

**ARCHAEOLOGICAL MONITORING AND RECORDING  
ON ROTHBURY BRIDGE, ROTHBURY,  
DISTRICT OF ALNWICK, NORTHUMBERLAND**

**Archaeological Monitoring and Recording on Rothbury Bridge, Rothbury,  
District of Alnwick, Northumberland**

**Central National Grid Reference: NU 0588 0159**

**Site Code: RBN 07**

**Commissioning Client:  
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Community & Environmental Services Directorate  
Northumberland County Council  
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August 2007**

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## CONTENTS

	<i>page</i>
1. NON-TECHNICAL SUMMARY	1
2. INTRODUCTION	2
3. ARCHAEOLOGICAL METHODOLOGY	8
4. ARCHAEOLOGICAL RESULTS	11
5. CONCLUSIONS	18
6. REFERENCES	19
7. ACKNOWLEDGEMENTS AND CREDITS	20

## APPENDICES

Appendix A Context Index

Appendix B Trial Hole Logs

Appendix C Plates

Appendix D Architectural Glossary

## List of Figures and Plates

Figure 1	Site location	3
Figure 2	Trial hole locations	4
Figure 3	Plan and elevation of bridge, showing trial hole locations	10
Plate 1	Rothbury Bridge, west side, from the south	<i>Appendix C</i>
Plate 2	Arch 3 detail, from the west	<i>Appendix C</i>
Plate 3	Phases 2 and 5 deposits in section, from the east	<i>Appendix C</i>
Plate 4	TH 16, wall [1606], from the north	<i>Appendix C</i>
Plate 5	TH 15, masonry [1506], from the south	<i>Appendix C</i>
Plate 6	TH 30, wall [3005], from the north	<i>Appendix C</i>
Plate 7	TH 6, masonry [605], from the west	<i>Appendix C</i>
Plate 8	TH 14, masonry [1404], from the south	<i>Appendix C</i>
Plate 9	TH 17, masonry [1704], from the south	<i>Appendix C</i>
Plate 10.	TH 28, wall [2805], from the north	<i>Appendix C</i>

## **1. NON-TECHNICAL SUMMARY**

- 1.1 An archaeological monitoring and recording exercise was undertaken by Pre-Construct Archaeology Limited in association with a strength feasibility site investigation on Rothbury Bridge over the River Coquet in Rothbury, Northumberland. The central National Grid Reference for the bridge is NU 0588 0159.
- 1.2 The site investigation, comprising hand excavation of a series of shallow trial trenches and machine excavation of a series of trial holes, was undertaken by the Highways Division of the Community and Environmental Services Directorate of Northumberland County Council and took place in February 2007.
- 1.3 The site investigation was undertaken along both carriageways of the B6342 on the four-span stone bridge. The bridge, which gives access to the market town from the south, is of medieval origin, although the southernmost of the arches is known to have been re-built in the post-medieval period and the structure was widened along its entire eastern side in the mid 18th century. The trial trenches were required to locate existing services, while the trial holes were required to confirm the form of construction and other structural details, with a particular concern being the position and form of the original east wall of the medieval bridge.
- 1.4 Because of its historic fabric, Rothbury Bridge has Scheduled Ancient Monument status and is thus afforded statutory protection. Therefore, all intrusive groundworks during the site investigation required scheduled monument consent from the Department of Culture, Media and Sport, advised by English Heritage. As the investigation had the potential to be detrimental to the monument, English Heritage recommended that a condition of the granting of consent was that the work must take place with an appropriate level of archaeological supervision and recording.
- 1.5 In all, thirty trial holes were excavated, the majority exposing elements of the historic fabric of the bridge. Beneath the modern road layers, sand infilling dumps were exposed in most of the trial holes, these overlying structural elements of the bridge, including mortared masonry of the arch barrels and the original eastern spandrel wall. In addition, six shallow trial trenches were excavated to locate services, each entirely within modern road construction layers.

## **2. INTRODUCTION**

### **2.1 General Background**

- 2.1.1 This report details the results and working methods of an archaeological monitoring and recording exercise (hereafter 'watching brief') carried out during groundworks associated with a strength feasibility site investigation on Rothbury Bridge, Rothbury, Northumberland. The central National Grid Reference for the site is NU 0588 0159 (Figure 1).
- 2.1.2 The watching brief comprised the monitoring and recording of machine-excavation of six shallow trial trenches designed to locate services within the body of the structure and thirty trial holes designed to investigate various structural issues regarding the bridge (Figure 2).
- 2.1.3 The archaeological watching brief was commissioned by the Highways Division of the Community and Environmental Services Directorate of Northumberland County Council and the fieldwork was undertaken 17th-21st February 2007 by Pre-Construct Archaeology Limited (PCA).
- 2.1.4 The bridge has Scheduled Ancient Monument (SAM) status and scheduled monument consent (SMC) was granted for the site investigation by the Department of Culture, Media and Sport (DCMS). The archaeological element of the project was a condition of the granting of SMC.
- 2.1.5 A Written Scheme of Investigation (WSI) for the watching brief was prepared by PCA and approved by English Heritage, in advance of the work.<sup>1</sup> The broad aims of the watching brief were to prevent damage to the ancient structural fabric of the bridge and to record all archaeological exposures during the groundworks.
- 2.1.6 At the time of writing, the project archive is housed at the Northern Office of PCA, at Unit N19a, Tursdale Business Park, Durham. The completed project archive, comprising written and photographic records will be ultimately deposited at the Museum of Antiquities, Newcastle University, under the site code RBN 07. The Online Access to the Index of Archaeological Investigations (OASIS) reference number is: preconst1-29150.

### **2.2 Site Location and Description**

- 2.2.1 The historic core of the small market town of Rothbury occupies a strategic location on the valley floor north of the River Coquet in central Northumberland. Rothbury Bridge spans the river, giving access to the town from the south (Plate 1). The central National Grid Reference for the bridge is NU 0588 0159.
- 2.2.2 The bridge is in squared local stone, spanning the river with four arches and three piers, although only the two southernmost piers now lie within the stream of the river. The uppermost portion of the superstructure comprises a modern concrete and steel deck carrying a two-lane tarmac road surface. Overall the bridge structure is c. 60m long, with part of the south abutment now obscured in the riverbank. The southernmost arch is reportedly a post-medieval rebuild of the original medieval structure and the entire bridge is known to have been widened along its eastern side in the mid 18th century.

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<sup>1</sup>PCA 2007.

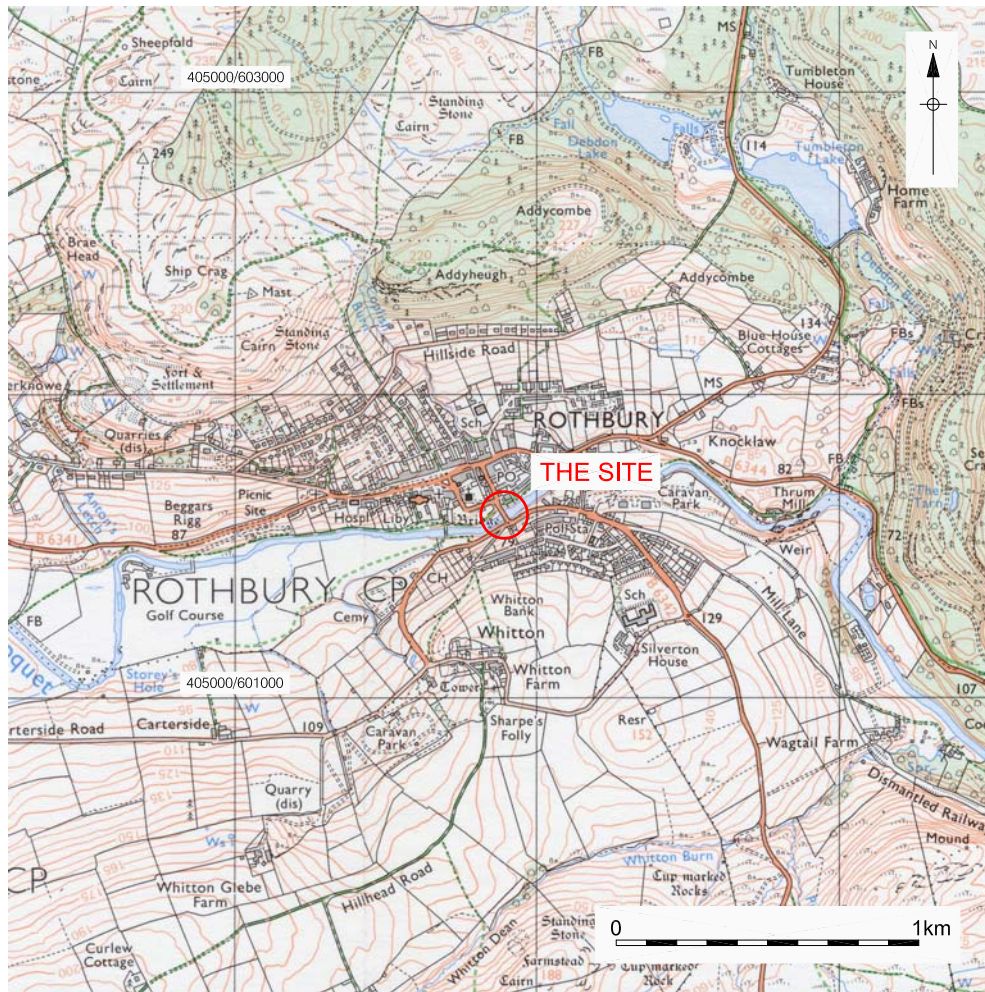
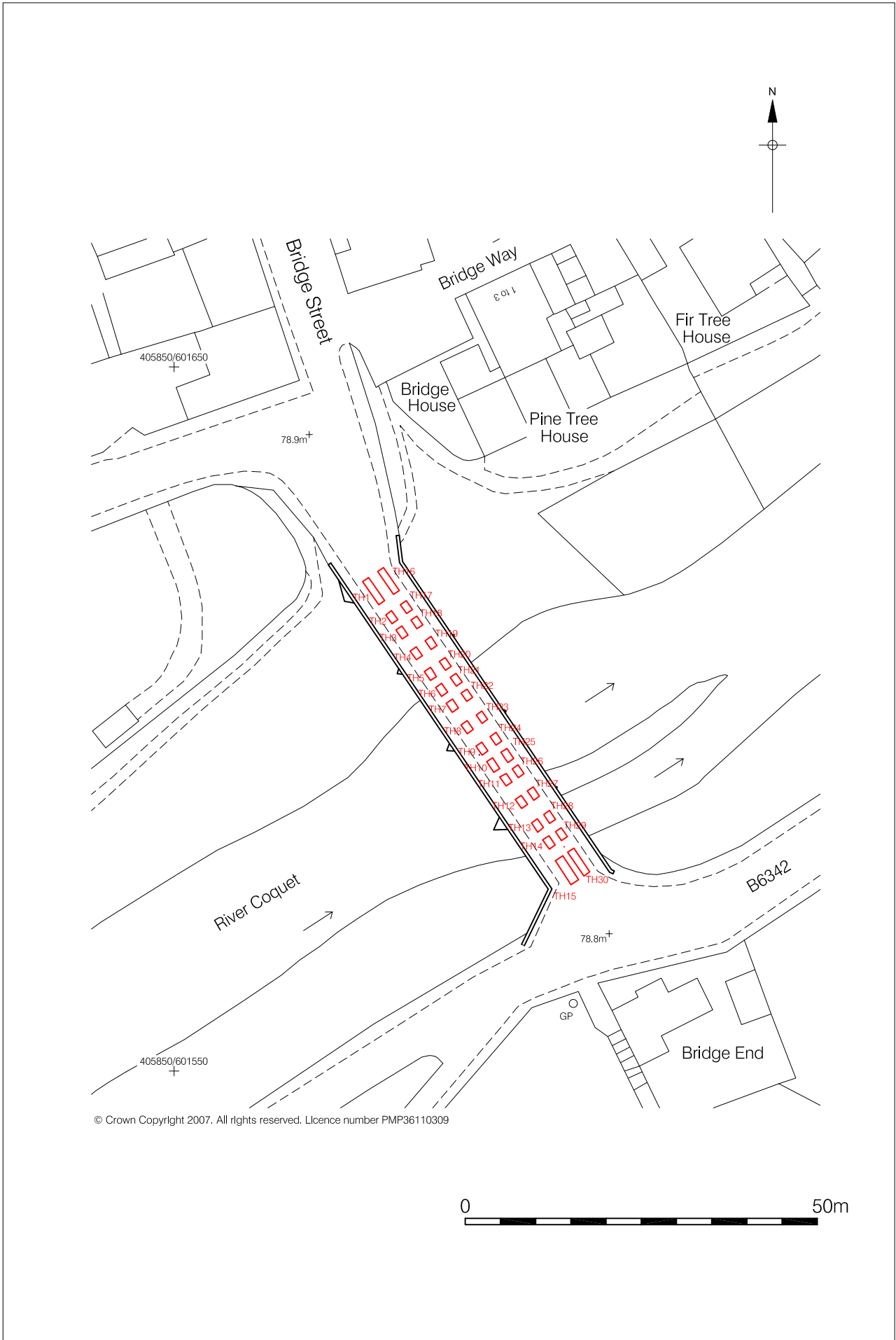


