



CHESTER CATHEDRAL QUARTER, CHESTER

Cheshire West
and Chester

Evaluation Report



Oxford Archaeology North

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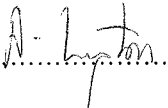
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SUMMARY

In April 2010, Oxford Archaeology North (OA North) was commissioned by Cheshire West and Chester Council on behalf of the partnership of Cheshire West and Chester Council, Chester Renaissance, Chester Cathedral and the North West Development Agency, to conduct a programme of archaeological evaluation to the south and west of Chester Cathedral (centred on SJ 4057 6642), as a prerequisite to the proposed development of these areas. This area lies within Chester's Area of Archaeological Importance (AAI), and an earlier OA North archaeological desk-based assessment suggested that significant Roman, medieval and post-medieval below-ground remains might be found across this area, forming part of the Roman fortress and a medieval and post-medieval cemetery.

In order to investigate the site, eight evaluation trenches were excavated (Trenches 2a, 2b, 2c, 3, 4a, 4b, 4c and 4d), which were distributed to the south-east and south-west of the cathedral. In addition, a second phase of archaeological evaluation entailed the excavation of seven test pits (Test Pits 4, 6, 7, 10, and 11; Trenches 5a and 5b), as part of a programme of geotechnical investigation. These test pits were located to the south-east and south-west of the cathedral, whilst two test pits were also excavated to the west of the cathedral, in Abbey Square.

The earliest identified remains were located in Trenches 2a and 2d, and possibly Trench 3, and seemingly represented the remains of substantial stone-walled buildings that may have been associated with the Roman Legionary fortress. Significantly, all of the trenches and test pits, apart from Trench 5a, also contained disarticulated human remains, associated with a burial horizon, which probably formed part of an extensive post-medieval cemetery. Other concomitant remains included articulated burials (Trenches 2a, 2b, 2d, and 3) and charnel pits (Trench 3). In addition, one possible medieval burial was identified (Trench 2d), contained within a stone cist, though it is anticipated that further medieval inhumations may be present across the study area.

Later post-medieval activity was also apparent and included several excavated layers to the south-east and south-west of the cathedral, which were interpreted as levelling deposits that had been imported to the site in order to raise the ground surface. These levelling deposits did not contain any human remains, and are most likely associated with George Gilbert Scott's work on the cathedral in *c* 1865.

It is concluded that any future development across the proposed development area would potentially have a serious archaeological impact, particularly upon buried human remains, which in some instances are found at comparatively shallow depths. Whilst the requirement and precise scope of any future works would need to be devised in consultation with the Chester City Archaeologist and the Cathedral Archaeologist, it is recommended that a continued archaeological presence would be required prior to, and/or during, any future ground works within the proposed development area.

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank BDP and Chester Renaissance for commissioning the project. Thanks are also due to the staff at Chester Cathedral, including Cathedral Surveyor Richard Axon, Press Officer, Nicholas Fry and Chief Executive, Annette Moor. Thanks must also be given to City Archaeologist, Mike Morris, and Cathedral Archaeologist, Simon Ward, for their advice and support throughout the project. Oxford Archaeology North is also grateful to Dr Karina Croucher, of the University of Manchester, for producing a photographic documentary of the archaeological evaluation process.

The archaeological evaluation was directed by Caroline Raynor and Andy Bates, with the assistance of Ged Callaghan, Dana Campbell, Tim Christian, Phil Cooke, Paul Dunn, John Griffiths, Aidan Parker, Gemma Jones, and John Onraet. The report was written by Andy Bates and Caroline Raynor, whilst the drawings were produced by Adam Parsons and Andy Bates. The majority of the finds reports were examined by Christine Howard-Davis, with contributions on the human bones and animal bones provided by Vickie Jamieson and Andy Bates respectively. The report was edited by Dr Richard Gregory, whilst the project was managed by Emily Mercer and Ian Miller.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 BDP, on behalf of Chester Cathedral, Chester Renaissance, and Cheshire West and Chester Council, is currently applying for planning permission for the Phase 1 Visitor Attraction Fund (VAF) designs for development on the south side of Chester Cathedral Developments within the Cathedral Quarter. These proposals will be submitted to the Cathedral's Fabric Commission for England (CFCE) and the Local Planning Authority, and aim to improve visitor attractions both within the cathedral, and also within its immediate environs.
- 1.1.2 The cathedral and its surroundings lie within an area of archaeological significance, which may contain nationally important below-ground remains (Fig 1). Accordingly, this area resides within Chester's Area of Archaeological Importance (AAI) and, given its potential significance, an archaeological desk-based assessment was undertaken by Oxford Archaeology North (OA North), on behalf of BDP (BDP 2010), to determine the potential impact of any future scheme of development. The desk-based assessment indicated that the proposed development lies within the confines of the Roman legionary fortress of *Deva Victrix*, and also covers an area that was used as a cemetery from the twelfth century onwards. In addition, the assessment indicated that this area might also contain other potential medieval structures and later post-medieval remains. The assessment therefore concluded that the proposals for the visitor attractions, which include a level of intrusive groundworks and earthmoving activities, might have a direct impact upon these potential archaeological remains.
- 1.1.3 In order to understand the precise nature, depth, extent and significance of the archaeological resource, a programme of archaeological evaluation was therefore recommended. This work was designed to inform the planning process, and allow the formulation of a suitable archaeological mitigation strategy.
- 1.1.4 OA North was invited to submit a project design for the archaeological evaluation, and was commissioned subsequently by BDP, acting on behalf of Chester Renaissance, to undertake this work. The initial phase of work was undertaken in April and May 2010, and targeted three of the designated development areas (Plate 1; Areas 2-4). This work involved the excavation of eight trenches (Plate 1; Trenches 2a, 2b, 2c, 3, 4a, 4b, 4c and 4d).
- 1.1.5 Following on from the results of the initial phase of evaluation, a second phase of archaeological evaluation was then proposed, and led to the production of an updated project design (*Appendix 1*). This allowed for the archaeological excavation of seven test pits (Fig 1; Test Pits 4, 6, 7, 10, and 11; Trenches 5a and 5b), as part of a programme of geotechnical investigation. It was further proposed that several of these test pits (TP 4, 6, 7, 10, and 11) would be positioned within the confines of the Phase 1 evaluation trenches to minimise the disturbance to sensitive archaeological remains.

1.1.6 The second phase of archaeological evaluation was largely completed in September and October 2010, with the excavation of Test Pits 4, 6, 7, 10, and 11. The remaining test pits (Trench 5a and 5b), located in Abbey Square, were excavated in October 2010.

1.2 LOCATION

1.2.1 The City of Chester is located on the Cheshire plains, to the west of the Cheshire sandstone ridge, close to the border with Wales. Chester Cathedral, positioned in the centre of this historic settlement, is situated on a sandstone bluff above the River Dee. The streets and lanes of the city centre are lined with a mix of half-timbered, brick and sandstone buildings, dating from the seventeenth and eighteenth centuries (Countryside Commission 1999, 151).

1.2.2 The area around the cathedral was divided into five areas for the purposes of the archaeological investigation. Within three of these areas (Areas 2-4) the Phase 1 archaeological trenches were excavated, along with five of the test pits, whilst two further test pits were excavated in Abbey Square (Area 5) (Plate 1).

1.2.3 **Area 2:** Trenches 2a, 2b, 2c and 2d, and Test Pits 6, 7, 10, and 11 were excavated within this area, which is bounded to the north by the cathedral, to the south and west by St Werburgh Street, and to the east by a path leading into the south transept of the cathedral (Plate 1). The area currently contains commemorative benches, ornamental flowerbeds, and a war memorial.

1.2.4 **Area 3:** Trench 3 was excavated in this area, which is bounded to the north by the cathedral, to the west by the path leading to the south transept, to the south by St Werburgh Street, and to the east by Area 4 (Plate 1). This area is currently occupied by commemorative benches and ornamental flower beds.

1.2.5 **Areas 4:** Trenches 4a, 4b, 4c and 4d, and Test Pit 4, were excavated in this area, which is bounded to the north and west by the cathedral, to the south by a footpath leading from St Werburgh Street to the city walls, and to the east by the city walls (Plate 1). This area is currently occupied by the modern bell tower and a small table and flowerbeds of the memorial gardens.

1.2.6 **Area 5:** Trenches 5a (TP 3) and 5b (TP 1) were excavated within Abbey Square, which is located to the north-west of the cathedral.



Plate 1: Aerial view showing of the cathedral showing the positions of the evaluation trenches

1.3 GEOLOGY

1.3.1 The underlying solid geology of the area comprises Triassic sandstones and marls, which are overlain by superficial deposits of boulder clay, interspersed with sands and gravel (Countryside Commission 1999, 148-9).

1.4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.4.1 The following section presents a summarised historical background, which draws heavily on the desk-based assessment compiled for BDP by OA North (BDP 2010).

1.4.2 **Prehistoric Period:** a Neolithic stone axe found near Abbey Square in 1888, and five worked flints found during the excavations on Deanery Field in the 1920s and 1930s immediately to the north of the cathedral, are the earliest signs of activity from the area. Adjacent and to the west of Deanery fields, excavations in the garden of no. 1 Abbey Green produced residual Late Bronze Age and Iron Age pottery in the excavated Roman ramparts. Striations in the sandstone bedrock, indicating pre-Roman cultivation were also recorded during this excavation (Hodgson and Brennand 2006, 50; McPeake *et al* 1980). However, no archaeological sites of this period are known within the area under investigation.

- 1.4.3 **Romano-British period:** the Cathedral Quarter now occupies what was approximately the north-east quarter of the Roman Legionary fortress, *Deva Victrix*, constructed between *c* AD 79-80 in timber, and then rebuilt after AD 100 in stone (BDP 2009). The fort was divided into four east/west-aligned *insulae*, or building plots. The *intervallum* road (*via sagularis*) ran around the outside of the *insulae*, parallel with the fortress ramparts (Mason 2000, 13-6). The area between the *via sagularis* and the rampart was occupied by cookhouses and bread ovens (Wilson 1972, 313; Thompson 1967, 11). The southernmost two *insulae* are in the area now occupied by the cathedral and the south precinct. The *praetorium* (commander's residence) is thought to occupy the south-west corner of this area, with its western and southern extents approximately on the lines of Northgate Street and Eastgate Street respectively. The north-east corner of the *praetorium* lies approximately beneath St Werburgh's Row, and potentially within Area 2 under investigation. Evidence for this building comes from remains of hypocausts, tessellated floors, herring-bone patterned tile pavements and elements of a probable private bath suite, all noted during nineteenth-century property developments (Mason 2000, 13-6). Excavations in 1959 (Thompson 1967) and 1985 (Frere 1986, 387) have identified barrack blocks to the east of the *praetorium*, extending as far as the *via sagularis*, with further remains potentially in Areas 2, 3 and 4 under investigation. The nature of the buildings in the next *insula* to the north is unknown, although the arrangement of other fortresses suggests that this area may have been occupied by store buildings or a hospital (Mason 2000, 13-6; Ward 1995, 17). This area lies beneath the cathedral church and the war memorial garden, and remains of these structures may be found within Areas 2, 3 and 4 under investigation.
- 1.4.4 A total of 14 archaeological trenches were excavated in the nave, south transept, slype and east cloister walk of the cathedral in 1996 in order to assess the potential of areas proposed for the restoration of floors and installation of underfloor heating. Two of the trenches (Trench III and XI) revealed Roman features (Ward 1996a, 7). In Trench III, these included two Roman deposits, the uppermost of which formed a possible surface of small stones, tile chips and cobbles, which was associated with Roman finds. Beneath this was a rubble-rich deposit containing sandstone, Roman tile, and mortar fragments. The finds associated with both of these layers dated no later than the mid-second century (*op cit*, 19-20). In Trench XI, a possible Roman, but more probably post-Roman, wall was identified. The wall ran on an approximate north/south alignment and was abutted to the south by a possible Norman-period wall.
- 1.4.5 Following the 1996 evaluation, an open-area excavation was undertaken in 1997, within the nave and parts of the south transept of the cathedral (Chester City Council 1997; Ward 1998). This area was excavated to a depth of 300mm, in order to allow for the laying of the underfloor heating and replacement of the floor (*ibid*). Further evidence for Roman activity was evidenced by the discovery of a short stretch of massive masonry of probable Roman date. However, the truncation of Roman remains by the cathedral foundations and grave cuts means that survival of Roman remains inside the cathedral footprint is fragmentary. However, a number of Roman finds,

including pottery from the late first to mid-fourth centuries, as well as window and bottle glass, indicates that this area of the fortress was in use throughout the Roman period. In addition, building materials, including roof tiles, bricks and box tiles from a hypocaust, indicate that a major building stood in this area (Chester City Council 1997, 3).

- 1.4.6 In 1959, excavations were undertaken immediately south of the cathedral grounds (Thompson 1967). This led to the discovery of reused Roman masonry and a reused tombstone behind the western face of the east city wall (*op cit*, 9). The Roman turf rampart was also revealed in the area immediately west of the city wall, which lies on the eastern edge of Area 4. The *intervallum* area was found to have been occupied by rampart buildings and ovens, which appeared to have been separated from the *intervallum* road, at least in the earlier occupation of the fortress, by a low wall (*op cit*, 12). On the west side of the *intervallum* road was a pavement, and stone-built barrack blocks, whilst other features noted included Roman pits (*op cit*, 9 and 13-14).
- 1.4.7 On the eastern side of Area 4 the excavation of a 12 x 3m evaluation trench, orientated westwards from the inner face of the city wall, was undertaken prior to the erection of the cathedral bell tower in 1975. This trial trench revealed further remains of the turf rampart immediately to the west of the fortress wall. The ramparts survived to a height of 2m and individual turves were also visible within the fabric of this feature. A second 12 x 3m evaluation trench recorded several phases of occupation in this area, dating between AD 70 and the early second century. This included evidence for a Roman oven (Phase 1), which was levelled and replaced by a timber building (Phase 2). Subsequently, this building was demolished and another oven was constructed (Phase 3), which was associated with two ‘unworn’ coins dating to AD 84 and AD 85 (Wilson 1971, 313).
- 1.4.8 In 1921, during the excavation of the foundations for the war memorial, located in Area 2, an east/west-aligned ashlar wall, 1.2m thick, was revealed some 11m south of the cathedral. A parallel wall was found *c* 1.5m to the south, which was built on flag foundations, placed on solid rock. These features were noted as being 24.75m OD, some 1.83m beneath the ground surface (Ward 1995, 21-2). Large building stones were also located to the west of the memorial, two of which formed part of a cornice.
- 1.4.9 **Anglo-Saxon Period (St Werburgh’s Church):** the first church to have been built on the site of the later cathedral church is thought to have been founded in the seventh century, originally dedicated to St Peter and St Paul. It was rededicated to St Werburgh in the ninth or tenth century, after her relics were moved to Chester (Chester City Council 1997, 1; Chester Cathedral 2009; Thacker 2000, 19). The minster church, the possible remains of which have been located in excavation in the cathedral nave and on the eastern side of the entrance to the south transept, served the principal parish in Chester (later associated with St Oswald’s). As such, it is likely to have contained prominent burials as well as having an external graveyard, although no Saxon graves have as yet been identified in the environs of the church (Thacker 2000, 24-5; Ward 1995, 19; Ward 1996a, 7; Ward 2000, 49).

- 1.4.10 **Medieval Period:** the establishment of Benedictine monasticism in Chester was undertaken by the first Norman Earl of Chester, Hugh Lupus (d 1101). Work on the Benedictine abbey of St Werburgh, located on the former Saxon minster church of St Werburgh, may have begun as early as the late 1080s (Lewis and Thacker 2005, 185; Thacker 2000, 24-5).
- 1.4.11 It would appear that the parochial graveyard of St Oswald's was already in existence when the abbey was constructed. This is evident by the unusual location of the cloister to the north of the abbey church, rather than the more traditional southern location. This would place the graveyard within the area of the external proposals, to the west and east of the south transept, and it is assumed that its presence would have prevented the construction of a southern cloister (Lewis and Thacker 2005, 191). By the thirteenth century, the former parishioners of the minster, the city's principal parish, were served from an altar dedicated to St Oswald in the nave of the abbey. The abbey also had control of the graveyard, which by then was the city's main graveyard (Thacker 1996, 22; Thacker 2000, 25).
- 1.4.12 A new chapel dedicated to St Nicholas was built to the south of the abbey church by 1348 and was used by the parishioners of St Oswald. The construction of this new chapel appears to have been in anticipation of disruption to the parishioners, as work on the south aisle of the nave was carried out shortly after this (Lewis and Thacker 2005, 194; Chester Cathedral 2009; Thacker 1996, 22).
- 1.4.13 It is not known how the graveyard to the south of the abbey church was initially enclosed and, therefore, how far it extended to the south. Four probable medieval burials were discovered just west of the east city wall and south of St Werburgh Street during the 1959 excavations (*Section 1.5.6*). These burials were aligned east/west, and are thought to have been part of the parochial graveyard of St Oswald's (Thompson 1967, 14). A licence was granted in 1377 to enclose and crenellate the church and abbey, although it is not known where this enclosure extended (Lewis and Thacker 2005, 194). By the sixteenth century a stone wall ran from the city wall on the line of the later St Werburgh Street, turning north to meet Abbey Gateway, thereby enclosing the southern part of the church, the parish graveyard and the chapel of St Nicholas (Lewis and Thacker 2005, 194).
- 1.4.14 In 1539, the chapel of St Nicholas was leased to the city, and the parishioners of the collegiate church of St Oswald moved their parish church back to the south transept. The parochial graveyard continued in the areas west and east of the south transept (Lewis and Thacker 2005, 185; Chester Cathedral 2009).
- 1.4.15 **Post-medieval and Industrial Periods:** with the Dissolution in 1536, the entire monastic complex passed to the appointed Dean and Chapter of the newly established cathedral (Lewis and Thacker 2005, 195). Many of the communal domestic buildings then became redundant and largely fell into ruin (*op cit*, 200). The refectory, however, was retained and used as the King's School, founded by order of Henry VIII in 1541, for 'poor and friendless boys' aged 9-15 (www.kingschester.co.uk).

- 1.4.16 During the sixteenth century the churchyard, one of the main areas of the external development proposals, was much neglected and had become a repository for rubbish and animal waste. It was levelled in 1619, but still contained a dunghill in 1634 (Lewis and Thacker 2005, 201). It is not known when the graveyard began to be used again, but the area is shown as such on the nineteenth-century maps (OS 1874; OS 1899).
- 1.4.17 The nineteenth century was a period of major changes to Chester Cathedral, and included restoration projects carried out by four renowned architects: Thomas Harrison (1744-1829); RC Hussey (1806-87); Sir George Gilbert Scott (1811-78); and Sir Arthur Blomfield (1829-99). The Bishop had moved out of the close in 1865, and the palace over the west range was demolished and replaced subsequently by buildings that housed the King's School. The King's School buildings were designed by Sir Arthur Blomfield in a neo-gothic style, with the south wing completed in 1877 and the west in 1879 (Lewis and Thacker 2005, 185 and 204).
- 1.4.18 **Modern Period:** the buildings that had housed the King's School on the south side of Abbey Square from 1879 went out of use in 1960, and by 1979 they were occupied by a bank (Lewis and Thacker 2005, 185).
- 1.4.19 In the 1920s a war memorial was erected within the graveyard on the west side of the south transept, and in 1952 the graveyard on the east side of the south transept became the Regimental Memorial Garden. The area to the north and north-east of the Cheshire Regiment Memorial, to the south of the Chapel of St Erasmus, is taken up with 98 cremation plots, each measuring 0.4 x 0.4m. By November 2007, 68 of these plots had been used (plan: 'Burial plots in Memorial Garden' provided by Chester Cathedral).

