

NOTTINGHAM CASTLE REDEVELOPMENT PROJECT

An Archaeological Investigation in the Outer Bailey Carriageway



For Nottingham City Council

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Summary

- As part of the Heritage Lottery funded 'Nottingham Castle Redevelopment Project', Nottingham City Council will shortly be carrying out landscaping works and the laying of services on the area of the post-medieval carriageway in the Outer Bailey. The following report concerns a programme of archaeological mitigation (comprising an archaeological evaluation) prior to the redevelopment.
- The archaeological evaluation comprised the excavation of three trenches across the bank which conceals the carriageway structure and later landscaping deposits. The investigation aimed to ascertain the depths of significant deposits in order to inform the redevelopment strategy and mitigate against substantial harm to archaeological remains present.
- The Carriageway is first depicted on Kip and Knyff's illustration of 1707, entitled 'The Prospect of Nottingham From Ye East'. Badder & Peat's map of 1744 shows the Carriageway spanning across the Inner Ditch between the Outer and Middle Baileys. Although the original carriageway collapsed soon after its construction, it was later reformed with an earthen bank. This is documented by Deering in his manuscripts dating to 1740, posthumously published in *History of Nottingham* in 1751.
- Previous archaeological investigations within the footprint of the former carriageway revealed evidence of well-preserved sub-surface archaeological remains of post-medieval date. Additionally, residual finds of medieval pottery were thought to indicate the presence of medieval deposits below the carriageway.
- No evidence was encountered of the original form of the Carriageway or associated features during the investigation. Additionally, no archaeological features or deposits pre-dating the post-medieval period were identified, though residual finds of medieval pottery were recovered. It is likely that these remains, if present, would be located at a greater depth and therefore will not be impacted by the planned redevelopment works.
- The most intensive phase of site activity observed is thought to relate to the 18th century reforming of the Carriageway with an earthen bank, as described by Deering in 1751. A number of layers were first used to increase the ground level before large, shallow pits were created to facilitate the insertion of railing. Interestingly, the sandstone wall identified in the NCA9 investigations did not extend into the current evaluation, despite being located only 0.4m to the west of Trench 01. No further structural remains associated with the ramp were encountered.
- Later landscaping works during the 19th century were also visible in the form of a widespread levelling event and a shallow ditch. The ramp was also reformed during this stage of redevelopment.
- High levels of preservation of 19th century and earlier remains were observed during the evaluation, with very little evidence of modern truncation. Further investigations and redevelopment works should take this and the relatively shallow nature of the archaeologically sensitive horizons into consideration.

Contents

Summary	4
Contents	5
Figures	6
Plates	6
Appendices	6
Acknowledgements	7
1 Introduction	8
2 Site Location and Background	8
3 Topography and Geology	8
4 Historical Background	9
5 Recent Archaeological Background	12
6 Construction Impact and Archaeological Potential	14
7 Relevant Legislation and Guidance	15
7.1 Planning Context	15
7.2 National Planning Policy Framework (NPPF)	15
7.3 Nottingham City Local Plan	15
8 Regional Research Objectives	16
9 Site Specific Objectives and Methodology	17
9.1 Objectives	17
9.2 General Methodology	17
10 Results	18
10.1 Overview	18
10.2 Mid-18 th Century Reforming of the Carriageway	20
10.3 19 th Century Landscaping	23
10.4 Modern	24
11 The Pottery <i>by Alison Wilson and Lee Elliott</i>	25
12 The Ceramic Building Material <i>by Alison Wilson</i>	29
13 Clay Tobacco Pipe <i>by Alison Wilson</i>	30
14 Miscellaneous Finds <i>by Rosemary Hughes</i>	32
15 The Animal Bone <i>by Marius Ilie</i>	33
16 Discussion and Conclusion	35
17 Bibliography	36

Figures

- Figure 1:** Site Location
Figure 2: Site Plan
Figure 3: Section Drawings 01-03
Figure 4: Section Drawings 04-07
Figure 5: NCA9 Section Drawings
Figure 6: Plan of NCA9, NCA18 and NCA22 Evaluations of the Carriageway
Figure 7: NCA18 Middle Bailey Carriageway Bank Sections

Plates

- Plate 1:** Badder & Peat map of 1745, showing 18th century carriageway
Plate 2: Wild & Smith map of 1820, showing area of carriageway
Plate 3: Stavely & Wood map of 1831, showing an absence of the carriageway
Plate 4: Test Pit 35, showing surviving wall and landscaping layers
Plate 5: General view of Trench 01, viewed looking north-west. Scale = 0.4m
Plate 6: General view of the extension to Trench 01 and central Test Pit, viewed looking west, Scales = 1m.
Plate 7: General view of Trench 02, viewed looking west-north-west. Scales = 1m.
Plate 8: General view of Trench 03, viewed looking south-east. Scales = 1m.
Plate 9: South-east facing section of the Test Pit within Trench -1 showing 18th century layers. Scales = 1m.
Plate 10: South-east facing section of pit [2215], viewed looking north-west. Scale = 1m.
Plate 11: North-west facing section of pit [2205], viewed looking south-east. Scale = 0.5m.
Plate 12: South-east facing section of pit [2237], viewed looking north-west. Scale = 0.4m

Appendices

- Appendix 1:** OASIS data collection form
Appendix 2: Archive Arrangements
Appendix 3: Context List

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- Michael Hughes (TPA) – Figures
- Alison Wilson (TPA) – Pottery, Clay Pipe, Ceramic Building Material
- Lee Elliott (TPA) – Pottery
- Rosemary Hughes (TPA) – Metal, Glass, Shell
- Marius Ilie (TPA) – Animal Bone

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1 Introduction

- 1.1 As part of the Heritage Lottery funded 'Nottingham Castle Redevelopment Project', Nottingham City Council will shortly be carrying out landscaping works and the laying of services on the area of the post-medieval carriageway in the Outer Bailey. The following report concerns a programme of archaeological mitigation (comprising an archaeological evaluation) prior to the redevelopment.
- 1.2 Trent & Peak Archaeology (TPA) was commissioned in 2016 by Nottingham City Council to liaise with Scott Lomax, City Archaeologist at Nottingham City Council (NCC) and Tim Allen, Inspector of Ancient Monuments (East Midlands) at Historic England, to determine a programme of Archaeological Mitigation Works during the redevelopment project. The Archaeological Mitigation Strategy (AMS) (Johnson 2016) was further informed by a desk-based assessment of known archaeological information (Kinsley 2016) and previous archaeologically-led enabling works within and around Nottingham Castle (Roushannafas 2016). By complying with the Historic England Approved AMS, the work outlined herein also satisfied the existing conditions of Nottingham City Council's Scheduled Monument Consent (Reference No. S00148351).
- 1.3 The archaeological evaluation comprised the excavation of three trenches across the bank which conceals the carriageway structure and later landscaping deposits. The investigation aimed to ascertain the depths of significant deposits in order to inform the redevelopment strategy and mitigate against substantial harm to archaeological remains present.
- 1.4 The overall study employed the methodology developed by TPA for use on similar projects in the region. This methodology conforms to the standard requirements of planning authorities where consent applications are made for development. These follow guidelines presented in the *Revised National Planning Policy Framework* (MHCLG 2019) which supersedes the 2012 *NPPF*.

2 Site Location and Background

- 2.1 Nottingham Castle is centred on NGR SK 56985 39485 and comprises an area totalling approximately 3.2ha located on the 'Castle Rock', overlooking Nottingham to the south-west of the modern city centre (Figure 1).
- 2.2 The Carriageway was originally located between the Outer and Middle Baileys, supplying a second and more direct access to the latter from the Gatehouse.

3 Topography and Geology

- 3.1 The underlying geology of Nottingham Castle is characterised by deposits of Chester Sandstone Formation, a sedimentary bedrock formed approximately 246-251 million years ago in the Triassic Period by riverine deposition of detrital material forming river terrace deposits. No superficial deposits have been recorded in the immediate vicinity of the Service Courtyard. However, to the south of Castle Rock, head deposits of clays, silts, sands and gravels have been recorded. These deposits formed up to 3 million years ago in the Quaternary Period by downslope movements of material (British Geological Survey 2019).
- 3.2 The overlying soils are characterised as freely draining, slightly acid, sandy soils (www.landis.org.uk/soilscapes).

4 Historical Background

4.1 A Brief History of Nottingham Castle

- 4.1.1 Nottingham Castle was originally founded on the orders of William the Conqueror during the northern campaign of 1068. Due to the strategic position of the Castle Rock combined with its location (which played a central role in controlling movement to and from the North), Nottingham Castle gained prestige, eventually growing to become one of the most important royal castles outside of London by the 13th century. It remained a royal castle until its effective sale to Francis, Earl of Rutland in 1622.
- 4.1.2 The Castle originally comprised three main areas: the Upper Bailey (where the Ducal Palace, now the Castle Museum, stands), the Middle Bailey (now known as the Green) and the Outer Enclosure which included the current Outer Bailey and land extending 120m further north over Standard Hill. This enclosure was divided into the Northern Bailey and the Outer Bailey (to the south) in the 13th century.
- 4.1.3 The castle was the scene of many historically important events throughout the medieval period. It was the site of a siege between the supporters of Prince John (the Earl of Mortain) and Richard I, following the King's return from the Third Crusade in 1194, in which King Richard put down the rebellion of Prince John. In 1330 Queen Isabella, the wife of Edward II and at that time regent for her son Edward III, and her lover Roger de Mortimer were captured at the castle and their reign overthrown. Furthermore, the castle was the official seat of government for most of the reign of Richard III who set out from the castle with his army of 12,000 troops to challenge Henry Tudor and ultimately meet his death on Bosworth battlefield in 1485.
- 4.1.4 In 1642, King Charles I raised his standard at Nottingham Castle as he sought to exert supreme authority of the crown over Parliament, effectively starting the English Civil War. The Castle was then held successfully throughout the war by a parliamentarian garrison under the command of Colonel Hutchinson.
- 4.1.5 Following the downfall of the monarchy and the execution of King Charles I in 1649, the Castle was still considered to be a formidable threat. Its potential seizure by a hostile force proved so problematic that a meeting was held at the castle in 1651 which sealed its fate; it was decreed that the castle should be completely destroyed.
- 4.1.6 Following the restoration of the monarchy in 1660, the site was sold to William Cavendish, 1st Duke of Newcastle, an exiled Royal Commander. Cavendish remodelled the site, demolishing the majority of the remaining medieval castle in order to begin the building of his palace. Sadly for the Duke, he did not survive to see its completion in 1679 and his subsequent heirs left the site empty for much of its remaining history.
- 4.1.7 In 1831, the 4th Duke of Newcastle opposed the cries for parliamentary reform that were popular at the time. Following the Duke's reported opposition to the Reform Bill in the House of Lords, the castle was burned down by radicals during a night of riots. The first Great Reform Act came into being the following year, with the events at Nottingham being pivotal in persuading Parliament and the House of Lords of the strength of popular opinion.
- 4.1.8 The building lay in a neglected and ruinous state until the 1870s when the Director of Nottingham Art School, along with Henry Cole (the evangelical first Director of the Victoria & Albert Museum), supported the Corporation of Nottingham in their aim to restore the palace as a public museum. On the 3rd of July 1878, the museum was formally opened by the Prince and Princess of Wales as the first municipal art gallery and museum outside of London.

- 4.1.9 The site owned by Nottingham City Council now comprises the former Upper and Middle Baileys and the reduced Outer Bailey.

4.2 A Brief History of the Carriageway

- 4.2.1 The Carriageway was first depicted on Kip and Knyff's illustration of 1707, entitled 'The Prospect of Nottingham From Ye East'. On Badder and Peat's map of 1744 (Plate 1), it is visible spanning across the Inner Ditch between the Outer and Middle Baileys. Although the original carriageway collapsed soon after its construction, it was later reformed with an earthen bank. This is documented by Deering in his manuscripts dating to 1740, posthumously published in *History of Nottingham* in 1751:

'Besides the bridge which goes over that part of the ditch where the ancient fortified bridge once stood, another was built across the moat more directly opposite the gate of the outer ward, after this new palace was finished, for the more convenient driving a coach up to the castle; but the foundation of this was so badly secured that the north side of it fell down some years after. This has lately been made good with earth, and is railed on each side, and covered with green sods, and is now became a pleasant way into the green court...'

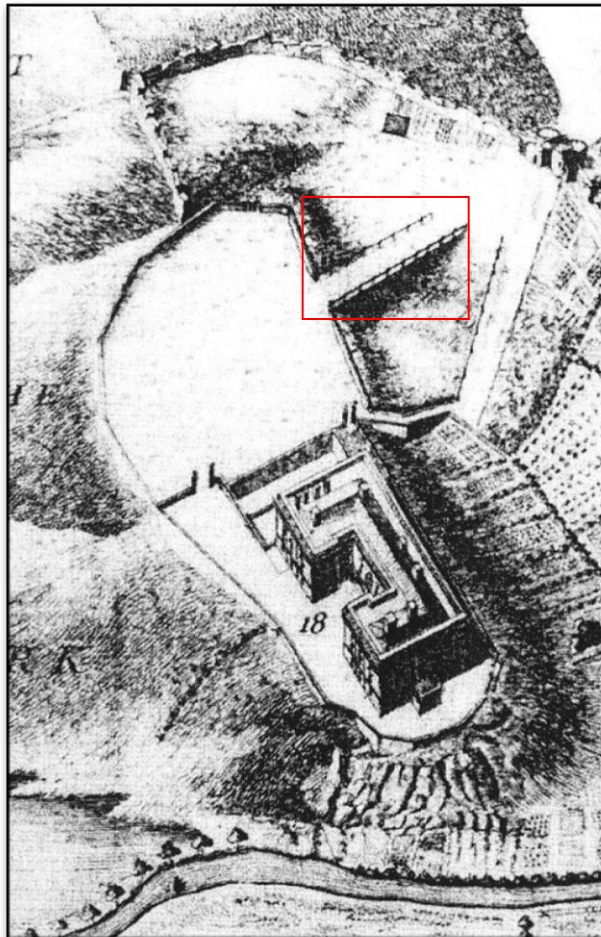


Plate 1: Badder & Peat map of 1744, showing 18th Century carriageway

- 4.2.2 During the 19th century extensive landscaping of the Outer Bailey and the defensive ditch concealed the Carriageway and developed a much shallower gradient between the Outer and Middle Baileys. An expression of the Carriageway was visible on Wild and Smith's map of 1820 (Plate 2), most likely after it had 'been made good with earth' as Deering described. However, the carriageway is absent on Staveley and Wood's 1831 map (Plate 3). This would suggest that the landscaping was carried out between these two dates.