Figure 1. Site location  
Scale 1:25,000



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Figure 2. Trial hole locations  
Scale 1:750

## 2.3 Planning Background

- 2.3.1 Rothbury Bridge (Northumberland Sites and Monuments Record (SMR) No. 2923) has SAM status (County Monument No. 124) and thus has statutory protection under the 'Ancient Monuments and Archaeological Areas Act 1979'. Accordingly, all intrusive exploratory ground works on the structure require SMC from the Department of Culture, Media and Sport (DCMS) prior to their undertaking.
- 2.3.2 The need for early consultation in the planning process in order to determine the impact of development schemes upon the archaeological resource is identified in the document 'Planning Policy Guidance Note 16: Archaeology and Planning' (PPG 16).<sup>2</sup> The Northumberland County Council Conservation Team (NCCCT) provides archaeological advice in relation to planning matters to the County Council and the various District Planning Authorities, in this case Alnwick District Council.
- 2.3.3 Local guidance is set out in the 'Alnwick District Local Plan',<sup>3</sup> adopted in 1997. Section 5, 'The Built Environment', of the Local Plan, contains Policies DC33 and DC34 relating to internationally and nationally, and regionally and locally important archaeological sites. These policies are reproduced below:

### **POLICY DC33 - International/national sites**

*A presumption will be exercised in favour of the preservation of Scheduled Ancient Monuments, nationally important archaeological sites, and their settings. Development which would be detrimental to these sites or their settings will not be permitted. In exceptional circumstances where development of a potentially detrimental nature is to be permitted, the developer will be required to make provision for the excavation and recording of the remains and publications of findings.*

### **POLICY DC34 - Regional/local sites**

*Planning permission will not be granted for development detrimental to sites of regional or local archaeological importance, unless there is an overriding need for the development and no alternative location can be found. Where the impact of the development is unclear, the developer will be required to provide further information in the form of an archaeological assessment or where appropriate evaluation before applications are determined. Where development is to be permitted, the developer will be required to make provision for the excavation and recording of the remains and publication of findings.*

- 2.3.4 The following provisos (relevant to archaeology) of SMC for the site investigation to take place were that:
- a) no works shall take place until implementation of a programme of archaeological work has been secured in accordance with a Written Scheme of Investigation (WSI) which has been submitted to and approved by the Secretary of State advised by English Heritage, and

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<sup>2</sup> Department of the Environment 1990.

<sup>3</sup> Alnwick District Council 1997.



b) a report on the archaeological recording shall be sent to the County SMR and to English Heritage within three months of the completion of the work (or such other period as may be mutually agreed).

2.3.5 A WSI was prepared by PCA prior to the work commencing and this set out the aims and methodologies for the archaeological investigations.

## **2.4 Archaeological and Historical Background**

2.4.1 Rothbury is a small market town, c. 10 miles south-west of Alnwick. Today, it straddles the River Coquet but, before the introduction of the railway in 1870, the town occupied only the north bank of the river. The town is situated at the neck of a narrow valley, probably selected because of its sheltered situation. A bridge across the Coquet was first recorded in 1616, but it is almost certain that this was not the first crossing. A ford point lies a little upstream from the bridge where a footbridge now crosses the river.

2.4.2 There are numerous records of prehistoric settlement and other activity in the vicinity of the town, although these are of little relevance to the current project. Rothbury lies far to the north of Hadrian's Wall, the northern frontier of the Roman Empire for much of the first four centuries of the first millennium AD, and there is very little evidence for Roman period activity in the area.

2.4.3 There are equally few remains from Anglo-Saxon Rothbury, though as the name of the town is of Old English origin there must have been a settlement in the area at this time. One of the few objects of the period that has survived is of great importance. The Rothbury Cross was found in 1849 and dates to the early ninth century and is a clear sign that an important Anglo-Saxon church once stood in the town. Although none of the current Church of All Saints dates to the Anglo-Saxon period, it is thought that it stands on the site of a double Anglo-Saxon church.

2.4.4 In the years following the Norman Conquest, the town began to develop in size, though there is little evidence for its precise area at this time. There were probably two main rows of buildings, either side of the market place. A Norman castle was built here, probably on land south-west of the church, in an area which was turned into part of the graveyard in the mid-19th century. The castle had remained inhabited until about 1850 and was demolished in 1869. It sat on the highest part of a rise in the ground, around the south side of which the River Coquet flows in a shallow bend.

2.4.5 In common with many of the smaller towns of the border marches, Rothbury suffered from the disruption of the Scottish Wars and border raids that continued into the 16th century. The town developed as a small market town in the medieval period and has continued to serve that function to the present day.

2.4.6 It was not until the middle and later part of the 19th century that the town experienced any expansion. At this time William Armstrong's establishment of the nearby Cragside estate, the opening of a rail link in 1870 and subsequent creation of a large livestock market near to the railway station boosted the economy.

- 2.4.7 Rothbury Bridge was first mentioned in documentary records of the early 17th century, although the earliest elements of its structure are known to be of medieval date.<sup>4</sup> It has four segmental, almost semi-circular arches, the southernmost of which is reported to have been rebuilt in the 16th or 17th century. A feature of the three northern arches are the chamfered soffit ribs (Plates 1 and 2), while the rebuilt southernmost arch has plain soffits. The piers have pointed cutwaters, those on the west side with canted tops (Plates 1 and 2).
- 2.4.8 A major programme of refurbishment of the bridge was undertaken in 1759 when it was widened with an extension along the full eastern side. The date 1759 and the initials W.O. (representing William Oliphant, a Rothbury mason) are said to be carved on the eastern elevation of the bridge.<sup>5</sup> In the 20th century, the upper deck of the bridge was replaced in steel and concrete, with this extending over the cutwaters (Plates 1 and 2). The bridge is a Grade I Listed Building and, as mentioned above, has SAM status.

## **2.5 Aims and Objectives**

- 2.5.1 The site investigation had the potential to disturb important archaeological remains, namely those representing the earliest structural elements of Rothbury Bridge. It was considered that in this case archaeological monitoring and recording ('watching brief') was the appropriate archaeological response to the works. The watching brief was maintained throughout all excavations with potential to affect the earliest structural elements of the bridge.
- 2.5.2 The main objective of the archaeological element of the project was to ensure that important archaeological remains were not damaged by the site investigation and that adequate archaeological recording was undertaken of archaeological exposures, particularly historic structural fabric. In this respect, the project had the potential to make a significant contribution to archaeological knowledge of the site.

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<sup>4</sup> Pevsner *et al.* 1992.

<sup>5</sup> Department of the Environment no date.

### 3. ARCHAEOLOGICAL METHODOLOGY

#### 3.1 Fieldwork

3.1.1 All archaeological investigations were undertaken in accordance with the relevant standard and guidance document of the Institute of Field Archaeologists (IFA).<sup>6</sup>

3.1.2 The strength feasibility site investigation comprised:

- hand excavation of six narrow service trenches on the deck of the bridge;
- machine excavation of 30 trial holes within the vehicular carriageway of the bridge;
- mechanical coring from within trial holes located upon the bridge abutments, the three piers and each of the four arch crowns.

3.1.3 Locations of the service trenches, trial holes and cores were specified within the SMC application, shown on Northumberland County Council (NCC) Highways Division drawing number HB062451/B6342/22/01.

3.1.4 The hand-excavated service trenches were designed to locate actual positions of known or suspected utilities within the modern bridge deck. Because these excavations had no potential to impact on the historic structural fabric of the bridge, no archaeological monitoring was carried out during this element of the scheme.

3.1.5 All machine-excavated trial holes measured up to 1.90m x 1.0m at ground level, except THs 1, 16 and 30, which measured up to 4.0m x 1.0m at ground level, and TH 15, which measured up to 4.0m x 2.80m at ground level. Full archaeological monitoring was carried out during this element of the scheme, as a condition of SMC for the site investigation.

3.1.6 THs 2, 6, 10, 14, 17, 21, 25 and 29 (*i.e.* those located on the arch crowns) were between c. 0.45m and c. 1.0m deep. Their purpose was to determine the level of the arch extrados at the crown to establish the arch barrel thickness and, if possible, to establish the position and nature of the original spandrel wall, with cores used to establish stone compressive strength and stone and mortar types also determined, as part of the site investigation.

3.1.7 THs 1, 15, 16 and 30 (*i.e.* those located on the bridge abutments) were up to c. 1.50m deep. Their purpose was to determine the profile of the backing material and, if possible, to establish the position and nature of the original spandrel wall. Stone and mortar types were also to be determined in the process, along with the compressive strength of the stone, as part of the site investigation.

3.1.8 THs 3 and 13 (*i.e.* those located on the west side of the bridge on the northernmost and southernmost arch barrels) were c. 0.70m deep and their purpose was to determine the profile of the backing material, and establish the presence/absence of the original spandrel wall and, where present, its form. The corresponding trial holes (THs 18 and 28) on the east side of the bridge were up to c. 1.30m deep and were to determine the backing profile, and also to establish the presence/absence and, where present, form of the original spandrel wall.