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 All work was undertaken in accordance with the OA North updated project design (*Appendix 1*), and was consistent with the relevant standards and procedures of the Institute for Archaeologists, and generally accepted best practise.

2.2 ARCHAEOLOGICAL TRIAL TRENCHES AND TEST PITS

2.2.1 **Excavation methodology:** nine evaluation trenches and seven test pits were excavated, which varied in both size and depth. All of the trenches and test pits were set out using a Total Station Theodolite (TST), and the majority of excavation was undertaken by hand. The only exception to this was the use of a mechanical excavator to remove the tarmac surface and underlying hard core within Trench 5b (TP 1).

2.2.2 The evaluation trenches were excavated to the first significant archaeological deposits to assess the archaeological remains in the Areas 2-4. Further excavations were undertaken for the site investigation team, to record those remains within the geotechnical test pits (TP) that would be destroyed by drilling, or sampling activities. The majority of the geotechnical pits were excavated to a maximum depth of 1.2m, though one test pit (TP 6) was excavated to a depth of *c* 2m below the present ground surface. In addition, the presence of modern services and footings within Trenches 5a (TP 3) and 5b (TP 1) meant that these trenches could only be excavated to a depth of *c* 1m. During the course of the excavation, the turf/topsoil/cobbles/tarmac removed from the surface of the trenches was stored separately from other excavated materials, and was then reinstated following the backfilling of the trenches. A metal-detecting survey was also undertaken over the trenches and excavated spoil, to ensure that no metal small finds were overlooked.

2.2.3 **Human remains:** unstratified, disarticulated, human remains were collected and are presently stored at the OA North office in Lancaster. Articulated human remains were generally left *in-situ* and covered using appropriate materials such as geo-mat or visquene. However, those articulated human remains located in the test pits were removed in order that geotechnical sampling could proceed. Where human remains (articulated or otherwise) were identified, the relevant trenches were screened from public view.

2.2.4 **Recording methodology:** the location, extent, and character of all surviving archaeological features and deposits were recorded during the course of the fieldwork. Recording comprised a full description and preliminary classification of deposits and materials on OA north *pro-forma* sheets. All subsequent survey was completed with a TST, tied to the Ordnance Survey grid. Hand-drawn plans were produced showing the contents of the trenches, with representative sections being drawn at a scale of 1:10 or 1:20, as

appropriate. Articulated human remains were recorded photographically, and more generally an indexed photographic record using monochrome, colour slide and digital formats was maintained throughout the course of the fieldwork.

2.3 ARCHIVE

- 2.3.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The original record archive of project, including the artefacts, will be deposited with the Chester Museum Service on behalf of Chester Cathedral.
- 2.3.2 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will also be completed as part of the archiving phase of the project.

3. EVALAUTION RESULTS

3.1 INTRODUCTION

3.1.1 This section presents a summary of the results obtained from the evaluation trenches and test pits.

3.2 TRENCH 2A (INCORPORATING TP 6 AND TP 7)

3.2.1 Trench 2a was aligned east-north-east/west-south-west, and measured 20m long by 1.5m wide (Fig 2). Trench 2a was bisected by Trench 2b, and the results from the overlapping portion of these trenches have been incorporated into this section of the report.

3.2.2 The majority of Trench 2a was excavated to the top of the first significant archaeological deposits (Plate 2). However, a 1.5m length of the trench (TP 6) was excavated to natural deposits, located *c* 2m below the present ground surface. This was undertaken to ascertain the depth of the archaeological remains at the site, and also to provide geotechnical information. In addition, a 1.2m deep geotechnical test pit was excavated at the western-most end of the trench (TP 7).



Plate 2: Trench 2a, looking west, with skeletal remains below visquene

- 3.3.2 Natural sandstone was encountered in the eastern part of the trench. Directly above the natural sandstone was a layer of degraded sandstone (**2073**), which was sealed by a buried subsoil (**2068**) and a buried soil **2065**, containing Roman pottery (Fig 3). Cut into this horizon was a north-west/south-east-aligned construction cut (**2066**), which contained the foundations of a wall (**2067**; Plate 3). Butting wall **2067**, and overlying soil layer **2065**, was occupation horizon **2064**, which contained sandstone fragments, potentially originating from wall **2067**, and also Roman artefacts (Figs 2 and 3).



Plate 3: Trench 2a, Roman wall **2067**, looking south

- 3.3.3 Sealing the Roman horizons and wall **2067** was horizon **2016/2059/2056**, which contained post-medieval artefacts. This horizon was encountered at a maximum height of 25.82m above Ordnance Datum (aOD) and represented soil that had potentially been imported onto the site. This horizon was encountered across the extent of Trench 2a, except at the eastern end of the trench, where it had been truncated by modern services (**2006** and **2009**).
- 3.3.4 Numerous burials truncated this horizon, though due to the homogeneous nature of the soil it was not possible to identify grave cuts prior to uncovering human remains. The burials included six adults (skeletons **2017**, **2021**, **2025**, **2029**, **2033** and **2042**), which were distributed along the length of the trench (Fig 2), whilst excavation within the areas of TP 6 and TP 7 recorded a further 14 skeletons (**2052**, **2053**, **2054**, **2055**, **2057**, **2058**, **2060**, **2061**, **2062**, **2069**, **2070**, **2076**, **2077** and **2078**). In most cases, these remains were only partly visible within the horizon. In addition, further work undertaken in this trench resulted in the removal of the remains of 11 individuals skeletons (**2017**, **2042**, **2052**, **2053**, **2054**, **2055**, **2057**, **2058**, **2060**, **2061**, and **2070**), which are detailed in *Section 4.1*.

- 3.3.5 Of those that were removed, skeleton **2017** was located at the eastern end of the trench and comprised part of the skull, vertebrae, ribs and legs of an adult male. The right arm and hand were absent, whilst the left half of the body was located beyond the northern limit of trench. The skeleton was in a supine position and was orientated east/west. This skeleton also lay directly above skeletons **2076** and **2077** (Section 3.3.12).
- 3.3.6 The complete remains of skeleton **2042** were present within the eastern half of the trench (Plate 4). The remains were of an adolescent female, laid in a supine position and aligned east/west. This burial also appears to have truncated an earlier burial (skeleton **2017**)



Plate 4: Skeleton **2042** within trench 2a, looking west

- 3.3.7 Skeleton **2052**, **2053**, **2054**, **2057**, **2058**, **2060**, **2061** and **2062** were located in the section of the trench which was excavated to the natural bedrock (TP 6). The remains of skeleton **2052** included the ribs, lower arms and hands, and legs and feet of a young child, who had been laid east/west in a supine position. The upper part of the body of this individual lay beyond the western limit of the trench. Skeleton **2053** appeared to represent an individual who had been laid east/west in a supine position, though only the legs, pelvis and feet were present. Similarly, the remains of skeleton **2054** also appear to have been disturbed, as only the ribs, vertebrae, scapula and right radius were present.
- 3.3.8 The upper part of skeleton **2055** was visible, suggesting this individual had been laid east/west in a supine position. These remains included the skull, mandible, ribs, vertebrae, portions of the arms, the right hand, and the pelvis of an adult male.
- 3.3.9 Skeleton **2057** was located in the northernmost corner of the trench, and comprised two tibias, the feet and the left femur of an adult, which lay above skeleton **2058**. Skeleton **2058** comprised the left leg and foot of an individual, presumably disturbed during the burial of the individual represented by skeleton **2057**. Skeletons **2060** and **2061** were located below **2058**. Skeleton **2060** comprised the pelvis, femurs, and right tibia and patella only, whilst skeleton **2061** comprised pelvis, legs and feet only. Each of these skeletons was aligned north-east/south-west, with potentially further parts of the skeletons presents beyond the limit of excavation.
- 3.3.10 Skeleton **2070** was located in the western half of the trench (TP 7) and orientated east/west, in a supine position. The remains included the skull, arms, hands, ribs and vertebrae of a child. The remainder of the body was present beyond the limit of excavation.
- 3.3.11 Of those left *in-situ*, skeleton **2021** was located in the middle of the trench, and was represented by the feet, and the tibias and fibulas of an individual. In this area, the skull and part of the feet of a second individual (skeleton **2025**) were also visible, whilst the skull and part of the feet of skeleton **2029** were visible in the western half of the trench. The rib cage and the humerus and ulna of skeleton **2062** were located in the southern most corner of TP 6. The skull and upper part of the body of an adolescent skeleton, including skull, ribs and arms, were uncovered in the eastern half of the trench. In this area three skulls were also recorded (skeleton **2033**, **2076** and **2077**).
- 3.3.12 Within this trench only one grave cut could be identified with confidence (cut **2071** for skeleton **2069**; Fig 2; Plate 5), and none of the burials appeared to have contained coffins. Several shroud pins were, however, recovered from the grave fill around skeleton **2025**, two from near skeleton **2053**, and one from skeleton **2055**.



Plate 5: Skeleton 2069 of Trench 5, looking west

3.3.13 A large amount of charnel was also observed, dispersed evenly throughout horizon **2016/2059/2056**, suggesting that this part of the graveyard had been heavily used. Located above the burials and horizon **2016/2059/2056** were made-ground deposits (**2093** and **2092**), which lay below subsoil **2091** and topsoil **2000/2090**.

3.3 TRENCH 2B

3.3.1 Trench 2b was aligned north-north-east/south-south-west, measured 8 x 1.5m, and was excavated to a depth of 1.4m, which exposed the top of the first significant archaeological deposits. The earliest deposit encountered (**2204**) formed the upper level of the burial horizon identified in Trench 2a (horizon **2016/2059/2056**). Deposit **2204** lay at a height of *c* 25.7m aOD, and although it was not excavated, the remains of several skeletons (**2211**, **2230**, **2233**, **2237**, **2207**, **2215**, **2222** and **2226**) were visible. However, none of these were lifted, or fully exposed.

3.3.3 Skeletons **2233** and **2237** were located in the southern half of the trench and were exposed during the excavation of drain **2220**, which had truncated both graves. Skeleton **2233** comprised the unarticulated and truncated remains of an adult individual, with the left radius and ulna, and some vertebrae and ribs visible. Of skeleton **2237**, only the femurs and tibias were visible.

- 3.3.4 Also located in the southern half of the trench were skeletons **2211** and **2230** (Fig 2; Plate 6). Skeleton **2211** comprised an adult laid out in a supine position, on an east/west orientation, though only the skeletal elements from the thoracic vertebrae to the pelvis were present in the trench. Similarly, skeleton **2230** comprised an adult burial laid out in a supine position, on an east/west alignment, though again only parts of this skeleton were present, and much of this individual is likely to be located beyond the eastern limit of excavation.



Plate 6: Southern part of Trench 2b looking south, with skeleton 2211 in the foreground

- 3.3.5 In the northern half of the trench, four skeletons were uncovered (**2207**, **2215**, **2222** and **2226**) all laid out on an east/west alignment (Fig 2; Plate 7) and placed in a supine position. Of these, skeleton **2215** was represented by a skull, skeleton **2207** comprised the remains of an infant, of which only the femurs and pelvis was exposed, whilst only the upper part of the skeleton **2222** was present within the trench. Skeleton **2226** was the most northerly skeleton located in Trench 2b, of which the skull, left arm and lower right arm and hand were partially exposed.
- 3.3.6 Sealing burial horizon **2204**, and all its associated burials, were four deposits used to level the area, **2203**, **2202**, **2205** and **2201** (Fig 4). These levelling deposits were truncated by construction cut, **2219**, which contained brick drain **2220** (Fig 2). The remainder of cut **2219** was back-filled by deposit **2221**. These deposits were subsequently sealed by the modern subsoil (**2206**) and topsoil (**2220**) (Fig 4).



Plate 7: Northern half of Trench 2b, looking north, showing skeletons 2215 and 2222

3.4 TRENCH 2C (INCORPORATING TP 11)

- 3.4.1 Trench 2c was aligned north-west/south-east, and was located at the western limit of the churchyard, opposite the War Memorial (Plate 1). Trench 2c measured 12 x 1.5m and was excavated to a maximum depth of 1.2m in order to expose the first significant archaeological deposits (Fig 5; Plates 8 and 9). TP 11 was excavated on the south-western side of Trench 2c, halfway along its length, and measured 1m square. This test pit was also excavated to a depth of 1.2m.



Plate 8: Trench 2c, looking north-west



Plate 9: South-east-facing section of Trench 2c, Test Pit 11, looking north-west

- 3.4.2 The earliest deposits were encountered in TP11 and comprised layers **2425** and **2527**, of which **2425** contained nineteenth-century pottery. Overlying these deposits was levelling layer **2424** (Fig 6; Plate 9) that was partially overlain by a layer of crushed sandstone **2423**, which was sealed by a lime-mortar surface (**2413**). This surface was, in turn, overlain by levelling deposits **2422**, **2421** and **2420/2407**.
- 3.4.3 Along the length of Trench 2c, overlying deposit **2407/2420**, was post-medieval surface **2408/2412** (Fig 5). This surface was composed of crushed sandstone, ashlar sandstone, brick fragments and stone cobbles, and also contained Roman pottery and tile. Although the function of this surface is not entirely clear, it is possible that it was deposited during the restoration work carried out under the auspices of George Gilbert Scott in the latter half of the nineteenth century. This surface was also truncated by a modern pit (**2403/2419**) and was sealed by a soil horizon **2417/2411**, which had probably been imported onto the site. Overlying this soil horizon were a series of levelling deposits (**2406/2416**, **2405**, **2404**, and **2415/2401**), which lay beneath the modern subsoil (**2401/2415**) and topsoil (**2400/2414**).

3.5 TRENCH 2D/TP 10

- 3.5.1 Trench 2d (TP 10) was located to the east of the war memorial, north of Trench 2a (Plate 1). It measured 1m square, and was excavated to a maximum depth of 1.2m (Figs 7 and 8). The earliest deposit encountered was a soil horizon (**2609**), which was devoid of finds. This horizon was located at the base of the trench, and at a similar depth the masonry foundations (**2608**) for a north-east/south-west-aligned wall were encountered (Figs 7 and 8; Plate 10). However, as excavation ceased with the exposure of wall **2608**, it was not possible to determine the relationship between horizon **2609** and this feature (Fig 8).
- 3.5.2 The eastern end of a stone-lined grave or cist (**2604**) was also exposed in Trench 2d. This was located at a depth of 0.37m below the ground surface (26.02m aOD), in the north-western corner of the trench (Fig 7; Plate 11), and it is possible that it was contained within a grave cut that truncated deposit **2609**. Cist **2604** was left unexcavated, but potentially represented an early burial at the site.
- 3.5.3 Overlying cist **2604**, deposit **2609** and masonry foundation **2608**, was burial horizon **2603**. This was encountered at a depth of *c* 0.30m below the ground surface (26.30m aOD). It contained unarticulated human bone, as well as post-medieval artefacts. In addition, within this horizon, one articulated skeleton (**2605**) was identified in the north-eastern corner of the trench (Fig 7; Plate 11). However, only the rib cage, left humerus and some cervical and thoracic vertebrae were present, and the skull of this individual appears to have been removed during the insertion of modern services (**2401**). In the west-facing section of the trench, the tops of three craniums were also visible (Plate 12). Overlying burial horizon **2603** was subsoil **2602**, which was overlain by topsoil **2600**.



Plate 10: Wall 2068 of Trench 2d, looking north-east



Plate 11: Cist 2604 and skeleton 2605 of trench 2d, looking north



Plate 12: West facing section of Trench 2d, looking east

3.6 TRENCH 3

- 3.6.1 Trench 3 was located on the south side of the cathedral in the garden area between the south transept and St Werburgh Street (Plates 1 and 13). The trench was orientated north/south, measured 7.5 x 1.5m, and was excavated to a depth of 1.12m (Figs 9 and 10). The first significant archaeological deposits encountered included two burial horizons (**3021** and **3051**), located at a maximum height of c 25.0m aOD (Fig 10). The presence of possible pits, containing disarticulated charnel, were also identified at a depth of 0.36m below the modern ground surface. All skeletal remains were left *in-situ*.
- 3.6.2 The earliest deposit encountered was a burial horizon (**3051**), composed of sandy silt, which was truncated in the middle section of the trench by three burials, represented by skeletons **3026**, **3022**, and **3034**. Skeleton **3026** comprised a sub-adult burial laid east/west, in a supine position. The skull of this skeleton was exposed, as was the left tibia, fibula and part of the left foot. Wooden fragments, in contact with the skeleton, were also observed and these suggest that the burial was interred within a coffin, or wooden plank bier. However, no coffin fittings or abutting sections of wood were visible.
- 3.6.3 Skeleton **3034** was located to the south of **3026**, and comprised the skull, right scapula and tip of the right pelvis of an adult male, laid east/west in a supine position. The skull showed a high level of ante-mortem tooth loss, with only five maxillary teeth remaining. Severe enamel hypoplasia was visible on both mandibular canines. The mandibular and maxillar central incisors also showed evidence of a very significant pipe notch, and evidence for this was also supported by the wear patterns and caries evident on the other teeth.



Plate 13: Trench 3, looking south

- 3.6.4 Skeleton **3022** formed a neonatal burial, of which only the upper portion of the skeleton was uncovered, exposing the skull to the lumbar vertebrae. The skeleton was in a supine position, and was aligned east/west. Of the long bones, only the left ulna and radius were identified. Staining around the skeleton suggests the presence of a decayed coffin, and several fragments of potential coffin plate material were also identified. These burials were sealed by a deposit of silty sand (**3021**), which was truncated by three post-medieval burials, represented by skeletons **3033**, **3040** and **3041**.
- 3.6.5 Skeleton **3030** comprised an adult burial laid east/east in a supine position. The cervical vertebrae, the upper left portion of the ribcage, the left humerus, ulna, radius, the proximal end of the femur, part of the pelvis, and left hand of this skeleton were exposed. The skull was not visible as it was located outside the western limit of excavation and the right arm, pelvis and leg may have been removed during the installation of modern services. There was no evidence of an associated coffin, or coffin fittings, with this burial. However, a

grave cut (**3032**) for this burial was visible in the east-facing section of the trench (Fig 10), which contained deposits **3031** and **3029**. A second, later, grave cut (**3058**) was also visible in east-facing trench section, which truncated grave **3032**. This cut contained deposits **3057** and **3056**.

