## Matford Bridge, Old Gloucester Road, Winterbourne, South Gloucestershire

## Archaeological Monitoring and Recording Exercise

Report: SGHER 19887 BRSMG 2011.30



for Planning, Transportation and Strategic Environment Directorate,
South Gloucestershire Council

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# Archaeological Monitoring and Recording Exercise at Matford Bridge, Old Gloucester Road, Winterbourne, South Gloucestershire NGR ST 63742 81810

South Gloucestershire HER 19887 Accession Number BRSMG 2011.30

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#### **NOTE**

Whereas Avon Archaeological Unit have taken all care to produce a comprehensive summary of the known and recorded archaeological evidence, no responsibility can be accepted for any omissions of fact or opinion, however caused.

#### **Summary**

This report sets out the results of an archaeological monitoring and recording exercise (SGHER 19887) carried out by the Avon Archaeological Unit Limited between August and November 2011 at the site of Matford Bridge, Old Gloucester Road, Winterbourne, South Gloucestershire, (NGR ST 63742 81810, Figures 1 and 2). The archaeological recording was undertaken in order to determine the likely origin of the bridge, purported to be late medieval in date, and to record the existing, mainly nineteenth century, fabric, all prior to demolition and the construction of a new bridge that conforms to modern traffic requirements. The Planning, Transportation and Strategic Environment Directorate, South Gloucestershire Council, commissioned the project and the site archive ultimately will be deposited with Bristol City Museum and Art Gallery under the accession number, **BRSMG 2011.30**.

The archaeological investigations were undertaken at the request of the Archaeology and Conservation Officer for South Gloucestershire Council, David Evans.

Archaeological monitoring and recording was undertaken prior to and during groundworks, in accordance with a Scheme of Work (Young, 2011) approved by the Archaeology and Conservation Officer. A preliminary survey of the existing bridge was undertaken on 3<sup>rd</sup> August, 2011, followed by an archaeological watching brief, which was undertaken, at appropriate intervals, between 22<sup>nd</sup> August, 2011 and 3<sup>rd</sup> November, 2011.

Matford Bridge spans the Bradley Brook, which formerly acted as the parish boundary, separating Frampton Cotterell to the north and Winterbourne, to the south. Cartographic evidence suggests that the present bridge has been in existence since at least the late 19<sup>th</sup> century (OS 1st edition, 1881). However, the Brief for the project, issued by South Gloucestershire Council, suggests that an earlier bridge may have been in existence at this location from the late medieval period onwards, and may have functioned contemporaneously with the ford.

The archaeological investigations indicated that the present bridge was largely a post-medieval construction, of two phases, with evidence of partial modern rebuilding, which may have replaced at least two earlier bridges, one of stone and one possibly of timber.

#### 1 Introduction

An archaeological monitoring and recording exercise was undertaken at Matford Bridge, Old Gloucester Road (B4427), Winterbourne, South Gloucestershire, (NGR ST 63742 81810, Figures 1 and 2). The project was undertaken during demolition and rebuilding of the bridge, which crosses the Bradley Brook to the north-west of the village of Winterbourne. The bridge was subject to weight restrictions (see cover photo), and strengthening works were required in order to upgrade the bridge and enable the highway to carry goods vehicles of up to 40 tonnes in weight.

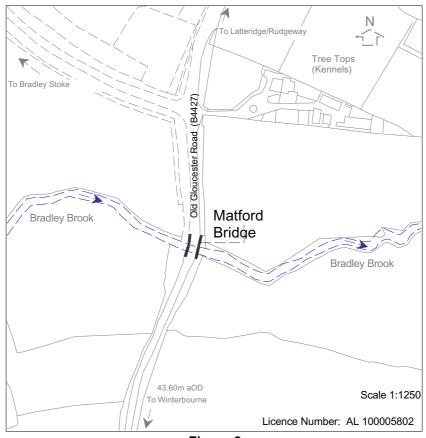


Figure 2
Location of Matford Bridge (after Ordnance Survey, 2011), showing
Old Gloucester Road and Bradley Brook

Matford Bridge is thought to have been of late medieval origin, replacing an earlier ford in the same location (SGHER 3567 and 12900). Accordingly, The Planning, Transportation and Strategic Environment Directorate of South Gloucestershire Council commissioned the Avon Archaeological Unit Limited to carry out a programme of archaeological recording prior to and during the demolition of the bridge.

The archaeological objectives of the project were detailed in a Scheme of Work for Archaeological Investigation and Recording designed by the Avon Archaeological Unit Limited (Young, 2011) in accordance with a project brief issued by the Archaeology and Conservation Officer for South Gloucestershire Council. The main objectives were to record the present structure of the bridge and any associated structural features prior to demolition, and to provide an archaeological record of any further structural features and related archaeological deposits revealed during the demolition.