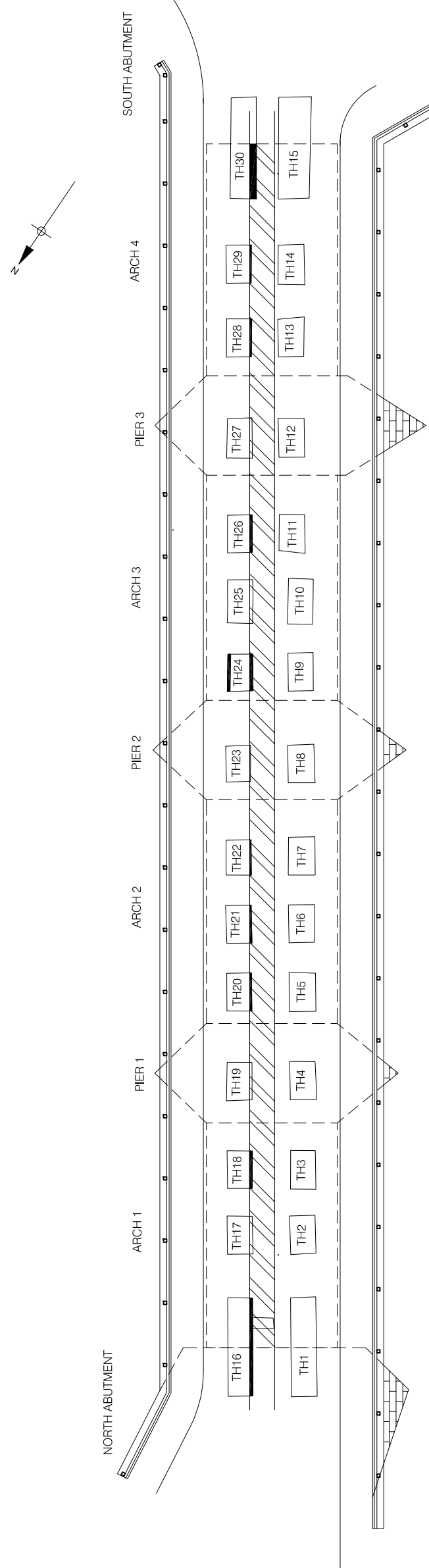
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<sup>6</sup> IFA 2001. PCA is an IFA-Registered Organisation (RAO 23).

- 3.1.9 THs 5, 7, 9, 11, 20, 22, 24 and 26 (*i.e.* all those except THs 3, 13, 18 and 28 located on the remaining arch barrels) were between c. 0.65m and c. 1.45m deep. These were to determine the backing profile and to establish the position and form of the original spandrel wall.
- 3.1.10 THs 4, 8, 12, 19, 23 and 27 (*i.e.* those located on the bridge piers) were between c. 0.60m and c. 1.10m deep. These were to determine the depth and form of the pier infill.
- 3.1.11 All groundworks were the responsibility of NCC Highways Division. All mechanical excavation was undertaken under archaeological supervision. All excavations described were monitored by the attendant archaeologist. If, in the opinion of the attendant archaeologist, significant structural fabric was encountered, then the hole was cleaned, logged and photographed. Any artefacts recovered were retained for analysis and their location recorded within the site record.
- 3.1.12 All archaeological deposits were recorded using *pro forma* 'context recording sheets'. Trench sheets were also compiled for each trial hole and these include measured sketch sections.
- 3.1.13 A photographic record of the investigations was compiled using SLR cameras. This comprised black and white prints and colour transparencies (on 35mm film), illustrating in both detail and general context the principal features and finds discovered. The photographic record also included 'working shots' to illustrate more generally the nature of the works. All photographs (excepting 'working shots') included a graduated metric scale. The photographic record forms part of the project archive.

## **3.2 Post-excavation**

- 3.2.1 The stratigraphic data for the project is represented by the written and photographic records. A total of 164 archaeological contexts were defined in the archaeological investigations. Post-excavation work involved checking and collating site records and phasing the stratigraphic information (see Appendix A). The site data has been synthesised to create a series of illustrative logs of the trial holes (Appendix B). A written summary of the archaeological findings was then compiled, as described below in Section 4.
- 3.2.2 A small assemblage of ceramic material was recovered from the site. No organic material was recovered. No material was recovered that required specialist stabilisation or an assessment of potential for conservation research.
- 3.2.3 The project's palaeoenvironmental sampling strategy was to recover bulk samples where appropriate, from well-dated (where possible), stratified deposits covering the main periods or phases of occupation and the range of feature types represented. To this end, no features encountered were significant enough to warrant the recovery of bulk samples.
- 3.2.4 The complete project archive, in this case comprising the written, drawn, and photographic records (including all material generated electronically during post-excavation), and a small assemblage of ceramic material, will be packaged for long term curation. The depositional requirements of the receiving body, in this case the Museum of Antiquities, Newcastle University, will be met in full.



PLAN ON BRIDGE

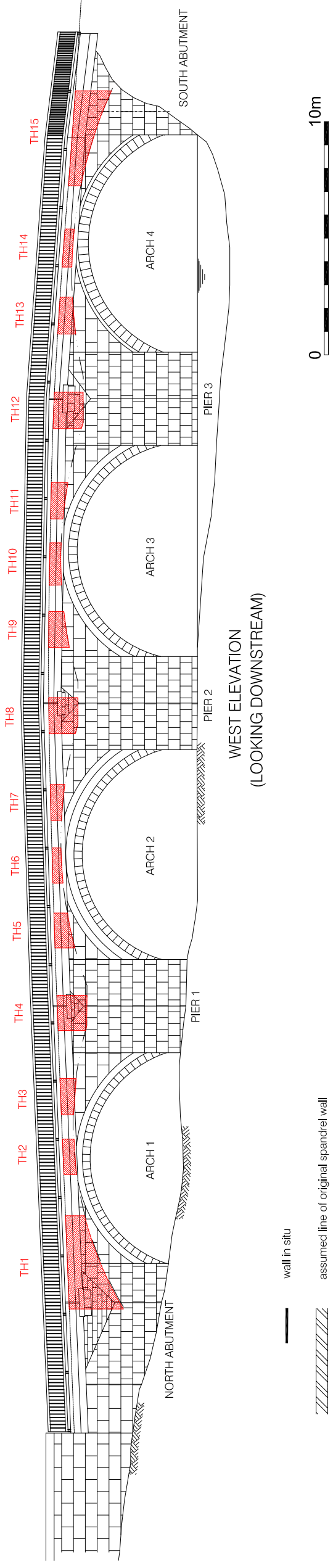


Figure 3. Plan and elevation of bridge showing Trial Hole locations  
Scale 1:200

## 4 ARCHAEOLOGICAL RESULTS

### 4.1 Phase 1: Medieval

- 4.1.1 Masonry interpreted as being the original medieval bridge was exposed in trial holes (THs) on both the west (upstream) and east (downstream) sides of the structure between the north abutment and Pier 3. Masonry of this period was not anticipated on Arch 4, between Pier 3 and the south abutment, since this is believed to have been rebuilt in the 16th or 17th century. Upstream, masonry assigned to this phase represents the ribbed arch barrels of the surviving three spans of the original medieval bridge, while downstream, masonry assigned to this phase represents the original eastern spandrel wall with, at one location, a small portion of the original arch also exposed below the spandrel. Upstream, several deposits interpreted as being closely related to the aforementioned structural elements were also recorded.
- 4.1.2 In TH 1, upstream between the north abutment and the crown of Arch 1, masonry, [106], representing the extrados of the arch barrel was exposed, comprising roughly worked sandstone, bonded with lime mortar. Encountered at a depth of c. 1.50m below the road surface, this mortared masonry was overlain by a compact layer, [105], comprising crushed and fragmented sandstone, up to 0.20m thick. This material has been interpreted as rubble 'backing', dumped directly upon the arch barrel, within the bridge structure, in order to provide weight essential for strengthening the structure.
- 4.1.3 In TH 2, upstream on the crown of Arch 1, and in TH 3, to the south, towards Pier 1, the basal deposit in each case, [205] and [305], respectively, comprised sandstone rubble, encountered at depths of 0.60m and 0.68m, respectively, below the road surface. These rubble dumps can be reasonably equated with rubble 'backing' [105], recorded in TH 1.
- 4.1.4 In TH 6, upstream on the crown of Arch 2, mortared masonry, [605], representing the extrados of the arch barrel was exposed, at a depth of c. 0.75m below the road surface (Plate 7). As exposed, it comprised an evidently deliberately arranged series of squared sandstone (the largest block measuring 640mm x 140mm in plan), aligned east-west, and bonded with lime mortar.
- 4.1.5 In each of THs 9, 10 and 11, upstream and positioned across Arch 3, masonry, [905], [1005] and [1104], respectively, representing the extrados of the arch barrel was the basal exposure. At each location, the masonry comprised squared sandstone, slobbered with lime mortar. No rubble 'backing' dump was recorded on Arch 3, the masonry of which was encountered at depths below the road surface between c. 0.55m (TH 9) and c. 0.70m (TH 11).
- 4.1.6 THs 4, 8 and 12 were located upstream directly above Piers 1, 2 and 3, respectively. The basal deposit at each location, [405], [805] and [1204], respectively, comprised compact sandstone rubble. In each case, the rubble dump continued below the limit of excavation and was encountered at depths between c. 0.60m (TH 12) and c. 1.0m (TH 8). These dump deposits, which can be reasonably equated, are interpreted as representing infill for the purpose of creating downward pressure through the piers to increase the stability of the original bridge.

- 4.1.7 Downstream, the spandrel wall of the original bridge was recorded in the east-facing section of a number of the trial holes (THs 16, 18, 20, 21, 22, 24 and 26), with the most informative portions appearing in THs 16 and 26. In the former, located between the crown of Arch 1 and the north abutment, the wall, [1606], was exposed for a length of c. 2.15m and to a maximum height of 0.80m along the west side of the trial hole. It comprised squared, generally regular, sandstone (maximum size of the blocks was c. 600mm x c. 300mm), built to courses with fair joints and bonded with brittle, light pinkish grey lime mortar. To the north, the wall diverted at an angle of c. 45° from its SE-NW alignment, to run to the north for c. 0.70m (Plate 4), this portion probably part of the original wing wall of the medieval bridge, prior to 18th century widening. In the north-easternmost corner of TH 16, what may have been a further element of the wing wall was partially exposed, although precise details of this part of the structure could not be determined within the confines of the area of investigation.
- 4.1.8 In TH 26, located between the crown of Arch 3 and Pier 3, the original spandrel wall, [2605], was exposed along the full 1.50m length of the west side of the trial hole, to a height of c. 1.05m. Four courses of squared, generally regular, sandstone were exposed, mortared in similar fashion to that described above in TH 16. In the north-western corner of TH 26, three voussoirs of the original arch were exposed below the spandrel wall, along with a small portion (maximum height c. 0.15m) of the arch opening (infilled with later material) below the intrados.
- 4.1.9 Along the downstream side of the bridge, the top of the original spandrel wall was generally encountered 0.60m-0.80m below the road surface and, based upon these exposures, the structure was at least 0.35m wide. Slobbered mortar was recorded upon the uppermost course wherever the spandrel wall was exposed, this taken as being indicative of the structure having been reduced in height following 18th century widening of the downstream arches. In the base of each of THs 17, 21 and 25, located on the crowns of Arches 1, 2 and 3, respectively, the top of the spandrel wall and the crown of the arch barrel (from 18th century widening), were virtually level, at a depth of c. 0.80m below the road surface. While insufficient masonry of the spandrel wall was exposed in THs 17 and 25 to be able to assign a number, in TH 21, a single course of squared, regular, sandstone, [2106], was exposed to a height of c. 0.20m, adjacent to the arch crown. This masonry was mortared with similar material to that described above in TH 16.
- 4.1.10 It is noteworthy that the original outer wall of the bridge parapet was not exposed in each of THs 19, 23 and 27, located upon Piers 1, 2 and 3, respectively. This perhaps indicates that the bridge parapet originally projected above each cutwater, to create refuges, a feature seen on other medieval and early post-medieval bridges, such as the bridge completed in 1624 during the reign of James I in Berwick-upon-Tweed. The earliest deposit recorded in each of THs 19, 23 and 27 comprised sandstone rubble, [1904], [2304] and [2704], respectively, interpreted as the core material of each pier, although these have been assigned to Phase 4, as they are assumed to derive from the episode of downstream widening of the bridge in the mid 18th century, which presumably included downstream widening of the piers, or perhaps significant rebuilding of those elements.