- 3.6.6 Skeleton **3040** formed the remains of a juvenile burial, laid east/west in a supine position. The skull, ribcage, vertebrae (cervical and thoracic), as well as the left ulna and radius of this skeleton were exposed. The lower half of the skeleton appears to be missing, and this is possibly due to truncation by a later burial represented by skeleton **3044**, which was contained within grave cut **3041**. Only the right scapula and humerus were exposed of skeleton **3044** though these probably form the remains of an adolescent individual, who had been buried beneath deposits **3042** and **3060** (Fig 10). As with grave **3032**, grave **3041** was truncated by a grave cut **3058**.
- 3.6.7 Stone rubble, **3019**, lay to the north of the burials, at the northern end of the trench (Fig 9; Plate 13). Rubble **3019** was not excavated and, although the relationship between it and the burial horizon could not be fully ascertained, it is possible that it predates burial horizon **3051**, and forms part of an earlier structure.
- 3.6.8 The east- and west-facing sections of the trench suggested that burial horizon **3021** had been truncated by a large pit or linear feature (**3048**) (Figs 9 and 10). This feature appeared to be 3.5m in width, with an average depth of 0.75m and had a V-shaped profile. It contained silty clay (**3004/3020**) and also numerous fragments of heavily abraded human bone, as well as Roman and medieval pottery and ceramic building material. Small fragments of coffin wood and staining from copper-alloy coffins studs were also observed within this pit, suggesting that coffins in advanced stages of decay had been moved during the cutting of this feature.
- 3.6.9 Recorded in the west-facing section of the trench, truncating the fill of pit **3048**, was feature **3019**, which had been back-filled by deposits **3018** and **3017** (Fig 10). Two rectangular charnel pits (**3005** and **3055**) were also identified truncating the fills of feature **3019**. They were both located on the eastern side of Trench 3, and were visible in the east-facing section of the trench at a depth of 0.36m below the ground surface (c 25.60m aOD) (Fig 10). The pits were filled with deposits (**3003** and **3054**), which contained large quantities of human remains, and it was apparent that pit **3005** truncated pit **3055**.
- 3.6.10 At the southern end the trench an archaeologically sterile layer **3053** was identified, which was contained within a shallow depression that might represent a tree bole (Fig 10). This feature was, in turn, overlain by a layer of mortar (**3052**), which was sealed by subsoil **3038**. This layer was present across the entire length of the trench and had been truncated by three pits (**3001**, **3005**, and **3007**: Fig 10). Pit **3005** formed a modern rubbish pit, which was truncated by a pit (**3001**). Pit **3007** represented a charnel pit, located in close proximity to the other charnel pits identified in this trench (**3005** and **3055**).

3.7 TRENCH 4A

- 3.7.1 Trench 4a was located at the south side of the cathedral within the Chester Regiment Memorial Garden, adjacent to the entrance to Bell Tower Walk. The trench measured 2.5 x 1.0m, was orientated north/south (Plates 1 and 14), and was placed in a decorative border. Prior to the excavation abraded fragments of human bone were visible in the topsoil within this border, suggesting the presence of graves in this area. The trench was excavated to a maximum depth of 0.86m (Fig 11).
- 3.7.2 The earliest deposit encountered was burial horizon **4009**. This deposit was truncated by two rectangular grave cuts (**4004** and **4007**), both of which were orientated east/west (Fig 11). However, the fills (**4005** and **4008**) of these features were not excavated, and the full extent of these potential grave cuts was not determined.



Plate 14: Trench 4a, looking south

- 3.7.3 Directly overlying the grave cuts and deposit **4009** was a layer (**4006**), consisting of ash and burnt stones. This, in turn, was overlaid by made ground layer/subsoil deposit **4001**, which contained charnel material including a group of several femurs, visible in the east facing section. Both layers **4001** and **4006** were sealed by modern topsoil layer **4000** and were also truncated by a service trench (**4002**).

3.8 TRENCH 4B

3.8.1 Trench 4b was located to the east of Trench 4a, and was situated within the Cheshire Regiment Memorial Garden, adjacent to Bell Tower Walk. The trench measured 2.5 x 1.0m and was orientated north/south (Plates 1 and 15). As with Trench 4a, Trench 4b was also positioned within a decorative border and, similarly, prior to the excavation abraded fragments of human bone were visible in the topsoil. This trench was excavated to a maximum depth of 0.45m (Fig 11).



Plate 15: Trench 4b, looking east

3.8.2 The earliest deposit encountered was a burial horizon (**4204**) composed of silty clay. This horizon was truncated by grave cut **4202**, which was visible at the south-east corner of the trench extending beyond the limits of the excavation. This cut contained an organic deposit (**4203**) and was overlain by subsoil **4201**. This, in turn, was sealed by topsoil **4200**.

3.9 TRENCH 4C

3.9.1 Trench 4c was located to the north-east of Trench 4B within a turf-covered area forming part of an ornamental flower bed (Plates 1 and 16). The trench measured 2.5 x 1.0m and was orientated north/south. Excavation of this trench was hampered due to the presence of dense layer of tree roots within the topsoil and also by a live electricity cable located at the southern terminus of the trench. Trench 4C was excavated to a maximum depth of 0.4m in order to expose the first significant archaeological deposits (Fig 11).

- 3.9.2 The earliest deposit identified within this trench was a levelling layer (**4403**), which was sealed by subsoil (**4402**). The subsoil was, in turn, overlain by a layer (**4401**) composed of crushed sandstone and red brick. Deposits **4403**, **4402** and **4401** were all truncated by a modern service trench (**4404**).



Plate 16: Trench 4c, looking south

3.10 TRENCH 4D (INCORPORATING TP 4)

- 3.10.1 Trench 4d was located north-east of Trench 4C, adjacent to the city walls and the modern bell tower (Plate 1). The trench measured 2.5 x 1.0m, was aligned north/south, and was excavated initially to a maximum depth of 0.57m. Subsequently, the southern 1m of this trench was excavated to a depth of 1.2m as part of the excavation of TP 4 (Figs 11 and 12).
- 3.10.2 The earliest deposit encountered within Trench 4d was burial horizon **4604** (Fig 12), which was exposed at a depth of 1.06m below the ground surface (24.91m aOD) and contained unarticulated human bone. This horizon was sealed by a layer of soil (**4603**) that had probably been imported to the site during landscaping. This in turn was overlain by subsoil **4602**, which was truncated partially by a modern service trench (**4605**). Topsoil **4600** sealed the subsoil and also filled the service trench.



Plate 17: Trench 4d, looking south

3.11 TRENCH 5A (TP 3)

3.11.1 Trench 5A (TP 3) was located on the east-side of Abbey Square, to the south of the entrance to the refectory and St Anselm's Chapel (Plate 1). The trench measured 1m square, and was only excavated to a depth of c 1m, as excavation was impeded by the presence of a modern gas main (Plate 18).



Plate 18: Trench 5a, viewed from the west

- 3.11.2 The earliest deposit encountered within the trench was, a layer of compact crushed pink sandstone (5010), which was sealed by a silty soil (5009) containing roots and a large amount of organic material. Above this was a deposit of sandy clay (5008), which lay below a layer of sandy silt, clinker, and small stones (5007). This latter deposit was, in turn, sealed by a deposit of silty clay (5006), which contained charcoal, fragments of mortar, ceramic building material, and animal bone, and also a small assemblage of post-medieval artefacts. These artefacts included fragments of clay pipe and glass.
- 3.11.3 Deposit 5006 was found to abut, or be truncated by, the footings of a modern wall (5003) of brick construction, measuring one course wide and four courses deep (extant height of 0.4m). The wall was laid in an English Garden Wall bond and was cemented with a buff-coloured lime mortar. This structure was orientated north/south and formed the eastern limit of excavation. To the west of this structure, also orientated north/south, was a backfilled service trench (5004) housing a modern gas main. This feature, the wall and deposit 5006 all lay beneath a bedding layer (5001), which supported the cobbling (5000) forming the present-day surface of Abbey Square.

3.12 TRENCH 5B (TP 1)

- 3.12.1 Trench 5B (TP 1) was located in the south-east corner of the car park, directly against the south facing elevation of the building occupied currently by Barclay's Bank (Plate 1). This trench measured 1m square and was only excavated to a depth of c 1m, due to the presence of the footings for a modern wall (Plate 19).



Plate 19: Trench 5b, viewed from the east

3.12.2 The earliest deposit encountered was a silty clay (**5107**) containing numerous fragments of sandstone and a large amount of butchered animal bone. This deposit also contained a few fragments of human bone, including large fragments of crania and mandible, suggesting that this deposit might represent a burial horizon. Set within this deposit was an irregular spread of large pink sandstone fragments (**5108**). Significantly, one of these fragments appears to have been worked and it is possible that this deposit represents a rudimentary surface. Both of these layers butted, or were probably truncated by, modern wall footings (**5109**) and were sealed by a layer of sandy clay (**5106**) containing crushed sandstone and ceramic building material. This deposit also contained fragments of butchered animal bone. This layer lay below a series of tarmac and a stone flagged surface, and associated bedding layers, which relate to the resurfacing of Abbey Square over the course of the twentieth century.

4. THE FINDS

4.1 INTRODUCTION

4.1.1 In broad terms, the artefacts recovered from the evaluation were in reasonable condition, with little indication of abrasion, implying that they had not moved far from their original place of deposition. The assemblage was dominated by human bone and ceramics, including pottery, clay tobacco pipes, and ceramic building materials. Other material classes recovered from the evaluation included glass and animal bone, with lesser amounts of metalwork and iron-working debris, glass, mollusc shell, and worked stone.

4.2 THE ROMAN POTTERY

4.2.1 In all, 29 fragments (502g) of Romano-British coarseware, including mortaria, were recovered from a total of 14 contexts. The fragments vary in condition, with varying degrees of ware and fragmentation, the average sherd weight is *c* 17.9 g, but this varies considerably between contexts (Table 1). Most of the fragments are too small for confident identification of the fabric or form, but the mortaria fragments from burial horizon **2016** and fill **3004** are Holt products dating to the late first century (Ward 1988), whilst that from **2064** is a Mancetter-Hartshill product, dating to the late second to fourth centuries (Tyers 1996, 122). A small fragment from layer **3021** is probably Severn Valley ware, present in Chester from the later first century (*op cit*, 197), and a dish from **2059**, although burnt, is Black Burnished ware 1, and can be dated to the later second or third century. A rim fragment in a badly leached shell-gritted fabric from the same context is probably of late Roman date, although the possibility that it is considerably later cannot be dismissed, as it bears a resemblance to St Neot's-type wares from the city (see, for instance Axworthy Rutter 1985, or Ward 1994, where the ambiguous dating of this fabric is touched upon).

4.2.2 A small collection of ten fragments (125g) of samian ware was collected from the same number of contexts (topsoil **2000**, burial horizons **2016** and **2056**, rubble **2202**, landscaping layer **2406**, fills **3004** and **3020** of pit **3048**, layer **3021**), and all are residual within their context. Although the fragments were small, all were in good condition, the average sherd weight being *c* 12.5g.

4.2.3 Decorated vessels include a rim fragment from a form Dr 29 bowl in a South Gaulish fabric, from **2406**, which can probably be dated to the Flavian period. Form Dr 29 went out of production in South Gaul *c* AD 85 (Webster 1996, 40). A rim fragment from **3020** is from a form Dr 37 bowl, again in a South Gaulish fabric. Little remains of the decorative scheme to aid in dating, but the rim form suggests a relatively early date, probably in the first century. Amongst the plain forms, a barbotine-decorated rim from **2000** is likely to be from form Dr 35, a predominantly Flavian or later type (Webster 1996, 46). A form 33a cup from **2016** can be dated to the first and early second century.

Context	Context Type	Count	Weight (g)	Average fragment weight (g)
2003		1	70	70
2011	Modern services	1	32	32
2016	Burial horizon	1	1	1
2037	Layer	1	10	10
2059	Burial horizon	1	23	23
2064	Roman? rubble layer	2	98	49
2070	Fill grave 2071	1	8	8
2202	Rubble layer	2	30	15
2402	Modern feature	1	14	14
2403	Modern feature	1	16	16
3004	Fill of pit 3048	3	54	18
3020	Fill of pit 3048	4	44	11
3021	Fill of pit 3048	8	94	11.75
4000	Topsoil	1	6	6
4200	Topsoil	1	2	2
<i>Totals</i>		29	502	

Table 1: The distribution of Romano-British coarsewares and mortaria

4.3 MEDIEVAL POTTERY

4.3.1 In all, 24 fragments of medieval pottery, weighing 823g were recovered, with an average sherd weight of 34.2g. They vary considerably in condition, but are, on the whole, relatively abraded. Three fragments of Chester ware (Rutter 1985), probably representing single vessel, came from burial horizon **2056**. These can be dated to the late Saxon period, and would not be out of place within the environs of the cathedral (Ward 1994). Although a small group, the remainder of the group comprises a wide range of medieval fabrics, including French imports from the Saintonge, and seems typical for Chester (Edwards 2008), probably encompassing a date range from the twelfth to fourteenth/fifteenth century.

Context	Context Type	Count	Weight (g)	Average fragment weight (g)
2004	Layer	1	34	34
2011	Fill of services	1	94	94
2016	Burial horizon	2	206	103
2056	Burial horizon	3	56	18.6
2221	Fill of sewer 2219	1	12	12
2400	Topsoil	1	24	24
2401	Subsoil	1	38	38
2402	Modern feature	2	38	19
2405	Landscaping layer	1	10	10

2406	Landscaping layer	1	20	20
3004	Fill of pit 3048	2	58	29
3010	Fill of pit 3011	1	10	10
3020	Fill of pit 3048	3	37	12.3
3021	Layer	1	24	24
4001	Subsoil	3	162	54
<i>Totals</i>		24	823	

Table 2: The distribution of medieval pottery

4.4 THE POST-MEDIEVAL POTTERY

4.4.1 By far the majority of the pottery recovered was of post-medieval date. A total of 688 fragments (13.115kg) were recovered from 40 contexts, most of them highly disturbed topsoils, subsoils and modern features (Table 3). Most are in relatively good condition, with unabraded breaks and obvious joins, and it seems likely that they have not been subject to severe disturbance. The overall average sherd size is *c* 19g.

4.4.2 With the exception of a single fragment of sugarware, probably from a cone, the assemblage is entirely domestic in nature. Overall, the assemblage differs little from others in Chester (see for instance, Edwards 2008). There is little that can be attributed to the earlier part of the period, for instance early blackwares and Midlands Purple-type wares, or Staffordshire-type yellowwares, although these are not entirely absent. Two fragments of seventeenth-century Weser ware (Jennings 1981) have been tentatively identified, from burial horizon **2016**, and levelling layer **2040**. Most of the assemblage, however, is unlikely to be earlier than the late seventeenth or beginning of the eighteenth century, and the latest material probably dates to the late nineteenth century. A large proportion of the material comprises probably locally-made, heavy-duty black-glazed kitchenwares, and late brown stonewares, but there are also small amounts of slip-decorated wares, mottled wares, tin-glazed wares, white salt-glazed stonewares, creamwares, pearlwares and transfer-printed white earthenwares.

Context	Context Type	Count	Weight (g)	Average fragment weight (g)
2000	Topsoil	16	205	12.8
2001	Bedding layer	1	74	74
2002	Layer	2	92	46
2003	Subsoil	15	168	11.2
2004	Layer	11	420	38.2
2015	Rubble layer	14	652	46.5
2016	Burial horizon	49	1466	29.9
2037	Layer	2	38	19
2040	Levelling layer	11	159	14.4

2051	Levelling layer	1	14	14
2056	Burial horizon	10	156	15.6
2200	Topsoil	39	506	12.9
2202	Rubble layer	19	186	9.7
2203	Layer	1	12	12
2204	Burial horizon	5	114	22.8
2205	Layer	10	184	18.4
2221	Fill of sewer 2219	30	752	25
2400	Topsoil	13	232	17.8
2401	Subsoil	14	320	22.8
2402	Modern feature	2	38	19
2403	Modern feature	22	646	29.3
2405	Landscaping layer	2	20	10
2406	Landscaping layer	2	18	9
2407	Landscaping layer	7	106	15.1
3000	Topsoil	10	142	14.2
3003	Fill of pit 3005	8	192	24
3004	Fill of pit 3048	69	1686	24.4
3010	Fill of pit 3011	2	12	6
3018	Fill of 3008	4	73	18.2
3020	Fill of pit 3048	65	1038	15.9
3021	Layer	26	222	8.5
3039	Baulk	4	42	10.5
4000	Topsoil	21	224	10.6
4001	Subsoil	57	1143	20
4200	Topsoil	46	340	7.4
4201	Subsoil	36	828	23
4400	Topsoil	18	212	11.7
4402	Layer	1	6	6
4600	Topsoil	14	203	14.5
4601	Subsoil	8	102	12.7
U/s	Unstratified	1	72	72
Totals		688	13,115	

Table 3: The distribution of Post-medieval pottery

4.5 CERAMIC BUILDING MATERIAL

- 4.5.1 In all, 548 fragments of ceramic building material were recovered, weighing 60.192 kg. Their distribution is shown in Table 4. In addition, some 270g of very small fragments (maximum dimension <10 mm) were recovered from soil samples taken for other purposes. These have not been included in the table below. Approximately 50% of the assemblage by fragment count, or 45.5% by weight, derives from topsoil or other modern features and can thus be regarded as effectively unstratified. The material was not sorted exhaustively, but clearly broke down into three broad groups: Romano-British roof and flue tile; medieval floor tile; unattributable fragments. It is likely that many of the latter are in fact Romano-British in origin.
- 4.5.2 Unequivocally Romano-British tile was recovered from contexts **2016**, **2020**, **2044**, **2059**, **2064**, **2204**, **2401**, **2406**, and **4600**. Only one obviously diagnostic fragment of *imbrex*-type roof tile was noted, from burial horizon **2016**, which also contained relatively large fragments of *tegula*-type roof tile. Large fragments of *tegula* also came from possible Roman rubble **2064**, post-medieval burial horizon **2204**, subsoil **2401**, and landscaping layer **2406**. The large fragment from **2064** bears at least two paw prints from different-sized dogs, and a smaller fragment from **2406** has part of the imprint of nailed shoe. One of the fragments from **2401** bears a fragmentary signature, and is also stamped, and although the stamp is illegible, it is clearly not ansate. Although much of the Romano-British tile from the site is from disturbed layers, it is a clear indicator of a relatively prestigious building in the vicinity, perhaps that suggested by wall **2067**.
- 4.5.3 Medieval floor tile was noted in groups from contexts **2000**, **2004**, **2016**, **2020**, **2202**, **2401**, **2402**, **2406**, **2407**, **3004**, **3021**, and **4601**. All are elements of decorative floors, and presumably of ecclesiastical origin. All tiles appear to have been square or triangular, and there is no evidence to suggest that any of the tiles derive from plain mosaics, like that seen at Norton Priory (Keen 2008). All of the tiles are in a coarse red fabric, and many show evidence of being sand-cast and knife trimmed. None of the triangular tiles recovered appear to have been decorated, and they are all glazed to a dark green. Most of the decorated examples are line-impressed tiles bearing geometric/floral designs, and either slipped to give a pale yellow surface, or unslipped, giving a dark green. Such tiles appear in the early fourteenth century (Eames 1992, 26), but many of the tiles recovered show signs of extreme wear, and may well represent tiles removed during renewal or replacement of tiled floors in the cathedral. A small fragment from burial horizon **2016** appears to be the same as element 2023 of pattern 4020 at Norton Priory (Keen 2008, fig 175), and the pattern is also known from several sites in Chester (Axworthy Rutter 1990). A single green tile from **4601** bears an animal facing left, probably a lion, and is a type seen at Norton Priory (Keen 2008, type 4170) and Vale Royal Abbey, Cheshire (Thompson 1962 fig 5.1), as well as in Ireland. An otherwise similar right-facing lion (Keen 2208, type 4160) is more frequently seen at Chester (type 8/69; Axworthy Rutter 1990, table 79). Indeed, Keen (2008, 277) suggests that many, if not all, of the line-impressed tiles used at Norton were made in Chester. Two of the geometric/floral designs can be

paralleled amongst unstratified material from the site of the amphitheatre (Thompson 1976), and presumably derived from the collegiate church of St John which stood on the site (Thacker 1987); a fragment with an interlaced design from burial horizon **2016** (Thompson 1976, fig 43.15) which is relatively common in Chester (Axworthy-Rutter 1990 type 70/88), and a trefoil from layer **2004** (Thompson 1976, fig 43.6) which is rare in the city (Axworthy-Rutter 1990 type 70/88).