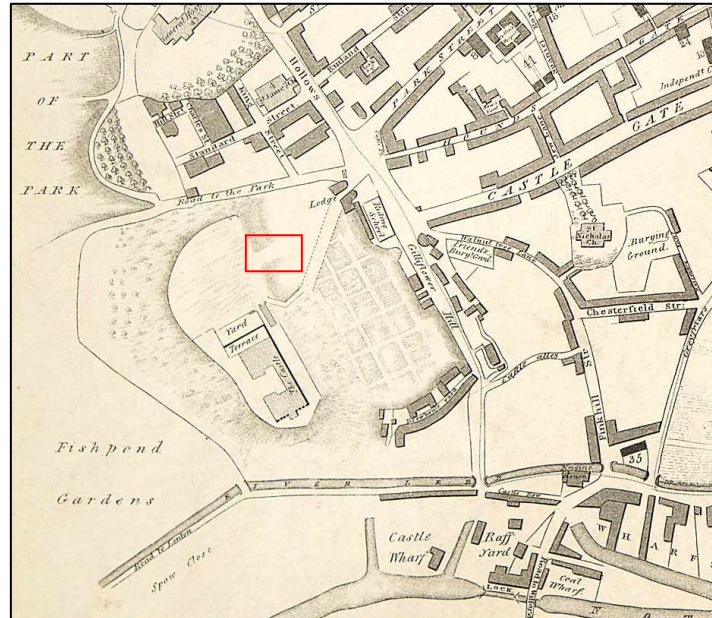


Plate 2: Wild & Smith map of 1820, showing area of carriageway

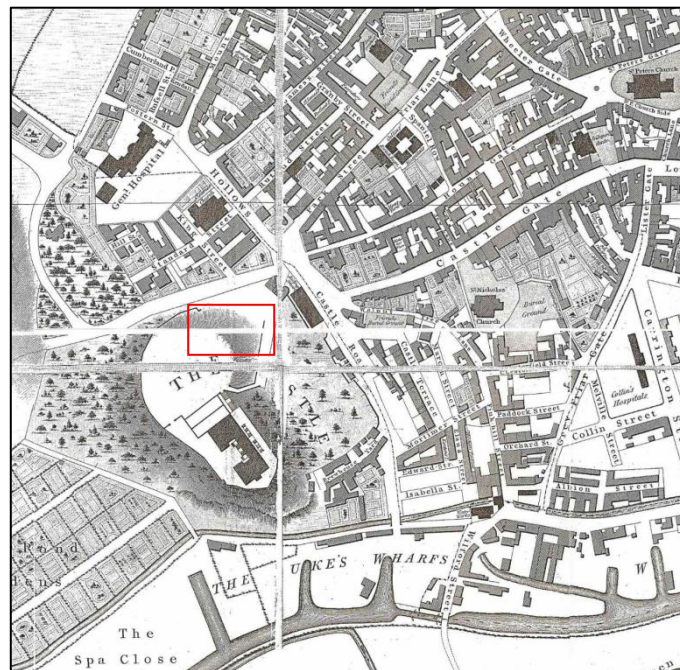


Plate 3: Staveley & Wood map of 1831, showing an absence of the carriageway

5 Recent Archaeological Background

5.1 Previous Archaeological Works within the Outer Bailey

5.1.1 TPA has carried out a series of archaeological investigations within the grounds of Nottingham Castle over the last five years. Details of these are listed below:

- In 2014 a geophysical survey of Nottingham Castle's Outer Bailey was carried out. Earth-resistance survey evidence revealed possible structural remains a fairly shallow position below the current ground level. GPR (Ground Penetrating Radar) was also used which discovered possible cave systems, as well as post-medieval and 19th century structures.

5.2 Nottingham Castle Redevelopment Project: Results of the Archaeological Works for Enabling Groundworks 2016

5.2.1 Between April and July 2016 TPA excavated and recorded a total of 31 archaeological test pits within the grounds of Nottingham Castle (Roushannafas 2016). A summary of the findings is included below.

5.2.2 The works were conducted within the context of the proposed major redevelopment and aimed to assess the potential for surviving archaeological remains and their level of preservation within the grounds (Roushannafas 2016). The information yielded from this first stage of archaeological investigation was used to refine and inform the proposed redevelopment and its associated Archaeological Mitigation Strategy (Johnson 2016).

5.2.3 A total of two archaeological test pits were targeted on the Carriageway structure (Figure 6). The first of these test pits, test pit 34, was located centrally between the Outer Bailey Gatehouse and the Middle Bailey. Although this test pit showed post-medieval layering it was not clear if this had any relation to the carriageway. Test pit 35 (Plate 4) however was excavated above the area which would have been the defensive ditch bridged by the carriageway. The first deposits encountered after the modern topsoil and disturbance was a sequence of sandy-silt layers which had been tipped as part of the later landscaping. A sandstone wall measuring 0.85m in width was uncovered which retain possible sandstone infill. This could have represented the original ramp construction or more likely part of the re-construction after the ramps collapse (Figure 5).



Plate 4: Test pit 35, showing surviving wall and landscaping layers.

- 5.2.4 A deposit model was formed from the results of the NCA9 excavation and was subsequently used to inform the location of the current evaluation.
- 5.2.5 As part of the ongoing NCA18 works of archaeological monitoring of the landscaping, part of the 'Nottingham Castle Redevelopment Project', some reduction of the bank between the Outer and Middle Bailey has been undertaken (Figure 7). A slot was excavated into the bank measuring 4.98m in length, 1.8m in width and 1.85m in depth to give a section through it. This revealed mainly late landscaping materials. This section was followed by general reduction of the bank to the same length and depth of the slot some of the layers exposed appeared to relate to an earlier phase of landscaping and could relate to the phase of landscaping which originally lessened the Middle Bailey bank.
- 5.2.6 The results from the finds collected during the recent works of NCA18 have suggested that the layers that have been exposed and mapped (Figure 6) are primarily dated to the 18th century. This dates these layers within the phase of construction and reconstruction of the carriageway. The earliest datable layer contained pottery which could be dated between the 1740's and 1750's and this would indicate that these layers are part of the earthen reinforcement of the carriageway.
- 5.2.7 It is also of note that a number of residual medieval pottery fragments were recovered, this could indicate earlier medieval deposits being present below the carriageway. Although it is likely that these medieval remains have been brought in from elsewhere it is possible that medieval features could be present especially within the trenches closest to the Outer Bailey gatehouse.

6 Construction Impact and Archaeological Potential

6.1.1 The Archaeological Mitigation Strategy (AMS) summarises the archaeological potential of the Outer Bailey as below:

Mediaeval: High

- Outer Gatehouse and Bridge
- Outer Bailey Ditch
- Curtain Wall
- Towers

Post-Mediaeval: High.

- Civil-War features (e.g. the ditch mentioned by Lucy Hutchnison)
- Civil-War structures and buildings
- C16 structures and buildings
- Post-Mediaeval access ramp to Middle Bailey
- Post-Mediaeval landscaping
- Post-Mediaeval cultivation
- Post-Mediaeval buildings

6.2 Previous archaeological investigations within the footprint of the former carriageway revealed evidence of surviving sub-surface archaeological remains of post-medieval date. High levels of preservation were encountered throughout the excavation area, with very little evidence of modern truncation. As such, the potential for archaeological remains to be encountered during the scheme of works was deemed to be high. In addition to this, residual finds of medieval pottery could indicate the presence of medieval deposits below the carriageway.

6.3 The first archaeologically sensitive horizon is thought to be approximately 0.5m below current ground level (determined from archaeological test-pitting detailed above). The depth of the proposed service trenches will be to approximately 1m. As such, the potential construction impact on sub-surface archaeological remains was deemed high.

7 Relevant Legislation and Guidance

7.1 Planning Context

7.1.1 The archaeological programme outlined herein is underpinned by the national legislation and local policies described below. The programme was designed in consultation with Scott Lomax, City Archaeologist at Nottingham City Council and Tim Allen, Inspector of Ancient Monuments (East Midlands) for Historic England.

7.1.2 The archaeological works are required in order to fulfil a planning condition as part of Nottingham City planning application 16/01707/NFUL3. This constitutes Planning Condition 2, which states:

2. No development involving the breaking of ground for ... the north courtyard works ... shall take place until an archaeological Written Scheme of Investigation, covering the area where it is proposed to excavate below existing ground or basement levels, has been first submitted to and approved in writing by the Local Planning Authority.

7.1.3 Nottingham Castle is a Scheduled Ancient Monument (Reference Number 1006382) under the Ancient Monuments and Archaeological Areas Act (1979). Any works undertaken within the boundary of the Scheduled Monument require Scheduled Monument Consent from the Secretary of State for the Department of Culture, Media and Sport, who is advised by Historic England. This was granted under Scheduled Monument Consent Reference Number S00148351.

7.2 National Planning Policy Framework (NPPF)

7.2.1 Developments of this nature, and their impact upon the historic environment, are addressed by the 2018 *National Planning Policy Framework* (NPPF), published by the Ministry for Housing, Communities and Local Government (MHCLG), and the NPPF Planning Practice Guide *Conserving and Enhancing the Historic Environment* (DCLG 2014). The Planning Condition is aligned to the principles outlined within these guidelines.

7.3 Nottingham City Local Plan

7.3.1 Nottingham City Council has policies regarding the historic environment incorporated within its Local Plan. These place emphases on preservation of important archaeological remains *in situ*. Policy BE16 states that where remains are able to be removed, they must be fully investigated, recorded and secured as part of the development.

8 Regional Research Objectives

- 8.1 The programme of archaeological mitigation may reveal evidence that allows research priorities highlighted by regional research frameworks.
- 8.2 The East Midlands Historic Environment Research Framework (EMHERF) Interactive Digital Resource hosts a digitised version of East Midlands Heritage and Updated Research Agenda and Strategy for the Historic Environment of the East Midlands (<https://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/>).
- 8.3 Any evidence uncovered by the investigations should be considered with the guidance provided by the framework in mind. If the evidence significantly contributes to a research question raised by the framework, this may, at the appropriate time, be used to feed this information back via the interactive commenting facility. This allows for the research framework to develop over time and remain relevant.
- 8.4 Research questions highlighted in the framework of particular note to this programme of archaeological mitigation include:

High Medieval (1066-1485)
<i>7.4 Castles, Military Sites and Country Houses</i>
1. How can studies of the region’s buildings contribute to an understanding of castle origins, and can we identify local typologies of castles and country houses?
4. Was there continuity of location between castles and country houses, and are earlier structures concealed in later buildings?
Post-Medieval (1485-1750)
<i>8.1 Urbanism: morphology, functions and buildings</i>
4. What can studies of environmental data, artefacts and structural remains tell us about variations in diet, living conditions and status?
6. How can we advance studies of building plans and standing remains, especially where hidden inside later buildings, and of caves and cellars?

- 8.5 The results of the archaeological mitigation works may also contribute to the priorities specified in The Nottingham City Council Museums and Galleries Service Strategic Research Plan (2014-2018). Of particular note is:

Nottingham Castle
Develop Nottingham Castle as a site of major historic significance with a modern museum and art gallery, while respecting and bringing to life its historic environment.

9 Site Specific Objectives and Methodology

9.1 Objectives

9.1.1 The general objectives of the fieldwork can be summarised as:

- To identify the presence of any archaeological remains to be affected by any intrusive aspects of the development by excavating three trenches across the bank which conceals the Carriageway structure.
- To ensure that any archaeological remains which significantly contribute towards an understanding of the Scheduled Ancient Monument are preserved *in situ*.
- To further inform the proposed redevelopment strategy (and more specifically the location of the carriageway) in order to fulfil the above objective.

9.1.2 Where practical within the constraints of the archaeological mitigation and development, this will include an assessment of the overall extent, date and state of preservation of archaeological remains.

9.2 General Methodology

9.2.1 The scheme of archaeological mitigation works comprised the hand-excavation of three trial trenches across the former carriageway to a depth of 1.2m. The trial trenches were designed to rapidly establish the presence, date and levels of preservation of any sub-surface archaeological remains, in order to inform a program of further mitigation during the redevelopment works. Due to this, the three trenches were broadly spaced to provide a wider insight.

9.2.2 All work was undertaken by suitably qualified and experienced archaeologists in accordance with accepted archaeological practice and the *Code of Conduct* produced by the Chartered Institute for Archaeologists (CIfA 2014b). The work was also carried out in adherence to the relevant WSI produced by TPA (Renner 2019).

9.2.3 Any archaeological remains present were further investigated by means of hand excavation. Deposits/fills were removed by contextual change (the smallest usefully definable unit of stratification) and/or in spits no greater than 100mm. Excavation was sufficient to securely establish the character and, where possible, date and stratigraphic relationship of features/deposits.

9.2.4 Archaeological features present were hand-cleaned and planned. The features were then sufficiently excavated to determine their plan and form, their nature, their degree of survival, and to recover any datable artefacts. All features thus investigated were then recorded stratigraphically using a single-context system in plan and section, and all finds recovered were retained for analysis. Structural remains were exposed in plan and were fully recorded using the methodology detailed below.