The resulting archaeological investigation, **South Gloucestershire Sites and Monuments Record SGHER 19887**, was undertaken in accordance with guidelines set out in PPS5 (Planning for the Historic Environment, 2010) and the previously prepared Scheme of Work (Young, *ibid*), approved by David Evans, Archaeology and Conservation Officer for South Gloucestershire Council.

The archaeological fieldwork was carried out over a period of three months, commencing on August 3<sup>rd</sup>, 2011. This was followed by the preparation of a report and the compilation of the site archive, which ultimately will be deposited with Bristol City Museum and Art Gallery, for long-term curation and storage, under the accession number **BRSMG 2011.30**.

#### 2 Geology, Topography and Landuse

The underlying geology of the site consists of Keuper Sandstone (Kellaway and Welsh, 1948, 41). During excavation, the underlying substrate, revealed at a minimum depth of 40.4m a OD, was found to consist of bands of red and grey marl, overlying mudstone, at a depth of 39.7m a OD.

The study site is located on the B4427, the Old Gloucester Road, Winterbourne, at a point where the road crosses the Bradley Brook, in open agricultural land, at height of between 40 and 45m a OD. At this location, the Brook is a shallow stream, of less than 500mm maximum depth, during the summer months, but whose depth can vary, up to an additional 500mm, during periods of heavy rain.

An oil pipeline is shown crossing the road on an east-west alignment, approximately 20m to the north of the bridge, on the site location map (1:1250) provided by South Gloucestershire Council (ref.no.68032/01).

Parallel to the road and on its western side, a deep hollow, up to 2m or more below the level of the carriageway, ran down to the Brook, to the north and south of the stream (see cover photo, Figure 2 and Section 3, below). To the east, a modern storm drain ran parallel to the road on the northern side of the Bridge.

#### 3 Brief Historical and Archaeological Background

Place-name evidence ("Mat**ford"**) and the fact that the bridge is located on the Old Gloucester Road would suggest an early, possible medieval, origin for a crossing over the Bradley Brook at this point. No desk-top study has been commissioned for the immediate area, but the South Gloucestershire Heritage Environment Record notes both the bridge (SGHER 3567; of mainly 19<sup>th</sup> century fabric) and a possible earlier ford (SGHER 12900). The brief for the project suggests that a bridge may have stood on this site from the late medieval period onwards (Evans, 2011). Map evidence from 1881 onwards (OS 1<sup>st</sup> edition and Figure 2) shows a considerable widening of the road to the south-west of the bridge, suggesting that the ford may have lain to the west of the bridge and may have remained in use after the construction of the later structure.

The present bridge would appear to be substantially the same as that recorded on maps from 1881 onwards (OS 1<sup>st</sup> edition and following). The exact date of its (re-)construction is not known, as the date-stone present on the west-facing parapet wall bears only the initial digits, "18...".

The Bradley Brook, a tributary of the River Frome, was formerly (until at least 1982 (OS 1:10,000, 1982) the boundary between the parishes of Frampton Cotterell (to the north) and Winterbourne (to the south). Boundary stones are shown to the south of the bridge on maps of 1881 onwards (OS 1<sup>st</sup> edition and following; SGHER 7684) and a single stone to the south-west, on maps of 1971 onwards (OS 1971 and following). No boundary stones were noted during the current survey.

#### 4 Archaeological Monitoring and Recording

#### 4.1 Methodology

Demolition/Preliminary Construction Methodology

The proposed strengthening works were designed to increase the load-bearing capacity of the bridge from 3 tonnes to 40 tonnes (pers.comm. Mike Johnson, June 2011). This required the demolition of the existing bridge, including the carriageway retaining walls, down to foundation level, and its complete rebuilding, incorporating some of the original stone.

On removal of the retaining walls, four lengths of corrugated metal shuttering were inserted, over 4m deep, in order to facilitate further excavation. Five reinforced concrete piles, each 700mm in diameter, were also inserted, to the north and south of the bridge, preparatory to bridge reconstruction (see Plate e)). The arch itself was removed under extremely controlled conditions. A temporary platform was erected immediately beneath the arch, and the arch fabric was cushioned with straw bales, in order to prevent debris falling into the Brook. After removal of the arch, deep cuttings were excavated to the north and south, each measuring over 7m east-west, over 4m north-south and up to 4.5m below the original carriageway level. On removal of the abutment walls, a row of ballast bags were inserted on the northern and southern banks of the stream, to prevent the incursion of water during the construction of the new bridge. The concrete piles were reduced from 4m to 2m in height.