- 4.5.4 Only two fragments of two-colour tile were noted, both from landscaping layer **2406**. A small but complete square tile, perhaps from a decorated mosaic pavement, bears a simple five-petalled flower and a larger fragment bears a lion's head. Although not identical to either, two similar designs are known from Chester (types 30/237 and 91/238 and 174; Axworthy-Ritter 1990), and are again rare in the city. Such tiles were introduced in the second quarter of the thirteenth century, but continued in production and widespread use for a considerable time, at least until the sixteenth century (Eames 1992). A single fragment of green-glazed roof tile, probably of medieval date, came from subsoil **4601**.

Context	Context Type	Count	Weight (g)	Average fragment weight (g)
2000	Topsoil	4	540	135
2001	Bedding layer	2	278	139
2004	Layer	3	451	150.3
2011	Modern services	10	1166	116.6
2014	Soil layer	2	238	119
2016	Burial horizon	49	4998	102
2020	Grave group	10	1671	167
2037	Layer	6	824	137.3
2040	Levelling layer	1	366	366
2044	Fill of grave 2403	2	249	124.5
2056	Burial horizon	5	1417	283.4
2057		2	437	218.5
2059	Burial horizon	18	1799	99.9
2064	Roman? rubble layer	2	3020	1510
2065	Roman layer	1	157	157
2200	Topsoil	4	436	109
2202	Rubble layer	2	150	125
2204	Burial horizon	11	1693	154
2221	Fill of sewer	6	378	63
2400	Topsoil	1	193	193
2401	Subsoil	117	10515	89.8
2402	Modern feature	5	513	102.5
2403	Modern feature	3	333	111
2404	Landscaping layer	1	320	320

2405	Modern feature	74	6014	81.2
2406	Landscaping layer	50	5830	116.6
2407	Landscaping layer	3	268	89.3
3000	Topsoil	6	685	114.1
3002	Fill of pit 3001	3	724	241.3
3004	Fill of pit 3048	36	4366	121.2
3010	Fill of pit 3011	1	23	23
3018	Fill of 3008	7	826	118
3020	Fill of pit 3048	42	3495	83.2
3021	Fill of pit 3048	21	1754	83.5
3039	Baulk	3	1061	353.6
4000	Topsoil	2	150	75
4001	Subsoil	14	1078	77
4201	Subsoil	9	438	48.6
4600	Topsoil	2	317	158
4601	Subsoil	2	163	81.5
5107	Unstrat?	2	224	112
<i>u/s</i>		4	634	
<i>Totals</i>		548	60.192	

Table 4: The distribution of ceramic building material

4.6 THE CLAY TOBACCO PIPE

- 4.6.1 A total of 151 fragments of tobacco pipe was recovered from the site. Of these, 90 fragments (59.6%) were from topsoil or subsoil layers, and thus effectively unstratified. The majority of the pieces (134; 88.7%) are short stem fragments, three of which bear partial stamps, and there are 17 bowl fragments, probably representing *c* 14 bowls. Only one of the bowls bears a stamp, which is now illegible.
- 4.6.2 It seems likely that most of the bowls can be identified as Chester products (Davey and Rutter 1980). Most of the datable bowls can be placed in the seventeenth-century, and bowls of this date were recovered from topsoil **2200**, subsoil **2401**, and pit **2048** (fills **3004** and **3020**), layer **5002**, and layer **5007**, but it is clear from other classes of find that these are all mixed contexts. The plain heeled bowl from **2200** can be dated to 1630-50 (Rutter and Davey 1980, fig 3.33), and similarly plain heeled examples from layers **2401**, **5002**, and **5007** date to the period 1640-80 (*op cit*, fig 7.42) and it is likely that two other bowls from the context, both milled and spurred (*op cit*, fig 10), fall within the same range. Plain heeled bowls from fills **3004** and **3020** are also seventeenth-century in date, but a decorated stem of eighteenth-century date from the former makes it clear that the fills of pit 3048 are somewhat mixed. That from **3020** is carefully burnished, and the heel bears what might be a shield-shaped stamp, but it is blurred and incomplete, and therefore illegible.

- 4.6.3 Bowl fragments from **2004** can probably be dated 1710-*c*1730, and a distinctive heel fragment from **3000** (Rutter and Davey 1980, fig 19.4) can be perhaps be placed in the range 1720-*c*1740. Stamped stem fragments from **2003** and **3004** are both of eighteenth-century date, with the Chester stamp on the latter (*op cit*, fig 56.51) placing it *c*1710-1730.
- 4.6.4 Bowls from topsoil **2000** are all probably of nineteenth-century date, and a stem stamp from topsoil **3000** identifies the maker as JATE FITZGERALD, CHESTER. The stamp is similar, but not identical, to a less complete example illustrated by Rutter and Davey (1980, fig 68.1) and attributed to Joseph Fitzgerald, producing in the first half of the nineteenth century.

4.7 THE METALWORK

- 4.7.1 **Copper alloy:** in all, 25 fragments of copper alloy were recovered, probably representing 17 objects. Although in poor condition, a sub-triangular object from the fill (**3003**) of post-medieval pit **3005**, is probably a strap end. The surviving surface is in very poor condition, but it could originally have borne cast decoration, similar to one from London illustrated by Pritchard and Egan (1991, fig 86, 614) and thus suggest a medieval date.
- 4.7.2 A small group of spherical-headed pins, probably, given their association with skeletons **2053** and **2055**, derive from shrouds or grave clothes. All have wound and crimped heads, a method of forming the heads which has a long date range, from the mid-sixteenth to at least the mid-eighteenth century. A single lace tag was also associated with skeleton **2053**, and again is likely to derive from grave clothes. A small plain triangular hooked fastener from burial horizon **2056** cannot be dated with precision, but bears considerable resemblance to some early medieval examples, for example Read's Class A clasps (2008, see especially no 13). Other hooked tags are known from the area (Griffiths 1994) and there is ample evidence for Early Medieval activity within the fortress (Ward 1994).
- 4.7.3 A thimble from topsoil **4600** is likely to be of post-medieval or modern date. It appears to have been stamped from sheet, with the pits, of which there are probably 12 rows, beginning approximately half-way up the side. Although not clear, it is possible that this example is deep drawn, possibly with a steel top, suggesting a later eighteenth-century or later date (Holmes *nd*, 2). A flat, shanked button came from layer **2202**. The front appears undecorated, but the back is stamped 'rich orange' and bears a second illegible inscription, presumably a maker's name. It seems most likely to date from the mid-late nineteenth century.
- 4.7.4 Three small dome-headed nails were recovered from fill **3020** of post-medieval pit 3048. These are of a relatively insubstantial nature, and most likely to have been used in upholstery, indeed two of them retain evidence of mineralised wood adhering to their short shank. Given the context, it is quite likely that they are from coffins, perhaps used to fix a cloth covering, and can thus be dated to the seventeenth century or later (Janaway 1993, 100).

- 4.7.5 A blade-shaped object from topsoil **2400** is difficult to identify. Superficially, it resembles a curving blade, with, to one end, a slender, tapering tang. As it is made from thin, and probably quite malleable, sheet metal, however, this seems unlikely, and there is no evidence, from its cross-section, that it ever had a sharpened edge. There are several incised or stamped marks along the piece, amongst them a carefully incised flying bird. It is hard to offer an identification, but it is possible that it is a trial piece of some sort.
- 4.7.6 A small fragment of tubing from post-medieval burial horizon **2016** and two short pieces of drawn wire from layer **2202** and subsoil **2401** are most likely to be recent in date and require no further comment.
- 4.7.7 **Ironwork:** a group of 131 fragments of ironwork was recovered from the evaluation trenches, their distribution is shown in Table 5. All were in relatively poor condition, but remained largely recognisable and so, as most were effectively unstratified, none were subject to x-ray. The largest proportion of the group (100; 74.6%) can be identified as hand-forged nails, ranging between *c* 40mm and *c* 90 mm in length. Many have the mineralised remains of wood adhering, showing that they had been used in carpentry, some of the smaller examples probably coming from coffins. As a long-lived and simple type, hand-forged nails cannot be dated with any precision, and have been used from the Roman period to the present day.
- 4.7.8 The remainder of the group comprised fragments of thin strap, and small amorphous fragments. The strap could have had a number of origins, amongst them cooped wooden vessels and strap hinges. A large conical ferrule from burial horizon **2204** obviously reinforced a pole or pile, but cannot be further identified. A small staple from fill **3003** (pit **3005**) seems likely, from its size, to be a strap guide from a plain buckle.

Context	Context Type	Nail	Strap and other objects	Totals
2000	Topsoil	19	4	23
2003	Subsoil	1	0	1
2004	Layer	10	0	10
2015	Rubble layer	0	3	3
2016	Burial horizon	10	1	11
2037	Layer	3	0	3
2055	Skeleton	3	0	0
2059	Burial horizon	2	0	2
2200	Topsoil	3	3	6
2201	Rubble layer	5	1	6
2202	Rubble layer	3	0	3
2203	Layer	1	1	2
2204	Burial horizon	3	1	4
2400	Topsoil	7	1	8
2401	Subsoil	4	1	5

2402	Modern feature	3	0	3
2405	Modern feature	0	1	1
2406	Landscaping layer	0	1	1
2415	Subsoil	2	1	3
3003	Fill of pit 3005	1	0	1
3020	Fill of pit 3048	1	6	7
3021	Fill of pit 3048	0	1	1
4000	Topsoil	0	1	1
4001	Subsoil	0	1	1
4402	Layer, made ground	4	0	4
4600	Topsoil	8	2	10
4601	Subsoil	2	0	2
5107	Layer	0	1	1
<i>u/s</i>		5	3	8
<i>Totals</i>		<i>100</i>	<i>34</i>	<i>131</i>

Table 5: The distribution of ironwork

4.7.9 **The lead:** a total of 30 fragments of lead was recovered, most from topsoil or modern layers. Most of the lead recovered was in the form of solidified spills of the kind generated by lead-working (from layer **2004**, topsoil **2200**) and small offcuts, from the use of sheet metal in building (from layer **2203**, topsoil **2400**, subsoil **2401**, modern feature **2402**, fill **3010** (modern rubbish pit **3011**), layer **5107**, and unstratified). A relatively substantial gallet was also recovered from layer **2203**. Its upper surface was deeply scored with criss-crossing chisel cuts, as if to key it. A single short fragment of lead piping came from subsoil **2401**, and is again probably associated with former buildings on the site. Finally there were 12 small fragments of lead window kame, lost or discarded in the installation or maintenance of leaded window lights. The earliest, from fill **3003** of post-medieval pit **3005**, has a short-H profile, although it is not clear as to whether it is cast or milled, using a toothless mill (either Knight's type C or type D (1985, 156), both of which are medieval in date. The remaining fragments of kame, all twisted and torn from their removal, have a much deeper H-shaped cross-section, and are of eighteenth or nineteenth-century date (Knight's type G).

4.7.10 **The silver:** a single silver coin in very poor condition, was recovered from the evaluation. It has been identified positively as a Constantinian *Nummus*, which can be dated AD 341-6. The obverse is illegible, although the reverse depicts facing victories [VICTORIAE D D AVGGQ N N] TRP (D Shotter pers comm).

4.8 THE GLASS

4.8.1 **Window glass:** in all, 81 small fragments of window glass were recovered, 55 (67.9%) of them coming from topsoil layers and thus effectively unstratified. The distribution of window glass is shown in Table 6. None of the window glass fragments are recognisably medieval, and most appears to be relatively thin, greenish sheet of the kind known as 'Forest Glass'. Some surviving pane-edges are fire-rounded, indicating that some of the glass was probably cylinder blown. When it could be established, the greenish glass derived from triangular or diamond quarries set in lead, and would probably have come from domestic glazing. Where original pane edges survive, they are predominantly diamond-cut, although a few fragments have clearly been tidied by grozing. Thin greenish sheet is typical of the English 'forest glass' industries, which were producing glass in the south of England from the later sixteenth century (Charleston 1984). Glass production was also well established in Cheshire and South Lancashire at this time (Hurst Vose 1980), with forest glass production continuing well into the seventeenth century and later, for instance at Houghton Green, Denton, near Manchester (Hurst Vose 1994) and it is quite likely that the greenish window glass recovered during the excavation was locally produced. The remainder of the window glass from the site is slightly bluish, or colourless sheet, and is probably of recent date.

Context	Context Type	Greenish glass	Bluish or colourless glass	Totals
2000	Topsoil	27	16	43
2004	Layer	5	4	9
2016	Post-medieval burial horizon	1	0	1
2402	Modern feature	1	0	1
2415	Subsoil	1		1
3004	Fill of post-medieval pit 3048	1	0	1
3010	Fill of modern pit 3011	1	2	3
3020	Fill of post-medieval pit 3048	5	0	5
3021	Layer above burial horizon 3051	0	2	2
4000	Topsoil	1	0	1
4001	Subsoil	1	2	3
4200	Topsoil	0	5	5
4400	Topsoil	2	1	3
5007	Layer	1		1
u/s		1	1	2
Totals		48	33	81

Table 6: The distribution of window glass

- 4.8.2 **Vessel glass:** a small assemblage of 111 fragments of vessel glass was recovered from 25 contexts and unstratified, their distribution is shown in Table 7; 30 fragments (28%) derive from topsoil and can be regarded as effectively unstratified. A single small fragment from layer **2004** is in a bluish-green metal reminiscent of much Roman glassware, but the form of the vessel could not be determined, and this must remain a tentative identification.
- 4.8.3 The majority of the fragments (82; 73.8%) are from dark olive green wine bottles, so-called ‘English bottles’, introduced in the late seventeenth century, and in widespread use in the eighteenth century (Hurst Vose 2008, 367). Most of the fragments are too small for the form to be identified with confidence, but apart from a small fragment from layer **3004** which could be a late seventeenth-century ‘onion’ form (Hume 1961), and a neck fragment from layer **5002** which is probably from an early eighteenth-century ‘mallet’ form (*ibid*), the remainder can be placed in the eighteenth and early nineteenth century.
- 4.8.4 There are very few fragments which pre-date the nineteenth century. The earliest is the milled base of a drinking beaker in greyish ‘facon de venise’ glass, which probably dates to the seventeenth century. Two fragments of small phials came from layer **3004** (base) and fill **3020** of pit **3048** (rim). These were introduced in the seventeenth century and lasted well into the nineteenth, the base fragment from layer **3004** is in a good colourless metal, suggesting an eighteenth-century date, and is similar to vessels from late activity at Norton Priory (Hurst Vose 2008, fig 255, 367, nos 99 and 100). The remainder of the vessel glass can be dated to the late nineteenth and twentieth centuries, and reflects a range of utilitarian bottles, including embossed mould-blown mineral water bottles.

Context	Context Type	Dark olive green wine bottle	Other vessel types	Totals
2000	Topsoil	4	1	5
2001	Bedding layer	2	1	3
2003	Subsoil	1	0	1
2004	Layer	2	1	3
2015	Rubble layer	1	0	1
2016	Burial horizon	6	0	6
2040	Rubble layer	1	1	2
2200	Topsoil	3	0	3
2202	Rubble layer	2	0	2
2204	Burial horizon	2	0	2
2221	Fill Victorian sewer	4	1	5
2400	Topsoil	3	0	3
2402	Modern feature	0	1	1
2403	Modern feature	2	0	2
3000	Topsoil	0	2	2
3004	Fill of pit 3048	10	6	16

3018	Fill of 3008	0	1	1
3020	Fill of pit 3048	11	2	13
3021	Fill of pit 3048	8	4	12
4000	Topsoil	0	5	5
4200	Topsoil	5	1	6
4201	Subsoil	5	0	5
4400	Topsoil	1	2	3
4600	Topsoil	3	0	3
5007	Layer	3	0	3
<i>u/s</i>		3	0	3
<i>Totals</i>		82	29	111

Table 7: The distribution of vessel glass

4.9 INDUSTRIAL DEBRIS

4.9.1 Only eight fragments of potential industrial waste were recovered, weighing less than 200g. All were recovered from modern topsoil or landscaping layers. With the exception of a partially-vitrified fragment of stone from topsoil **4001**, most of the fragments probably derive from fuel ash, generated by domestic fires.

4.10 THE WORKED STONE

4.10.1 A rather disparate group of 50 fragments of stone was recovered during the excavations, of these five were small pieces of coal, one was burnt shale, and one was unworked flint, and these require no further discussion. The majority of the stone recovered was clearly associated with building, and included roughly dressed red sandstone from topsoils **2400** and **4000**, and deposit **3009**, and modern feature **2402**, limestone with mortar adhering from subsoil **4001**, and a small fragment of purple (Welsh?) roofing slate from topsoil **2200**. More finely dressed fragments came from modern feature **2402** and fill **3020** of post-medieval pit **3048**, and decorative stonework, presumably of medieval date, came from topsoil **2000** (two fragments, one from tracery, the other a small fluted column drum), and an amorphous fragment from fill **3004** of pit **3048**.

4.10.2 A group of 23 small fragments of white and grey marble, including small parts of an inscription, came from the fill (**3002**) of post-medieval pit **3001**, and probably derive from a smashed funerary monument. Small fragments of a second inscription, on a yellowish sandstone plaque, came from fill **3020** of pit **3048**. Whilst this could well be a second late funerary inscription, the quality and style of the lettering raises the strong possibility that this example could be of Roman date, and perhaps of Legionary origin (David Shotter pers comm). Finally there were two small slate pencils, from topsoil **2200** and post-medieval layer **2203**. These are probably post-medieval or recent in date.

4.11 THE WORKED BONE

4.1.1 Two items of worked bone came from burial horizon **2204** and subsoil **2401**. The former is an incomplete pointed object, and the latter, a heavily modified metapodial with extensive green staining from contact with copper or copper alloy, is probably a pinner's bone, and likely to be post-medieval in date (MacGregor 1985, 171).

4.12 THE HUMAN BONE

4.12.1 *Introduction and Methodology*: human skeletal material was recovered from nine of the excavation trenches. This material was assessed using five criteria: preservation and completeness; age at death; sex; stature; and pathology.

4.12.2 *Preservation and Completeness*: bone preservation of all components of the recovered assemblage was rated on a four-point scale, ranging from 1 (poor) to 4 (excellent). Likewise, skeletal completeness for articulated remains was scored on a scale of 1 - 4: 1 (< 25 %); 2 (25- 50 %); 3 (50- 75 %); and 4 (> 75 %).

4.12.3 *Estimation of Age at Death*: adult skeletons were aged by the pubic symphysis (Brooks and Suchey 1990; Todd 1920), degeneration of the auricular surface of the pelvis (Lovejoy *et al* 1985), and dental attrition (Miles 1963). The ageing of fetuses and neonates was based on diaphyseal long bone length (Scheuer and Black 2000). Subadults were aged by the stage of dental eruption (Moorees *et a.* 1963a and 1963b) and epiphyseal fusion (Scheuer and Black 2000). All skeletons were assigned an age group as defined in Table 8.

