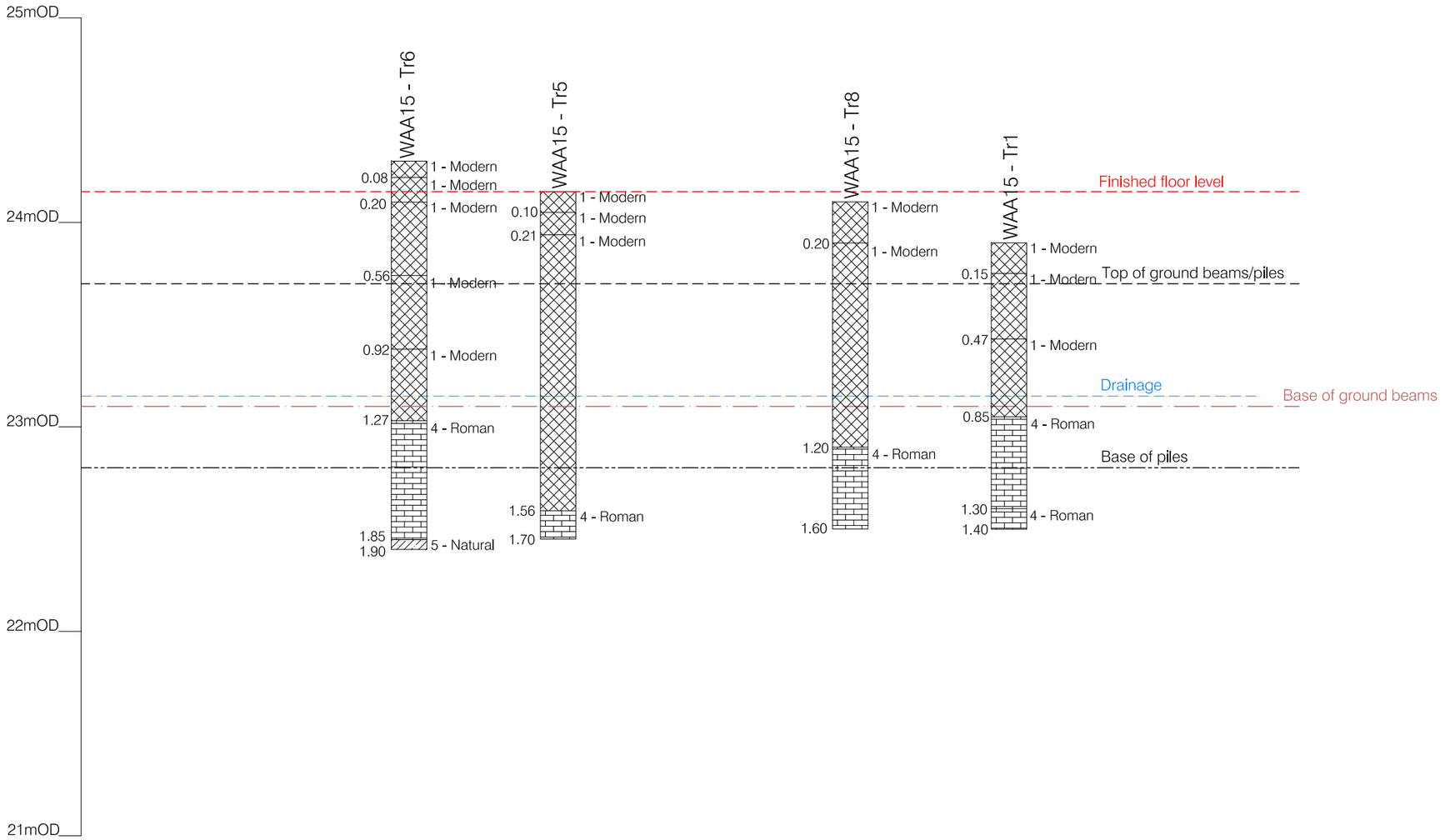
REPORT No:

CP11363

FIGURE:

10

Figure 10: Transect 1, North - South, eastern side of site.