#### Archaeological Methodology

Recording was undertaken using standard Avon Archaeological Unit paper records. Significant archaeological features, structures and deposits were photographed and scaled drawings made as appropriate. All artefacts retrieved were bagged and marked with the appropriate context number and removed for processing.

Archaeological contexts, recorded during the initial phase of archaeological recording, prior to the demolition, were numbered consecutively from 100. During demolition, contexts on the north side of the bridge were numbered from 500 onwards and those to the south were numbered from 600 (see Table of Contexts, Section 7).

The location of the bridge was related to the National Grid using the appropriate Ordnance Survey sheet for the area and was levelled to a local Ordnance Survey benchmark.

#### 4.2 Detailed Observations

#### 4.2.1 Records Prior to Demolition (see Figure 3)

Prior to the commencement of demolition/construction work, a brief preliminary survey of the existing bridge was undertaken by Lynn Hume and the author, Avon Archaeological Unit, 3<sup>rd</sup> August, 2011 (see frontispiece).

Although much of the fabric of the bridge had been recently repointed, the style of construction, the flattened arch and the curving coping stones were not inconsistent with the nineteenth century date suggested by the date-stone. Perhaps the most striking feature of the external fabric was the large longitudinal crack in the underside of the arch, which had been filed with modern cement-based mortar.

The carriageway retaining walls to the north were in a major state of disrepair (see cover photo). The terminal to the south-east retaining wall and some of the wall itself was found to be a modern re-build.

Detailed Description Eastern elevation (see Frontispiece)

The eastern elevation of the bridge consisted of a parapet wall (Context 107), of a minimum of nineteen courses (approximately 2m) high, surmounted by coping stones (Context 102), of Pennant sandstone, externally bonded with modern cement-based mortar. The parapet wall extended 12.15m north-south and measured 370mm wide at the top. The flattened arch (Context 109), with central keystone, spanning a width of 6.2m, consisted of irregularly sized but roughly rectangular Pennant blocks, also with external modern cement bonding, suggesting that the eastern elevation had been recently repointed.

To the south, the arch rested on a southern abutment (Context 112), which measured 1.6m high in total, and extended approximately 7.3m east-west. The masonry was similarly of Pennant sandstone with modern repointing. The lower three courses of Wall 112 extended some 50mm to the north beyond the remainder of the wall, forming a stepped foundation.

An area of masonry (Context 115), approximately 1.35m high by 700mm east-west, was noted in the south bank of the Brook, abutting Wall 112 to the east. The masonry was of Pennant sandstone, with remnants of pinkish lime mortar and a possible fair face to the east. This masonry may have lain within a possible cut (Context 114), which truncated the reddish brown clay subsoil at this location. The masonry (Context 115) was overlain by a grey silty topsoil deposit (Context 113), of maximum depth, 1.1m, which extended over 2.3m east-west.

Approximately 2.7m east of the east edge of abutment 112, lay a line of stonework (Context 117), consisting of small stones, up to three courses high, extending up to 1.3m east-west. No bonding material was visible.

To the north side of the bridge, the abutment (Context 129) was obscured by the western revetment of the headwall of a large modern storm drain (Context 110), consisting of a wall of concrete blocks, 1.7m high by 1.6m east-west, resting on a concrete foundation of similar width, 500mm high. (See Plan, Figure 4).

#### Western elevation (Figure 3)

The western elevation consisted of a parapet wall (Context 123) of similar dimensions and fabric to the eastern parapet, with a central date stone (Context 125), much abraded, inscribed "18....". The parapet wall was similarly surmounted by coping stones and showed evidence of recent repointing. The flattened arch (Context 124) had a central keystone, 410mm long, similar to that recorded on the eastern elevation. On the internal face of the parapet wall, a further inscribed stone (Context 130), was located relatively centrally at a level just above the modern road surface. The surviving inscription read, ".....ge/......o", presumably "Matford Bridge", the remaining letters having been largely abraded (SGSMR 3567, source (1). The rear of the stone, (revealed during demolition) showed a possible mason's mark, "A'W / ell".

The southern abutment (Context 112) on the western side measured 700mm high (not including concrete foundation, Context 111, see below). The northern abutment (Context 129) was obscured by vegetation.

#### Underside of the arch

Internally, the most prominent feature of the arch fabric was the large crack (Context 131), running longitudinally from north to south, located approximately 3.8m west of the east side of the bridge. The crack had been filled with modern cement-based mortar and measured a maximum of 50mm wide (approx). The internal fabric of the arch (Context 128) was of Pennant sandstone, bonded with a variety of lime-based mortars, including a thick, cream-coloured mortar with frequent charcoal flecks and a pinkish-coloured lime mortar. A large portion of the arch immediately to the east of Context 131 was bonded with a white, lime-

based mortar. There was no apparent distinction (pre-demolition of the bridge) between the masonry to the west and that to the east of Context 131.