Age group	Age range
Foetus	< 0 years
Neonate	0-1 months
Infant	0-1 years
Young child	2-5 years
Older child	6-12 years
Adolescent	13-17 years
Young adult	18-25 years
Prime adult	26-35 years
Mature adult	36-45 years
Older adult	> 45 years
Child	2-12 years
Sub-adult	< 18 years
Adult	> 18 years

Table 8: Age groups used in the assessment

- 4.12.4 *Estimation of Sex:* based on standards set out in Buikstra and Ubelaker (1994), sexually dimorphic features of the pelvis and cranium were used to diagnose osteological sex of adult skeletal material.
- 4.12.5 *Estimation of Stature:* the calculation of body stature was estimated from the maximum length of the major long bones and was based on the method by Trotter and Gleser (1958). Stature was only be calculated for articulated skeletons within the assemblage.
- 4.12.6 *Skeletal and Dental Pathologies:* the descriptions of skeletal pathologies is based upon palaeopathology texts by Aufderheide and Rodríguez-Martín (1998) and Ortner (2003). Degenerative joint disease was recorded as osteophytic growth, porosity and eburnation, according to the recommendations of Rogers and Waldron (1994). Dental pathologies were described in accordance with Hillson (2003), and dental calculus was recorded according to Brothwell's methods (1981).
- 4.12.7 **Results:** the following sections outline the salient results of the assessment of the recovered skeletal remains according to the trench from which they were gathered. It is not the intention to provide details of every element that was examined and, where details of age, sex, stature, or pathology are not presented here, it can be assumed that such information could not be established from the bones.
- 4.12.8 *Trench 2a:* during excavation, 20 burials were identified within this trench, eight of which could be, and were, left *in situ* following on-site recording. Twelve articulated skeletons (with a total of 1007 bone fragments between them) were recovered, most of them only partially so, due to the fact that elements frequently lay beyond the limit of excavation. The bones from these twelve articulated skeletons were assessed (Table 9), revealing the presence of at least 14, mostly adult, individuals.
- 4.12.9 Skeleton **2017** was well preserved with 25-50% of the bone remaining. It comprised 175 fragments of bone of which a small amount could be reassembled. This was an adult male aged 34+, with a maximum height of 157-165cm. The only pathology observed on this skeleton was a Schmorl's node on the fourth lumbar vertebra, indicating the presence of osteoarthritis in the spine. Elements of two other individuals were recovered with the remains of skeleton **2017**: a vertebra and left scapula of a foetus, and skull fragments, including the right temporal bone, of an infant. Skeleton **2042** was in good condition, more than 75% complete and represented an adolescent female aged approximately 14-18 years old at the time of death. The only pathology present was small amounts of dental calculus on the mandibular teeth.

Skeleton	Number of Fragments	Excavated
2017	175	Yes
2021	unknown	No
2025	unknown	No
2029	unknown	No
2033	unknown	No
2042	277	Yes
2052	89	Yes
2053	65	Yes
2054	12	Yes
2055	125	Yes
2057	55	Yes
2058	37	Yes
2060	16	Yes
2061	6	Yes
2062	unknown	No
2069	107	Yes
2070	43	Yes
2076	unknown	No
2077	unknown	No
2078	unknown	No
Total	1007	

Table 9: Summary of burials encountered in Trench 2a

- 4.12.10 Skeleton **2052** was that of a young child aged between 2-4 years at the time of death. Only the lower portion was lifted, with the rest running beyond the limit of excavation.
- 4.12.11 Skeleton **2053** was in poor condition, fragmented, and showed evidence of weathering and post-mortem damage. Less than 25% of the skeleton was recovered. The remains included fragments of pelvis and both legs, with the foot bones extremely decayed.
- 4.12.12 Skeleton **2054** was rather incomplete but otherwise in good condition. Epiphyseal fusion of the right radius indicated that this individual was an adult.
- 4.12.13 Skeleton **2055**, an adult male, was fragmentary but in good condition. Only 50% of the skeleton was lifted, with the lower extremities and the majority of the hand bones running beyond the perimeter of the trench. The skeleton exhibited evidence of osteoarthritis of the shoulders and the elbow. The left scapula coracoid process had extra bone growth, whilst the right clavicle had osteophytes and increased bone growth on the lateral end of the inferior surface. The distal joint of the right humerus had erosion of the anterior capitular bone surface. There was also evidence of active infection, with periostitis present on the distal shaft of the right humerus and, more severely, on the left ulna. The mandible showed signs of periodontal disease and dental

attrition. A small fragment of root protruding at right angles to the bone is all that survives of the left mandibular third molar.

- 4.12.14 Adult skeleton **2057** was less than 25% complete, with the remainder falling outside the limit of excavation.
- 4.12.15 Skeleton **2058** was in good condition, but fragmented. Only the left leg was available for analysis as the remainder fell beyond the edge of the excavation trench. It was possible that this was an adult individual, based on the size of the tibia.
- 4.12.16 Skeleton **2060** consisted of the left and right femur, patella and right tibia. Only a small fragment of the right pelvis survived.
- 4.12.17 Skeleton **2061** was in poor condition and highly fragmented, with only six small fragments of the lower limbs recovered.
- 4.12.18 Skeleton **2069** consisted of 107 well-preserved fragments. Only the upper half of the skeleton was lifted, with the pelvis and the lower extremities left *in situ* running under the section. The remains represented a young child aged 4-6 years at time of death.
- 4.12.19 Skeleton **2070** was highly fragmented and in poor condition. Three fragments of unidentified calcined bone were recovered with this skeleton.
- 4.12.20 Further contexts within the trench produced disarticulated skeletal remains. From the fragment count of 1212 it was possible to determine that a minimum number of 25 individuals was present (Table 10). All contexts were recorded with the number of fragments and the minimum number of individuals (MNI), though only the contexts that had skeletal remains of note are detailed below.

Context	Number of Fragments	Minimum Number of Individuals (MNI)
2000	9	1
2001	2	1
2003	86	2
2004	5	1
2011	10	1
2015	18	2
2016	408	5
2019	1	1
2037	17	1
2040	18	1
2044	-	0
2056	307	2
2059	331	7
Total	1212	25

Table 10: Minimum number of individuals from the disarticulated skeletal material recovered from Trench 2a

- 4.12.21 Topsoil **2000** contained nine fragments with an MNI of one adult. A fragment of the frontal bone displayed small lesions and pin-prick porosity, suggesting that this individual may have suffered from syphilis.
- 4.12.22 Bones from modern service fill **2011** were in good condition, with some fragmentation and post-mortem damage. The MNI was one adult. A right distal radius shaft showed thickening of the periosteum, suggesting an infection was active in this area at the time of death.
- 4.12.23 Soil horizon **2016** contained a large amount of human skeletal fragments. From them an MNI of five individuals was established: four adults and one juvenile. Of the adults, it was determined from skull fragments that at least one was female. All adults showed evidence of occlusal caries and dental calculus. The juvenile remains were determined to be of a child less than 14 years of age, based on the epiphyseal fusion of the femur and humerus.
- 4.12.24 Soil horizon **2056** contained 307 fragments with a MNI of two adults, one male, the other female. The female mandible exhibited evidence of dental attrition, periodontal disease, and dental calculus.
- 4.12.25 Soil horizon **2059** contained a large amount of human skeletal fragments. They were in good condition with evidence of post-mortem damage and some weathering. From the fragments it was possible to determine a MNI of four adults and three juveniles. Of the adults, it was possible from the skulls to determine that two were male and two were female. The juvenile bones represented two children aged approximately 10 years old and another of about 6 years.
- 4.12.26 *Trench 2b*: four different contexts from this trench produced disarticulated human remains representing the remains of 12 individuals (Table 11).

Context	Number of Fragments	Minimum Number of Individuals (MNI)
2202	8	1
2204	351	5
2221	26	2
Pit fill	50	4
Total	435	12

Table 11: Minimum number of individuals from the disarticulated material from Trench 2b

- 4.12.27 Burial horizon **2204** had a MNI five, comprising two adults, one neonate, one young child and one older child. The adults were both female, and the auricular surfaces on their pelvises indicated ages of 39+ and 27+ respectively. Drain backfill **2221** had a MNI of two adults, of which one showed evidence of periostitis on the tibia.
- 4.12.28 *Trench 2d*: Skeleton **2605** was of a fair condition and comprised less than 25% of a juvenile aged approximately 4-6 years.
- 4.12.29 Topsoil **2600** contained remains in good condition with evidence of post-mortem damage. There was a MNI of two adults.

- 4.12.30 Modern service **2601** contained less than 25% of an adult individual, whose age and sex were indeterminate. The remains showed evidence of weathering.
- 4.12.31 Burial horizon **2603** contained 76 fragments of disarticulated human bone. They were in a good condition with some fragmentation and showed signs of weathering. The MNI within this assemblage consisted of one sub-adult and one adult male (sex determined by the mental eminence and the mastoid process) with evidence of dental calculus on the mandibular teeth.
- 4.12.32 *Trench 3*: this trench produced human remains from several contexts, amongst which two large rectangular pits contained large amounts of charnel material. The number of fragments of human bone and the MNI calculated therefrom are presented in Table 12.
- 4.12.33 Charnel pit fill **3003** contained 708 fragments of human skeletal material representing at least four adults and one juvenile. The remains were in good condition, though highly fragmented, and they showed evidence of weathering and post-mortem damage. This could have been the result of the remains being buried at a relatively shallow depth or as a result of disturbance. There was evidence that one of the adults had suffered a dislocation of the forearm: the left distal radius had formed a false joint on the ulnar notch, with severe eburnation indicating that this condition had taken place before death, and had not been completely debilitating.
- 4.12.34 Charnel pit fill **3006** contained the remains of at least nine adults (amongst which two were male and another female) and one juvenile. One of the males was aged 27+ and the female was aged 39+. The skeletal remains within this pit show evidence of osteoarthritis, dental calculus and caries, and infection with periostitis evident in some of the long bones. An adult left tibia showed severe infection with the presence of osteomyelitis and a small cloaca, whilst a fragment of frontal bone showed evidence of pitting. These two bones exhibit evidence of syphilis and may have belonged to the same person. Another adult left tibia showed evidence of trauma with a healed fracture mid-shaft.

Context	Number of Fragments	Minimum Number of Individuals
3000	4	1
3002	4	1
3003	708	5
3004	192	3
3006	1129	10
3010	5	1
3018	1	1
3020	197	4
3021	179	2
3039	27	1
Total	2446	29

Table 12: Minimum number of individuals from the disarticulated material from Trench 3

4.12.35 *Trench 4a*: this trench contained two deposits with human remains, **4000** (topsoil) and **4001** (subsoil) and a collective MNI of six (Table 13). The bone preservation within these deposits was poor, with the remains showing severe weathering and fragmentation, which is to be expected if they were buried just below the ground surface.

Context	Number of Fragments	Minimum Number of Individuals (MNI)
4000	13	1
4001	116	5
4200	24	1
4201	83	2
4400	25	2
4402	10	1
4600	143	1
4601	23	2
4604	31	2
Total	468	17

Table 13: Minimum number of individuals and preservation of bone from Trench 4a

4.12.36 Topsoil **4000** contained the remains of one adult of indeterminate age and sex. Subsoil **4001** had a MNI of three adults and two juveniles. It was not possible to age or sex the juveniles. Of the adults one was most likely to be a male, aged approximately 24. One of the adult mandibles showed evidence for dental calculus.

4.12.37 *Trench 4b*: this trench contained human remains derived from two contexts **4200** (topsoil) and **4201** (subsoil). Again, due to the proximity to the surface they were in poor condition, and highly fragmented, with evidence of weathering. Topsoil **4200** had a MNI of one adult. Subsoil **4201** contained a MNI of one adult female, aged 22-8 years, and one juvenile. The adult had a small septal aperture on the distal humerus, a non-metric trait that can link family members.

4.12.38 *Trench 4c*: the skeletal remains from topsoil **4400** were in a poor condition, highly fragmented and weathered. This context produced a MNI of one adult of indeterminate age and sex, with evidence of osteoarthritis in the left second metacarpal. Topsoil **4400** also contained one juvenile who was approximately six years of age at death.

4.12.39 Subsoil **4402** had a MNI of one juvenile of approximately 6 years old (established from the maxillary tooth eruption). Evidence of dental caries was also present on the left upper pre-molar. Again, the skeletal material was in poor condition with post-mortem damage.

4.12.40 *Trench 4d*: three separate contexts from this trench produced highly fragmented human remains in a poor condition, with evidence of weathering. This suggests close proximity to the surface and, as with the other trenches, the remains show signs of having been left exposed to the elements for a period of time.

- 4.12.41 Topsoil **4600** had a MNI of one adult of indeterminate age and sex, with evidence of dental attrition. Subsoil **4601** produced a MNI of one juvenile and one adult aged 21+ with evidence of osteoarthritis on the vertebral column.
- 4.12.42 Topsoil **4600** contained skeletal remains in good condition, with minimal weathering and fragmentation. It had a MNI of one juvenile, again of indeterminate age and sex, and one female adult aged 35-39 years. This individual had osteoarthritis of the thoracic and lumbar vertebra and osteophytic growth on the femoral head.

4.13 THE ANIMAL BONE

- 4.13.1 **Introduction:** a small collection of animal bone, weighing *c* 15.5kg, was recovered from the evaluation trenches (Table 14). All of the material has been grouped into the general phase of the site. This material was scanned rapidly in order to assess its condition and potential of the bone for analysis.

Species	Post-medieval	Post-medieval/Modern	Modern	Total
Horse	3	1	3	7
Cattle	156	11	74	241
Pig	30	6	6	42
Sheep/Goat	61	5	28	94
Sheep	1			1
Goat	1			1
Deer			1	1
Dog	2		2	4
Cat	5		4	9
Rabbit	1	1		2
Red Deer		1		1
Fallow Deer			1	1
Roe Deer	1			1
Domestic Fowl/ Pheasant	1		2	3
Unidentified Bird			3	3
Unidentified Fish	1			1
Unidentified Mammal	704	55	166	925
Total	967	80	290	1337

Table 14: Number of Individual Specimens (NISP) by Species

- 4.13.2 **Methodology:** the material was identified using the reference collection held by the author. All parts of the skeleton were identified where possible, including long bone shafts, skull fragments, all teeth and fairly complete vertebrae. Sheep/goat distinctions were attempted using reference material and Boesneck (1969), Kratochvil (1969), and Prummel and Frisch (1986). Only mammal bone identifiable to a species level was recorded in detail. All other mammal bone was classified as unidentified.
- 4.13.3 For each species, or species group, the following were recorded: the number of individual specimens (NISP); preservation category; the number of

measurable bones; the number of butchered bones; the number of mandibles or mandibular loose teeth from which the wear pattern could be described; and the number of bones from which the epiphysial fusion state could be identified. Tooth wear and fusion data was used to assess the age of death of the principal stock animals (cattle, sheep/goat and pig). Biometrical data was used to assess the size, and in some instance, the sex ratio of the principle stock animals. The preservation categories provide a useful indicator to the general condition of the assemblage. These categories are as follows:

very poor: very fragmented bone with a highly eroded surface;

poor: bone with an eroded surface and with less than half the anatomical part present;

moderate: bone with approximately half the anatomical part present and with some erosion to the surface;

good: bone with an uneroded surface and with half or more than half the anatomical part present;

very good: a complete, or near complete, bone with little or no erosion.

4.13.4 **Quantification and Preservation:** the majority of the animal bones are dated to the post-medieval period, cattle being the most frequently recovered species. The bone is generally in a moderate to good condition, often fragmented but with limited erosion of the bones surface (Table 15). Relatively speaking, few bones have the potential to supply data relating to the age of death of the animal (tooth wear and epiphysial fusion), the butchery of animals or biometric data (Table 16).

Period	Preservation category (%)				
	Very Poor	Poor	Moderate	Good	Very Good
Post-Medieval	0.0	59.2	28.6	11.2	1.0
Post-Medieval/Modern	0.0	34.9	39.8	22.9	2.4
Modern	0.0	30.0	48.4	16.3	5.3

Table 15: Preservation of animal bone fragments identified to a species level

Phasing	Tooth wear	Fusion	Butchery	Measurable
Post-medieval	7	73	14	60
Post-medieval/Modern	0	7	2	5
Modern	5	37	7	37

Table 16: Tooth wear, fusion, butchery and biometric data

4.14.4 **Conclusions:** the evaluation produced very low quantities of animal bone, and as such the archaeozoological material has no potential for statistical analysis. The area was used for rubbish disposal in the sixteenth century, and it is possible that much of the post-medieval bone has derived from this activity. The modern material may be discarded, but it is of note that potentially a residual fallow deer bone was recovered from the subsoil.

4.15 MARINE MOLLUSCS

4.15.1 Marine mollusc shells, all of them single valves of the native oyster, were recovered from a total of 21 contexts, all of which were post-medieval and later in date, including topsoil. There was a total of 69 individual shells (1.627kg), and all were of a size suitable for consumption. No detailed analysis was made of this small group, but they seem most likely to represent food waste.

5. CONCLUSION

5.1 INTRODUCTION

- 5.1.1 The evaluation trenches and test pits excavated during the archaeological investigations allow significant insights into the nature and character of the below-ground remains found within those several areas situated to the south and west of Chester Cathedral (Areas 2-5). Generally, the results obtained from the evaluation indicate that a significant archaeological resource is contained within these areas, which on present evidence dates from the Roman period onwards.
- 5.1.2 The earliest surviving remains encountered during the evaluation are possible stone-walled structures associated with the Roman Legionary fortress, located in Trenches 2a, 2d, and possibly Trench 3. Sealing these structures and deposits was a burial horizon present across the entire area of the graveyard, in Areas 2, 3 and 4. A similar burial horizon was also tentatively identified in Trench 5b (TP 1), excavated in Area 5. It was only in Trenches 2a and 2d that this horizon was excavated, which entailed the removal of several burials, but the available evidence strongly indicates that the graveyard around the cathedral was extensive and was used intensively throughout the post-medieval period. In addition to the articulated burials, the evaluation trenches also identified abundant quantities of unarticulated human bone, from disturbed burials, and also a number of charnel pits. Although the majority of burials, and deposits of human bone, encountered during the evaluation probably date to the post-medieval period, one burial was identified in Trench 2d, contained within a stone cist, which may be medieval in date. However, it is highly likely that with excavation of the post-medieval burials further medieval inhumations would be present across the areas examined as part of the evaluation.
- 5.1.3 Later post-medieval activity was also apparent and included several excavated layers, which were interpreted as levelling deposits that had been imported to the site in order to raise the ground surface. These levelling deposits did not contain human remains (articulated or otherwise) and are most likely associated with George Gilbert Scott's work on the cathedral in *c* 1865. The crushed sandstone surface located in Trench 4, containing a variety of ceramics dating from the Roman period to the nineteenth century, also probably dated to this period of work. Moreover, judging from the proximity of the skeletons to the overlying levelling deposits, the area of the churchyard was possibly raised in order to contain those human remains that may have been eroding from the late nineteenth-century ground surface. Other late post-medieval features identified during the course of the evaluation included a redbrick culvert, possibly a eighteenth- or nineteenth-century sewer, in Trench 2b, and a surface composed of sandstone fragments uncovered in Trench 5b.

5.2 SIGNIFICANCE

- 5.2.1 The archaeological remains encountered in the evaluation trenches are of a regional and national importance. Whilst there have been a number of excavations of the Legionary Roman fort of *Deva Victrix*, little is known about the area between the barrack blocks and the *praetorium* (commanders residence), which was probably located in Areas 2 and 3. The barracks are suspected to lie in Area 4, and have been previously excavated to the north and south of this area (*cf* Frere 1986; Thompson 1967), and the *praetorium* at or just beyond the western extent of Area 2 (Mason 2000). Previous works undertaken within the cathedral produced finds that indicate a major structure, or structures, once occupied this location (Chester City Council 1997, 37). The two parallel north-east/south-west-aligned walls located in Trenches 2a and 2d, at heights of 25.41m aOD and 25.51m aOD respectively, and possibly the east/west-aligned masonry at the northern end of Trench 3 at a height of 25.09m aOD, suggests further evidence for the presence of substantial Roman buildings in the immediate vicinity of the cathedral.
- 5.2.2 Physical remains of the medieval period were few, as the post-medieval burial horizon covered most of the graveyard area, which was left largely unexcavated. However, the cist burial in Trench 4d, located at a height of 25.96m aOD, possibly dates to this period. It is also possible that the masonry deposit identified in Trench 3, although potentially Roman (*see above*), may be medieval in date.
- 5.2.3 Evidence of the post-medieval graveyard was abundant, in the form of burials, unarticulated human bone and charnel pits in Trenches 2a, 2b, 2d, 3, 4a, 4b, 4d, and 5b. None of the skeletal remains uncovered were contained within coffins, although fragmentary coffin furniture was identified in Trench 3. However, the close proximity of the skeletons to each other and the large quantity of unarticulated human bone indicate a very high density of inhumations. Indeed, historic pictures of the area, dating from the 1920s, show a dense spread of gravestones with gravestone designs spanning at least 150 years. In addition, visual inspection of the flowerbeds of the Cheshire Regiment Memorial Garden identified the presence of abraded human remains in the topsoil.
- 5.2.4 In Trench 2a the burial horizon was encountered at 25.82m aOD, in Trench 2B at 25.70m aOD, in Trench 2d at 26.13m aOD and in Trench 3 at 25.0m aOD. Although no burials were removed from trenches 4a, 4b and 4d, the horizon thought to contain burials of the graveyard was encountered at 25.64m aOD, 25.74m aOD and 24.91m aOD respectively. The first charnel deposit, however, was encountered at only 0.15m below the ground surface (*c* 25.80m aOD) in Trench 3.