## **4.2 Phase 2: Medieval? or Early-Post-Medieval?**

- 4.2.1 Numerous sand deposits recorded in upstream trial holes have been broadly equated due to their physical similarities and stratigraphic positions. None produced artefactual material and their precise period of origin is uncertain although, as a group, they have been assigned a broad medieval/early post-medieval date. In terms of function, these deposits are assumed to have been deposited with the dual purpose of adding weight to the structure and to serve as make-up/levelling deposits for former carriageway surfaces. The sand itself may have originated as alluvial material derived from the River Coquet.
- 4.2.2 In the three upstream trial holes located on Arch 1, namely THs 1, 2 and 3, each of the earliest sand deposits, [104], [204], [304], respectively, overlay the Phase 1 rubble 'backing' of the arch barrel. The maximum thickness of any of these layers was 0.26m and they were extended to depths, below the road surface, between c. 0.50m (TH 2), on the crown of the arch, and c. 1.0m (TH 1) (Plate 3). At each location, mixing between the sand layer and the rubble backing is perhaps indicative of this material being deposited broadly contemporaneously, possibly at the time of construction of the bridge. The three deposits described above were overlain by similar, distinctively lensed sand deposits, [103] (Plate 3), [203], [303], respectively. The maximum thickness of any of these upper sand deposits was c. 0.45m.
- 4.2.3 In TH 4, located upstream above Pier 1, the rubble core of the structure was overlain by a sand deposit, [404], up to 0.10m thick, in turn overlain by another sand deposit, [403], up to 0.24m thick.
- 4.2.4 Sand deposits sufficiently similar in composition and colour to be broadly equated were encountered in upstream trial holes located on Arch 2, Pier 2 and Arch 3. In THs 6, 9 and 10, the lowermost sand deposits, [604], [904] and [1004], respectively, lay directly upon the Phase 1 masonry of the arch barrel. The maximum thickness of any of these deposits was 0.17m. Three broadly similar – and therefore equatable - deposits, layers [603], [903] and [1003], respectively, overlay the lowermost sand layers, these upper Phase 2 deposits being between 0.10m and 0.20m thick. Another sand layer, [804], this up to 0.25m thick, was recorded in TH 8 on Pier 2, where it directly overlay the rubble infill of the pier. Layer [804] was itself overlain by another lensed sand layer, [803], up to 0.33m thick.
- 4.2.5 TH 11, on the south side of Arch 3, and TH 12, on Pier 3, revealed similar - and again broadly equatable - sand layers, [1103] and [1203], respectively, directly upon Phase 1 material, the maximum thickness of these dump deposits being 0.33m.

## **4.3 Phase 3: 16th or 17th Century**

- 4.3.1 Arch 4 was reportedly rebuilt sometime in the 16th or 17th centuries. Masonry interpreted as representing this build was recorded on the upstream side in THs 13, 14 and 15, while masonry representing the downstream spandrel wall of this build was recorded in THs 28, 29 and 30.



- 4.3.2 Rough sandstone masonry, [1306], was exposed as the basal deposit, at a depth of c. 0.70m, in TH 13 on Arch 4. This material probably represents the arch barrel itself, rather than a 'backing' dump, although its rough form, with limited use of light greyish white sandy mortar, was in some contrast to the well-prepared masonry forming the extrados of the arch barrels on the earlier arches. In TH 14, masonry [1404], exposed at a depth of c. 0.45m below the road surface, comprised roughly worked sandstone, arranged east-west in fairly regular courses and bonded with light greyish white sandy mortar (Plate 8). Again, this masonry is interpreted as probably representing the crown of the arch barrel.
- 4.3.3 In TH 15, located on the south side of Arch 4, towards the south abutment, the basal exposure was masonry, [1506], comprising squared sandstone (up to 460mm x 360mm x 120mm), bonded with light greyish white sandy mortar and deliberately stepped above the curve of the arch (Plate 5). The form of this masonry, at a maximum depth of c. 1.45m at the south end of the trial hole and c. 0.95m deep at the north end, probably reflects its proximity to the south abutment.
- 4.3.4 Various layers, mostly of sand composition, recorded in the three upstream trial holes described above have been interpreted as having been dumped broadly contemporaneously, probably to serve similar functions as the sand deposits assigned to Phase 2. In TH 13, three such sand layers were recorded, the earliest, deposit [1305], being only 90mm thick, this overlain by deposit [1304], 0.15m thick, in turn overlain by deposit [1303], up to 0.10m thick. TH 14 exposed a single sand layer, [1403], of similar composition to layer [1304] and of maximum thickness 80mm.
- 4.3.5 Of three layers recorded in TH 15, the earliest, deposit [1505], comprised loose sand with a maximum thickness of 0.38m. It overlay the southernmost portion of stepped stonework [1506] and, in turn, was overlain by a distinctive dump, [1504], of mortared sandstone rubble, up to 0.49m thick and extending c. 2.10m along the west facing section of the trial hole. This was overlain by a substantial, up to 0.66m thick, sand dump, [1503]. In sum, these layers have been interpreted as dumped levelling deposits, laid down ahead of an earlier carriageway surface, possibly at the time of the rebuilding of Arch 4. Deposit [1504] presumably represents unused masonry and mortar from an episode of structural work.
- 4.3.6 Although the predominantly sand layers described above were broadly similar to those assigned to Phase 2 recorded in the upstream trial holes, this may simply reflect a similar origin for the material, possibly alluvial material from the vicinity of the River Coquet. It is acknowledged however, that some, particularly the uppermost of the Phase 2 deposits, could date to the time of the rebuilding of Arch 4, a time which may well have seen wholesale re-surfacing of the bridge carriageway.

- 4.3.7 Masonry representing the downstream spandrel wall of the reported early post-medieval rebuild of Arch 4 was recorded in THs 28, 29 and 30. On the north side of Arch 4, in TH 28, the wall, [2805], was exposed for up to c. 0.95m in height, at a depth of c. 0.25m below the road surface, and comprised four courses of squared, generally regular, sandstone (maximum size c. 850mm x c. 200mm), bonded with hard, greyish white lime mortar (Plate 10). In the south-western corner of the trial hole, a small part of a voussoir of the original arch was exposed below the spandrel wall, along with a small portion (maximum height c. 0.15m) of the arch opening. In TH 29, sited on the crown of Arch 4, only the very top of the masonry of the former spandrel wall, [2905], was visible in the base of the trial hole at a depth of c. 0.40m.
- 4.3.8 In TH 30, on the south side of Arch 4, a relatively substantial length of masonry, [3005], representing the former spandrel wall was exposed (Plate 6). What is likely to have been its sandstone rubble core, [3003], appeared in the southern part of the east-facing section. Mortared with hard, greyish white lime mortar, this core was faced by stonework, exposed for a height of up to c. 1.0m. Again, the masonry, [3005], comprised squared, generally regular sandstone (largest block dimension seen was 700mm x 300mm), built to courses with fair joints, mortared. It survived at a maximum height of c. 0.40m below the existing road surface. To the north, in the lower part of the east-facing section, the spandrel wall was associated with a portion of the former arch; three complete and parts of two other voussoirs were exposed, with the opening below exposed to a height of c. 0.40m.

#### **4.4 Phase 4: 18th Century**

- 4.4.1 Masonry interpreted as representing widening of the east side of the bridge in the mid 18th century was exposed in the majority of the downstream trial holes. The northernmost, TH 16, sited between the north bridge abutment and the crown of Arch 1, revealed sloping sandstone masonry, [1607], slobbered with hard, greyish white mortar, so that it was virtually impossible to record the dimensions or even general form of the stones. This structure was encountered, at a depth of c. 0.85m below the road surface, at the south end of the trial hole, extending for c. 0.80m to the north before its sloping surface ran below an undisturbed rubble deposit, [1605], described in due course below. This masonry is interpreted as the extrados of the arch barrel of the 18th century widening of Arch 1.
- 4.4.2 Further parts of the same arch barrel were exposed in THs 17 and 18, masonry [1704] (Plate 9) and [1804], respectively, where similar masonry was recorded, at depths of c. 0.60m and c. 1.10m, below the road surface, respectively. Overlying the masonry of the arch barrel and abutting the former spandrel wall in TH 16 was a deposit, [1605], comprising loose sandstone rubble; this interpreted as a deliberate backing dump for the arch. The rubble had a matrix of mid greyish brown sand, with frequent small fragments of lime mortar throughout.

- 4.4.3 Trial holes on Arches 2, 3 and 4 also recorded sandstone masonry, again with detail largely obscured by slobbered, hard mortar, representing the barrel of the widened arches. It was noteworthy that no evidence was recorded to suggest that the masonry of the widened arch had been tied-in to the existing structure. In several trial holes, most notably TH 20 on Arch 2, TH 24 on Arch 3 and TH 29 on Arch 4, there was a gap, up to 10mm wide, between the masonry of the widened arch barrel and the former spandrel wall, so that the river below was visible. It is assumed that widening of each of the bridge piers was undertaken contemporaneously with the widening of the arches.
- 4.4.4 In TH 24, sited between the crown of Arch 3 and Pier 2, the masonry, [2406], of the arch barrel, was recorded in the southern portion of the trial hole, abutted to the east by what appeared to be masonry, [2405], representing the inner side of the 18th century spandrel wall. This was recorded at a depth of c. 1.0m below the road surface, running along the lower part of the west facing section of the trial hole, and comprised a course of squared and tooled sandstone (maximum recorded dimension for any block was 580mm x 190mm), with no bonding material. To the south were parts of two sandstone voussoirs of the arch, this being the only location at which the internal side of an 18th century arch voussoir was recorded during the work.
- 4.4.5 Downstream, THs 19, 23 and 27, sited on the bridge piers, all exposed loose sandstone rubble infill deposits, [1904], [2304] and [2704], respectively, as the basal deposits. In THs 19 and 27, the deposits were encountered at a depth of c. 0.60m, while in TH 23, on Pier 2, rubble fill [2304] was at least 1.0m deep. All three deposits continued below the limit of excavation. It is noteworthy that similar sandstone rubble 'fill' material was recorded in the upstream trial holes sited on the bridge piers. While, those deposits have been assigned to Phase 1, it is acknowledged that significant alteration or even rebuilding of the bridge piers may have been undertaken in association with 18th century widening of the bridge.
- 4.4.6 In 12 of the 15 downstream trial holes, Phase 4 structural material was overlain by one or more generally similar sandy deposits. The thickness of these layers varied, between c. 0.20m and c. 0.70m, with the thickest being layer [1803], a compact, mid brownish yellow, medium sand, recorded overlying the masonry of the widened arch barrel in TH 18 on Arch 1. These deposits are considered to be broadly contemporaneous and have been interpreted as deriving from 18th century widening of the bridge, specifically being material deliberately dumped to add weight to the structure at the time of the widening. In TH 30, sandy dump layer [3004] produced a sherd of red earthenware with brown and white slip decoration and a small fragment of pantile. The pottery probably dates to the late 17th to early 18th century.<sup>7</sup>
- 4.4.7 Additional material interpreted as having been used to add weight following downstream widening of the bridge was river gravel, probably dredged from the river bed or quarried from the banks of the Coquet, with layers of such material recorded in THs 20, 21, 22, 24 and 25. Again the thickness of the various deposits varied, with the most substantial recorded being layer [2006], in TH 20, sited between the crown of Arch 2 and Pier 1. This deposit, comprising 90% fine and medium rounded river gravels in a matrix of mid greyish brown coarse sand, was at least 0.90m thick, continuing below the limit of excavation. It overlay the masonry, [2007], forming the extrados of the widened arch barrel at this location.