The eastern portion of the southern abutment (Context 112) (to the east of Context 131), protruded 50mm to the north, forming a slight ledge, but was otherwise indistinguishable from the fabric to the west of Context 131. The majority of the southern abutment showed evidence of modern repointing. The abutment rested on a modern concrete sill or beam (Context 111), partially encased in wood at its western end, which extended the full width of the bridge, measuring 260mm high by over 230mm wide by 7.3m east-west.

The northern abutment (Context 129) was of similar sandstone masonry with much modern repointing, particularly towards the base, with a similar slight ledge to the east, which extended only 1.56m west of the east elevation of the bridge.

#### Retaining walls to the south

To the south of the bridge, a Pennant sandstone retaining wall (Context 106) extended a further 6.5m beyond the eastern parapet wall and terminated in a modern pilaster (Context 103), 650mm north-south by 660mm east-west by 1.7m high, surmounted by a coping stone. The retaining wall (Context 106) was surmounted by cock and hen coping stones and was clearly a modern rebuild, with characteristic larger squared blocks, located randomly amidst the otherwise fairly even courses. Wall 106 measured 530mm wide at the top and was bonded with modern cement-based mortar, of several phases. A squared coping stone (Context 104), 620mm sq., marked the southern extent of the flatter coping stones surmounting the east parapet wall.

A similar retaining wall (Context 127) of 2.5m maximum height, extended a further 9.5m to the south, beyond the western parapet wall. Context 127 measured approximately 300mm wide at the top and was surmounted by cock and hen coping stones. The fabric of the wall consisted of small to medium sandstone blocks with modern cement-based repointing. A squared sandstone coping stone marked the southernmost extent of the cocks and hens surmounting the parapet wall. A pilaster (Context 122), topped by a cement coping stone, was located approximately 5.9m to the south of the above stone. The wall ended in a curved southern terminal, approximately 1.25m high, much obscured by vegetation.

#### Retaining walls to the north

On the western side of the bridge, a similar Pennant sandstone retaining wall (Context 126, maximum height 2.65m) extended a further 25.8m to the north of the parapet wall, surmounted by cock and hen coping stones. The fabric was similar to that of Context 127, Pennant sandstone with modern cement repointing. The northern portion of the wall was partially collapsed and in a state of disrepair at the time of the survey (see cover photo).

On the eastern side, the retaining wall (Context 108) extended a further 4.7m north of the parapet wall and measured a maximum height of just over 2m. The wall measured 350mm wide at the top and was surmounted by cock and hen coping stones. The northern extent of the flatter coping stones surmounting the parapet wall was marked by the presence of a squared coping stone, Context 105, which measured 680mm sq. The northern pilaster terminal of Wall 108, shown on South Gloucestershire Plan 68032/01, 2008, was no longer in existence by the time of the survey.

#### 4.2.2 Main Records During Demolition and Reconstruction (see Figures 4 a) and b)

The most obvious feature revealed during the demolition was a distinction in the fabric of the arch, (pers.comm. Ron Keene, 13.10.11), showing clay bonding to the west of the longitudinal crack and grey mortar to the east (Plate a). The distinction was not traceable in the main fabric of the abutments, which were bonded with an indiscriminate variety of clay- and lime-

based mortars. Additional features included an isolated chunk of clay bonded masonry (Plates b) and c), to the north of the north abutment) and a significant number of post-holes (Plates f), h) and l), nearer to edge of the Brook.

Detailed Observations
The highway retaining walls
North end of bridge

A preliminary cutting up to 1.5m deep and 2m east-west was excavated immediately to the west of the existing carriageway, in order to remove the existing carriageway retaining wall (Context 126). The excavation showed that the tarmacadam road surfacing (Context 522) had been laid directly onto a bed of compacted scalpings (Context 523), varying between 600mm and 650mm deep, which, in turn, overlay a redeposited red clay subsoil, over 800mm deep (Context 524). A possible earlier tarmac surface was visible, within layer 523, at a depth of approximately 350mm.

The retaining wall (Context 126) was found to consist of Pennant slabs (of maximum dimensions 350mm by 350mm by 100mm), bonded with a grey lime mortar flecked with charcoal. The majority of the slabs were unworked. It is possible that the wall was sited within a foundation cut, truncating the subsoil layer, Context 524. The wall measured a width of 530mm east-west at its northern terminal, which was in a state of disrepair (see cover photo).

The retaining wall to the east (Context 108) was found to be of similar dimensions and construction, a maximum of 2m high, with a fabric of Pennant slabs bonded with grey lime mortar. The wall may also have been sited within a foundation cut within the redeposited subsoil (Context 524).