Wardell Armstrong
Archaeology
2015

PROJECT:

Hunter Street,
Cheshire, Chester

CLIENT:

Watkin Jones

SCALE: Vertical 1:25/
Horizontal 1:250 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

Made ground
Archaeology
Natural

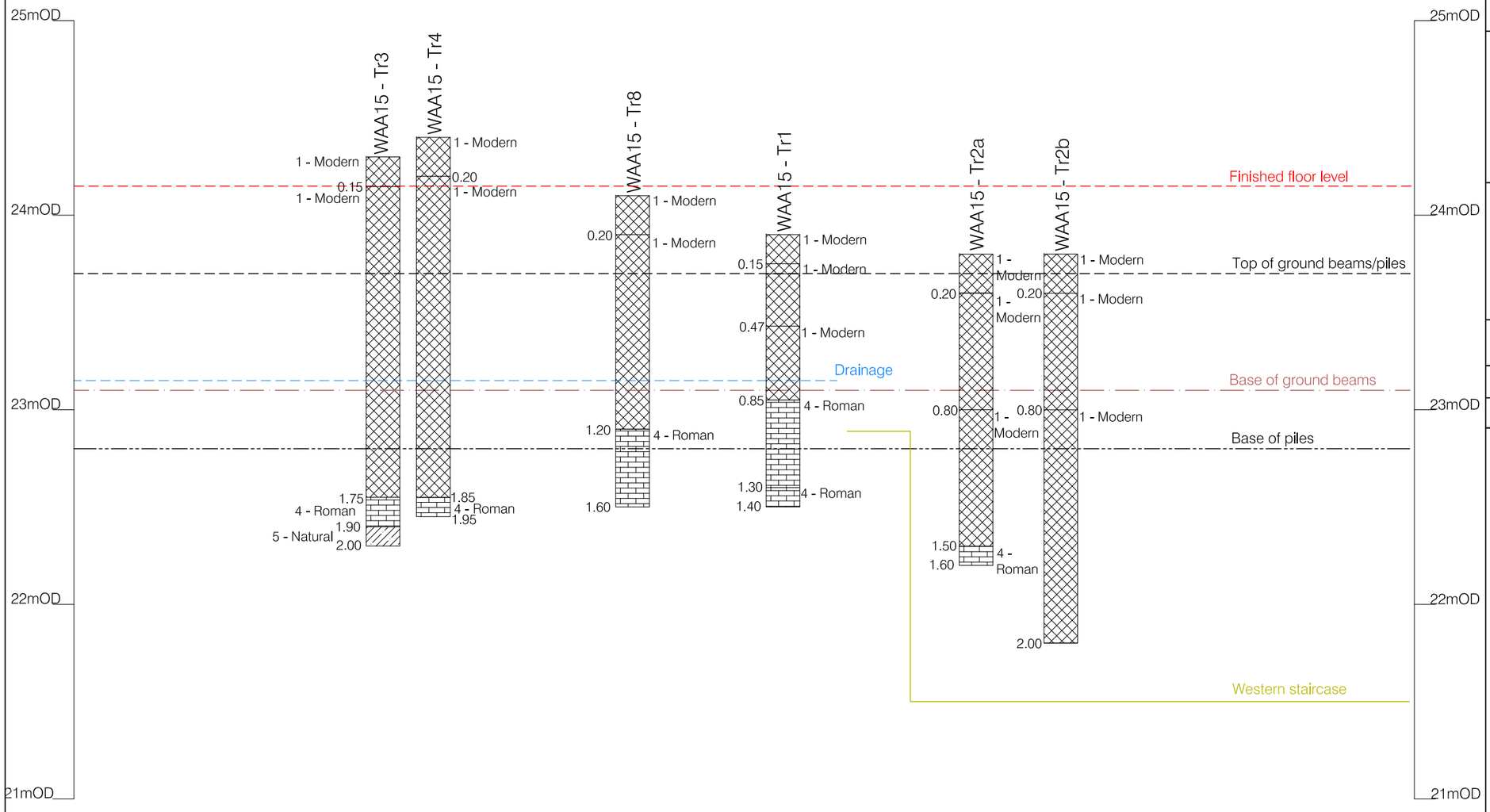
REPORT No:

CP11363

FIGURE:

11

Figure 11: Transect 2, North - South, centre of site.