5.3 MITIGATION

- 5.3.1 It is not expected that the proposed development will involve extensive areas of deep excavation, although it does allow for a building in the vicinity of Area 2, and a walkway between the historic city walls, which bounds the eastern side of Area 4, to Area 2. Any deep excavation in Areas 2, 3 or 4 will inevitably have a major impact on the below-ground archaeological resource. In event of this, an appropriate scheme of further archaeological investigation in advance of development will therefore be required to mitigate the ultimate loss of the buried remains.
- 5.3.2 The precise scope of a mitigation strategy for any future works would need to be devised in consultation with the Cathedral Archaeologist, the Cathedrals Fabric Commission for England (CFCE), and the Local Planning Authority. In board terms, however, should the groundworks for the proposed development reach a depth at which post-medieval burials, or earlier deposits, are impacted upon, then a programme of detailed archaeological excavation would be an appropriate course of action, as a prerequisite to development. This would effectively mitigate against the damage, or loss, of significant archaeological remains. If, however, the proposed groundworks are relatively shallow, then an archaeological watching brief should be maintained during these works, in order to record and recover any chancel deposits, or other significant remains, which are encountered during the course of this work.

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APPENDIX 1: PROJECT DESIGN

**CHESTER
CATHEDRAL
QUARTER, PHASE 1
DEVELOPMENTS
(EXTERNAL
PROPOSALS),
CHESHIRE**

**Archaeological Evaluation
Phase 2 Intrusive
Project Design
(updated)**



Oxford Archaeology North

May 2010

BDP

NGR: SJ 406664

1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 BDP, on behalf of Chester Cathedral, Chester Renaissance and Cheshire West and Chester Council (CWaC), are currently working on the proposals for the Phase 1 VAF Developments within the Cathedral Quarter, which will be submitted in the near future to the Cathedrals Fabric Commission for England (CFCE) and the Local Planning Authority. The proposals concern improvements to visitor attractions both within the cathedral, and externally to the south (NGR SJ 406664).
- 1.1.2 The cathedral and its surroundings are an area of high archaeological significance of potentially national importance, and is included within Chester's Area of Archaeological Importance (AAI). A desk-based assessment undertaken by Oxford Archaeology North (OA North) as part of BDP's proposals (2010) highlighted areas for potential below-ground remains; the site lies within the Roman legionary fortress, and mainly within an area used as a cemetery from 12th century onwards, together with potential for medieval and post-medieval occupation. The proposals for the visitor attractions include a level of intrusive groundworks and earthmoving activities that may disturb or adversely affect below-ground archaeological remains. Therefore, in order to understand the precise nature, depth, extent and significance of any such remains a programme of archaeological evaluation is required. This will enable a suitable mitigation strategy to be agreed upon between the client and the regulatory bodies, and implemented either by excavation prior to the commencement of the construction works or by design to preserve the remains *in situ*.
- 1.1.3 The first phase of archaeological evaluation was begun by OA North at the end of March 2010 to the top of the first significant archaeological deposits (i.e. Phase 1 non-intrusive), in three areas of potential impact to the south of the cathedral (Areas 2, 3 and 4, Area 1 having been omitted due to changes in design). This was subject to approval by the CFCE of a project brief prepared by the Cathedral Archaeologist (*Outline Brief for Archaeological Evaluation in advance of Cathedral Quarter phase 1 developments*, January 2010) and project design prepared by OA North (*Chester Cathedral Quarter, Phase 1 Developments (External Proposals), Cheshire: Archaeological Evaluation (Non-intrusive) Project Design*, March 2010). The results of Phase 1 were intended to be used to inform further decisions regarding the level of intrusion for the proposals and, in turn, inform the requirements for further, more intrusive, archaeological investigation through the archaeological levels and possibly to the underlying natural in the Phase 2 evaluation.
- 1.1.4 The CFCE has been consulted on, and approved a project brief for, the procedures for the Phase 2 intrusive evaluation work, as prepared by the Cathedral Archaeologist (*Brief for a Programme of Archaeological Evaluation. Chester Cathedral, area to south of Cathedral Church*, March 2010) and in line with the provisions of the Care of Cathedrals Measure. The

following proposals, therefore, are based on the brief, with details of Phase 2 trenching confirmed during an on-site meeting with the Cathedral Archaeologist now that the Phase 1 trenching is near completion. This will consist of intrusive evaluation to natural deposits within the eastern end of Trench 2a.

- 1.1.5 In addition to the proposed Phase 2 investigation of Area 2, the following proposals also include excavation of inspection trial pits and/or window sampling holes required for the geotechnical SI pits to enable sampling and the drilling of boreholes.

1.2 PHASE 1 RESULTS

- 1.2.1 Eight areas of potential archaeological investigation have been put forward by BDP to the CFCE based on the proposed designs. The recent issue of preferred designs dictated the position of trenches for the Phase 1 non-intrusive evaluation in three of these areas to the south of the cathedral (Areas 2-4), the remaining areas will be dealt with as and when the method of works for the proposals are more defined.
- 1.2.2 Area 2 is within the south-west lawn, and the area of the proposed public realm, which includes a visitor pavilion. Three trenches have been excavated during the Phase 1 evaluation, Trenches 2a, 2b, and 2c, within the area of the cemetery used since the twelfth century, and in an area of potential for remains associated with the Roman legionary fortress, as well as medieval and post-medieval occupation.
- 1.2.3 The Area 2 trenches consist of Trench 2a, which runs north-west/south-east and measures 20m x 1.5m, and is dissected by Trench 2b, running in a north-east/south-west direction, measuring 8m x 1.5m. Trench 2c, approximately north-west/south-east, measures 10m x 1.5m, and lies to the north-west of Trench 2a. Excavations within Trench 2a and 2b proceeded through three distinct layers of made ground containing finds of Roman and medieval pottery, as well as tile fragments and masonry fragments from the cathedral, animal bones, and a large amount of charnel. Beneath this was a burial horizon at a depth of around 0.75m, at which Phase 1 excavations ceased being the first archaeological deposit encountered (except for areas where services have been encountered at around 0.2m). Evidence of at least 14 inhumations has been observed, all buried in a supine position, lying in an east/west orientation, although there is no evidence of any coffins, and the grave cuts are indistinct. Investigative slots excavated between some of the inhumations to a maximum of 0.92m have shown that these are not confined to one level but are intercutting and intermixed. The number and arrangement of the burials suggest a well used grave yard with many burials to be expected during Phase 2. There is no obvious dating material associated with this presumed upper layer of burials but they appear to be post-medieval. No evidence of a burial horizon was noted in Trench 2c, which was excavated to 0.68m when excavation ceased due to the presence of possible floor surfaces. This is not to say that there may be a deeper burial horizon yet to be discovered in line with that found in Trenches 2a and 2b.

- 1.2.4 The Area 3 trench, Trench 3, lies within the south transept lawn area in a north/south alignment, and measures 7.5m x 1.5m. This area lies within the proposed public realm and will be crossed by a small continuation of the sculpture wall extending across Area 4. The archaeological potential for this area is the same as for Area 2, although an illustration from the mid-nineteenth century (Romney 1854, see OA North 2010) shows a low wall and building extending southwards from the east side of the south transept. This trench is currently under excavation and has found charnel pits, together with more modern rubbish pits containing human and animal bone, plus general debris and building material. At the northern end, at a depth of around 0.6m, is an area of stone rubble which is yet to be defined, and evidence of the burial horizon has been found within the northernmost section at approximately 0.3m.
- 1.2.5 Area 4 consists of the proposed Addleshaw Tower Walk. Four trenches, 4a-4d, measuring 2m x 1.5m, have been excavated in the Phase 1 evaluation along the proposed line of the sculpture wall to the south-east of the cathedral. The potential for archaeological deposits is similar to Area 2, although the graveyard in this area was noted on maps until the beginning of the twentieth century, together with many illustrations of the south-east view of the cathedral. All of the test pits contained charnel deposits. Evidence of grave cuts was only observed in Trenches 4a and 4b at 0.86m and 0.4m respectively, although the presence of tree roots obstructed excavation deeper than 0.35m in 4c, and excavation ceased at 0.35m in 4d when rubble was encountered that may possibly be associated with the hearths or ovens of Roman date known to exist in this area.
- 1.2.6 The only area of proposed works where the impact may adversely affect the below ground remains is that of the pavilion. Therefore, a 4m long trench will be excavated to natural deposits within the eastern arm of Trench 2a to assess the significance of the impact.

1.3 OXFORD ARCHAEOLOGY

- 1.3.1 Oxford Archaeology (OA), which is an educational charity under the guidance of a board of trustees, has nearly 40 years of experience in professional archaeology, and can provide a professional and cost-effective service. We are the largest employer of archaeologists in the country, and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations. In the UK, we have offices in Lancaster, Oxford and Cambridge, trading as Oxford Archaeology North (OA North), Oxford Archaeology (OA South), and Oxford Archaeology East (OA East) respectively, enabling us to provide a truly nationwide service. OA is an Institute of Archaeologists Registered Organisation (No 17). All work on the project will be undertaken in accordance with relevant professional standards.
- 1.3.2 OA North has considerable experience of the evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects throughout Northern England during the past 30 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

2. AIMS AND OBJECTIVES

2.1 ACADEMIC AIMS

2.1.1 The main research aim of the investigation will be to understand further the archaeological deposits exposed during the Phase 1 evaluation by intrusive investigation. This Phase 2 evaluation will investigate the eastern arm of Trench 2a, as agreed with the Cathedral Archaeologist, together with those test pits required for geotechnical purposes. The main aims can be summarised as follows:

- to assess the nature, date, depth and extent, function and state of preservation of archaeological remains, together with their significance in Trench 2a (eastern end);
- to record those remains within the geotechnical trial pits and window sampling holes that would be destroyed by drilling or sampling activities;
- to examine the surviving archaeological remains in order to identify the development of the site;
- to provide information to aid an understanding of any remains or deposits that may be affected by the design proposals for the Phase 1 visitor attractions;
- to inform wider regional, national and period based research frameworks.

2.2 OBJECTIVES

2.2.1 The following programme has been designed to investigate and evaluate the exposed archaeological deposits or features within the Phase 1 evaluation of Trench 2a (east) and any underlying deposits that may be present, together with excavation of the geotechnical SI pits (see *Section 1*). The fieldwork will be carried out in line with current IfA guidelines (2008b) and in line with the IfA Code of Conduct (2008a). All work will be conducted in accordance with Planning Policy Statement 5 (PPS5) (DCLG 2010), current English Heritage guidelines (1991, 2002, 2005), CFCE conditions, and will conform to the former Cheshire County Council conditions (2003).

2.2.2 *Archaeological Investigation:* to manually excavate a 4m length section of the eastern arm of Trench 2a (with a 10% contingency for expansion), together with the geotechnical SI pits, so as to identify, investigate and record archaeological remains. Where possible, avoiding archaeological deposits or features considered sufficiently significant to be left *in situ* (as agreed with the Cathedral Archaeologist), the excavations will proceed to natural deposits.

2.2.3 *Report Production:* following completion of the fieldwork, a report will be produced for the client within six to eight weeks, depending on any specialist

reports outstanding, unless a report submission deadline is agreed with the client at the time of commission. An archive will be produced to current English Heritage guidelines.

3. HEALTH AND SAFETY

3.1 RISK ASSESSMENT

3.1.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liaise with the client to ensure all health and safety regulations are met. A detailed risk assessment will be completed in advance of any on-site works, with continuous monitoring and updating during the fieldwork. This can be supplied to all interested parties on request.

3.1.2 All open archaeological sites, especially in the event of deep excavations, will be inspected by the Site Director or other appointed and competent person. These inspection records will be signed and dated, and form part of the on-site Health and Safety folder, which will always be available to all interested parties on request.

3.2 STAFF ISSUES

3.2.1 All project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards.

3.2.2 All project staff will wear full basic PPE whilst on site, to include safety helmets, safety boots and high-visibility jackets. Noise defenders and eye protectors will be made available to staff as necessary.

3.2.3 It is understood that the Cathedral toilet facilities will be made available during the site work.

3.3 SERVICES

3.3.1 Full regard will, of course, be given to all constraints (services etc) during the excavation, as well as to all Health and Safety considerations. As a matter of course the field team will use a CAT and Genny prior to any excavation of new areas (such as those for geotechnical purposes) to test for services. However, this is only an approximate location tool. Any **information regarding services**, i.e. drawings or knowledge of live cables or services, within the study area and held with the client should be made known to the OA North project manager prior to the commencement of the evaluation.

3.3.2 Should it be discovered that any of the geotechnical SI pits are overlying services, work shall cease and the client, Cathedral Archaeologist and Giffords will be contacted to determine whether the pit is moved to an

alternative location. Any additional excavation as a result will be costed as a variation.

3.4 CONTAMINATION

3.4.1 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met, and that the risk is dealt with appropriately.

3.4.2 Should any presently unknown contamination be discovered during excavation, which also includes that associated with the excavation and removal of human remains, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment, together with any time lost as a result, this will be costed as a variation.

3.5 FENCING REQUIREMENTS

3.5.1 The site is currently open to the public and, therefore, the excavation trench, spoil and any areas of archaeological sensitivity will require protection with security fencing whilst open, and any appropriate signage. OA North will arrange for heras-type security fencing to be used during the course of the fieldwork. The cost of this has been provided as an approximate contingency sum, to be verified once the timetable and on-site logistics have been confirmed with the Cathedral and the precise number of panels required can be calculated.

3.5.2 Any human remains encountered during excavation will be screened from the public gaze by debris netting secured to the heras fencing.

4. METHOD STATEMENT

4.1 LOCATION AND LOGISTICAL PREREQUISITES

4.1.1 ***Phase 2 archaeological evaluation:*** the Phase 2 intrusive evaluation will consist of a 4m long trench within the eastern arm of Trench 2a (Fig 1).

4.1.2 Further on-site discussions with the Cathedral Archaeologist during the fieldwork may subsequently lead to the Phase 2 trench being expanded using the additional 10% contingency detailed in the project brief. Depending on the extent of expansion, should this extend the time allocated for fieldwork, a variation to the cost will need to be agreed with the client.

4.1.3 ***Excavation of geotechnical SI pits:*** twelve SI pits have been identified by Giffords for the purposes of sampling or inspection pits prior to borehole drilling (Fig 1). TP11/SA2, TP7/WS7, TP6/WS6, and TP4/WS4/SA1 have been positioned to utilise the archaeological trenches from the Phase 1 evaluation.

- 4.1.4 Elsewhere in the area to the south of the cathedral, TP5/WS5, TP9, TP10 and TP12 are also required but have not been examined under the Phase 1 trenching. TP5/WS5 and TP10 are grass covered and therefore excavation and reinstatement, including replacing any turf, poses no difficulties. However, TP9 is partially block-paved, tarmaced and irregular brick-type surfacing. This surfacing and any associated bedding layers will be removed using a small mechanical excavator, although specialist reinstatement would be required of the surfaces. TP12 is paved using York stone-type flags and will require specialist removal and reinstatement either side of excavation.
- 4.1.5 Four SI pits are sited to the north-west side of the cathedral; TP1/WS1 and TP2/WS2 are located within the Barclays Bank car park, which is owned by CWaC, and within an area of tarmac; TP8 and TP3/WS3 are in an area of cobbles. The Cathedral Archaeologist has requested that additional archaeological information is required within the bank car park and has suggested that these two pits be combined into a single evaluation trench. TP1/WS1 is positioned over an inspection chamber and drain and, therefore, a suggested length of a 12m archaeological trench (Fig 1) falls slightly short of the service.
- 4.1.6 All of the pits/trench to the north of the cathedral can be opened using a mechanical excavator, and any associated bedding deposits removed. However, given the nature of the surfaces, they will also require specialist reinstatement.
- 4.1.7 The mechanical excavator will be restricted to removal of the surfacing material, and will employ a 3 or 4 tonne midi excavator with a toothed bucket initially (combined with a riddling bucket on the cobbled surfaces), and a ditching bucket to remove underlying bedding deposits.
- 4.1.8 A number of these pits may be subject to change, depending on the updated requirements of Giffords and the location of services, particularly TP6/WS6 found during Phase 1 evaluation to be overlying numerous cables and other services, and TP8 situated adjacent to a tree that may have an extensive root system.

4.2 EXCAVATION

- 4.2.1 Where appropriate, modern overburden will be removed either by hand or mechanical excavator (see *Section 4.1*, above). This will be stored adjacent to the trench on plastic sheeting, unless there is a requirement to store it elsewhere. Thereafter, excavation will be undertaken in successive, level spits, by hand by a suitably experienced archaeologist. For those test pits not previously excavated in the Phase 1 evaluation, this will continue until the first significant archaeological deposit. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. Such features will be defined and a base plan produced.
- 4.2.2 The exact position and extent of the excavation will be located on topographic survey information provided by the client. The trenches will be planned

digitally by experienced surveyors to record the site according to OS co-ordinates, using an EDM Total Station.

- 4.2.3 The trenches and test pits will initially be excavated to 1.2m, the maximum depth in accordance with health and safety constraints, and the requirements for geotechnical purposes, particularly the soak away pits. However, should the archaeological deposits extend below this depth and there is a requirement to excavate beyond, i.e. to natural deposits in accordance with the brief issued by the Cathedral Archaeologist, this will involve stepping out or shoring of the trench sides. This has not been accounted for in the costings section as each trench or test pit will be treated on a case-by-case basis, but will be subsequently costed as a variation.
- 4.2.4 It is intended, however, that the excavation of the Phase 2 evaluation of Trench 2a will be stepped, which has been accounted for in the cost.
- 4.2.5 During excavation the trenches and spoil will be subject to an on-going metal detector survey by an OA North archaeologist experienced in this work.
- 4.2.6 Any investigation of intact archaeological deposits will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation will be undertaken with a view to avoiding damage to any archaeological features that appear worthy of preservation *in situ*. Any archaeological or historical structural features will also be left *in situ* regardless, in accordance with the requirements of the Cathedral Archaeologist.
- 4.2.7 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections, and monochrome contacts) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 4.2.8 Results will be recorded on *pro forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute for Archaeologists guidelines) in order to minimise deterioration.

4.3 GENERAL PROCEDURES

- 4.3.1 ***Environmental Sampling:*** samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). These will be returned to OA North's offices for processing. Deposits of particular interest may incur additional sampling, on advice from the

appropriate in-house specialist. The location of all samples will be recorded on drawings and sections with heights OD etc.