#### South end of bridge

The demolition of the retaining walls to the south of the bridge was largely unobserved, with the exception of the north end of Context 127, which was observed during the excavation of a large cutting at the south-west corner of the bridge, for the insertion of sheet piling. The cutting revealed that the retaining wall had been constructed within a possible cut, which truncated a very mixed redeposited red/brown silty clay (Context 612).

The parapet walls East side of bridge

A cutting, 2.3m deep by 1.4m east-west, was excavated immediately to the east of the carriageway, truncating the northern end of the eastern parapet wall (Context 107). The cutting revealed that, at this point, the bridge parapet wall (Context 107) measured 1.9m high and rested on a foundation, 800mm deep and over 1.4m east-west. The parapet wall was found to be of double skin construction with a rubble infill, bonded with grey lime mortar and measured a maximum of 600mm wide at its base, tapering towards the top. The upper courses of the foundation were bonded with a cream lime mortar with charcoal flecking, which was not visible in the lower courses. Both the parapet wall and its foundation were constructed of small to medium Pennant slabs. It is likely that the wall (Context 107) was constructed within a foundation cut, truncating the redeposited clay subsoil (Context 524). The base of the modern cutting also revealed the possible red marl natural substrate (Context 525), at a depth of approximately 2.3m below the modern ground surface (approximately 41m a OD).

West side of bridge (see cover photo)

The parapet wall (Context 123) to the west of the Bridge was of similar construction to Context 107. Both parapet walls were surmounted by coping stones (Contexts 102 and 118),

which were curved in section and linked one to another by means of small iron "dogs". The coping stones measured between 340mm and 1.31m long, between 140mm and 180mm maximum height and 340mm to 390mm broad. As on the east side of the Bridge, larger squared coping stones marked the boundary between the cocks and hens surmounting the retaining walls and the flatter coping stones overlying the parapet walls. These squared stones measured approximately 620mm to 640mm sq. and were fixed to the underlying wall by means of a central metal bar, approximately 390mm long.

Context 123 was of double skin construction, with rubble and decayed mortar infill, bonded with pinkish cream lime mortar containing charcoal flecks and lime chunks, externally repointed with a cement-based mortar. The wall extended to 1m (thirteen courses) high above the road surface, at which point it measured approximately 340mm to 390mm wide, splaying to a width of 520mm to 530mm at a point level with the road. The sandstone slabs were generally of small to medium size, becoming larger towards the base of the wall. The foundation, at its northern end, of sandstone rubble with clay/lime mortar bonding, extended over 1m deep below the level of the road and was probably sited within a cut in the redeposited subsoil layer (Context 531, similar to Context 524). The foundation measured over 730mm east-west at its base.

#### Construction work (Plate e)

After the removal of the retaining walls and the parapet walls, four lengths of north-south aligned corrugated metal shuttering were inserted, replacing the retaining walls, in order to facilitate further excavation. In addition, five reinforced concrete piles (700mm diameter) were inserted at regular intervals to the rear of the south and north abutment walls, preparatory to the construction of the new bridge.

The arch fabric (information courtesy of Ron Keene, Structural Engineer, South Gloucestershire Council, 13.10.11)

After removal of the tarmacadam road surface and make-up layer (Contexts 522 and 523) surmounting the span of the Bridge, the underlying fabric of the arch was shown to be made up of two abutting Contexts (Plate a). Context 520, sandstone rubble construction bonded with hard grey mortar, extended approximately 3.8m east-west and 6.2m north-south (to the right of the frame). The upper surface of Context 520 was raised approximately 100mm above that of Context 521. Context 521, sandstone rubble construction with clay bonding, extended approximately 3.6m east-west and was of similar length (to the left of the frame). (See also Phase Plan, Figure 4a).

Additional masonry (Plates b) and c); Phase Plan, Figure 4a)

After removal of the arch, a further cutting was excavated, 5.8m east-west, approximately 1m to the rear (north) of the north abutment wall (Context 129) to a depth of approximately 1.12m below the former road surface (maximum depth 43.08m a OD). The cutting revealed an isolated area of masonry (Context 528) located approximately 1.4m west of the east parapet wall (Context 107) and approximately 1m north of the north abutment wall. The masonry consisted of at least ten courses of clay bonded small sandstone rubble slabs, with fair face to east, measuring over 750mm east-west by over 450mm high by over 800mm north-south. The base of the masonry was not observed. To the west, the masonry was truncated by Cut 527, a cut of at least 800mm deep and 4.1m east-west, filled by redeposited clay (Context 526). To the east lay an area of modern disturbance, probably related to the bridge demolition.