9.2.5 All contexts were given an individual context number. Plans and sections of all features were drawn on drafting film in pencil at a scale of 1:20/1:50, and showed at least context numbers, all colour and textural changes and principal slopes represented as hachures. Digital colour photographs of each context were taken using a DSLR at 7 megapixel minimum resolution. Written records were maintained as laid down in the TPA recording manual.

10 Results

10.1 Overview

10.1.1 Three broadly north-west to south-east orientated trenches were excavated across the former carriageway during the archaeological investigation (Figure 2).

10.1.2 Trench 01, the western-most trench, was T-shaped with its main axis measuring 8.5m in length and 1.16m in width (Figure 3).



Plate 5: General view of Trench 01, viewed looking north-west. Scale = 0.4m.

10.1.3 To the north-east of the trench was a 3x3m extension. The trench was excavated to a depth of 1.2m with a 1x1m test pit towards the centre extended to a maximum depth of 2m.



Plate 6: General view of the extension to Trench 01 and central Test Pit, viewed looking west. Scales = 1m.

10.1.4 Trench 02 was positioned centrally, approximately 4.5m north-east to Trench 01, and measured 8.9m in length and 1.3m in width. This trench was excavated to a maximum depth of 1.2m (Figure 4).



Plate 7: General view of Trench 02, viewed looking west-north-west. Scales = 1m.

10.1.5 Trench 03 was located 8.8m north-east of Trench 02. Measuring 6.2m in length and 1m in width, this trench was excavated to a maximum depth of 1.2m (Figure 4).



Plate 8: General view of Trench 03, viewed looking south-east. Scales = 1m.

10.2 Mid-18th Century Reforming of the Carriageway

10.2.1 A number of layers thought to be associated with the 18th century reforming of the carriageway with an earthen bank were encountered during the evaluation. These are discussed by trench and in stratigraphic order below:

Context	Description	Dimensions (LxWxD) (m)
Trench 01		
2246	The earliest layer within Trench 01, (2246), was present at the base of an investigatory 1x1m test pit excavated towards the centre of the trench. (2246) was composed of friable brownish grey silty sand with occasional inclusions of small rounded pebbles and charcoal flecks.	Unknown
2219	Partially overlying (2246) was a layer of friable grey silty sand with occasional inclusions of small rounded pebbles	1.96x2.26x0.3
2220	Layer (2220) sealed (2219) and comprised loosely compacted black silt and tile fragments, with occasional inclusions of small rounded pebbles and CBM fragments	2x1.56x0.24
2221	The final layer present within the 1x1m test pit was (2221), a friable layer of brown sand with occasional inclusions of small rounded pebbles and charcoal flecks.	1.9x3.02x0.44
2240	Layer (2240) was present above (2221), and was composed of friable yellow sand with occasional inclusions of small rounded pebbles.	0.08x2.16x0.1
2239	Sealing (2240) was a layer of friable grey sandy silt with occasional inclusions of small rounded pebbles.	1.14x2.16x0.18
2222	Located centrally within the trench was (2222), a layer of friable yellow sand with occasional inclusions of small rounded pebbles. This layer partially overlaid layer (2239) and was visible in the north-eastern facing section of the test pit.	1.2x2.7x0.38
2223	Above (2222) was a layer of friable brown sand with occasional inclusions of small rounded pebbles and charcoal flecks.	0.86x2.7x0.24
2225	The next layer in the sequence was (2225), a layer of friable yellow sand with occasional inclusions of small rounded pebbles.	0.64x2.64x0.38
2226	(2226) was composed of friable mid brown sand with occasional inclusions of small rounded pebbles. It was located above layer (2225).	0.84x2.5x0.08
2227	Overlying (2226) was (2227), a layer of friable greyish yellow sand with occasional inclusions of small rounded pebbles.	0.42x2.5x0.28
2228	Layer (2228) was located above (2227), and was composed of friable brown sand with occasional inclusions of rounded pebbles.	1.38x3.14x0.32
2241	Partially sealing (2228) was a layer of friable yellow sand with occasional inclusions of small rounded pebbles.	0.51x3.24x0.4
2242	Layer (2242) was located towards the north-western extent of Trench 01, overlying layer (2241), and comprised friable brown sand with occasional inclusions of small rounded pebbles.	0.92x3.24x0.38
Trench 02		
2212	Layer (2212) was located at the base of Trench 02 towards the north-eastern end and comprised friable mid to dark brown sandy silt.	0.16x1.1x0.1
2211/2236	A layer of softly compacted dark brown sandy silt with occasional inclusions of small rounded pebbles was present above (2212).	1.56x1.16x0.5
2210	Sealing (2211/2236) was a layer of loosely compacted pale brown sand with occasional inclusions of mortar fragments.	2.48x1.16x0.44
2256	Layer (2256) was present above (2210) and was composed of softly compacted dark brown sandy silt with occasional inclusions of small rounded pebbles and charcoal flecks.	1.56x1.1x0.22
2209	Above (2256) was a layer of friable brownish yellow sand with occasional inclusions of small rounded pebbles and fragments of CBM.	4.02x1.16x0.5
2213	Located at the north-western extent and at the base of Trench 02 was a layer of friable greyish brown sand with occasional inclusions of small rounded pebbles.	1.98x1.16x0.34
2214	Sealing (2213) was (2214), a layer composed of friable yellow brown sand with occasional inclusions of small rounded pebbles.	1.74x1.16x0.48
2252	A layer of softly compacted red clay (2252) was present above (2214)	2.3x1.1x0.46

2255	Also partially overlying layer (2213) was a layer of loosely compacted light brown sand and mortar fragments (2255).	0.86x1.1x0.15
2254	Layer (2254) sealed (2255) and comprised softly compacted dark brown sandy silt.	0.8x1.1x0.26
2253	The final layer in the sequence was (2253), composed of softly compacted sterile light brown silty sand.	0.46x1.1x0.36
Trench 03		
2270	The earliest layer encountered within Trench 03 was at the base of the excavation, and comprised softly compacted light greyish brown silty sand with no inclusions.	1.26x0.92x0.1
2251	Sealing (2270) across the north-western half of the trench was (2251), a layer of loosely compacted yellowish brown sand and sandstone fragments.	1.03x0.95x0.3
2269	Layer (2269) was composed of sterile friable greyish brown silty sand, and was located above (2251)	0.92x0.96x0.11
2249	A layer of friable yellowish brown sand with no inclusions was present overlying (2269).	1.13x0.32x0.2
2248	Above layer (2249) was a layer of friable mid brown silty sand.	1.18x0.92x0.48
2258	Layer (2258) comprised softly compacted black silt and was observed partially overlying layer (2248).	0.39x0.66x0.08
2257	Sealing (2258) towards the north-eastern extent of the trench was a layer of friable orange sand.	0.8x0.9x0.2
2247	The latest layer attributed to this phase of site activity was (2247), a comparatively substantial deposit of friable dark brown silty sand with occasional inclusions of small rounded pebbles.	1.64x0.9x0.24

Table 1: Layers associated with the mid-18th century reforming of the Carriageway



Plate 9: South-east facing section of the Test Pit within Trench 01, showing 18th Century layers. Scales = 1m.

- 10.2.2 A railing was constructed to either side of the reformed carriageway once it had been 'made good with earth'. A single pit was encountered within both Trenches 01 and 02 that may relate to this structure. This comprises pits [2215] (fill (2217)) (Trench 01) and [2205] (Trench 02).
- 10.2.3 Pit [2215], located towards the south-eastern extent of Trench 01, was circular in shape with vertical sides and a flat base. Measuring 1.18m in length and width, this feature extended to a depth of 0.37m and contained two distinct fills. The earliest of these, (2217), was composed of softly compacted dark grey sandy silt with occasional inclusions of

small rounded pebbles and charcoal flecks. Sealing (2217) was a second fill (2216) comprised of softly compacted orange clay.



Plate 10: South-east facing section of pit [2215], fill (2217), viewed looking north-west. Scale = 1m.

10.2.4 A second circular pit, [2205], was located towards the centre of Trench 02. This feature measured 1.32m in both length and width, with a depth of 0.18m. Pit [2205] was circular in shape and steep-sided with a flat base. It contained a single fill (2206) of softly compacted dark greyish brown silty sand with occasional inclusions of small rounded stones and charcoal flecks.



Plate 11: North-west facing section of pit [2205], viewed looking south-east. Scale = 0.5m.

10.3 19th Century Landscaping

10.3.1 Five layers representing a widespread levelling event were encountered within Trench 01, which may be associated with the extensive landscaping of the Outer Bailey during the 19th century. The layers are described in stratigraphic order below.

Context	Description	Dimensions (LxWxD) (m)
2229	Layer (2229) was composed of friable mid to dark brown sand with occasional inclusions of small rounded pebbles.	0.6x1.14x0.14
2224	Above (2229) was a layer of friable mixed yellow and brown sand with occasional inclusions of small rounded stones.	2.22x1.06x0.28
2244	Sealing (2244) was a layer of softly compacted black silt and charcoal.	0.24x1.16x0.1
2245	Located towards the north-west extent of the trench, above (2244) was a layer of friable yellow sand with occasional inclusions of small rounded pebbles.	0.5x1.16x0.1
2243	Layer (2243) is possibly a continuation of layer (2245), though no physical relationship was established within the confines of the evaluation. Layer (2243) also comprised friable yellow sand with occasional inclusions of small rounded pebbles.	0.82x0.98x0.34

Table 2: Layers associated with 19th century landscaping

10.3.2 A shallow linear ditch was present towards the south-eastern extent of Trench 02. [2201] was only observed for a length of 1.16m as it extended beyond the boundaries of the excavation, with a width of 1.5m and a depth of 0.18m. The sides of this feature exhibited a gradual slope with a flat base, and a single fill (2202) composed of softly compacted greenish brown clay was contained within.

10.3.3 An interesting linear feature was observed within Trench 03, [2250], which is thought to relate to the 19th century re-landscaping of the ramp. This feature measured 4.1m in width with a length and depth that exceeded that of the investigation. Contained within were fills six distinct fills comprising (2259), (2268), (2267) (2266) (2265) and (2264), all of which sloped towards the south-eastern edge of [2250]. Fill (2259) had been heavily truncated by a modern service trench [2260], obscuring its relationship with contemporary fills within [2250]. This fill was composed of friable light greyish brown sand with occasional inclusions of small stones and CBM fragments. To the south-east of service trench [2260] was fill (2268), which comprised friable greyish brown silty sand with occasional inclusions of small rounded pebbles. Overlying (2268) was a fill (2267) of friable yellowish brown sand with very occasional inclusions of small rounded pebbles. Above this was (2266), which was composed of softly compacted dark grey silt with occasional inclusions of small rounded pebbles and charcoal flecks. Sealing (2266) was a fill (2265) of softly compacted dark greyish brown silty sand with moderately frequent inclusions of small rounded The latest fill in the sequence, (2264), comprised friable greyish-yellowish brown sand with moderately frequent inclusions of small rounded pebbles and charcoal flecks.

10.4 Modern

10.4.1 A circular post-hole relating to a modern information sign was encountered at the south-eastern extent of the trench. Post-hole [2237] measured 0.5x0.48x0.24 and contained a single fill (2238) of friable very dark grey silty sand.



Plate 12: South-east facing section of pit [2237], viewed looking north-west. Scale = 0.4m.

10.4.2 The backfill of Test Pit 05 from the previous stage of archaeological enabling works (NCA9) was visible across the south-western edge of Trench 01. (2218) was composed of softly compacted mixed black and brown silt.

10.4.3 Topsoil (2200) comprised softly compacted black silty sand with very occasional inclusions of small rounded pebbled. Partially truncating this layer was the cut for a previous tarmac footpath [2271], which has been subsequently removed.

10.4.4 A number of services and associated cuts were encountered within trenches 02 and 03. These are summarised in the table below:

Context	Description	Dimensions
Trench 02		
2207	Cut for H.V. cables, filled by (2208) and (2233)	1.16x0.32x0.74
2208	Softly compacted very dark grey silty sand fill of service cut [2207]	1.16x0.32x0.74
2233	H. V. cables within [2207]	N/A
Trenches 02 and 03		
2230	Cut for ceramic drain, filled by (2231) and (2232)	>5x0.26x0.44
2231	Softly compacted black silty sand fill of drain cut [2230]	>5x0.26x0.44
2232	Ceramic pipe within drain cut [2230]	>5x0.14x0.14
2203	Cut for services which run below the previous tarmac path.	1.16x1.49x0.94
2204	Firmly compacted greyish brown sandy silt fill of [2203].	1.16x1.49x0.94
2234	Lead pipe within [2203]	1.2x0.06x0.06
2235	Cast iron pipe within [2203]	1.2x0.1x0.1
Trench 03		
2262	Cut for a cast iron pipe towards the south-eastern end of Trench 03.	0.96x0.48x0.62
2263	Softly compacted greyish brown silty sand fill of service cut [2262]	0.96x0.48x0.62
2260	Cut for H. V. cables, filled by (2261)	0.92x0.38x0.7
2261	Softly compacted very dark grey silty sand fill of [2260].	0.92x0.38x0.7

Table 3: Modern Services

11 The Pottery by Alison Wilson and Lee Elliott

11.1 Methodology

11.1.1 The pottery was identified under x 20 magnification and classified into wares. Where possible the probable origin of these wares is indicated in the descriptions. In some cases, the attribution of certain medieval fabrics, especially in the absence of diagnostic forms, and their sources cannot be definite without the use of further analysis such as thin sectioning and can therefore only be tentatively attributed.

11.2 Overview

11.2.1 A total of 142 sherds of pottery, weighing 4492g were recovered from site. The pottery ranged in date from the 13th century to the 19th century. The wares present are summarized below.