- 4.3.2 Between 50%-100% of bulk samples shall be selected for processing, based on the advice from OA North's in-house environmental manager. However, the basis of the advice will be agreed with the Cathedral Archaeologist and the client prior to processing commencing, which will be included in the final report. An assessment of the environmental potential would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits.
- 4.3.3 In order to achieve the aims of the programme of work, it may be required to obtain dating evidence through radiocarbon dating, dendrochronological or other such techniques. This would only be undertaken in consultation with the Cathedral Archaeologist and the client.
- 4.3.4 **Human remains:** the majority of the test pits and trenches (excluding those to the north-west side of the cathedral) are situated within the now redundant cemetery, where numerous burials and grave cuts have been identified and recorded during the Phase 1 evaluation. Treatment of these remains will be in accordance with the Church of England and English Heritage's guidelines (2005). A licence for removal of human remains has been received from the Ministry of Justice for the Phase 2 intrusive evaluation and excavation of geotechnical SI pits.
- 4.3.5 For the purposes of the evaluation and investigation ahead of the GI works, only the human remains within the defined excavation areas will be removed, and the remainder of each burial outwith this will be left *in situ*. Removal will be carried out with due care and sensitivity under the environmental health regulations, and any such remains will be screened from the public using debris netting. Furthermore, it is possible that a visit will be required from an OA North human remains specialist to advise on recording. Prior to this work commencing the English Heritage Regional Science Advisor will be contacted for advice.
- 4.3.6 **Finds:** all finds recovered during the investigation will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and Grosvenor Museum's guidelines.
- 4.3.7 Finds recovery and sampling programmes will be in accordance with best practice (current IfA guidelines) and subject to expert advice. OA has close contact with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs in-house artefact and palaeoecology specialists, with considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by OA North with the Department of Archaeology, the University of Durham.

- 4.3.8 Neither artefacts nor ecofacts will be collected systematically during the mechanical excavation of the topsoil unless significant deposits, for example clay pipe waster dumps, are encountered. In such an eventuality, material will be sampled in such a manner as to provide data to enhance present knowledge of the production and dating of such artefacts, although any ensuing studies will not be regarded as a major element in any post-excavation analysis of the site. Other finds recovered during the removal of overburden will be retained. It is not anticipated that ecofacts (e.g. unmodified animal bone) will be collected during this procedure.
- 4.3.9 All material will be collected and identified by stratigraphic unit during the excavation process. Hand collection by stratigraphic unit will be the principal method of collection, but targeted on-site sieving could serve as a check on recovery levels. Objects deemed to be of potential significance to the understanding, interpretation and dating of individual features, or of the site as a whole, will be recorded as individual items, and their location plotted in 3-D. This may include, for instance, material recovered from datable medieval pit groups.
- 4.3.10 Finds will be administered at regular intervals and removed from the site in order that they can be processed as the excavation proceeds back at OA North offices. All finds will be treated in accordance with OA standard practice, which is cognisant of IfA and UKIC Guidelines. In general this will mean that (where appropriate or safe to do so) finds are washed, dried, marked, bagged and packed in stable conditions; no attempt at conservation will be made unless special circumstances require prompt action. In such case guidance will be sought from OA North's consultant conservator.
- 4.3.11 It is not anticipated that there will be any waterlogged deposits. However, should such finds be encountered they will be treated as appropriate. In the case of large deposits of waterlogged environmental material (e.g. unmodified wood), advice will be sought with the OA North specialist and English Heritage Regional Science Advisor with regard to an appropriate sampling strategy.
- 4.3.12 Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists.
- 4.3.13 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

5. POST-EXCAVATION REPORT AND ARCHIVE

5.1 REPORT

5.1.1 An interim statement will be produced within approximately two weeks of the completion of the fieldwork for the Phase 2 evaluation. The results from the Phase 1 evaluation will be combined with Phase 2 to produce an overall final evaluation report. This will be issued within six to eight weeks, unless an alternative deadline is agreed with the client and regulatory bodies, and not withstanding any specialist reports. Both hard copies and digital copies (pdf) will be submitted to BDP, and the Cathedral Archaeologist. Hard copies will also be submitted to the Dean and Chapter, CFCE, the Historic Environment Records (HER) and English Heritage. The report will include:

- a site location plan related to the national grid;
- a front cover to include the NGR;
- a concise, non-technical summary of the results;
- the circumstances of the project and the dates on which the fieldwork was undertaken;
- description of the methodology;
- a summary of the historical background to put the results into context;
- description of the results, to include the results of any specialist work undertaken;
- description and basic record of the finds and ecofacts, including qualification by sherd count and weight for the pottery and CBM;
- summary analysis of the environmental assessment;
- interpretation of the results and their potential archaeological significance, together with an impact assessment of the proposed development;
- plans showing the location and position of trenches and test pits, excavation plans and sections;
- illustrations of unusual or important artefacts;
- photographs as appropriate;
- a copy of the brief and project design, and indications of any agreed departure from that design;
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted;
- summary tables listing contexts and finds.

5.1.2 Recommendations for further work will not be included in the report.

5.1.3 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

5.2 ARCHIVE

5.2.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with Appendix 3 of English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the HER (the index to the archive and a copy of the report). OA North will deposit the original record archive (paper, magnetic and plastic media) with the Cathedral Archive, held at the Cheshire Record Office, and the material archive will be submitted to Grosvenor Museum.

6 OTHER MATTERS

6.1 PROJECT MONITORING

6.1.1 Monitoring of the archaeological investigations will be undertaken by both the Cathedral Archaeologist and City Archaeologist who will be afforded access to the site at all times.

6.1.2 OA North will ensure that any significant results are brought to the attention of the Cathedral and City Archaeologist as soon as is practically possible.

6.2 ACCESS

6.2.1 All of the areas for Phase 2 evaluation trenching or geotechnical SI pits are under cathedral ownership, excluding TP1/WS1 and TP2/WS2 in the Barclays Bank car park, which belongs to CWaC. It is assumed that Giffords/the client will arrange for access to the Barclays Bank car park, and any arrangements made known to OA North prior to the fieldwork..

6.2.2 Visitor access around TP3/WS3 to the refectory and shop will also need to be arranged whilst the test pit is open by the cathedral. The area will be fenced off which may prove restrictive to public access.

6.3 SPOIL AND REINSTATEMENT

6.3.1 The removed surfaces (turf or hardstanding) and spoil will be stored adjacent to the trench, with the spoil separated into topsoil and subsoil.

6.3.2 Once excavation has been completed, in agreement with the Cathedral Archaeologist, the trenches and test pits will be either: lined with a geotextile membrane, such as Terram, and backfilled. The topsoil and subsoil will be replaced appropriately with the topsoil placed on top and the turf reinstated; or covered with a steel plate and cordoned-off in the anticipation of imminent use by the geotechnical sub-contractors who will be responsible for backfilling.

- 6.3.3 The requirements for backfilling will be discussed on a case-by-case basis with the Cathedral Archaeologist, the Cathedral Surveyor, Giffords and the client. Any surplus material will be spread evenly over the unsurfaced part of the site.
- 6.3.4 OA North is not qualified to undertake an specialist reinstatement required by the Dean and Chapter, arrangement of which will be necessary by the client or the Cathedral Surveyor, i.e. reinstatement of the flags over TP12, relevant surfacing material over TP9, replacing the tarmac in the Barclays Bank car park for TP1/WS1 and TP2/WS2, and replacement of the cobbles and mortar for TP3/WS3 and TP8.

6.4 SITE WELFARE

- 6.4.1 Health and safety regulations require access to adequate handwashing facilities to be provided for the duration of the fieldwork. It is understood that the use of the cathedral visitor toilets will remain available to site staff.
- 6.4.2 However, a messing area for the laying out of plans and the secure storage of tools is also required. Should it become necessary for a secure cabin to be used as a lock-up and messing facility OA North can arrange hire of these facilities, the cost of which will be agreed as a variation. The siting of such facilities will be agreed with the Cathedral.

6.5 INSURANCE

- 6.5.1 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

7 PROGRAMME AND STAFFING

7.1 PROGRAMME

- 7.1.1 It is anticipated that the work will commence in mid-May 2010 once approval of services and costs has been agreed with the client.
- 7.1.2 The test pits for the geotechnical SI works will be undertaken initially in order that the subsequent boreholing and sampling can proceed as soon as possible, although once this has begun the investigation of features in the Trench 2a may commence in tandem. The work is expected to take approximately 5 weeks, but this is subject to findings and the timetable suitable to the geotechnical inspections.
- 7.1.3 **Report and Archive:** the report and archive will be produced following the completion of all the fieldwork. An interim statement can be provided within approximately two weeks following completion of the site work and the final report will be available within six to eight weeks of completion of the fieldwork. The archive will be deposited within six months.

7.2 STAFFING

- 7.2.1 The project will be under the direct management of **Emily Mercer** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 7.2.2 The excavation will be supervised in the field by **Caroline Raynor** (OA North project officer) who has been supervising the Phase 1 evaluation and fully conversed with the requirements of the project.
- 7.2.3 **Christine Howard-Davis, BA, MIFA** (OA North finds manager) has extensive knowledge of all categories of artefacts of all periods. The assessment and subsequent analysis of all artefacts recovered during the course of the investigation will be undertaken by or under the auspices of Christine.
- 7.2.4 Any requirement for conservation work will be undertaken by **Jennifer Jones**, the AML contract conservator based at the University of Durham. Jennifer is a nationally-recognised specialist in conservation, and is readily available to provide advice on the treatment of any delicate finds recovered from the excavation.
- 7.2.5 **Environmental management** will be undertaken by **Elizabeth Huckerby** (OA North environmental manager), who will also provide specialist input on pollen analysis/charred and waterlogged plant remains. Elizabeth has extensive knowledge of the palaeoecology of the North, and has contributed to all of the English Heritage funded volumes of the Wetlands of the North West. Elizabeth has also acted as palaeoenvironmental consultant for several archaeological investigations. Elizabeth will advise on site sampling procedures and co-ordinate the processing of samples and organise internal and external specialist input as required.

ILLUSTRATIONS

FIGURES

Figure 1: Location map

Figure 2: Plan of Trench 2a and 2b

Figure 3: North and east facing area excavated to natural sandstone in Trench 2a

Figure 4: North facing section of Trench 2b

Figure 5: Plan of Trench 2c

Figure 6: South-east facing section of Trench 2c (TP11)

Figure 7: Plan of Trench 2d

Figure 8: North, east and west facing section of Trench 2d

Figure 9: Plan of Trench 3

Figure 10: East and west facing section of Trench 3

Figure 11: Plans of Trench 4a, 4b, 4c and 4d

Figure 12: North-east facing section of Trench 4a; south-east facing section of Trench 4c and north facing section of Trench 4d.

PLATES

Plate 1: Aerial view showing of the cathedral showing the positions of the evaluation trenches

Plate 2: Trench 2a, looking west, with skeletal remains below visquene

Plate 3: Trench 2a, Roman wall **2067**, looking south

Plate 4: Skeleton **2042** within trench 2a, looking west

Plate 5: Skeleton **2069** of Trench 5, looking west

Plate 6: Southern part of Trench 2b looking south, with skeleton **2211** in the foreground

Plate 7: Northern half of Trench 2b, looking north, showing skeletons **2215** and **2222**

Plate 8: Trench 2c, looking north-west

Plate 9: South-east-facing section of Trench 2c, Test Pit 11, looking north-west

Plate 10: Wall **2068** of Trench 2d, looking north-east

Plate 11: Cist **2604** and skeleton **2605** of Trench 2d, looking north

Plate 12: West facing section of Trench 2d, looking east

Plate 13: Trench 3, looking south

Plate 14: Trench 4a, looking south

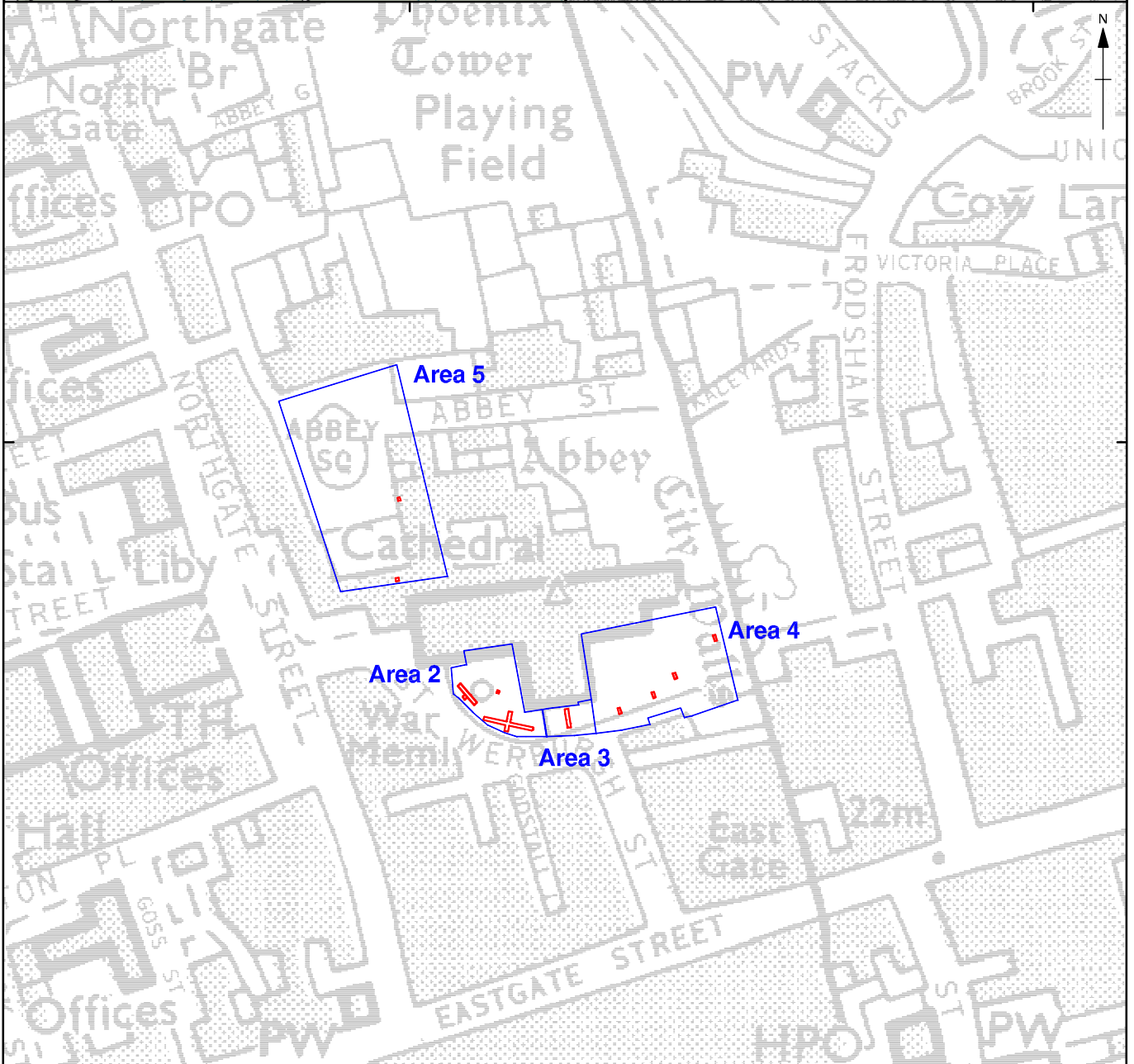
Plate 15: Trench 4b, looking east

Plate 16: Trench 4c, looking south

Plate 17: Trench 4d, looking south

Plate 18: Trench 5a, viewed from the west

Plate 19: Trench 5b, viewed from the east



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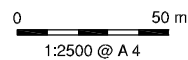
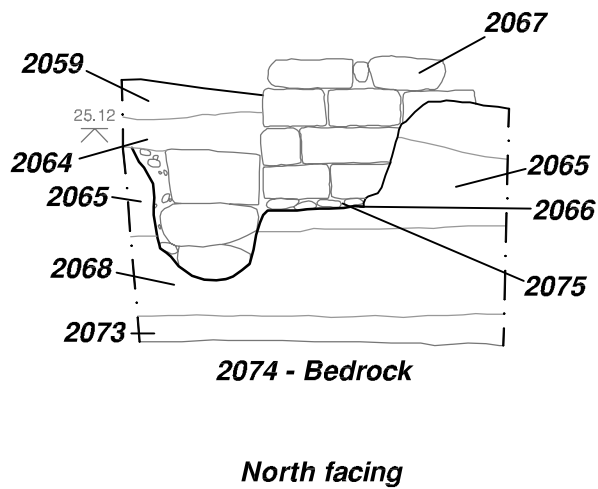
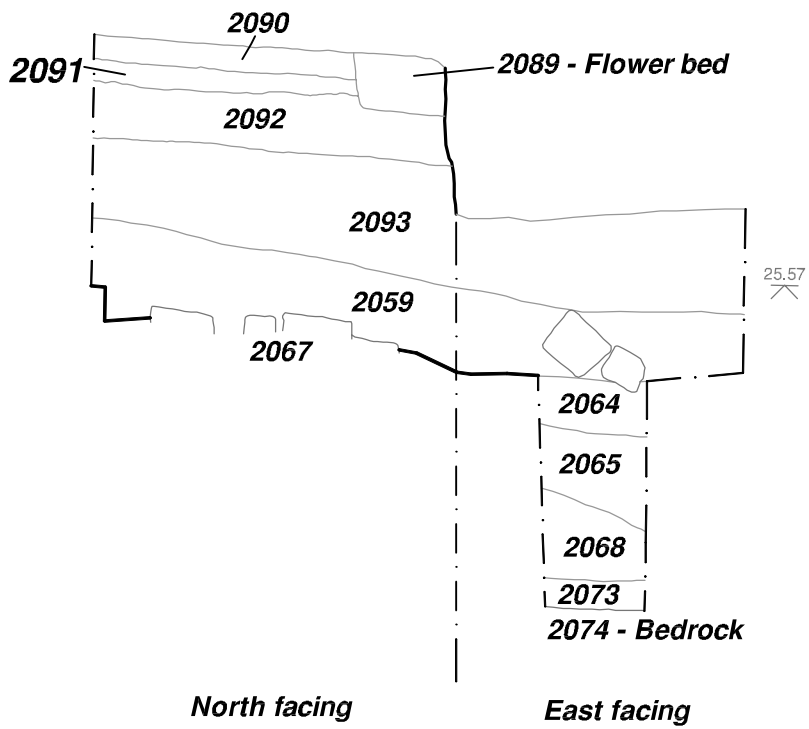



Figure 1: Site location

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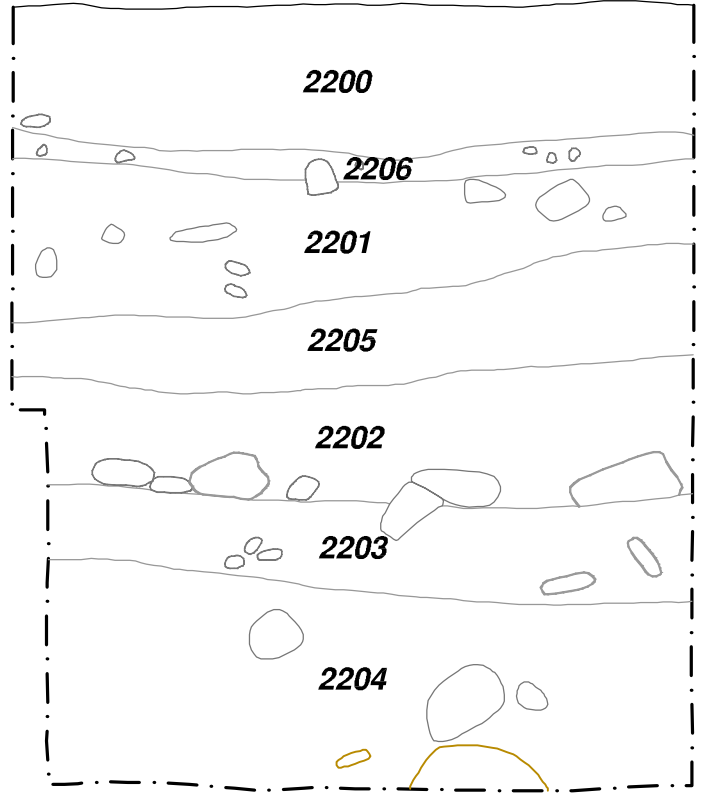
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-  Bone