## The bridge abutments Northern abutment

The external (southern) face of the northern abutment (Context 129) was recorded prior to demolition (see Section 4.2.1, above; and Plate c). During the bridge demolition, excavation to the north of the Brook revealed a portion of the rear face of Context 129, over an area approximately 1.8m east-west by 500mm high. The exposed portion, located approximately 2m east of the west side of the Bridge, revealed that the fabric to the rear of the abutment consisted of medium to large sandstone slabs, some bonded with a dark grey lime mortar but also with some clay bonded areas. This rear elevation was fairly randomly coursed, with varying sizes of slab, and was probably trench-built, into the redeposited reddish brown clay (Context 533) visible to the north of the wall.

As further courses of the northern abutment wall were removed, during the general reduction in ground level required by the bridge replacement works, it became apparent that the abutment wall itself (Context 129) was made up of two abutting phases of masonry. The eastern portion of the abutment wall was recorded as Context 518 and the western portion as Context 519. The butt joint between Contexts 518 and 519 was located at approximately 4m east of the west terminal of the abutment (see Phase Plan, Figure 4b) and Plates d) and e) and was first noted at a height of approximately ten courses (over 800mm) above the base of the wall. Little or no distinction was noted between the fabrics of the two abutting contexts. Both walls were made up of irregular sandstone slabs, with fair face to south. It was not possible, by observing the joint, to determine which was the earlier wall. Both walls were of similar width (up to 1m north-south) and were bonded with similarly variable mortars, lime based, with varying amounts of charcoal, clay and lime.

## Foundation courses of northern abutment (Contexts 518 and 519) Context 519

A further reduction in the level of Wall 519 revealed that the base of the masonry rested on a stepped foundation course, extending approximately 200mm beyond the western terminal of the wall (see Plate f). This foundation was flanked by two timber posts (Contexts 517/529 and 516; see Phase Plan, Figure 4b), approximately 160mm in diameter. Post 529, which was marked on its upper surface with the stamp, "TO", was retained for further examination. The foundation itself was located at a depth of between 3m and 4m below the original carriageway level (40.21m a OD and 41.21m a OD) and measured up to 500mm wide (north-south). At foundation level the Pennant sandstone slabs were bonded largely with red clay, but traces of dark grey lime mortar were also visible. It is likely that the foundation courses were trench built within Contexts 500 and 501, but the cut was not observed due to waterlogging.

#### Context 518

The excavated area to the north of the Brook was further reduced to a maximum depth of 4.5m below the original level of the carriageway (approximately 39.71m a OD) and extended to a maximum of 3.9m north-south.

The lower courses of Wall 518 were observed in north-facing elevation (see Plate d), in the southern face of the above cutting. The wall itself, measuring 270mm wide, rested on a lower foundation course, measuring a further 230mm wide. The fabric consisted of Pennant sandstone slabs, becoming more squared and regular towards the base, bonded with lime-based mortars including a creamy yellow mortar with frequent charcoal and clay, and a hard dark grey mortar. The lower three to five courses of masonry, which were observed in detail, measured a total of 300mm high (plate g). The lowest course was located at approximately 3.6m below the original carriageway level (40.61m a OD).

Wall 518 appeared to sit within a foundation cut (Context 507), which truncated a thin band of gingery clay (Context 501), visible at the south-eastern corner of the excavated cutting (Plate g). Context 501 overlay a thicker brown silty clay deposit (Context 500), which extended the entire width of the cutting (over 7.5m east-west) and over 1.4m north-south. Context 500

appeared to sit within a cut (Context 504), which truncated the natural marl substrate (Context 503), which in turn overlay the natural mudstone (Context 505), which was visible in the base of the cutting. Cut 504, visible in the east and west-facing sections of the cutting (Plate i), appeared to be cut from a level of approximately 40.4m a OD and measured over 7m east-west by over 1.4m north-south.

To the rear (north) of Wall 518, the cutting appeared to show a thin layer of decayed timber (Context 502), measuring approximately 1m east-west. Seven individual post-holes and one in situ stake (Contexts 508 to 515) were also visible, extending along the entire rear face of the wall (See Plate h Phase Plan, Figure 4b). These features were cut into the brown silty deposit (Context 500).

The west-facing section of the modern cutting (Plate i) also revealed a thick band of manganese-rich redeposited red clay (Context 532), which overlay Context 500 and measured 600mm thick by over 1.2m north-south. Context 532 was in turn overlain by a mixed redeposited brown silty clay (Context 506), over 500mm thick and a further redeposited red clay band (Context 536).

#### Southern abutment

The external (northern) face of the southern abutment (Context 112) was recorded prior to demolition (Section 4.2.1, above).