Wardell Armstrong Archaeology 2015

PROJECT: Hunter Street, Cheshire, Chester

CLIENT: Watkin Jones

SCALE: Vertical 1:25/ Horizontal 1:250 at A3

DRAWN BY: AB

DATE: October 2015

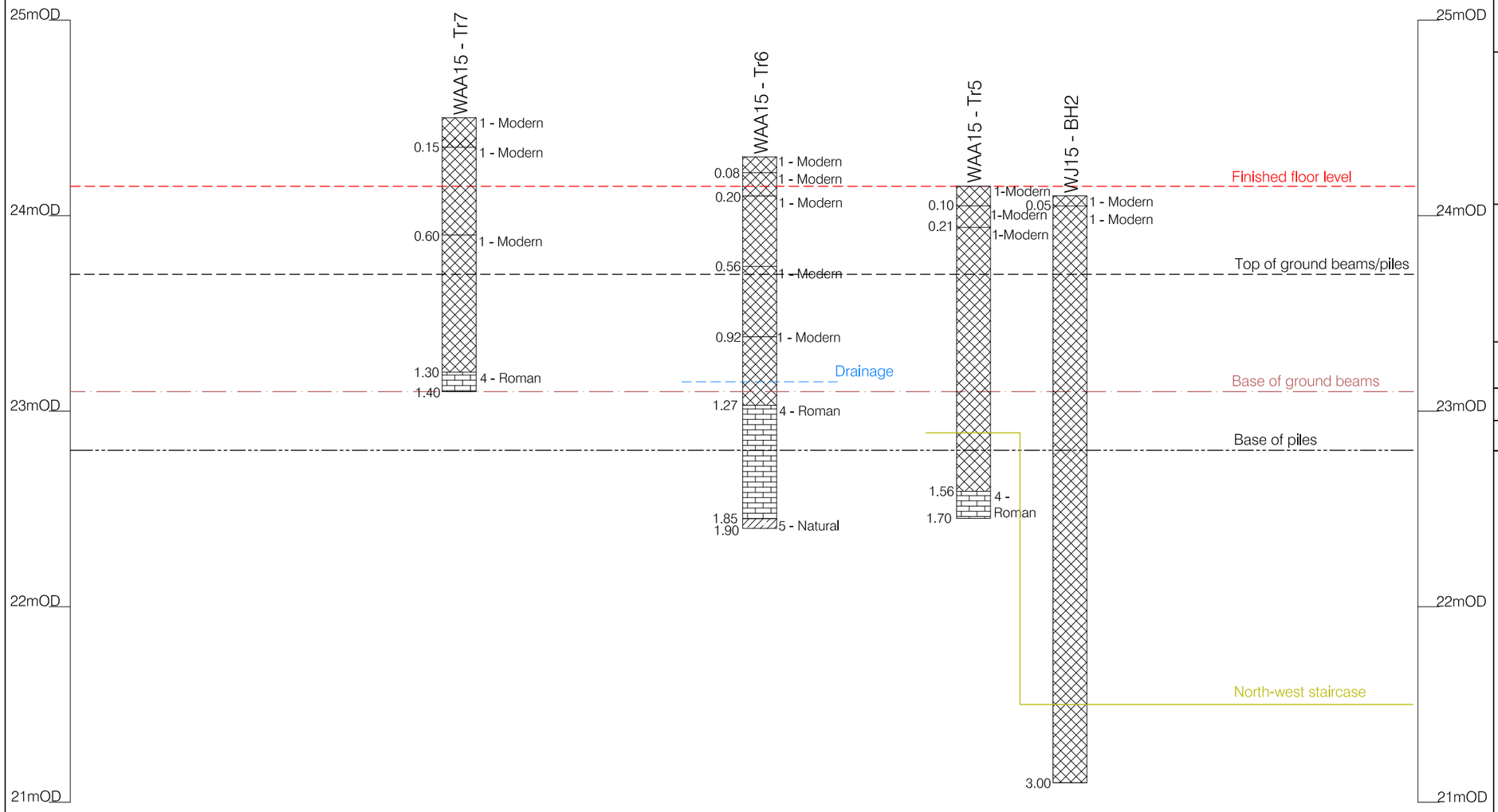
KEY:

Made ground
Archaeology
Natural

REPORT No: CP11363

FIGURE: 12

Figure 12: Transect 3, East - West.



Wardell Armstrong Archaeology 2015

PROJECT:

Hunter Street, Cheshire, Chester

CLIENT:

Watkin Jones

SCALE: Vertical 1:25/ Horizontal 1:250 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

Made ground
Archaeology
Natural

REPORT No:

CP11363

FIGURE:

13

Figure 13: Transect 6, East - West, northern end of site.