11.3 Summary of main wares in chronological order

Later Medieval Ware – 13th – early 16th century

11.3.1 *Reduced Green Glazed ware*; possessing a dark grey fabric with a light grey external margin below a greenish brown glaze. This most closely resembles Nottingham Reduced Green Glaze, dating to the late 13th to early 15th century.

11.3.2 *Light Bodied Green Glazed ware*; a hard fabric fired to an off-white with cream, pink or orange surfaces and a grey internal margin and surface, often forming a thin walled vessel. It is particularly dominant towards the middle of the 13th century.

11.3.3 *Transitional Midland Purple/Midland Purple ware*; a very high-fired material with a characteristic dark brown/red-brown to purple colour. Transitional Midland Purple consists of a hard orange/grey fabric with a darker surface. Production of this ware is attributed to a number of places, including Chilvers Coton, Warwickshire and Ticknall, Derbyshire. Dates for the origins of Midland Purple are variable but largely run from the late 13th century to the 18th century.

11.3.4 *Cistercian ware*; generally a fine, hard fabric ranging from dark red, dark brown, dark greyish-brown to orange brown. Many sherds could not be distinguished from Blackware sherds and have been classed as Cistercian/Blackware. Known possible production sites include Chilvers Coton and Ticknall from the late 14th century and into the 17th century.

Early post-medieval wares late 16th – 17th century

11.3.5 *Blackware*; comprised of dark red-brown-orange fabrics with dark brown to black glazes. As this ware is very similar to Cistercian ware, a number of sherds could not be distinguished from Blackware sherds and have been classed as Cistercian/Blackware. Blackware is thought to have gradually evolved from Cistercian ware from the early 17th century, remaining in production into the 18th century. Possible production sources include North Staffordshire and Ticknall (Spavold & Brown, 2005).

11.3.6 *Coarse Earthenware*; there are generally 2 components to this; lower fired fabrics ranging from red to orange brown to buff with a dark internal and external slip and initially a red-orange to green internal glaze. Later forms have a dark brown to black glaze, all internal and all below the rim. The second group comprises a harder fired reduced fabric

sometimes resembling Midland Purple. Production ran from the 17th into the 19th century in various forms, mostly butter pots and pancheons associated with dairy production.

- 11.3.7 *Slipware*; Slipware originated in Staffordshire during the mid-17th century as elaborately decorated ornamental dishes. Staffordshire-type slipware is an earthenware with fine sand and other coarse materials in the body of the ceramic.
- 11.3.8 *Mottled ware*; comprised a fine buff fabric with a mottled brown glaze containing manganese. Typically, late 17th – 18th century in date, possibly produced in Stoke-on-Trent and other unidentified local sources.

Post-medieval to modern – mid 18th – 20th century

- 11.3.9 *Brown salt glazed Stoneware*; hard fired with salt thrown into the kiln during the firing process. Much of it was produced in Nottinghamshire and Derbyshire in the late 17th – 18th century.
- 11.3.10 *White salt glazed stoneware*; production ran from 1720 – 1790.
- 11.3.11 *White bodied earthenware*; predominant 19th century table ware. Much of this ware is likely to have come from North Staffordshire, although no makers marks were present.

11.4 Summary of pottery by trench

- 11.4.1 **Topsoil (2200)** contained a very mixed assemblage no contemporary sherds. The earliest piece was a fragment of 13th – 14th century Light Bodied Green Glaze. 17th - early 18th century pottery included a Coarse Earthenware cylindrical storage jar, Mottled Ware, Cistercian/Blackware and a fragment of Midland Purple with a kiln scar on the base. A fragment of Flow Blue Glazed Transfer ware, a white/grey stoneware bottle and fragments of plant pot took the assemblage into the 19th century.

Trench 01: Pottery date range 13th – 19th century

- 11.4.2 **Context (2217) the fill of pit [2215]** contained a variety of 18th – 19th century forms. These included Coarse Earthenware in the form of cylindrical storage jars and pancheons, Brown Salt glazed Stoneware, White Salt Glazed Stoneware, Flow Blue Transfer Ware and a fragment of a Staffordshire Tortoiseshell Creamware from a thin bodied vessel. This context also contained a residual sherd of Light Bodied Green Glazed pottery.
- 11.4.3 **Context (2218)**, the backfill from Test Pit 05 from the previous stage of work, contained a very mixed assemblage of pottery finds. These ranged from a 13th – 14th century sand and iron rich fabric oxidized jar rim, 16th-17th century Midland Purple Ware, Plain White Salt Glazed Stoneware manufactured from 1730 onward and 19th century plant pot fragments.
- 11.4.4 **Layer (2220)** contained a largely 18th century assemblage which included Coarse Earthenware in the form of a cistern with bung and finger-tip decoration around the bunghole, Pancheon ware, Blackware with a metallic sheen glaze and part of a White Salt Glazed Stoneware bowl or cup. A fragment of combed slipware dated to the late 17th-early 18th century.
- 11.4.5 **Layer (2222)** contained a 17th – early 18th century pottery assemblage consisting of hard fired Coarse Earthenware and a combed and trailed Slipware piecrust rim. The layer also contained an abraded fragment of a 13th/14th century Light Bodied Green Glaze jug which is likely to be residual.
- 11.4.6 **Layer (2224)** contained an assemblage of pottery belonging primarily to the late 17th – early 18th century. This consisted of a straight sided cylindrical Coarse Earthenware jar

with a clay pad from the kiln still attached, a fragment of Coarse Earthenware pancheon with an internal glaze, Blackware with a metallic glaze, over-fired Midland Purple Ware, fragments of a Mottled Ware mug and Brown Salt Glazed Stoneware. Fragments of 19th century plant pot are likely to be intrusive. Of particular interest is an unusual body sherd which looks like a Ticknall type incised Cistercian Ware but with a late medieval orange/coarse earthenware fabric, possibly dating to the 14th – 15th century which will merit further study.

- 11.4.7 **Layer (2225)** contained pottery dating largely to the late 17th – early 18th century in the form of a hard fired coarse earthenware cylindrical storage jar, fragments of a Brown Salt Glazed Stoneware mug including a handle, Mottled Ware, Blackware, Slipware, White Salt Glazed Stoneware, possible Cistercian ware and a hard-fired sherd which is possibly Midland Purple Ware although it could be Coarse Earthenware.
- 11.4.8 **Layer (2227)** contained mostly 17th century pottery with some possible late 16th and early 18th century fragments; sherds of later 17th century Midland Purple including a handle, a fine 16th-17th century Cistercian/Blackware cup, hard fired Coarse Earthenware and fragments of a 17th-early 18th century Tin Glazed Earthenware Plate.
- 11.4.9 **Layer (2228)** Contained a single small abraded fragment of Reduced Green Glaze dating to the late 13th – early 15th century. The small size and poor condition of the sherd would suggest that it is residual.
- 11.4.10 **Layer (2229)** contained just 2 fragments of 17th century Midland Purple Ware and Blackware with a metallic glaze.

Trench 02: Pottery date range 13th – 19th century

- 11.4.11 **Context (2202), the fill of linear ditch [2201]** contained 19th century pottery in the form of Coarse Earthenware and transfer decorated Willow Pattern White Bodied Earthenware.
- 11.4.12 **Context (2204), the fill of [2203] service cut,** contained a very mixed assemblage of pottery ranging from fragments of over-fired 15th century pottery to a fragment of 17th-18th century glazed Buff Earthenware.
- 11.4.13 **Context (2206) fill of pit [2205]** contained a mixed assemblage of pottery ranging from a single sherd of 13th – 14th century Light Bodied Green Glaze, a 14th – 15th pipkin handle, possibly transitional Midland Purple Ware although it could be an over fired Nottingham Coarse Sandy Ware and a fragment of a reduced fabric dark green glazed jug with a triangular rim also dating to the 14th century. The remaining wares dated to the 17th - 18th century and included 18th century Creamware and late 17th-18th century Mottled Ware Brown Salt Glazed Stoneware and Coarse Earthenware.
- 11.4.14 **Layer (2210)** contained pottery ranging from the 16th – 17th century in date. This included part of a coarse earthenware cylindrical vessel such as a butter pot or storage jar, a fragment of Blackware and a single sherd of 15th – 16th century Cistercian ware.
- 11.4.15 **Layer (2212)** located at the base of trench 02, contained the base of a wide mouth bowl made in a coarse gritted fabric with internal glaze, dating to the 14th/15th century, a fragment of very overfired medieval pottery with iron inclusions probably dating to the 14th/15th century, and 2 fragments of a hard fired quartz gritted fabric which are also likely to date to the 14th - early 15th century. A body sherd of coarse earthenware with an internal and external glaze dating to the 17th - early 18th century was present in the assemblage but is likely to be intrusive.
- 11.4.16 **Layer (2213),** located at the base of trench 02, contained 17th – early 18th pottery. This included a fragment of a coarse earthenware pancheon with internal glaze, hand painted tin glazed earthenware, Blackware and a fragment of early Midland Purple Ware.

11.4.17 **Layer (2214)** contained 14th – 15th century fragments of Coarse Orange Sandy Ware and Gritty ware and a single small fragment of Salt Glazed Stoneware which is probably intrusive.

Trench 03: Pottery date range 13th – 18th century

11.4.18 **Layer (2251)** contained just a single fragment of 17th – early 18th century Blackware.

11.4.19 **Layer (2247)** contained fragments of 17th – 18th century pottery including a Tin Glazed Earthenware jug fragment, a Coarse Earthenware pancheon and a fragment of Blackware with metallic glaze.

11.4.20 **Layer (2248)** contained a single fragment of a 13th -14th century oxidized Green Glazed jug.

11.5 Discussion

11.5.1 The pottery assemblage recovered from the evaluation is comprised overwhelmingly of pottery of a Post-Medieval date, with little definitive chronological progression evidenced, perhaps due to general mixing of deposits during later landscaping. Definitive dating is, of course, also hampered by the lack of a Nottingham type-series and the very broad date ranges attributable to some wares (see Cumberbatch 2019).

11.5.2 Similarly to earlier archaeological investigations undertaken in the Outer Bailer, residual medieval pottery (particularly Green Glazed wares) was encountered throughout the archaeological deposits and features present. This may indicate the presence of earlier deposits beneath the 18th Century carriageway structure.

11.5.3 In conclusion, the assemblage is typical of a medieval site that has been reduced and developed throughout the post-medieval and modern periods. The majority of the layers present contributed to widespread levelling and made ground events in the 18th and 19th century, and the mixed nature of the pottery assemblage recovered is certainly a reflection of those activities.

12 The Ceramic Building Material *by Alison Wilson*

- 12.1 A total of 68 fragments of brick and tile weighing 18351g and 2 fragments of plaster weighing 570g were recovered during archaeological investigation in the Outer Bailey Carriageway of Nottingham Castle.
- 12.2 Most of the material appeared to be post-medieval in date except for fragments of probable medieval floor tile with a plain dark glaze recovered from context (2212), and fragments of medieval ridge tile in contexts (2212) and (2218).
- 12.3 The roof tiles showed variation in fabric from a fine sandy red to a coarse poorly sorted fabric with large sandstone inclusions which would indicate production in the Nottingham area. All were single nibbed and of indeterminate date, possibly running from the late medieval period through to the 19th century. Mortar was still adhering to many of the fragments which could possibly relate to the practice of torching - the use of lime mortar on the underside of tiles to keep them in place.
- 12.4 2 fragments of wall plaster recovered from context (2210) had lathe marks on the reverse.

Material	Description	Context	Quantity	Weight (g)
CBM	Tile fragment	2200	1	314
CBM	Tile fragments	2204	2	563
CBM	Tile fragments	2206	2	19
CBM	Tile fragment	2210	1	294
CBM	floor tile	2212	1	608
CBM	Glazed floor tile	2212	1	244
CBM	Tile fragments	2213	10	2007
CBM	Brick fragments	2216	3	2032
CBM	Tile fragments	2216	9	1383
CBM	Tile fragments	2217	3	345
CBM	Tile fragments	2218	5	903
CBM	Glazed tile fragment	2218	1	92
CBM	tile fragment	2222	1	141
CBM	Tile fragments	2224	6	2048
CBM	Brick fragment	2224	1	518
CBM	Tile fragments	2225	5	1190
CBM	Tile with mortar	2225	1	1082
CBM	Tile fragments	2226	3	372
CBM	Tile fragments	2227	2	299
CBM	Brick fragments	2227	2	245
CBM	Tile fragment	2228	1	364
CBM	Tile fragments	2229	5	2718
Plaster	Fragments	2210	2	570

Table 4: CBM organised by context

13 Clay Tobacco Pipe by Alison Wilson

13.1 Introduction

- 13.1.1 5 complete and incomplete tobacco pipe bowls and 31 stem fragments were recovered during the archaeological excavation on the Outer Bailey Carriageway at Nottingham Castle. These date to between the 17th and 19th centuries and were recovered from 10 contexts.
- 13.1.2 The pipe bowls were studied and recorded following guidelines set within Higgins and Davey 1994. Dating of bowl forms followed examples within Oswald 1975, as well as in relation to significant local published assemblages (Alvey 1972, Oswald 1980, Hammond 2012, Elliott 2015).
- 13.1.3 The bulk of the clay pipe fragments found during the excavation were lengths of stem. In the absence of any identifying features such as makers stamps or decoration, the stems have been dated using bore hole diameter (early clay pipes have a bore diameter of 3mm, decreasing over time until stems by the middle of the 18th century had a bore of less than 2mm). Pipe fragments with identifying features have been discussed according to period below.