Wall 112 was reduced to a height of approximately 1m above concrete sill (Context 111), at which point the butt joint (Context 131) became visible. Further context numbers were assigned (as they were for the northern abutment) in order to distinguish between masonry to the west (Context 602) and to the east (Context 600) of Context 131. Context 600 consisted of an area of Pennant sandstone masonry, approximately 300mm high and 3.8m east-west, breadth approximately 1m. The fabric consisted of large flat slabs, repointed externally with cement-based mortar. Context 600 directly overlay a slightly wider area of masonry, Context 601, which extended a further 50mm to the north (see records prior to demolition). Context 601 measured approximately 3.8m east-west by 700mm high by 1.2m maximum breadth and was of similar fabric to Context 600. To the west of Context 131, the masonry (Context 602) was of similar fabric and extended approximately 3.5m east-west by up to 1.2m north-south and measured 1m high. Both walls, Contexts 601 and 602, appeared to be bonded by both lime-based and clay-based mortars, which varied in colour and contained varying amounts of charcoal, clay and lime.

### Foundation courses of Walls 601 and 602 Wall 601

On excavation to the rear (south) of Wall 601, the masonry was shown to be sited within a cut (Context 604), which truncated a brown silty clay layer, over 350mm thick (Context 605 – possibly the same as Context 500, to the north) (see Plate k). Context 605 was overlain by a redeposited orangey brown clay with charcoal (Context 603), over 400mm thick. Both the above deposits extended the full length of the width of the Bridge (over 7.3m east-west). It was unclear whether Cut 604 truncated this clay layer, or whether the clay had been packed against the rear elevation of the wall, after its construction. The base of Cut 604 was located at approximately 40.89m a OD.

#### Wall 602

The foundation courses of Wall 602, to the west, did not differ visibly in fabric, dimensions or bonding from those to the east of Context 131. Wall 602 also appeared to have been trenchbuilt, into Context 605. It was not possible to discern whether the cut for the wall truncated the redeposited clay layer (Context 603).

Butt joint between Walls 601 and 602 (Context 131) (Plate j) and Phase Plan, Figure 4b)

The butt joint between the two walls, located at approximately 3.8m to the west of the east end of Wall 601, was revealed clearly on removal of the upper foundation courses. In section, Wall 602 was shown to be sited within a stepped cut (Context 606), measuring over 270mm deep, declining to the west. Wall 601 could be seen to be sited within a similarly stepped cut (Context 607), declining to the east, of slightly greater depth. It was not possible to determine which of the two cuts was the earlier.

The section excavated to the rear (south) of Walls 601 and 602 revealed the presence of a single post-hole (Context 608), measuring 110mm in diameter and 160mm deep, cut into the brown silty clay deposit (Context 605). The post-hole was located just south of the eastern terminal of Wall 602, possibly partially underlying the latter wall (Plate I) and Figure 4b). At this location, the brown silty clay (Context 605) reached a thickness of 200mm and overlay the grey marl substrate (Context 610).

Removal of Walls 601 and 602 revealed the top of the concrete sill (Cut/fill 609/Context 111), recorded in the preliminary survey, which measured less than 400mm wide and could be seen to undercut slightly the base of the walls.

Three large medieval fine ware pottery sherds were recovered from the loose spoil approximately 1.5m to the north of the north abutment (Context 129), at a depth of 1.5m to 2m below the original carriageway level (42.21m a OD to 47.21m a OD). The pottery consisted of two rim sherds and a conjoining strap handle sherd from a probable Ham Green jug of 12<sup>th</sup> to late 13<sup>th</sup> century date (Fabric A, BPT 26), showing stabbed decoration and remnants of green glaze (Good and Russet 1987, 36-7).

#### 5 Discussion, Summary and General Conclusions

The archaeological monitoring and recording exercise undertaken during the demolition and rebuilding of Matford Bridge, Old Gloucester Road, Winterbourne, South Gloucestershire indicates that the bridge was post-medieval in origin. A 19<sup>th</sup> century construction date, indicated by a date-stone set into the western parapet, appeared to be supported by the cartographic evidence, which showed that a bridge had existed on the site, from at least 1881 onwards (OS 1881, 1<sup>st</sup> edition).

More recently, the majority of the fabric of the Bridge had been repointed, the coping stones surmounting the parapets appeared to have been re-cemented in place and a part, at least, of one of the retaining walls (to the south-east) appeared to have been completely rebuilt. The large longitudinal crack in the underside of the arch had been recently pointed with a cement-based mortar.

The bridge was shown to have been constructed in two phases, represented by the two abutting fabrics to either side of the longitudinal crack visible in the underside of the arch. It is suggested that an earlier bridge, to the west, of just over 3m wide, was then enlarged (widened) by the addition of a similar, slightly wider, bridge to the east. The similarity in construction technique and mortars of the abutments suggests, however, that the earlier phase may not have preceded the later by any significant length of time.