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<sup>7</sup> J. Vaughan pers comm.

#### **4.5 Phase 5: Modern**

- 4.5.1 Modern test pits had previously been excavated on Arch 2, two upstream and two downstream. These were encountered, necessitating partial re-excavation, in THs 5 and 7, upstream, and THs 20 and 22, downstream.
- 4.5.2 The uppermost deposits in all 30 trial holes comprised three layers of modern road material; a course sand and aggregate, [102], [202], [302], *etc.*, through to [3002], overlain by layers of tar [101], [201], [301], *etc.* through to [3001] and then aggregate [100], [200], [300], *etc.* through to [3000]. These layers had an average thickness of c. 0.40m (*e.g.* Plates 3 and 10).

## 5. CONCLUSIONS

- 5.1 Thirty trial holes (THs 1-30) were excavated during the strength feasibility site investigation on Rothbury Bridge, THs 1-15 on the west, upstream, side of the bridge and THs 16-30 on the east, downstream side. Archaeological structures and deposits recorded in these trial holes have been assigned to five broad phases (Phases 1-5) of archaeological activity.
- 5.2 The earliest, Phase 1, comprises masonry and associated deposits probably derived from the original medieval bridge. Upstream, in THs 1, 6, 9, 10 and 11, mortared masonry assigned to this phase represents the arch barrels of the surviving three spans of the original bridge, while downstream, in THs 16, 18, 20, 21, 22, 24 and 26, masonry assigned to this phase represents the original eastern spandrel wall with, at one location (TH 26), a small portion of the original arch also exposed. Upstream, in THs 1, 2, 3, 4, 8, 12, deposits interpreted as rubble backing dumps or pier infill material, all closely related to medieval structural elements, were recorded.
- 5.3 Phase 2 comprises numerous sand deposits recorded upstream, in THs 1, 2, 3, 4, 6, 8, 9, 10, 11, 12, which have been assigned a broad medieval/early post-medieval date. In terms of function, these deposits are assumed to have been deposited with the dual purpose of adding weight to the structure and possibly to serve as make-up/levelling deposits for former carriageway surfaces.
- 5.4 Phase 3 represents rebuilding of the southernmost arch of the original bridge sometime in the 16th or 17th centuries. Masonry interpreted as representing the arch barrel from this build was recorded upstream in THs 13, 14 and 15, while masonry representing the downstream spandrel wall of this build was recorded in THs 28, 29 and 30.
- 5.5 Phase 4 represents activity undertaken during a major programme of widening of the east side of the bridge in the mid 18th century. Masonry or dumped backing material interpreted as being derived from this event was exposed in all downstream trial holes, THs 16-30. The fabric of the original bridge and its eastern extension are assumed to be united at the bridge piers as no evidence was recorded to suggest that the masonry of the 18th century downstream arches was tied into the spandrel wall of the original bridge.
- 5.6 Phase 5 represents constructional layers forming the existing road carriageway on the 20th century deck of the bridge. Deposits assigned to this phase were recorded in all thirty trial holes.

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## 7. ACKNOWLEDGEMENTS AND CREDITS

### **Acknowledgements**

Pre-Construct Archaeology Limited would like to thank Northumberland County Council for commissioning and funding the project herein described. The liaison role of Jim Hodson, of the Highways Division, Community and Environmental Services Directorate, is particularly acknowledged.

The curatorial roles of Kate Wilson (English Heritage) and Chris Burgess (Northumberland County Council Conservation Team) are acknowledged.

### **PCA Credits**

*Fieldwork:* Clare Henderson

*Report:* Clare Henderson and Robin Taylor-Wilson

*Project Management:* Robin Taylor-Wilson

*CAD:* Adrian Bailey

**APPENDIX A**  
**CONTEXT INDEX**



APPENDIX A: CONTEXT INDEX

*Upstream*

Context	Trial Hole	Phase	Type 1	Type 2	Interpretation
100	1	5	Deposit	Layer	Road surface
101	1	5	Deposit	Layer	Road construction
102	1	5	Deposit	Layer	Road construction
103	1	2	Deposit	Layer	Sand dump
104	1	2	Deposit	Layer	Sand dump
105	1	1	Structure	Masonry	Rubble backing
106	1	1	Structure	Masonry	Original Arch 1

200	2	5	Deposit	Layer	Road surface
201	2	5	Deposit	Layer	Road construction
202	2	5	Deposit	Layer	Road construction
203	2	2	Deposit	Layer	Sand dump
204	2	2	Deposit	Layer	Sand dump
205	2	1	Structure	Masonry	Rubble backing

300	3	5	Deposit	Layer	Road surface
301	3	5	Deposit	Layer	Road construction
302	3	5	Deposit	Layer	Road construction
303	3	2	Deposit	Layer	Sand dump
304	3	2	Deposit	Layer	Sand dump
305	3	1	Structure	Masonry	Rubble backing

400	4	5	Deposit	Layer	Road surface
401	4	5	Deposit	Layer	Road construction
402	4	5	Deposit	Layer	Road construction
403	4	2	Deposit	Layer	Sand dump
404	4	2	Deposit	Layer	Sand dump
405	4	1	Deposit	Dump	Rubble core, Pier 1

500	5	5	Deposit	Layer	Road surface
501	5	5	Deposit	Layer	Road construction
502	5	5	Deposit	Layer	Road construction
503	5	5	Deposit	Fill	Fill of test pit 504
504	5	5	Cut	Pit	Test pit

*Downstream*

Context	Trial Hole	Phase	Type 1	Type 2	Interpretation
1600	16	5	Deposit	Layer	Road surface
1601	16	5	Deposit	Layer	Road construction
1602	16	5	Deposit	Layer	Road construction
1603	16	4	Deposit	Layer	Sand dump
1604	16	4	Deposit	Layer	Sand dump
1605	16	4	Structure	Masonry	Rubble backing
1606	16	1	Structure	Masonry	Original spandrel wall
1607	16	4	Structure	Masonry	Arch 1 18th c. addition

1700	17	5	Deposit	Layer	Road surface
1701	17	5	Deposit	Layer	Road construction
1702	17	5	Deposit	Layer	Road construction
1703	17	4	Deposit	Layer	Sand dump
1704	17	4	Structure	Masonry	Arch 1 18th c. addition

1800	18	5	Deposit	Layer	Road surface
1801	18	5	Deposit	Layer	Road construction
1802	18	5	Deposit	Layer	Road construction
1803	18	4	Deposit	Layer	Sand dump
1804	18	4	Structure	Masonry	Arch 1 18th c. addition
1805	18	1	Structure	Masonry	Original spandrel wall

1900	19	5	Deposit	Layer	Road surface
1901	19	5	Deposit	Layer	Road construction
1902	19	5	Deposit	Layer	Road construction
1903	19	4	Deposit	Layer	Sand dump
1904	19	4	Deposit	Dump	Rubble core, Pier 1

2000	20	5	Deposit	Layer	Road surface
2001	20	5	Deposit	Layer	Road construction
2002	20	5	Deposit	Layer	Road construction
2003	20	5	Deposit	Fill	Fill of test pit 2005
2004	20	5	Deposit	Fill	Fill of test pit 2005
2005	20	5	Cut	Pit	Test pit
2006	20	4	Deposit	Layer	Gravel dump
2007	20	4	Structure	Masonry	Arch 2 addition
2008	20	1	Structure	Masonry	Original spandrel wall

APPENDIX A: CONTEXT INDEX

*Upstream*

Context	Trial Hole	Phase	Type	Type	Interpretation
600	6	5	Deposit	Layer	Road surface
601	6	5	Deposit	Layer	Road construction
602	6	5	Deposit	Layer	Road construction
603	6	2	Deposit	Layer	Sand dump
604	6	2	Deposit	Layer	Sand dump
605	6	1	Structure	Masonry	Original Arch 2

700	7	5	Deposit	Layer	Road surface
701	7	5	Deposit	Layer	Road construction
702	7	5	Deposit	Layer	Road construction
703	7	5	Deposit	Fill	Fill of test pit 704
704	7	5	Cut	Pit	Test pit

800	8	5	Deposit	Layer	Road surface
801	8	5	Deposit	Layer	Road construction
802	8	5	Deposit	Layer	Road construction
803	8	2	Deposit	Layer	Sand dump
804	8	2	Deposit	Layer	Sand dump
805	8	1	Deposit	Dump	Rubble core, Pier 2

900	9	5	Deposit	Layer	Road surface
901	9	5	Deposit	Layer	Road construction
902	9	5	Deposit	Layer	Road construction
903	9	2	Deposit	Layer	Sand dump
904	9	2	Deposit	Layer	Sand dump
905	9	1	Structure	Masonry	Original Arch 3

1000	10	5	Deposit	Layer	Road surface
1001	10	5	Deposit	Layer	Road construction
1002	10	5	Deposit	Layer	Road construction
1003	10	2	Deposit	Layer	Sand dump
1004	10	2	Deposit	Layer	Sand dump
1005	10	1	Structure	Masonry	Original Arch 3

*Downstream*

Context	Trial Hole	Phase	Type	Type	Interpretation
2100	21	5	Deposit	Layer	Road surface
2101	21	5	Deposit	Layer	Road construction
2102	21	5	Deposit	Layer	Road construction
2103	21	4	Deposit	Layer	Gravel dump
2104	21	4	Deposit	Layer	Sand dump
2105	21	4	Structure	Masonry	Arch 2 18th c. addition
2106	21	1	Structure	Masonry	Original spandrel wall

2200	22	5	Deposit	Layer	Road surface
2201	22	5	Deposit	Layer	Road construction
2202	22	5	Deposit	Layer	Road construction
2203	22	4	Deposit	Layer	Gravel dump
2204	22	5	Deposit	Fill	Fill of test pit 2205
2205	22	5	Cut	Pit	Test pit
2206	22	1	Structure	Masonry	Original spandrel wall

2300	23	5	Deposit	Layer	Road surface
2301	23	5	Deposit	Layer	Road construction
2302	23	5	Deposit	Layer	Road construction
2303	23	4	Deposit	Layer	Sand dump
2304	23	4	Deposit	Dump	Rubble core, Pier 2