13.2 The Clay Pipe Assemblage

- 13.2.1 The following discussion is organised by trench as given in the context register.
- 13.2.2 **Topsoil** context (2200) contained partial stems with a borehole diameter ranging from 2mm-3mm, placing the date of manufacture between the 17th and 19th centuries. A single partial stem had a very worn indistinguishable makers stamp.
- 13.2.3 **Trench 01 – 17th – 19th century:** Contexts (2217, 2220 and 2229) contained partial stems with a borehole diameter of 1.5-3mm giving a date range of 17th-19th century. Context (2229) also contained 2 partial stems bearing a maker's stamp, both of Benjamin Marshall, a clay tobacco pipe maker working in Nottingham between 1730 and 1778, along with a mostly complete large bowl with a long forward spur c.1730-80 (Oswald, 1975, p.40). Another complete bowl with a narrow flat based foot c.1820-40 (Oswald, 1975, p.38) was found in context (2220).
- 13.2.4 **Trench 02 – 17th – 19th century:** Contexts (2202, 2205, 2210 and 2213) contained unmarked partial stems with a 2-3mm bore diameter giving a 17th – 19th century date. Context (2210) also included one partial stem with a Benjamin Marshal stamp and a complete bowl with a long forward spur, c.1730-80 (Oswald, 1975, P.40). Context (2204) contained an almost complete bowl with an upright spur possibly dating to c.1690-1710 (ibid).
- 13.2.5 **Trench 03 – 17th-18th century:** Context (2248) contained a single partial stem, unmarked with a 3mm borehole diameter, 17th-18th century.

13.3 Discussion

Seventeenth Century

- 13.3.1 There was little evidence for 17th century clay tobacco pipe. The 3mm borehole diameter stem fragments could indicate an earlier date, but the few bowls recovered were of 18th-19th century date.

Eighteenth Century

13.3.2 At the start of the 18th century clay tobacco pipe bowls became larger with straight sided, thinner, finer walls. Heeled spurs also became common. Throughout most of the 18th century Nottingham clay pipe makers often used elaborate stem decoration incorporating their name. Usually this took the form of a band around the stem, with linear, scroll, circular, oval and often classical motifs. The decorated stems found in the Outer Bailey Carriageway of Nottingham Castle all bear the stamp of Benjamin Marshall, a Nottingham clay pipe maker working between 1730 and 1788.

Nineteenth century

13.3.3 By the 19th century, bowls became larger and upright. However, the bore diameters were much narrower at 1.5mm. The assemblage recovered during the excavations at Nottingham castle contains only stem fragments with a 1.5mm borehole diameter which could possibly be placed in the 19th century.

13.4 Conclusion

13.4.1 In general, although the individual assemblages from each context were mixed with broad date ranges, the clay pipes recovered from the Outer Bailey Carriageway at Nottingham Castle comprised mainly of 18th century and early 19th century pipes, with direct evidence of just one Nottingham pipe manufacturers; Benjamin Marshall.

Trench	Context	Pipe stem diameter	Description	Date range
Topsoil	2200	2-3mm	5 x unmarked partial stem 1 partial stem with makers stamp	17 th -18 th century
02	2202	2mm	Unmarked partial stem	18 th – 19 th century
02/03	2204	2mm	Partial bowl with spur	18 th -19 th century
02	2205	2mm	Unmarked partial stem Small bowl fragment (indet.)	18 th -19 th century
02	2210	2mm	3 x unmarked partial stem 1 partial stem with Marshall stamp 1 x complete bowl with spur	18 th -19 th century
02	2213	3mm	3 x unmarked partial stem	17 th -18 th century
01	2217	2-3mm	3 x unmarked partial stem	17 th -19 th century
01	2220	1.5-3mm	7 x unmarked partial stem 1 x complete bowl with spur	17 th -19 th century
01	2229	1.5-2mm	3 x unmarked partial stem. 2 x stamped stem 1 x partial bowl	18 th -19 th century
03	2248	3mm	1 x unmarked partial stems	17 th – 18 th century

Table 5: Clay Pipe fragments organised by trench and context

14 Miscellaneous Finds by Rosemary Hughes

14.1 The Shell

14.1.1 A total of 3 pieces of shell were recovered from the site. 2 fragments of oyster shell were recovered from context (2213) and a single crab claw was recovered from context (2222).

Context	Quantity	Weight (g)	Description	Date
2213	2	20	Oyster shells	Unknown
2222	1	7	Crab claw	Unknown

Table 6: Shell organised by context

14.2 The Glass

14.2.1 A total of 6 pieces of glass were recovered from the site. All were fragments of green bottles and post medieval to modern in date.

Context	Quantity	Weight (g)	Description	Date
2200	1	13	Green bottle base fragment	Modern
2217	1	3	Green bottle base fragment	19 th – 20 th century
2220	2	62	Green onion bottle fragments	19 th – 20 th century
2224	2	101	Green bottle neck and base fragments	19 th – 20 th century

Table 7: Glass organised by context

14.3 The Metal

14.3.1 A total of 15 pieces of metal and slag were recovered from 9 contexts; 10 iron nails, 1 unidentifiable fragment of copper alloy, 1 unidentifiable copper alloy coin or token, 1 large piece of slag, possibly a hearth bottom, and 2 unidentifiable fragments of iron. All are post medieval in date.

Context	Quantity	Weight (g)	Description	Date
2200	1	6	Copper alloy	Post medieval
2200	2	28	Iron nails	Post medieval
2202	1	545	Slag	Post medieval
2204	1	45	Large curved iron nail	Post medieval
2204	1	264	Iron object	Post medieval
2206	3	15	Iron nails	Post medieval
2217	1	6	Iron nail	Post medieval
2220	1	4	Copper alloy coin/token, heavily abraded and pitted with cross hatches on surfaces	Early post medieval
2224	1	213	Iron object	Post medieval
2229	3	35	Iron nails	Post medieval

Table 8: Metal organised by context

15 The Animal Bone by *Marius Ilie*

15.1 Introduction

15.1.1 An assemblage of 54 animal bone specimens was recovered from 10 different contexts from a site at the Outer Bailey Carriageway at Nottingham Castle. A total of 19 specimens were anatomically and taxonomically identifiable and are discussed here. Taxa identification was possible for 45% of the anatomically identifiable assemblage, with the remaining 55% being assigned a size category. The material was assessed to determine its potential to contribute to our understanding of the site.

15.2 Materials and methods

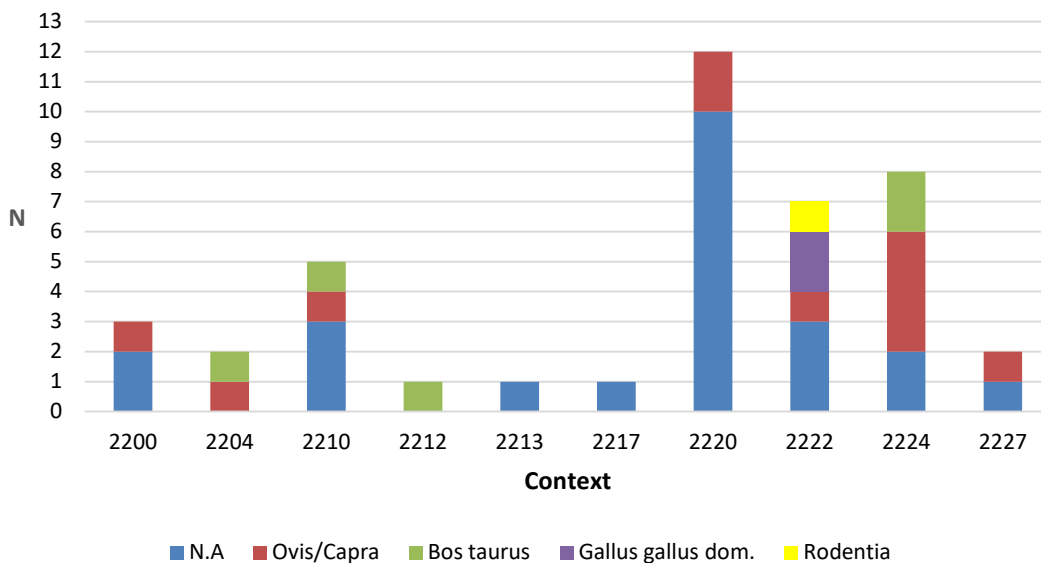
15.2.1 All osteological material was excavated manually from 10 different contexts. Each bone was examined macroscopically and weighed. Taxa were identified according to morphological features¹. To assist in cataloguing the unidentifiable specimens in the assemblage, three distinct categories were used: large mammal (horse, cattle), medium mammal (sheep, goat, pig) and small mammal (cat, small breeds of domestic dog, rodents). Minimum number of individuals (MNI) was calculated using the diagnostic zone method². Butchery marks were identified by type and recorded. Age at death was determined based on the level of wear on the molars^{3,4}. No sexually dimorphic traits were present in any of the specimens, making determination of sex impossible. The distinction between sheep and goat was attempted when diagnostic features were present. Specimens that were anatomically unidentifiable were recorded following the same methodology but are discussed separately. Fragments with no diagnostic features and under 20mm were counted approximately and weighed. After the material was identified according to the methodology above, the assemblage was analysed according to context.

15.3 Results

15.3.1 A total of 14 (141g) anatomically unidentifiable fragments were recovered and were macroscopically examined. Overall 8 fragments belonged to large mammals, 3 to medium mammals and one fragment was assigned to the small mammal category. One bird bone fragment and one fragment not assigned any size category were also recovered. The following discussion refers to the anatomically identifiable assemblage.

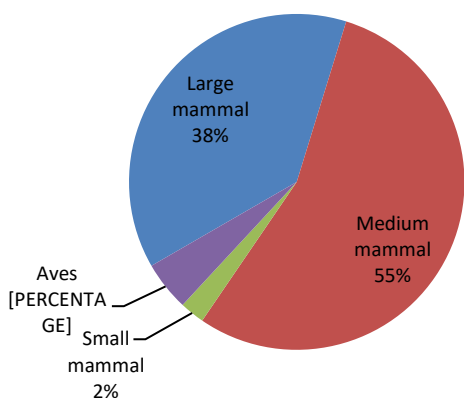
15.3.2 Of the anatomically identifiable sub-sample, 109 specimens came from 5 different contexts. Taxa distribution can be seen Graph 1. Of the mammals, 40% (N=16) are large mammals, 58% (N=23) are medium mammals with the remaining 2% belonging to the small mammal and bird (Aves) categories with 1 and 2 specimens respectively (Graph 2).

Graph 1: Taxa distribution according to context

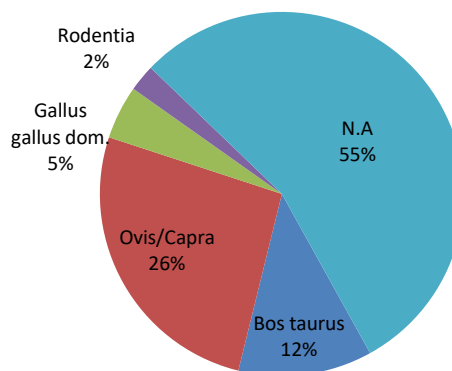


15.3.3 A total of 45% (N=19) of the assemblage could be identified according to taxon. Of these, sheep (*Ovis aries*) remains represent the majority, with 26% (N=11) specimens. Cattle remains (*Bos taurus*) remains make up the second largest part of the assemblage with 12% (N=5). Finally, domestic chicken (*Gallus gallus domesticus*) makes up 5% (N=2) of the assemblage while unidentified rodents (order Rodentia) are represented by one specimen (Graph 3). MNI for each taxon is 1 for all contexts. Age at death could be calculated for three sheep specimens at under 2 years old. Only 2 specimens, a mandible and a skull fragment belonging to the large mammal category show any signs of butchery.

Graph 2: Distribution according to size category



Graph 3: Distribution according to taxon



15.4 Discussion & Conclusions

15.4.1 The usual domestic species associated with Post-Medieval deposits make up most of the Outer Bailey assemblage. Unfortunately, it does not lend itself to interpretation due to its very small size and the fact that it was recovered from contexts associated with made ground. No further work is required.

16 Discussion and Conclusion

- 16.1 The excavation has elucidated our understanding of the formation and layout of the Carriageway during the post-medieval and modern periods, and was consistent with the results of previous excavations undertaken in the Outer Bailey (NCA9 and NCA18) focused on the structure.
- 16.2 The first archaeologically sensitive horizon, comprising remains relating to mid-19th century landscaping works, was encountered at a depth of approximately 0.4m b.g.l. Although this horizon contributes to our understanding of the Carriageway, it is less significant than the earlier deposits forming the 18th century structure. As such, it is possible to state that the first archaeologically significant horizon was present at a depth of approximately 0.44-0.8m b.g.l.
- 16.3 No evidence was encountered of the original form of the Carriageway or associated features during the investigation. Additionally, no archaeological features or deposits pre-dating the post-medieval period were identified, though residual finds of medieval pottery were recovered. It is likely that these remains, if present, would be located at a greater depth and therefore will not be impacted by the planned redevelopment works.
- 16.4 The most intensive phase of site activity observed is thought to relate to the 18th century reforming of the Carriageway with an earthen bank, as described by Deering in 1751. A number of layers were first used to increase the ground level before large, shallow pits were created to facilitate the insertion of railing. Interestingly, the sandstone wall identified in the NCA9 investigations did not extend into the current evaluation, despite being located only 0.4m to the west of Trench 01. No further structural remains associated with the ramp were encountered.
- 16.5 Later landscaping works during the 19th century were also visible in the form of a widespread levelling event and a shallow ditch. The reforming of the ramp during this stage of redevelopment was evidenced by cut [2250].
- 16.6 High levels of preservation of 19th century and earlier remains were encountered during the evaluation, with very little evidence of modern truncation. Further investigations and redevelopment works should take this and the relatively shallow nature of the archaeologically sensitive horizons into consideration.