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Figure 3: North and east sections of area excavated to natural sandstone in Trench 2a

26.35



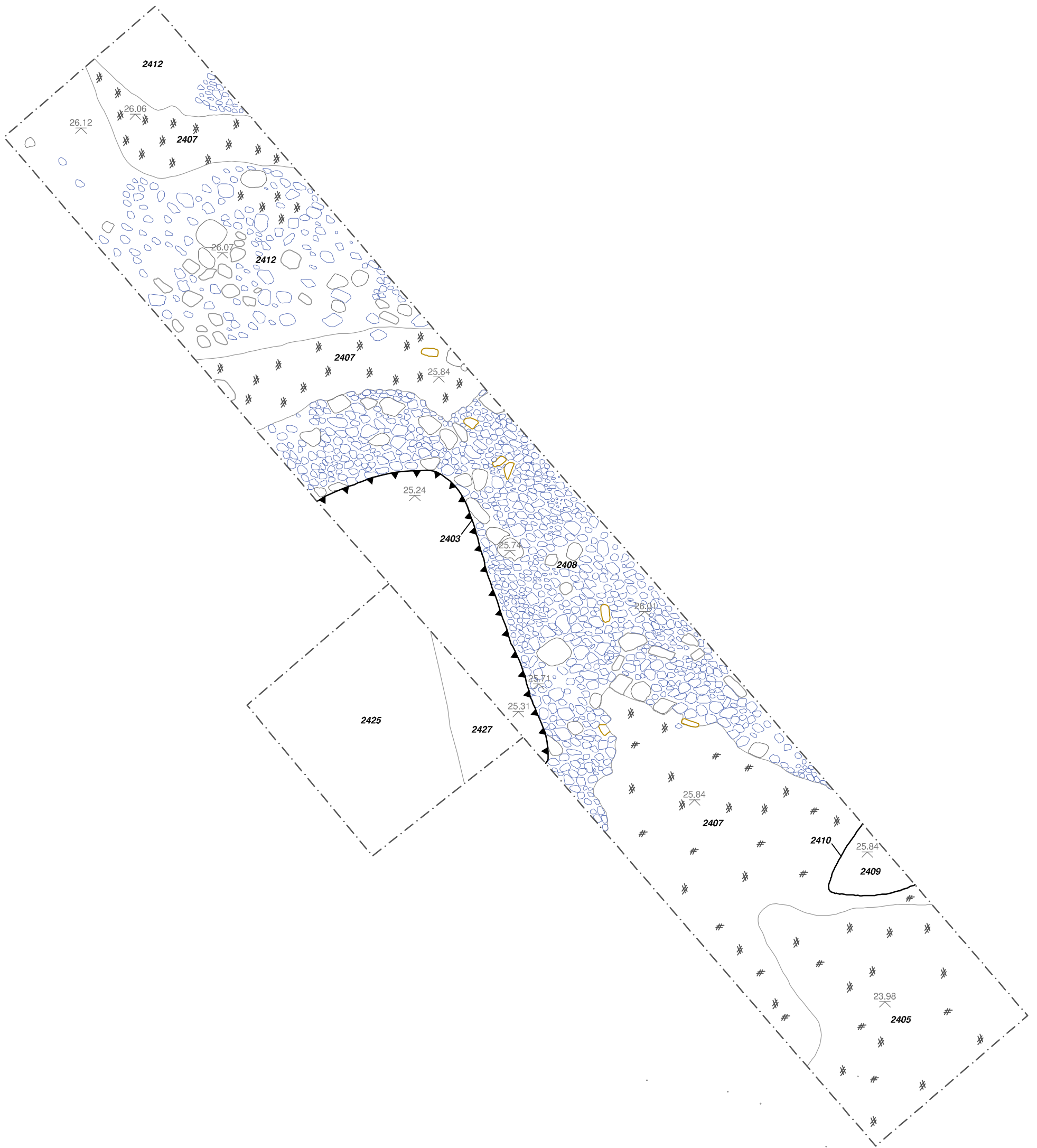
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Figure 4: North facing section of Trench 2b

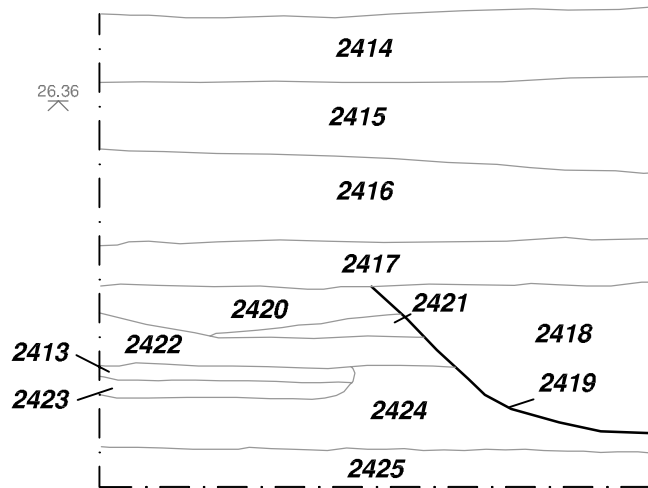


- Limit of excavation
- Archaeological feature
- Stone
- Cobbled surface
- Charcoal deposit

0 1 m
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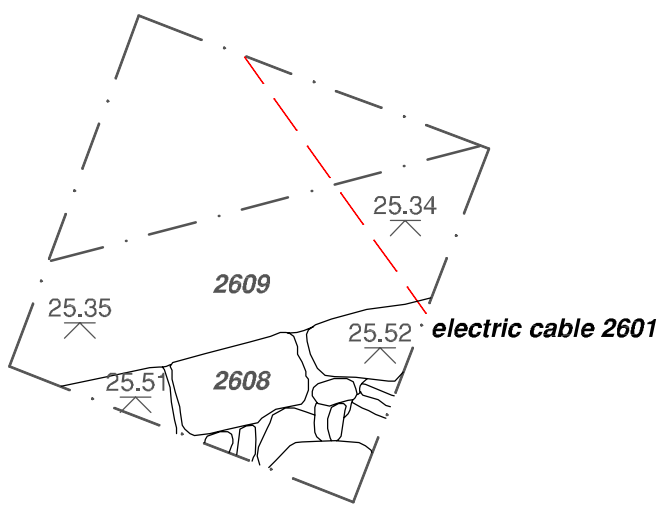
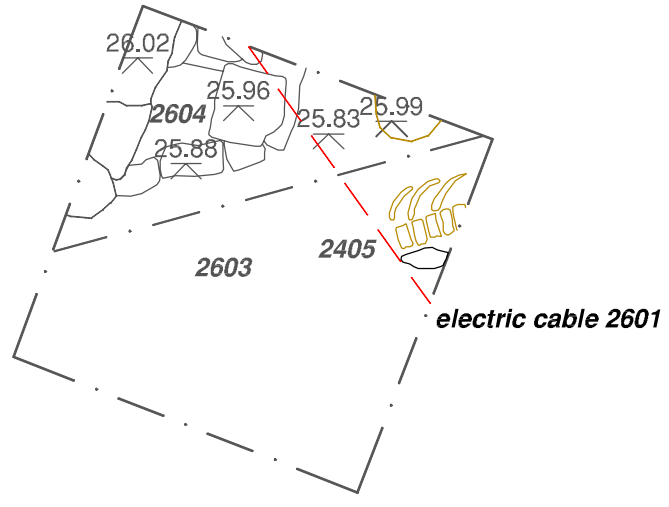
Figure 5: Plan of Trench 2c







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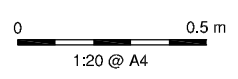
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Figure 6: South-east facing section of Trench 2c (TP11)



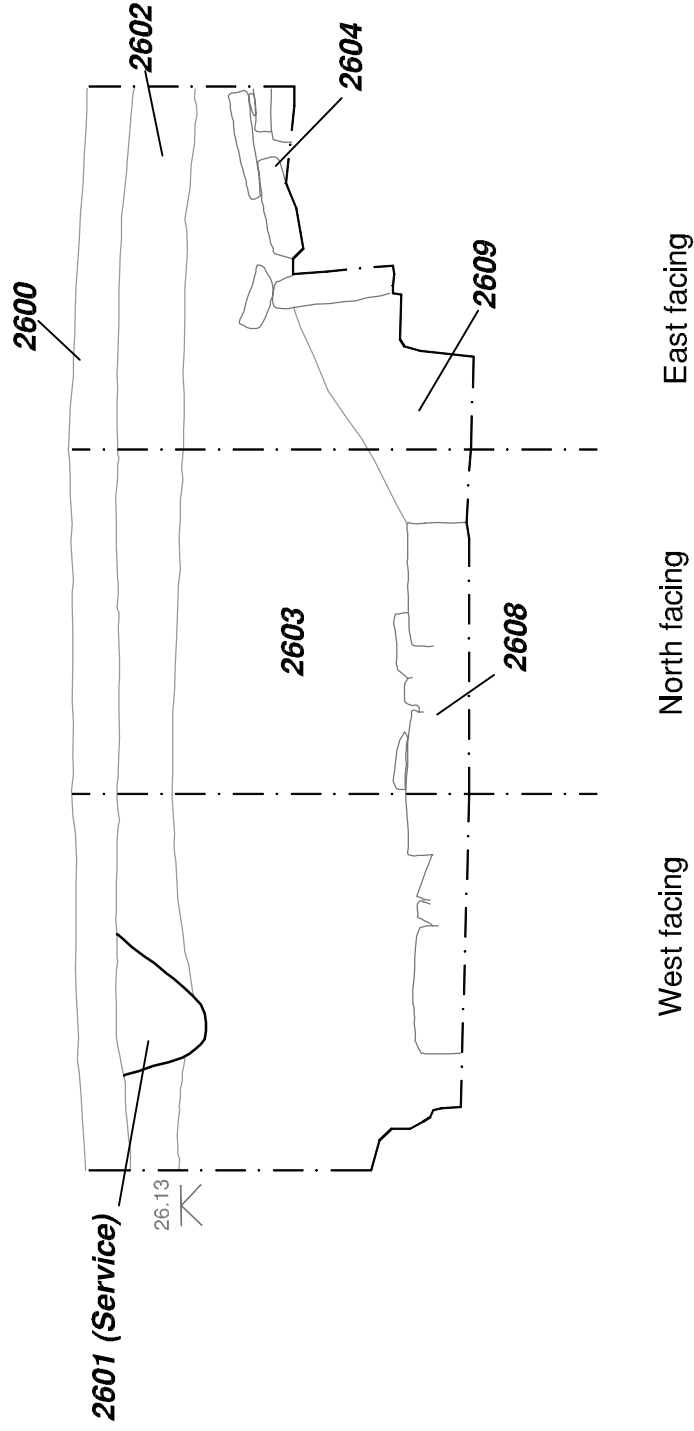
-  Limit of excavation
-  Archaeological feature

-  Bone
-  Stone



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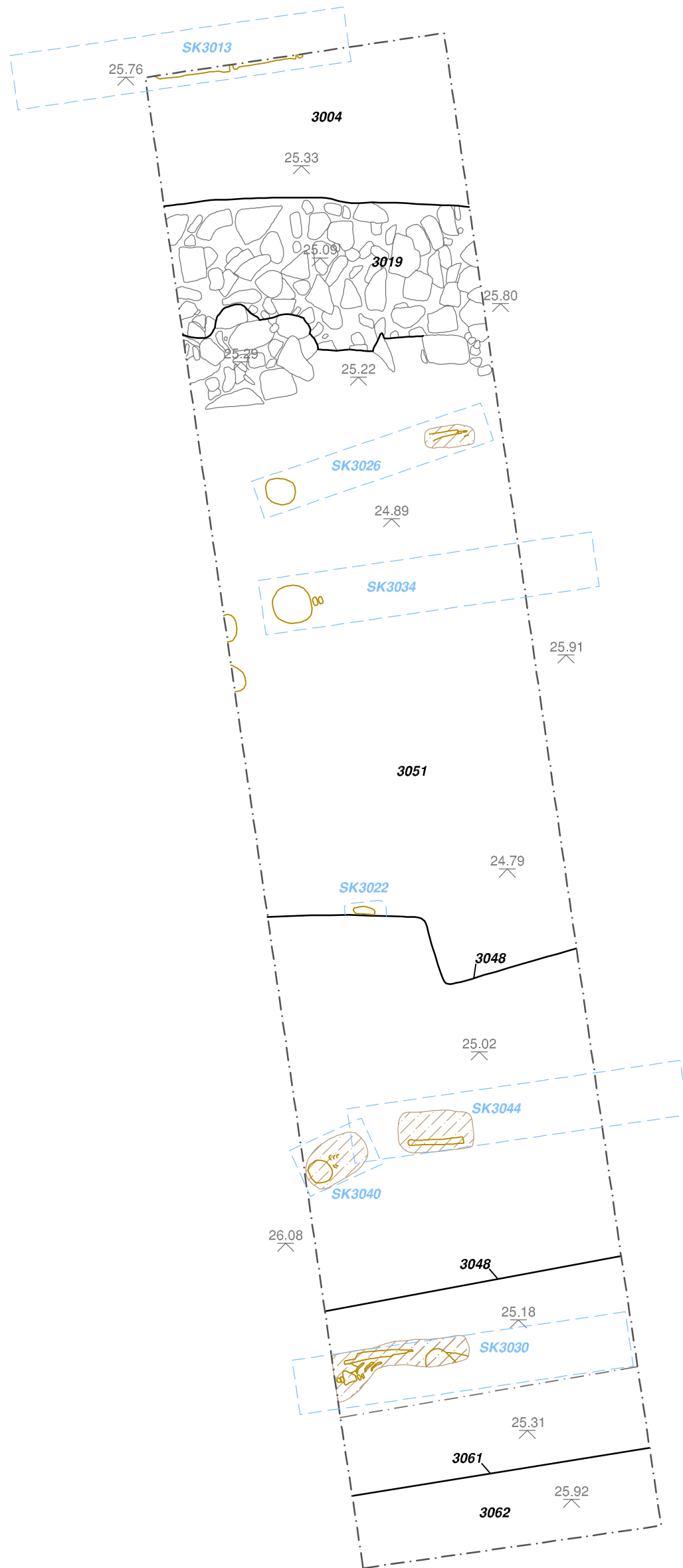
Figure 7: Plan of Trench 2d








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
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Figure 8: North, east and west facing section of Trench 2d



-  Limit of excavation
-  Archaeological feature
-  Bone

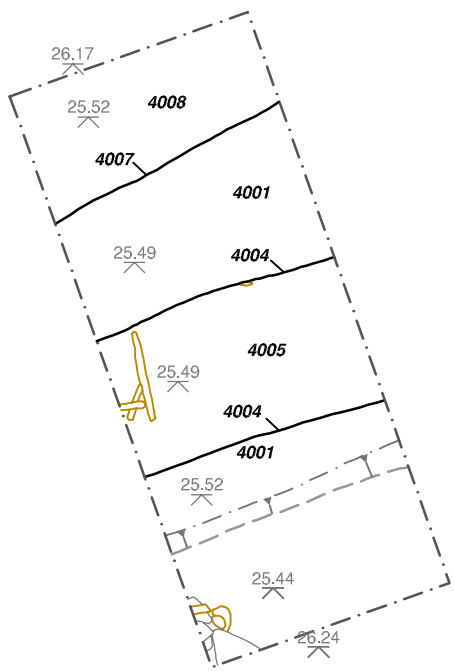
-  Chanel area
-  Stone

-  Extrapolated grave, based on articulated bones

0 0.5 m
1:25 @ A3



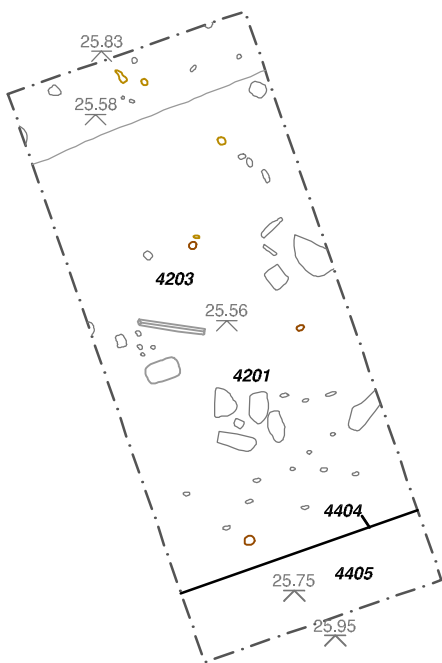
Figure 9: Plan of Trench 3



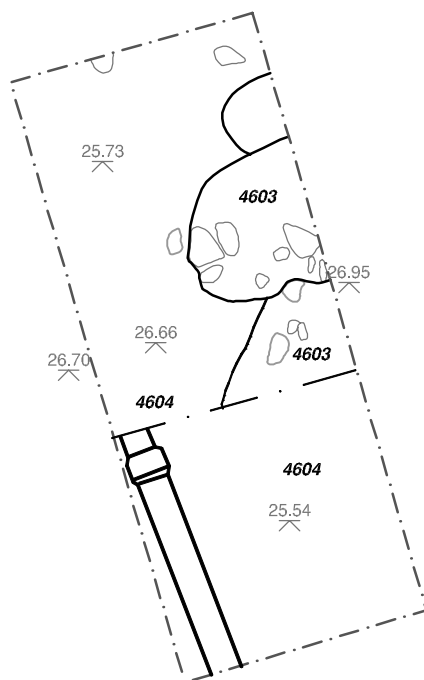
4a





4b






4c



4d

 Limit of excavation
 Archaeological feature

 Bone
 Stone

0  0.5 m
1:20 @ A4

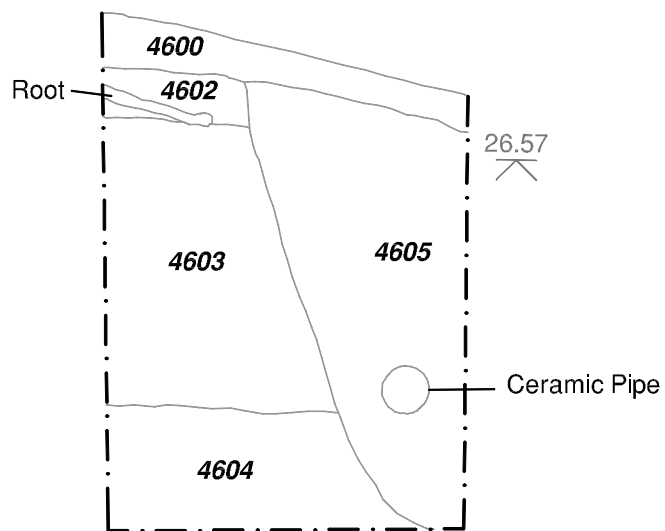
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Figure 11: Plans of Trenches 4a, 4b, 4c and 4d

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-  LOE etc
-  Bone

0 0.5 m
1:20 @ A4



Figure 12: North facing section of Trench 4d