DRAWINGS

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Wardell Armstrong Archaeology 2015

PROJECT: Land at Hunter Street, Chester

DRAWN BY: JW

PROJECT No: CP11363

CLIENT: Watkin Jones Group

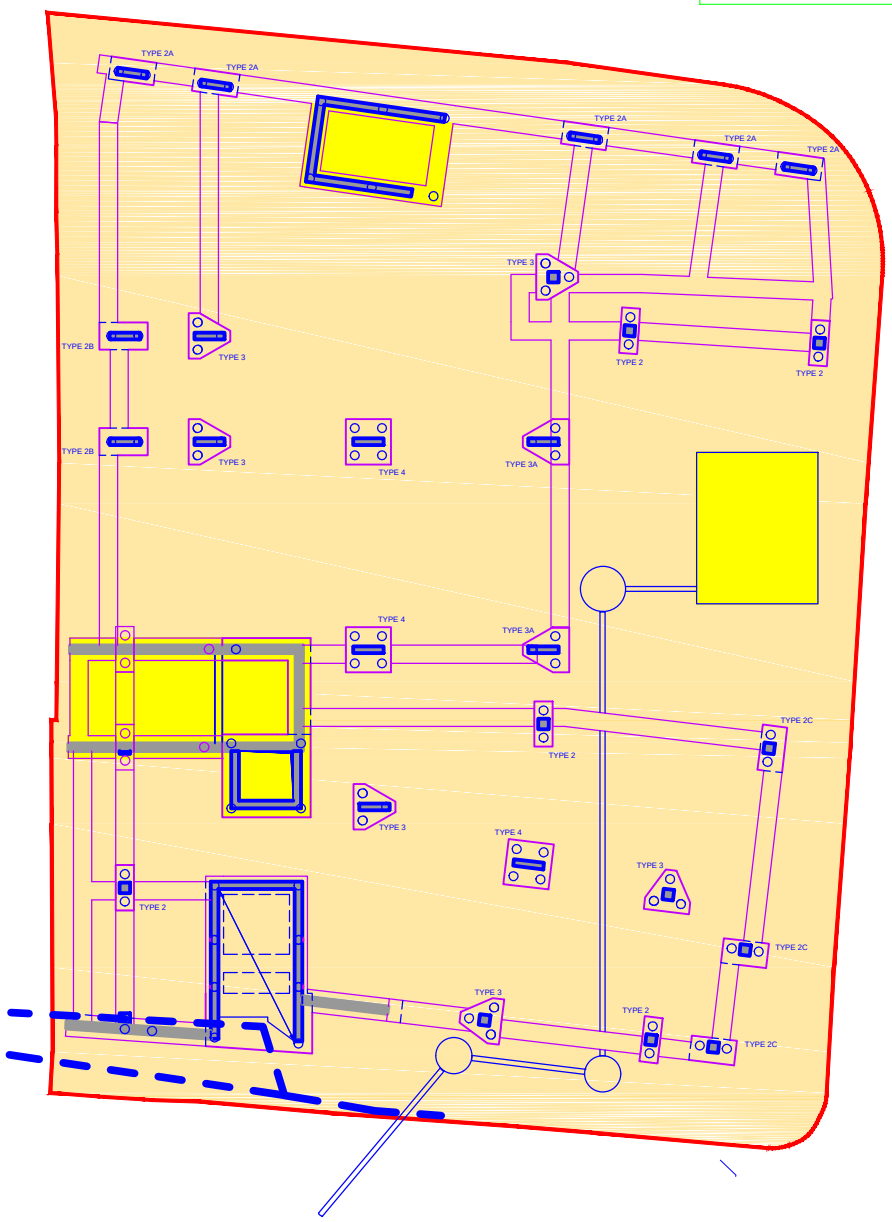
DATE: July 2015

Figure 1: Site Location

DO NOT SCALE FROM THIS DRAWING

Key:

- Site Boundary
- Foundation route
- Watching brief area
- Targeted excavation areas



CLIENT: Watkin Jones Group	DRG No.: ST15779-002		REV: A
PROJECT: Land at Hunter Street, Chester	SIZE: A4	SCALE: 1:250	DATE: 31/07/2017
	DRAWN BY: JW	CHECKED BY: ND	APPROVED BY: ND
DRAWING TITLE: Figure 2: Proposed areas of investigation	wardell armstrong your earth our world		

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