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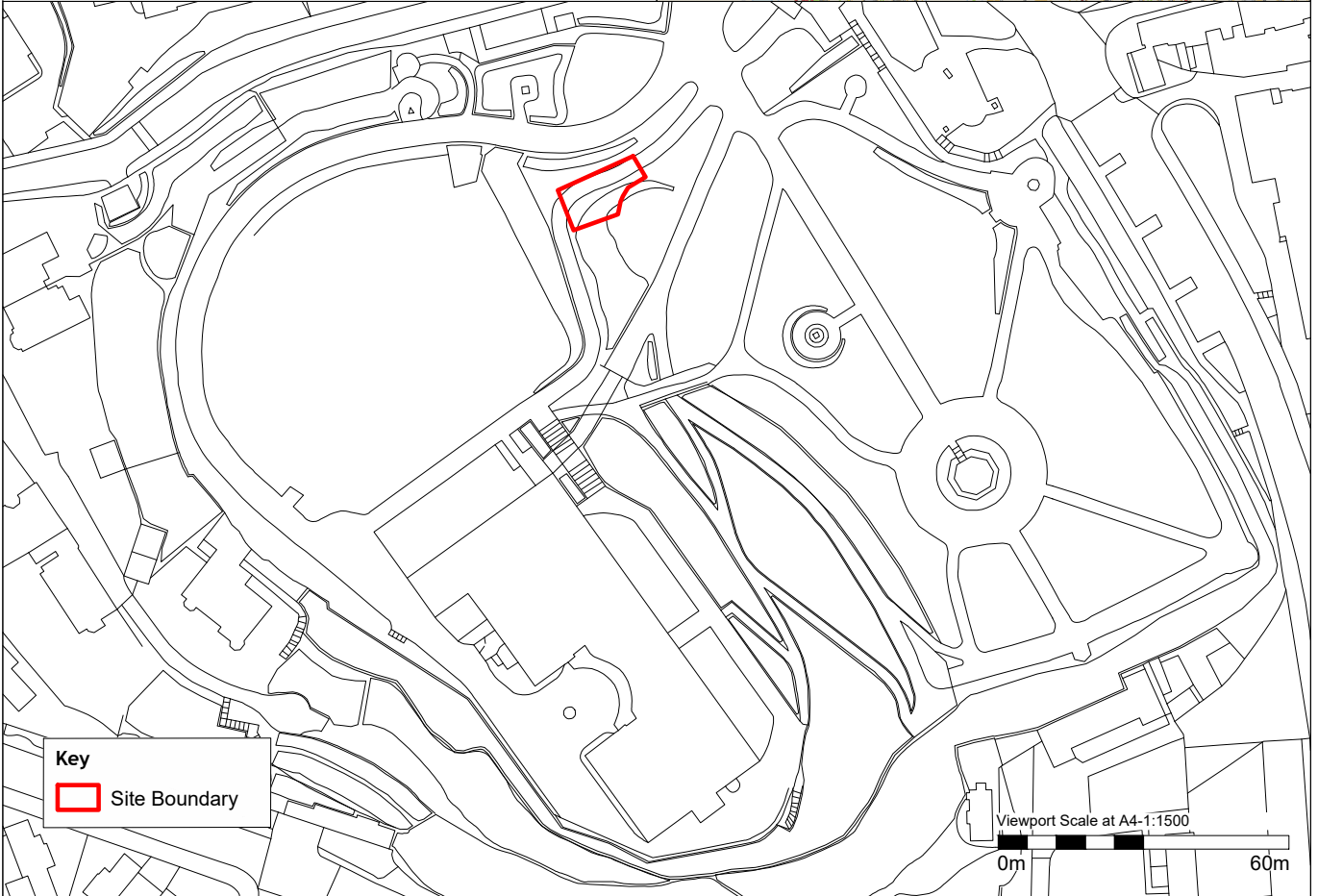
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Figures



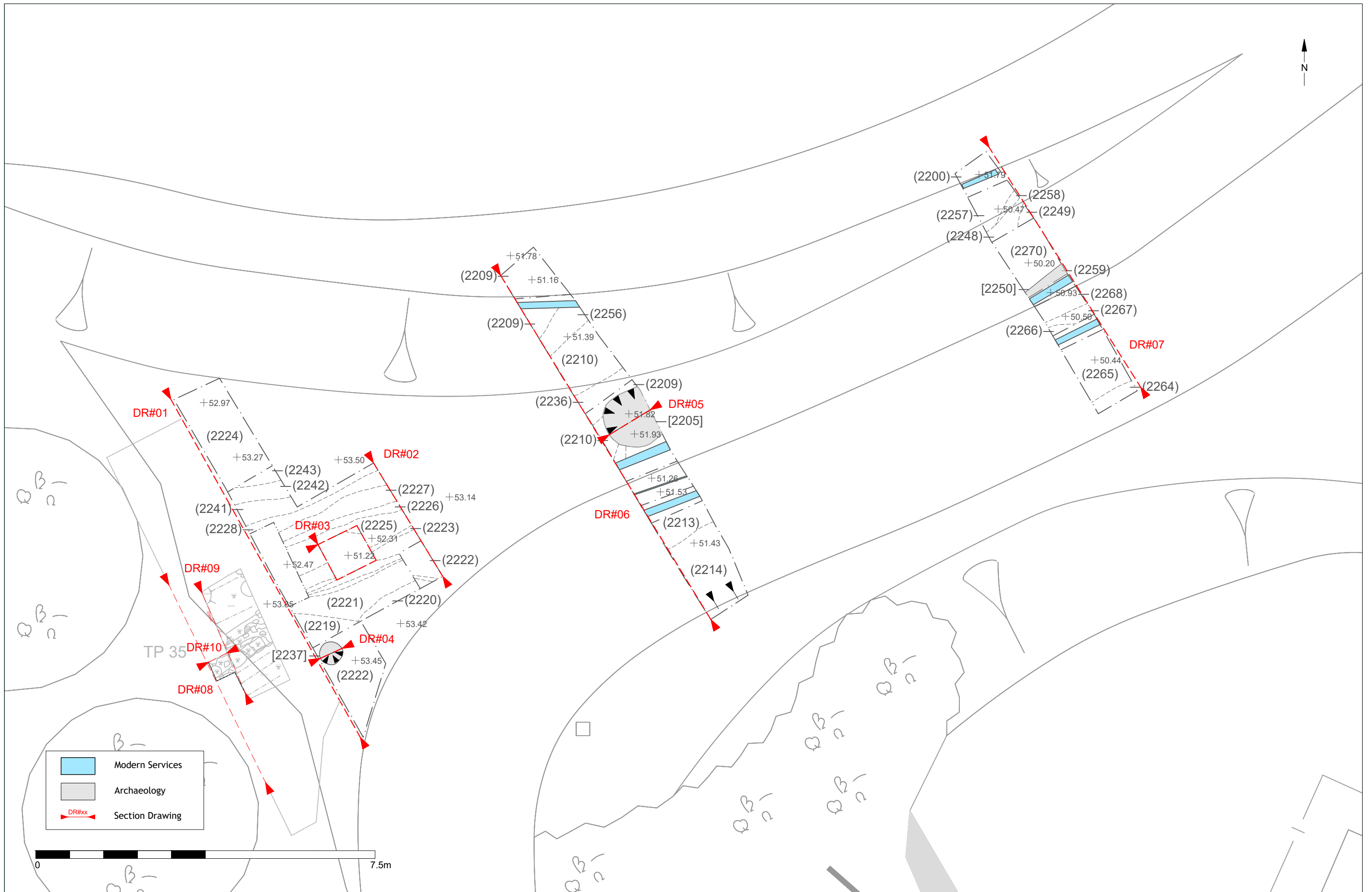
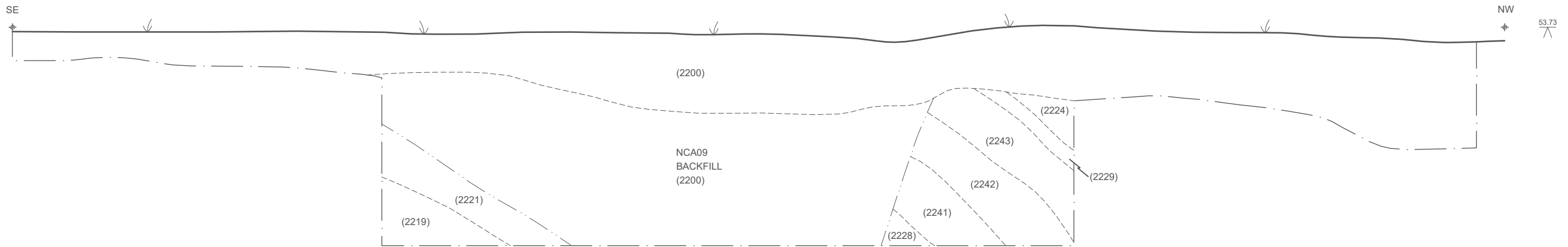


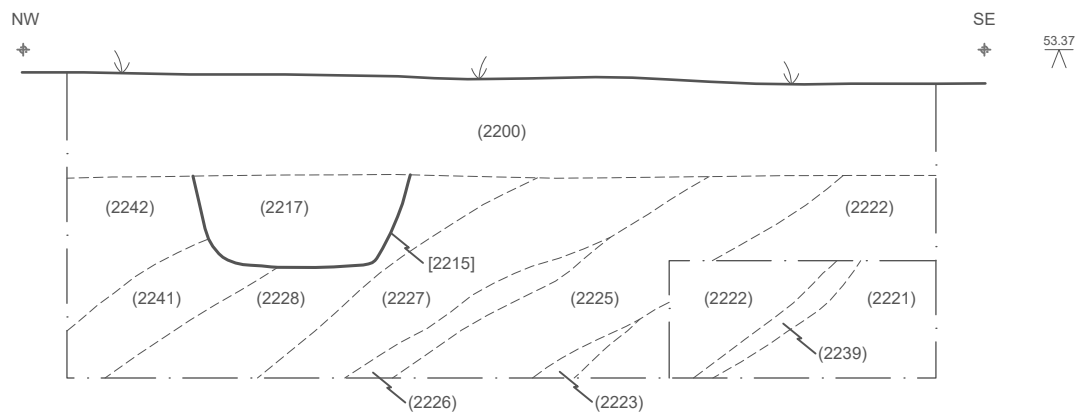

Figure 02 - Site Plan
 NCA22 - Nottingham Castle Redevelopment Project: Middle Bailey Carriageway

Scale at A3 - 1:75
 Drawn by MH

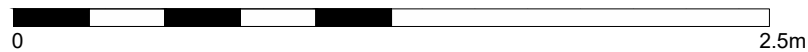
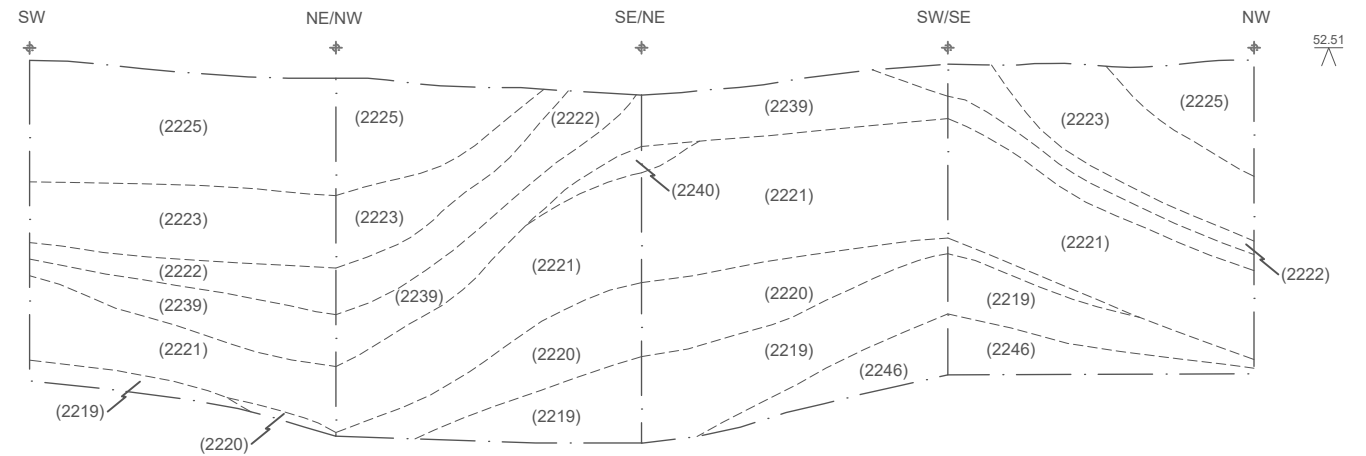
DR#01
North East Facing Section TR#01



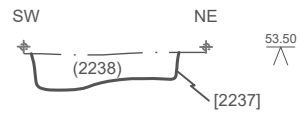
DR#02
South West Facing Section TR#01



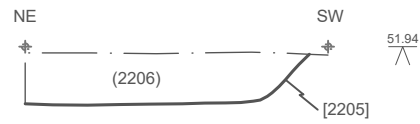
DR#03
South East Facing Section, 1m Step TR#01



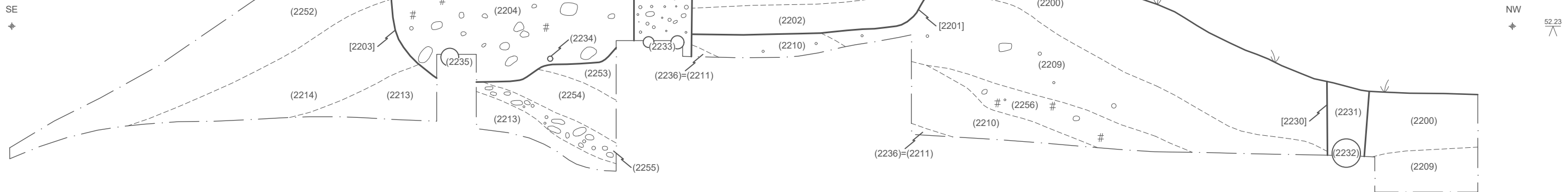
DR#04
South East Facing Section [2237]