2400	24	5	Deposit	Layer	Road surface
2401	24	5	Deposit	Layer	Road construction
2402	24	5	Deposit	Layer	Road construction
2403	24	4	Deposit	Layer	Gravel dump
2404	24	4	Deposit	Layer	Sand dump
2405	24	4	Structure	Masonry	?Later spandrel wall
2406	24	4	Structure	Masonry	Arch 3 18th c. addition
2407	24	1	Structure	Masonry	Original spandrel wall

2500	25	5	Deposit	Layer	Road surface
2501	25	5	Deposit	Layer	Road construction
2502	25	5	Deposit	Layer	Road construction
2503	25	4	Deposit	Layer	Gravel dump
2504	25	4	Deposit	Layer	Sand dump
2505	25	4	Structure	Masonry	Arch 3 18th c. addition

APPENDIX A: CONTEXT INDEX

Upstream

Context	Trial Hole	Phase	Type	Type	Interpretation
1100	11	5	Deposit	Layer	Road surface
1101	11	5	Deposit	Layer	Road construction
1102	11	5	Deposit	Layer	Road construction
1103	11	2	Deposit	Layer	Sand dump
1104	11	1	Structure	Masonry	Original Arch 3

1200	12	5	Deposit	Layer	Road surface
1201	12	5	Deposit	Layer	Road construction
1202	12	5	Deposit	Layer	Road construction
1203	12	2	Deposit	Layer	Sand dump
1204	12	1	Deposit	Dump	Rubble core, Pier 3

1300	13	5	Deposit	Layer	Road surface
1301	13	5	Deposit	Layer	Road construction
1302	13	5	Deposit	Layer	Road construction
1303	13	3	Deposit	Layer	Sand dump
1304	13	3	Deposit	Layer	Sand dump
1305	13	3	Deposit	Layer	Sand dump
1306	13	3	Structure	Masonry	Arch 4

1400	14	5	Deposit	Layer	Road surface
1401	14	5	Deposit	Layer	Road construction
1402	14	5	Deposit	Layer	Road construction
1403	14	3	Deposit	Layer	Sand dump
1404	14	3	Structure	Masonry	Arch 4

1500	15	5	Deposit	Layer	Road surface
1501	15	5	Deposit	Layer	Road construction
1502	15	5	Deposit	Layer	Road construction
1503	15	3	Deposit	Layer	Sand dump
1504	15	3	Deposit	Layer	Mortar
1505	15	3	Deposit	Layer	Sand dump
1506	15	3	Structure	Masonry	Arch 4/south abutment junction?

Downstream

Context	Trial Hole	Phase	Type	Type	Interpretation
2600	26	5	Deposit	Layer	Road surface
2601	26	5	Deposit	Layer	Road construction
2602	26	5	Deposit	Layer	Road construction
2603	26	4	Deposit	Layer	Sand dump
2604	26	4	Structure	Masonry	Arch 3 18th c. addition
2605	26	1	Structure	Masonry	Original spandrel wall, with part of arch

2700	27	5	Deposit	Layer	Road surface
2701	27	5	Deposit	Layer	Road construction
2702	27	5	Deposit	Layer	Road construction
2703	27	4	Deposit	Layer	Sand dump
2704	27	4	Deposit	Dump	Rubble core, Pier 3

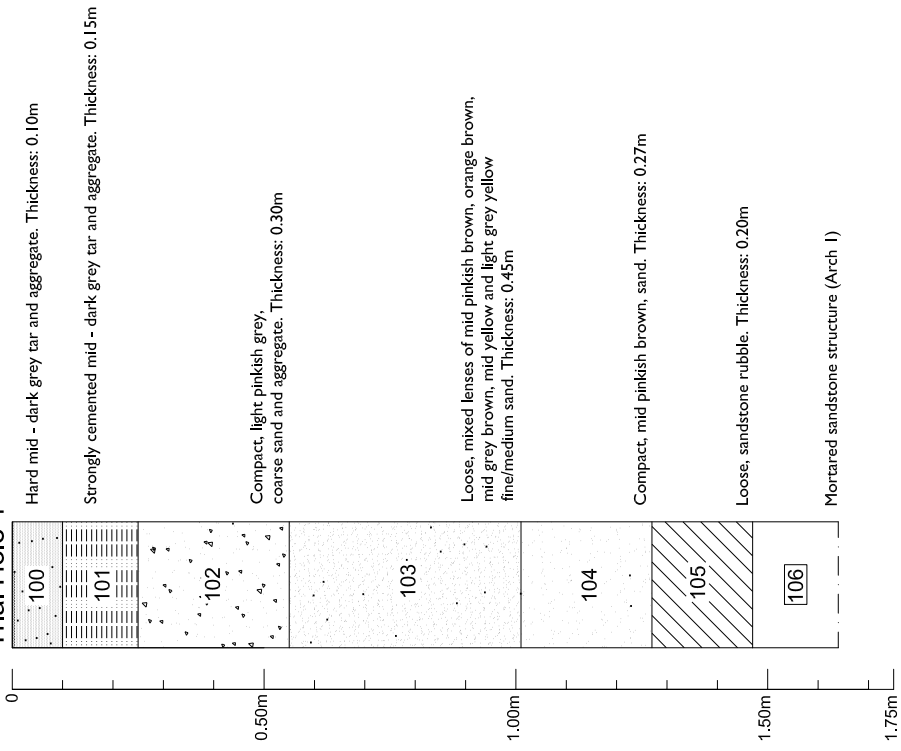
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2801	28	5	Deposit	Layer	Road construction
2802	28	5	Deposit	Layer	Road construction
2803	28	4	Deposit	Layer	Sand dump
2804	28	4	Structure	Masonry	Arch 4 18th c. addition
2805	28	3	Structure	Masonry	Former spandrel wall, with part of arch

2900	29	5	Deposit	Layer	Road surface
2901	29	5	Deposit	Layer	Road construction
2902	29	5	Deposit	Layer	Road construction
2903	29	4	Deposit	Layer	Sand dump
2904	29	4	Structure	Masonry	Arch 4 18th c. addition
2905	29	3	Structure	Masonry	Former spandrel wall

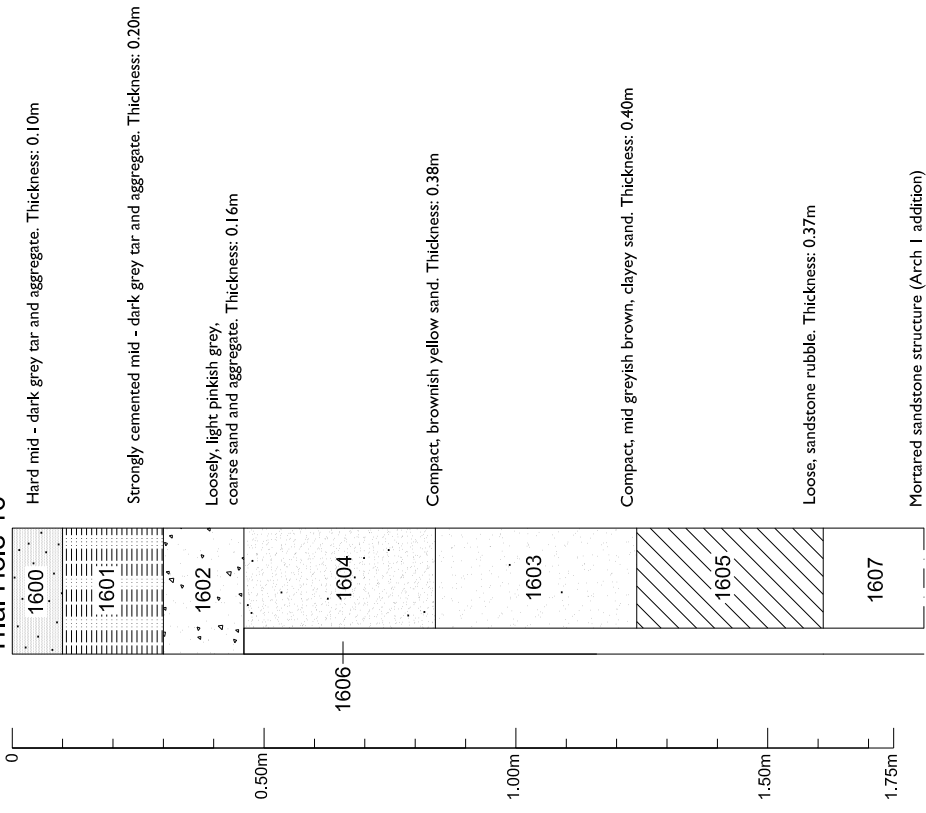
3000	30	5	Deposit	Layer	Road surface
3001	30	5	Deposit	Layer	Road construction
3002	30	5	Deposit	Layer	Road construction
3003	30	3	Structure	Masonry	Rubble core of [3005]
3004	30	4	Deposit	Layer	Sand dump
3005	30	3	Structure	Masonry	Former spandrel wall, with part of arch

**APPENDIX B**  
**TRIAL HOLE LOGS**

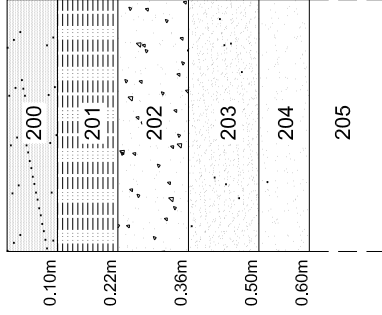
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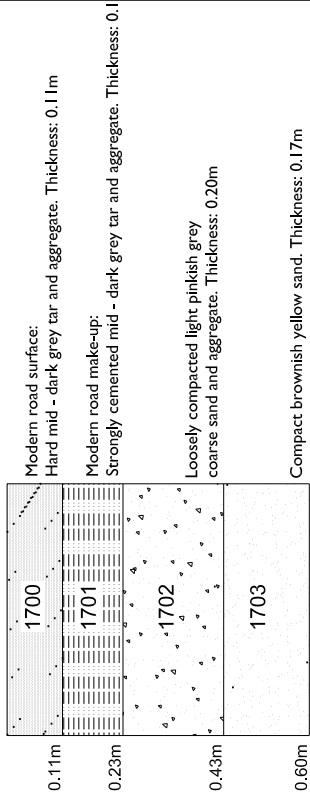
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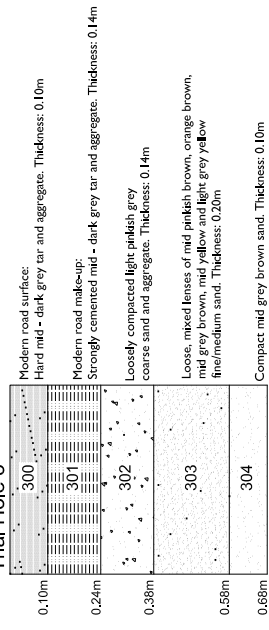
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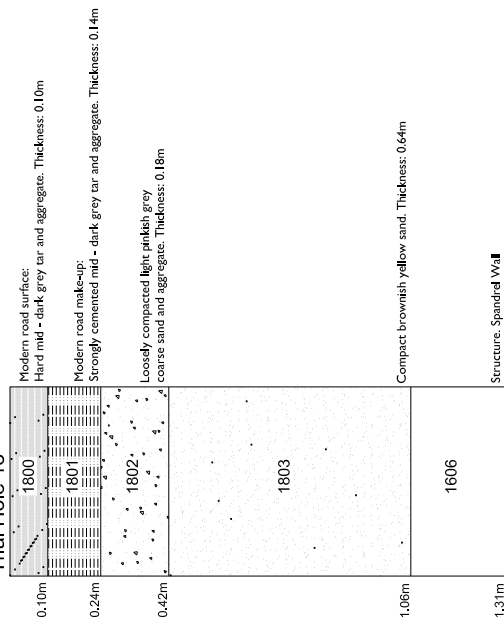
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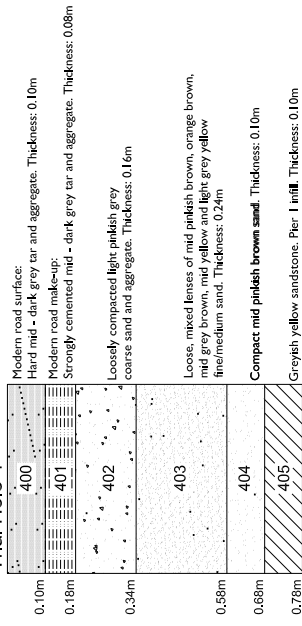
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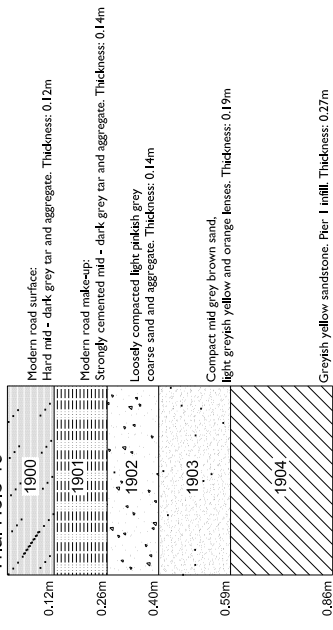
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### Trial Hole 4