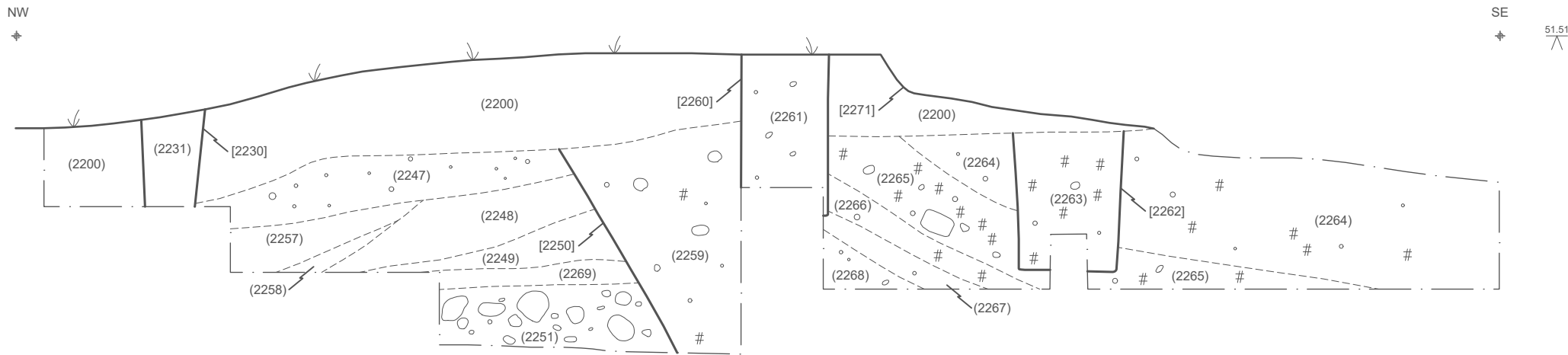
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North West Facing Section [2205]



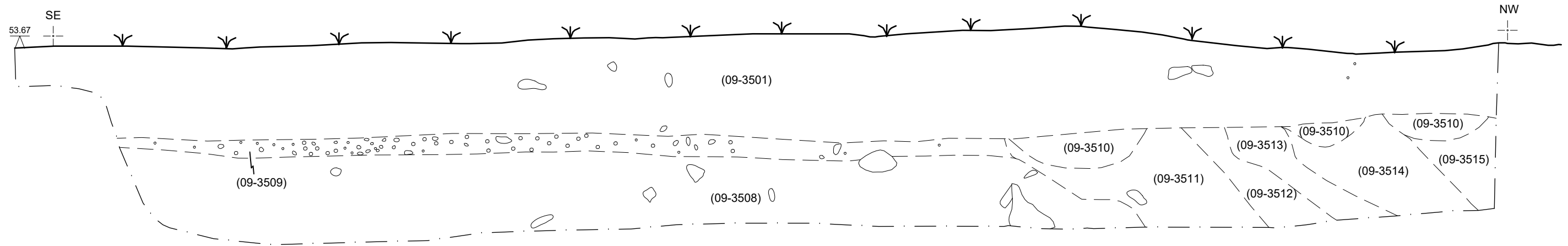
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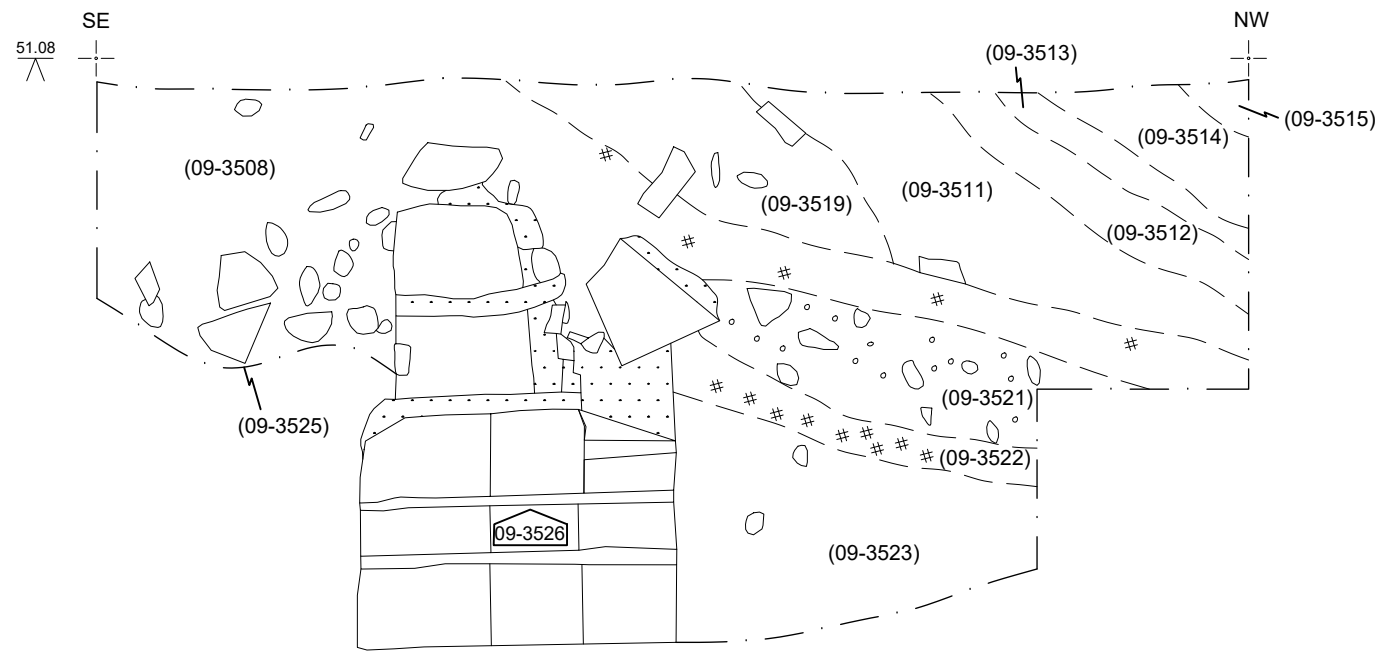
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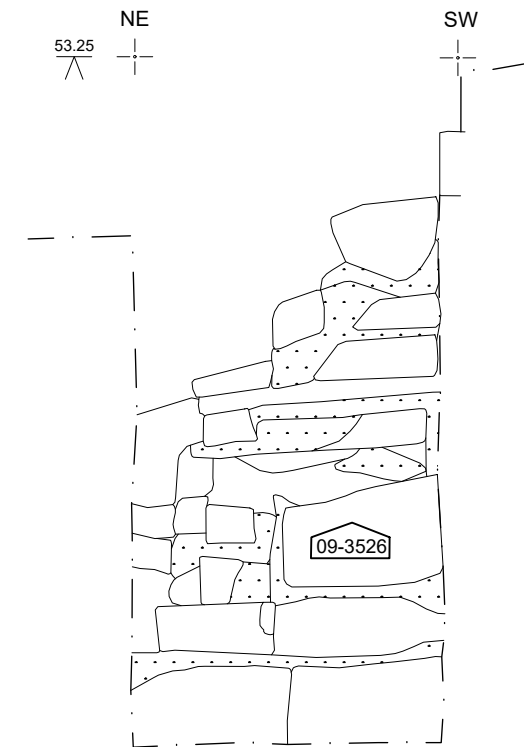
DR#08
North-East Facing Section of NCA09: Test Pit 35, Upper Section



DR#09
North-East Facing Section of NCA09: Test Pit 35, Lower Section



DR#10
South-East Facing Elevation of Wall 3526



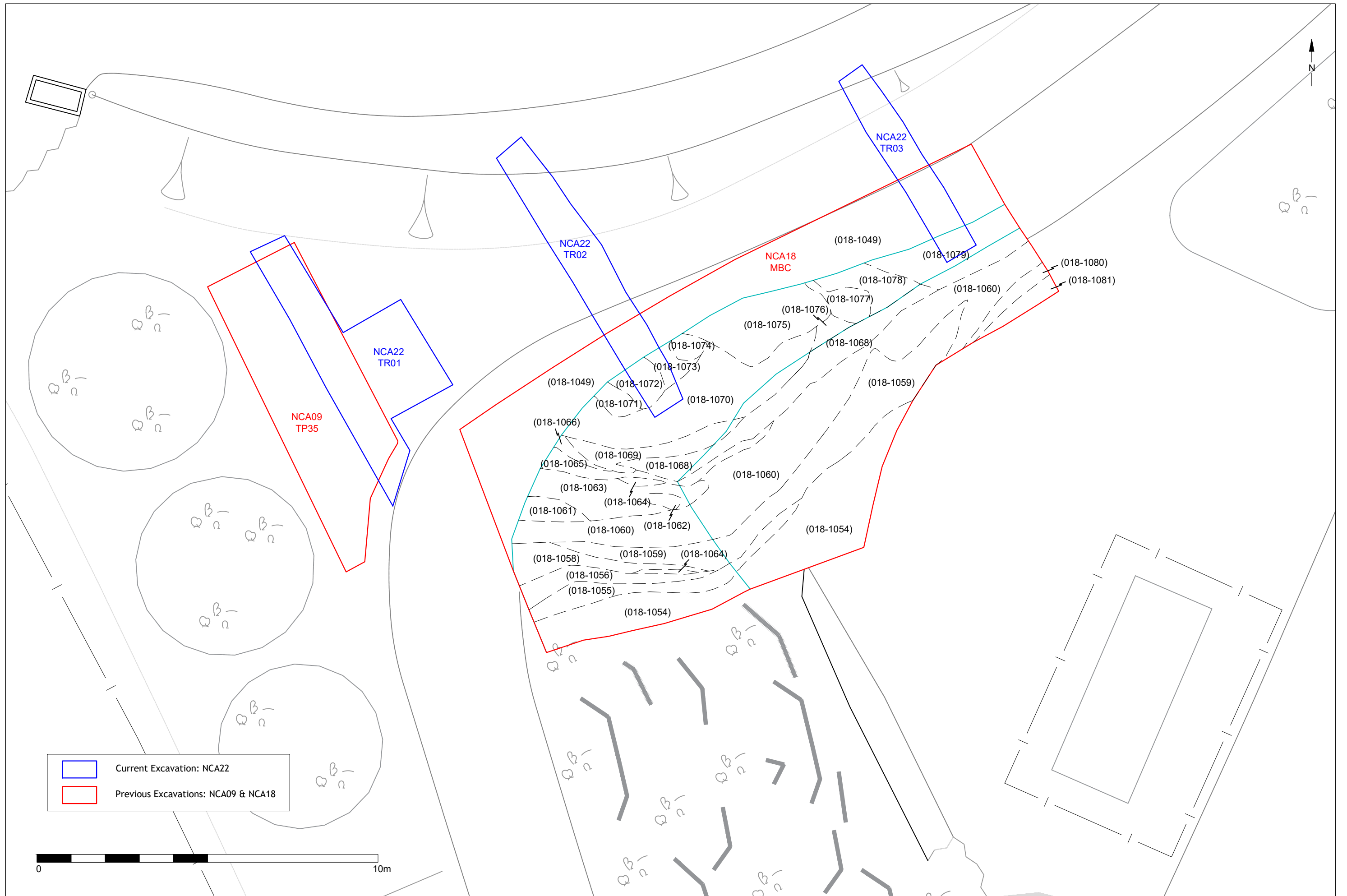
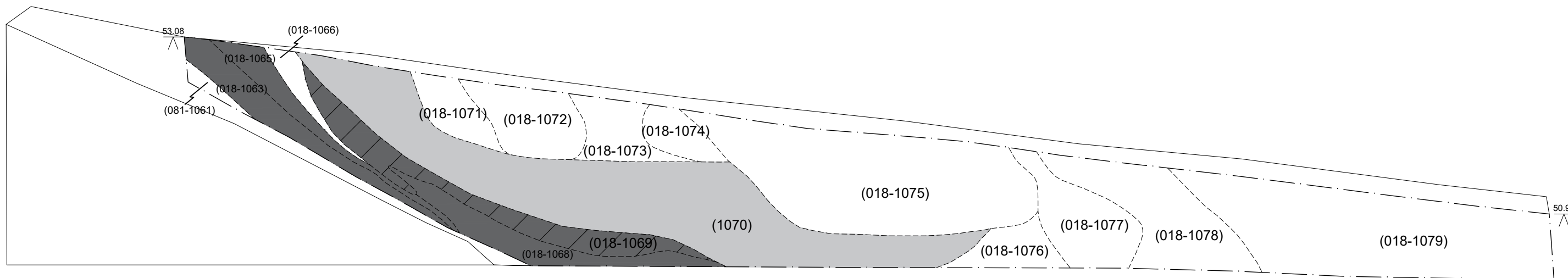


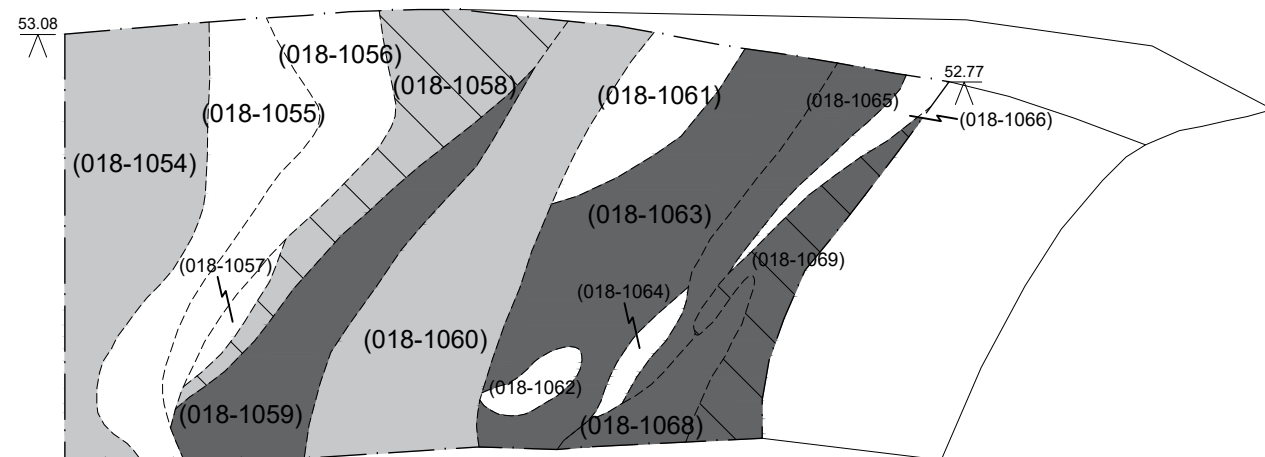

Figure 06 - NCA18 Middle Bailey Carriageway Plan
 NCA22 - Nottingham Castle Redevelopment Project: Middle Bailey Carriageway

Scale at A3 - 1:100
 Drawn by MH

DR#11
North West Facing View of Middle Bailey Carriage Way



DR#12
South-West Facing View of Middle Bailey Carriage Way



- 1740s - 1750s
- 18th C
- Residual Medieval (13th - 14th C)



Appendix 1: OASIS Data Collection Form

OASIS ID: trentpea1-349686

Project details

Project name	NOTTINGHAM CASTLE REDEVELOPMENT PROJECT: Carriageway Evaluation
Short description of the project	As part of the Heritage Lottery funded 'Nottingham Castle Redevelopment Project', Nottingham City Council will shortly be carrying out landscaping works and the laying of services on the area of the post-medieval carriageway in the Outer Bailey. The following report concerns a programme of archaeological mitigation prior to the redevelopment. The archaeological evaluation comprised the excavation of three trenches across the bank which conceals the carriageway structure and later landscaping deposits. It aimed to ascertain the depths of significant deposits in order to inform the redevelopment strategy and mitigate against substantial harm to archaeological remains present. The Carriageway is first depicted on Badder and Peat's map of 1754, where it spans across the Inner Ditch between the Outer and Middle Baileys. Although the original carriageway collapsed soon after its construction, it was later reformed with an earthen bank. This is documented in the 1751 History of Nottingham by Deering. No evidence was encountered of the original form of the Carriageway or associated features during the investigation. Additionally, no archaeological features or deposits pre-dating the post-medieval period were identified. The most intensive phase of site activity observed is thought to relate to the 18th century reforming of the Carriageway with an earthen bank, as described by Deering in 1751. A number of layers were first used to increase the ground level before large, shallow pits were created to facilitate the insertion of railing. No further structural remains associated with the ramp were encountered. Later landscaping works during the 19th century were also visible in the form of a widespread levelling event and a shallow ditch. Future works should take into consideration the high levels of preservation and relatively shallow nature of the archaeologically sensitive horizons.
Project dates	Start: 30-04-2019 End: 14-05-2019
Previous/future work	Yes / Yes
Any associated project reference codes	NCA22 - Sitecode
Any associated project reference codes	1006382 - SM No.
Type of project	Field evaluation
Site status	Scheduled Monument (SM)
Current Land use	Community Service 1 - Community Buildings
Monument type	PALACE Post Medieval
Monument type	CASTLE Medieval

Significant Finds	POTTERY Post Medieval
Methods & techniques	""Targeted Trenches""
Development type	Building refurbishment/repairs/restoration
Prompt	Scheduled Monument Consent

Project location

Country	England
Site location	NOTTINGHAMSHIRE NOTTINGHAM NOTTINGHAM Nottingham Castle
Postcode	NG1 6EL
Study area	3.2 Hectares
Site coordinates	SK 56985 39485 52.949402212238 -1.151777394487 52 56 57 N 001 09 06 W Point
Height OD / Depth	Min: 48m Max: 59m

Project creators

Name of Organisation	Trent and Peak Archaeology
Project brief originator	Trent and Peak Archaeology
Project design originator	Paul Renner
Project director/manager	Dr. Gareth Davies
Project supervisor	Paul Renner
Type of sponsor/funding body	HLF

Project archives

Physical Archive recipient	Nottingham City Museums and Gallery
Physical Contents	"Animal Bones","Ceramics","Glass","Metal"
Digital Archive recipient	Nottingham City Museums and Gallery
Digital Contents	"none"
Digital Media available	"Database","Images raster / digital photography","Images vector","Spreadsheets","Survey","Text"
Paper Archive recipient	Nottingham City Museums and Gallery
Paper Contents	"none"
Paper Media available	"Context sheet","Correspondence","Diary","Drawing","Plan","Report","Section","Unpublished Text"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Nottingham Castle Redevelopment Project: Archaeological Investigation in the Outer Bailey Carriageway
Author(s)/Editor(s)	Collins, C.
Other bibliographic details	TPA Report No. 097/2019
Date	2019
Issuer or publisher	Trent and Peak Archaeology
Place of issue or publication	Nottingham
Entered by	Camilla Collins (ccollins@yorkat.co.uk)
Entered on	27 June 2019

Appendix 2 – Archive Arrangements

1. Finds will remain the property of the client until deposition within the Nottingham Museums and Galleries Archives at Brewhouse Yard subject to their approval. These will remain at the TPA office at Unit 1 Holly Lane, Chilwell, NG9 4AB until deposition within the timescale agreed by the Nottingham City Archaeologist.
2. The paper and digital archive generated will remain the property of TPA until deposited within the Nottingham Museums and Galleries Archives at Brewhouse Yard.
3. The archive will be fully indexed and contain:
 - copies of correspondence relating to the fieldwork
 - site notebooks/diaries
 - original photographic records
 - site drawings (plans, sections and elevations)
 - original context records
 - matrix diagrams showing the stratigraphic sequence of all contexts
 - artefacts
 - original finds records
 - original sample records
 - a hard copy of the report and a PDF/A version included on disc
4. All finds have been stored as recommended in 'First Aid for Finds' and have been marked with the site and find codes, and the relevant accession numbers.
5. An OASIS data collection form has been started and included in this report as Appendix 1. This will be finalised once a site-specific accession number has been confirmed with the Nottingham Museums and Galleries Archive.
6. Following the approval of this report by the Nottingham City Archaeologist and Historic England, a single bound hard copy and a digital PDF/A version included on disc, will be provided for the Historic Environment Record.

Appendix 3 – Context List

Context	Area	Type	Description	Dimensions (LxWxD) (m)
2200	Tr. 01-03	Layer	Topsoil: Soft black silty sand	15x9x0.44
2201	Tr. 02	Cut	Linear ditch, gradual slope, flat base	1.16x1.5x0.18
2202	Tr. 02	Fill	Fill of [2201]: soft greenish brown clay	1.16x1.5x0.18
2203	Tr. 02	Cut	Service Cut	1.16x1.49x0.94
2204	Tr. 02	Fill	Fill of [2203]: Firm greyish brown sandy silt	1.16x1.49x0.94
2205	Tr. 02	Cut	Pit, circular, steep sides, flat base	1.32x1.32x0.18
2206	Tr. 02	Fill	Fill of [2205]: Soft dark greyish brown silty sand	1.32x1.32x0.18
2207	Tr. 02	Cut	Service Cut for H.V. Cables	1.16x0.32x0.74
2208	Tr. 02	Fill	Fill of [2207]: Soft very dark grey silty sand	1.16x0.32x0.74
2209	Tr. 02	Layer	Friable brownish yellow sand	4.02x1.16x0.5
2210	Tr. 02	Layer	Loose pale brown sand	2.48x1.16x0.44
2211	Tr. 02	Layer	Soft dark brown sandy silt	1.56x1.16x0.5
2212	Tr. 02	Layer	Friable mid-dark brown sandy silt	0.16x1.1x0.1
2213	Tr. 02	Layer	Friable greyish brown sand	1.98x1.16x0.34
2214	Tr. 02	Layer	Friable yellow brown sand	1.74x1.16x0.48
2215	Tr. 01	Fill	Fill of [2215]: Soft dark grey sandy silt	1.18x1.18x0.37
2216	Tr. 01	Fill	Fill of [2215]: Soft orange clay	0.94x0.94x0.12
2217	Tr. 01	Cut	Pit, circular, vertical sides, flat base	1.18x1.18x0.37
2218	Tr. 01	Layer	Soft mixed black and brown silt and sand	3.16x0.7x0.87
2219	Tr. 01	Layer	Friable grey silty sand	1.96x2.26x0.3
2220	Tr. 01	Layer	Loose black silt and tile fragments	2x1.56x0.24
2221	Tr. 01	Layer	Friable brown sand	1.9x3.02x0.44
2222	Tr. 01	Layer	Friable yellow sand	1.2x2.7x0.38
2223	Tr. 01	Layer	Friable brown sand	0.86x2.7x0.24
2224	Tr. 01	Layer	Friable mixed yellow and brown sand	2.22x1.06x0.28
2225	Tr. 01	Layer	Friable yellow sand	0.64x2.64x0.38
2226	Tr. 01	Layer	Friable mid brown sand	0.84x2.5x0.08
2227	Tr. 01	Layer	Friable greyish yellow sand	0.42x2.5x0.28
2228	Tr. 01	Layer	Friable brown sand	1.38x3.14x0.32
2229	Tr. 01	Layer	Friable mid-dark brown sand	0.6x1.14x0.14
2230	Tr. 02	Cut	Service cut for ceramic drain	1.3x0.26x0.44
2231	Tr. 02	Fill	Fill of [2230]: Soft black silty sand	1.3x0.26x0.44
2232	Tr. 02	Service	Ceramic pipe within [2230]	1.3x0.14x0.14
2233	Tr. 02	Service	H. V. Cables within [2207]	1.2x0.34x0.78

2234	Tr. 02	Service	Lead pipe within [2203]	1.2x0.06x0.06
2235	Tr. 02	Service	Cast iron pipe within [2203]	1.2x0.1x0.1
2236	Tr. 02	Layer	Same as 2211	N/A
2237	Tr. 02	Cut	Pit, circular, vertical sides, flat base	0.5x0.48x0.24
2238	Tr. 01	Fill	Fill of [2237]: Friable very dark grey silty sand	0.5x0.48x0.24
2239	Tr. 01	Layer	Friable grey sandy silt	1.14x2.16x0.18
2240	Tr. 01	Layer	Friable yellow sand	0.08x2.16x0.1
2241	Tr. 01	Layer	Friable yellow sand	0.51x3.24x0.4
2242	Tr. 01	Layer	Friable brown sand	0.92x3.24x0.38
2243	Tr. 01	Layer	Friable yellow sand	0.82x0.98x0.34
2244	Tr. 01	Layer	Soft black silt and charcoal	0.24x1.16x0.1
2245	Tr. 01	Layer	Friable yellow sand	0.5x1.16x0.1
2246	Tr. 01	Layer	Friable brownish grey silty sand	Unknown
2247	Tr. 03	Layer	Friable dark brown silty sand	1.64x0.9x0.24
2248	Tr. 03	Layer	Friable mid brown silty sand	1.18x0.92x0.48
2249	Tr. 03	Layer	Friable yellowish brown sand	1.13x0.32x0.2
2250	Tr. 03	Cut	Cut possibly relating to rebuild of ramp and Carriageway in 19 th century	0.92x4.1x0.1
2251	Tr. 03	Layer	Loose yellowish brown sand and stone fragments	1.03x0.95x0.3
2252	Tr. 02	Layer	Soft red clay	2.3x1.1x0.46
2253	Tr. 02	Layer	Soft light brown silty sand	0.46x1.1x0.32
2254	Tr. 02	Layer	Soft dark brown sandy silt	0.8x1.1x0.26
2255	Tr. 02	Layer	Loose light brown sand and mortar fragments	0.86x1.1x0.15
2256	Tr. 02	Layer	Soft dark brown sandy silt	1.56x1.1x0.22
2257	Tr. 03	Layer	Friable orange sand	0.8x0.9x0.2
2258	Tr. 03	Layer	Soft black silt	0.39x0.66x0.08
2259	Tr. 03	Fill	Fill of [2250]: Friable light greyish brown sand	Unknown
2260	Tr. 03	Cut	Service cut for H. V. Cables	0.92x0.38x0.7
2261	Tr. 03	Fill	Fill of [2260]: Soft very dark grey silty sand	0.92x0.38x0.7
2262	Tr. 03	Cut	Cut for cast iron drain pipe	0.96x0.48x0.62
2263	Tr. 03	Fill	Fill of [2262]: Soft grey brown silty sand	0.96x0.48x0.62
2264	Tr. 03	Fill	Fill of [2250]: Friable grey-yellow brown sand	2.6x0.96x0.74
2265	Tr. 03	Fill	Fill of [2250]: Soft dark grey brown silty sand	2.38x0.96x0.29
2266	Tr. 03	Fill	Fill of [2250]: Soft very dark grey silt	0.9x0.93x0.16
2267	Tr. 03	Fill	Fill of [2250]: Friable yellow brown sand	0.72x0.28x0.12
2268	Tr. 03	Fill	Fill of [2250]: Friable grey brown silty sand	Unknown
2269	Tr. 03	Layer	Friable grey brown silty sand	0.92x0.96x0.11
2270	Tr. 03	Layer	Soft light grey brown silty sand	1.26x0.92x0.1
2271	Tr.02-03	Cut	Cut for previous tarmac footpath, since removed.	>5x1.96x0.26