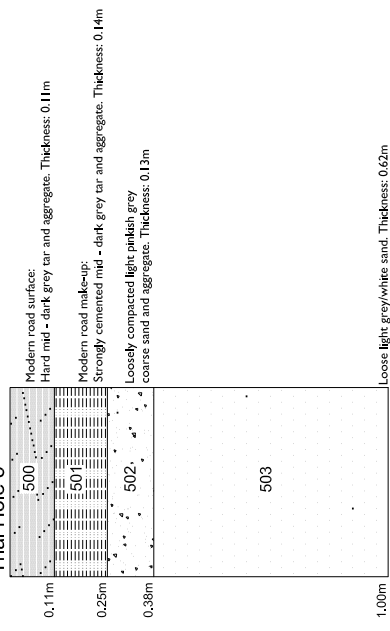


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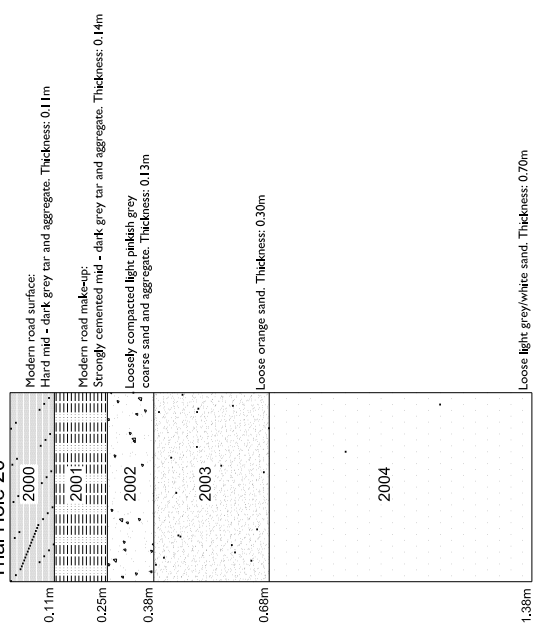




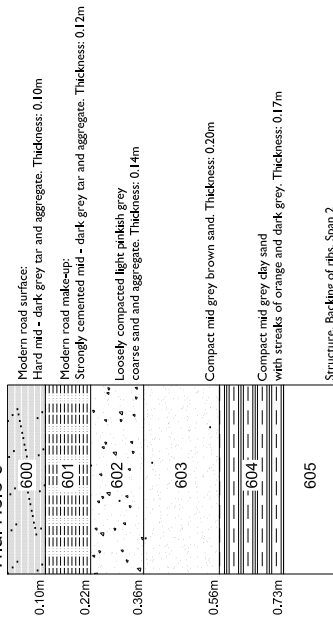
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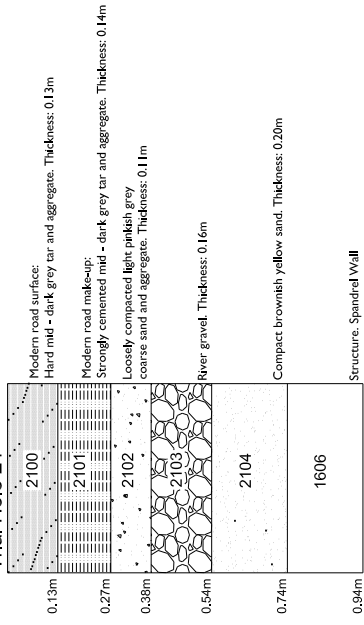
### Trial Hole 20



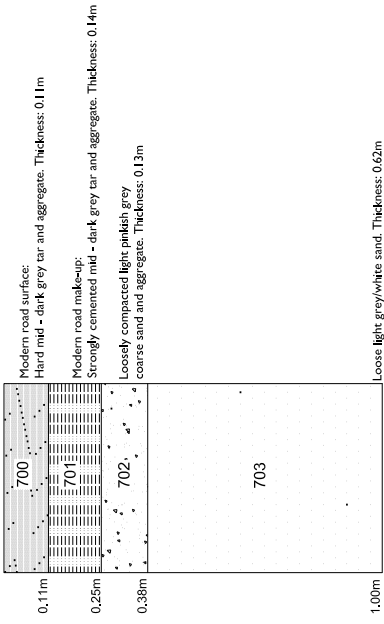
### Trial Hole 6



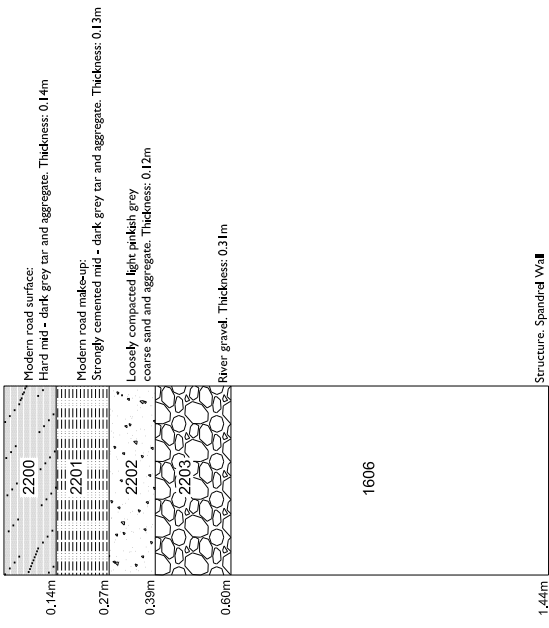
### Trial Hole 21



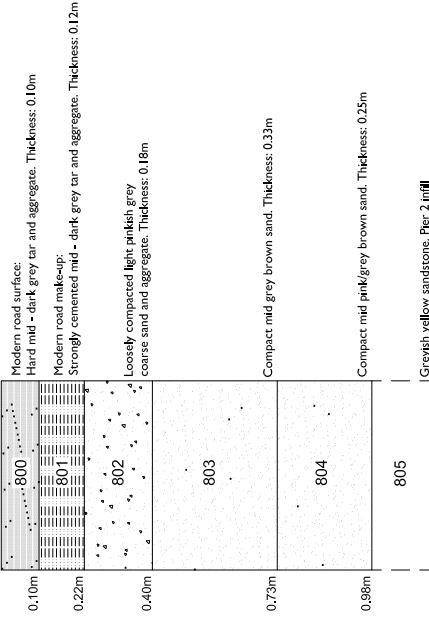
### Trial Hole 7



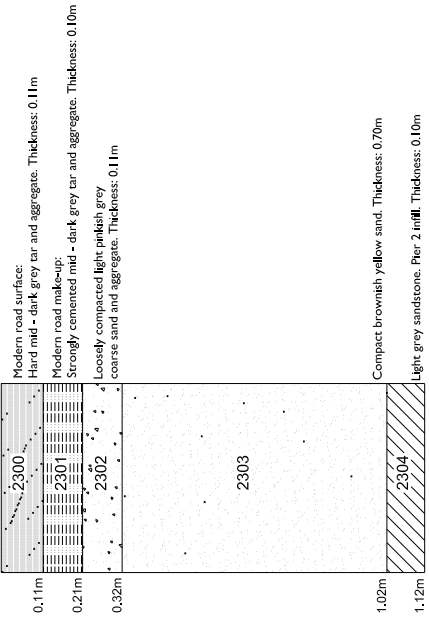
### Trial Hole 22



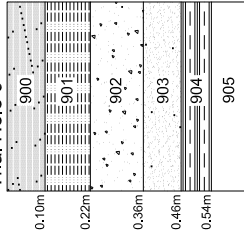
### Trial Hole 8



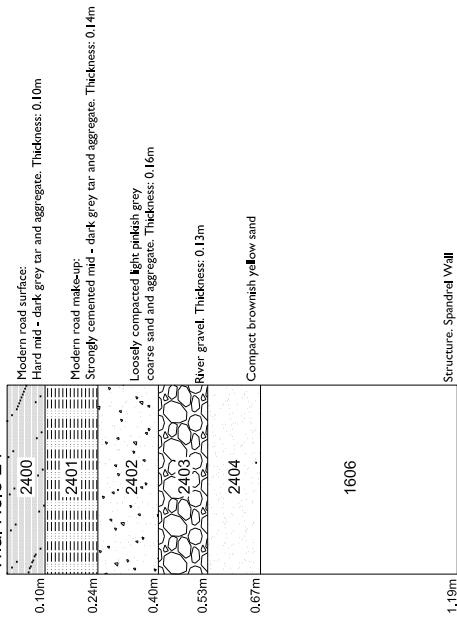
### Trial Hole 23



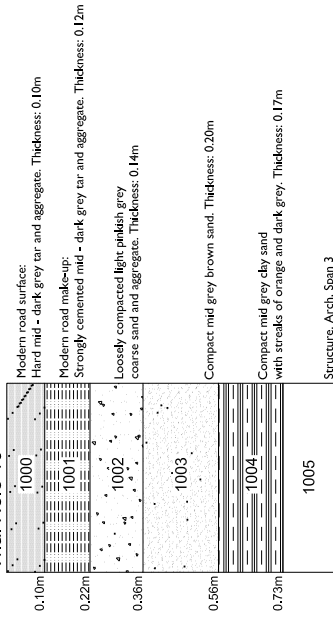
### Trial Hole 9



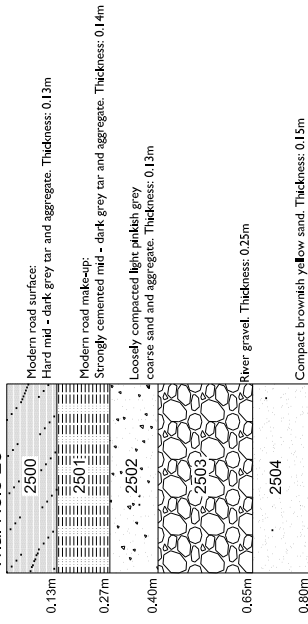
### Trial Hole 24



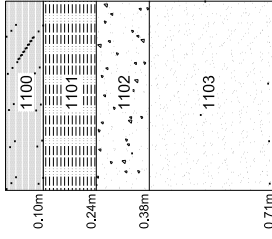
### Trial Hole 10



### Trial Hole 25



### Trial Hole 11



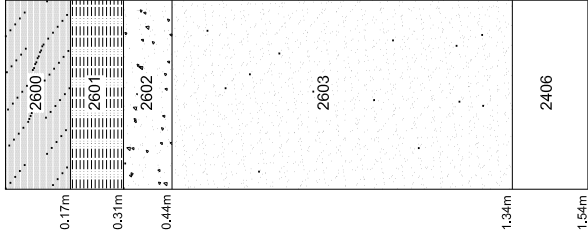
Modern road surface:  
Hard mid - dark grey tar and aggregate. Thickness: 0.10m

Modern road make-up:  
Strongly cemented mid - dark grey tar and aggregate. Thickness: 0.14m

Loosely compacted light pinkish grey coarse sand and aggregate. Thickness: 0.14m

Compact mid pinkish brown sand. Thickness: 0.33m

### Trial Hole 26



Modern road surface:  
Hard mid - dark grey tar and aggregate. Thickness: 0.17m

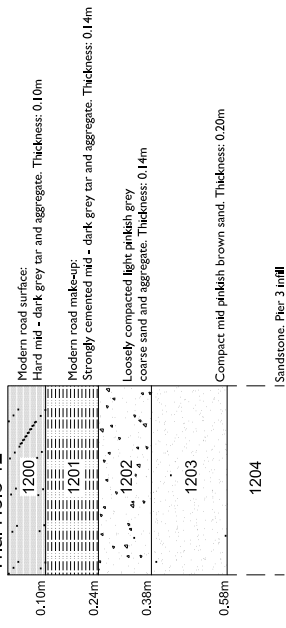
Modern road make-up:  
Strongly cemented mid - dark grey tar and aggregate. Thickness: 0.14m

Loosely compacted light pinkish grey coarse sand and aggregate. Thickness: 0.13m

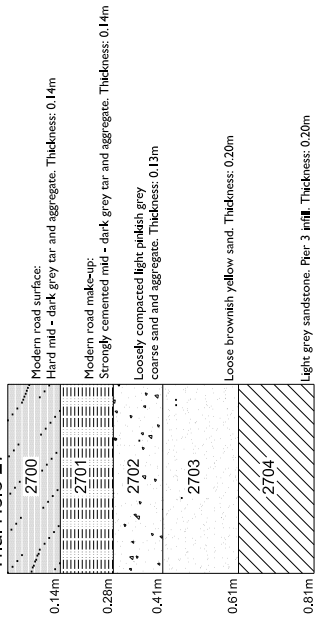
Loose brownish yellow sand. Thickness: 0.90m

Structure. Arch, Span 3

### Trial Hole 12

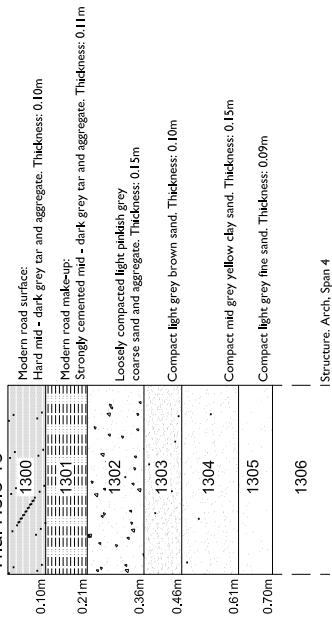


### Trial Hole 27

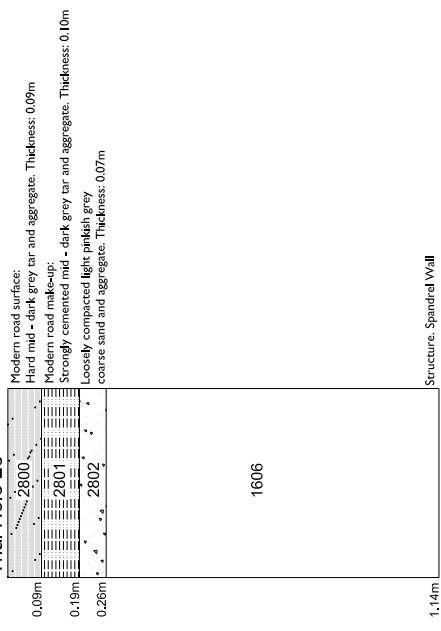




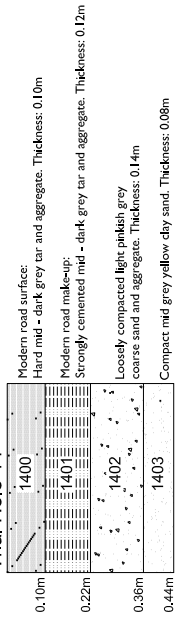
### Trial Hole 13



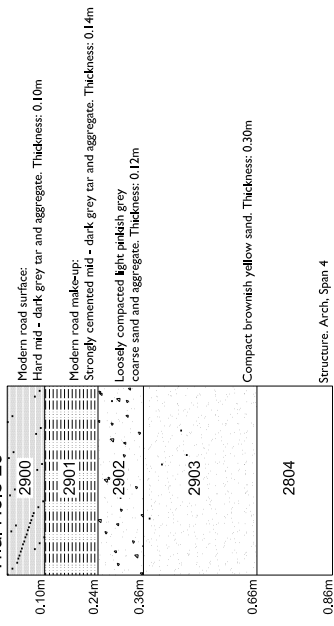
### Trial Hole 28



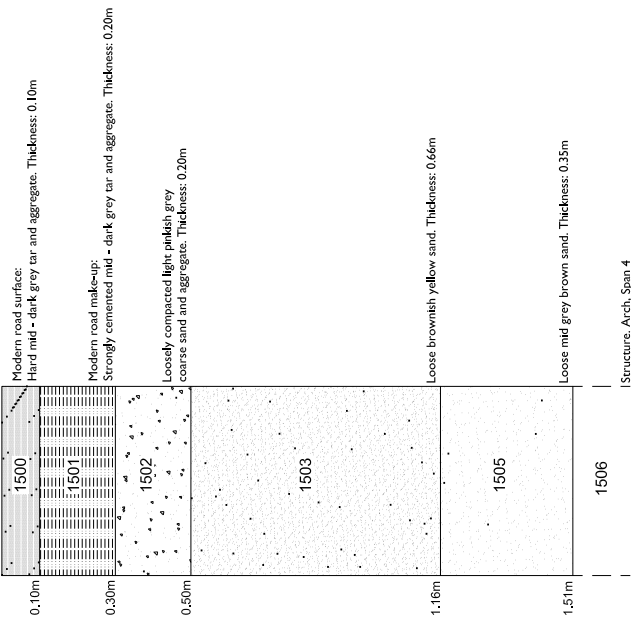
**Trial Hole 14**



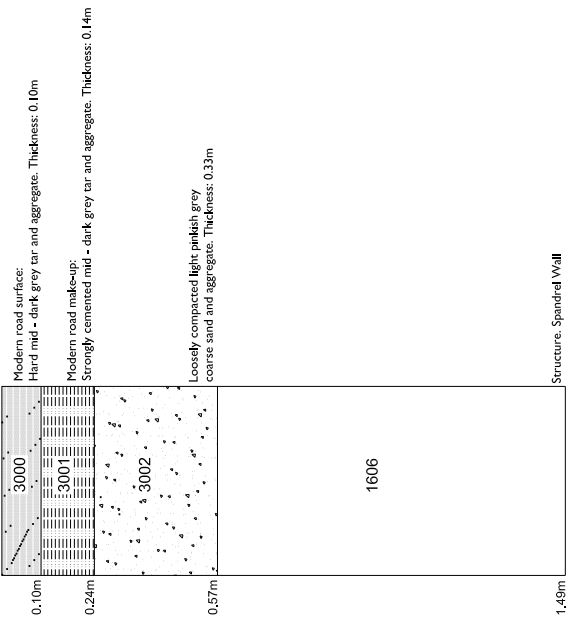
**Trial Hole 29**



### Trial Hole 15



### Trial Hole 30



**APPENDIX C**  
**PLATES**



Plate 1. Rothbury Bridge, west side, from the south.



Plate 2. Arch 3 detail, from the west.



Plate 3. TH 1, Phases 2 and 5 deposits in section, from the east (*0.5m scale*).



Plate 4. TH 16, wall [1606], from the north (*0.5m scale*).



Plate 5. TH 15, masonry [1506], from the south  
(0.5m scale).



Plate 6. TH 30, wall [3005], from the north (0.5m scale).



Plate 7. TH 6, masonry [605], from the west (0.5m scale).



Plate 8. TH 14, masonry [1404], from the south (0.5m scale).





Plate 9. TH 17, masonry [1704], from the south  
(0.5m scale).



Plate 10. TH 28, wall [2805], from the north  
(0.5m scale).

**APPENDIX D**  
**ARCHITECTURAL GLOSSARY**

## ***Architectural Glossary***

- Abutment:*** Part of a structure that supports the end of a span or accepts the thrust of an arch.
- Arch:*** In this instance, a curved structural member which is supported at its ends and supports a vertical load mainly by axial compression.
- Arch barrel:*** The inner surface of an arch.
- Crown:*** The point at the top of an arch.
- Extrados:*** Outer exposed curve of an arch; defines the lower arc of a spandrel.
- Intrados:*** Interior arc of an arch.
- Member:*** One of many parts of a structure.
- Pier:*** A vertical structure which supports the ends of a multi-span superstructure at a location between abutments.
- Refuge:*** On a bridge, a recess for pedestrians projecting from the carriageway or deck, usually placed over the cutwaters.
- Rib:*** Any one of the arched series of members that is parallel to the length of the bridge.
- Segmental arch:*** An arch formed along an arc that is drawn from a point below its spring line, so that, in simple terms, the inner circle (intrados) of the arch is less than a semi-circle.
- Slobbered:*** In this instance, the technique of thickly and rather haphazardly applying mortar in a functional rubblestone structure, where aesthetics are not a concern. The technique has, however, been used in some vernacular building traditions to deliberately create uneven rendering of a rubblestone wall surface.
- Span:*** The horizontal space between two supports of a structure, but also refers to the overall structure itself.
- Spandrel:*** In this instance, the roughly triangular space between an arch or two adjacent arches and the horizontal bridge deck above it/them. A closed or (solid) spandrel means that the area between the arches was completely filled in, while an open spandrel carries its load using interior walls or columns.
- Spring line:*** The place where an arch rises from its support.
- Wing walls:*** Extensions of a retaining wall as part of an abutment; used to contain the fill of an approach embankment.