It is probable that these two abutting bridges were preceded by at least one earlier stone bridge and one of possible timber construction, as suggested by the isolated block of masonry north of the north abutment and by the considerable number of post-holes fringing the north bank.

Earlier activity, in the form of an extensive cut through the natural substrate, and by the presence of unstratified medieval pottery, may be related to either the suggested medieval ford, or to a bridge pre-dating the above timbers.

Although the exact location of the supposed earlier ford is not known, the wide sunken hollow to the west of the present carriageway may represent a former hollow-way, leading to such a feature. This suggestion is corroborated by the fact that maps from 1881 onwards (OS 1<sup>st</sup> edition and see Figure 2) show a distinct widening of the road to the south-west of the bridge, suggesting that the route of the original road may have lain to the west and that the ford and the bridge may have functioned contemporaneously.

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#### 7 Table of Contexts

Context Number	Location	Dimensions	Description
100	South end of Bridge, east side	Overall extent: 6.5m north-south by 53mm (max) east-west (approx)	Pennant sandstone coping stones in form of cocks and hens, surmounting carriageway retaining wall 106, modern cement bonding.
101	North end of Bridge, east side	Overall extent: 4.7m north-south by 350mm east- west (approx)	Pennant sandstone coping stones in form of cocks and hens, surmounting carriageway retaining wall 108, modern cement bonding.
102	East side of Bridge	Overall extent: 12.15m north- south by 370mm east-west (approx)	Pennant sandstone coping stones surmounting central area of masonry (parapet wall 107), modern cement bonding. Iron "dogs" used to attach one stone to the next.
103	South end of Bridge, east side	1.7m high (approx) by 650mm wide (approx)	Pennant sandstone pilaster marking southern extent of eastern carriageway retaining wall. Protrudes 100mm (approx.) to east of main retaining wall. Surmounted by large squared coping stone.
104	South end of Bridge, east side.	620mm by 620mm, by 220mm high (approx.).	Large Pennant sandstone coping stone, marking southern extent of coping stones surmounting Bridge parapet.
105	North end of Bridge, east side	2m high, width 680mm.	Pennant sandstone pilaster at northern end of parapet wall 107.
106	South end of Bridge, east side	6.5m north-south by 530mm wide by 2m high (max)	Area of Pennant sandstone masonry (carriageway retaining wall) south of coping stone 104, showing modern repointing. Most stones medium-sized,

		(approx)	rectangular, but also incorporates occasional large squared blocks (300mm by 230mm).
107	East side of Bridge	12.15m north- south by 4m high (max) by 400mm -600mm wide (approx)	Area of Pennant sandstone masonry (parapet wall) surmounting arch of Bridge, showing modern repointing. Foundation at northern end of parapet wall measured 800mm deep by >1.4m wide.
108	North end of Bridge, east side	4.7m north-south by 1.9m high (max) by 350mm wide (at the top)	Area of Pennant sandstone masonry (carriageway retaining wall) north of pilaster 105, showing modern repointing. Bonded internally with grey lime mortar. Northern end of 108 is in state of disrepair.
109	East arch of Bridge (east- facing elevation)	6.2m (internal span); length of keystone: 400mm.	Flattened arch of Bridge with central keystone, east- facing elevation. Pennant sandstone with modern repointing.
110	North end of Bridge, east of wall 107	1.7m high by 2.3m east-west	Concrete block headwall for 600mm diameter outflow pipe, sited on concrete foundation, 500mm deep, and flanked by retaining walls, giving overall width of feature, 4.7m (east-west).
111	South end of Bridge	< 360mm high by 230mm wide (north-south) by 7.3m long (east- west) (approx)	Concrete sill foundation running full width of Bridge, partially beneath abutment 112. Concrete is faced with wood at its western end.
112	Southern abutment	1.5m high by 7.3m east-west	Pennant sandstone southern abutment. Three lower courses form slightly wider foundation, 260mm high. Abutment itself is 70mm to 800mm high and composed of large squared blocks. At east side of Bridge, abutment protrudes <50mm north of fabric of arch. Vertical crack in masonry (Context 131), 3.65m from east side of Bridge. Modern cement repointing.
113	South end of Bridge, east side	>700mm east- west by 1.1m max. height (adjacent to abutment 112) (observed in section only)	Build-up of grey, silty topsoil, adjacent to and overlying masonry 115.
114	South end of Bridge, east side	>200mm deep, >700mm wide (east-west) (observed in section only)	Possible cut, observed in north-facing section only, filled by masonry 115.
115	South end of Bridge, east side	1.35m maximum height by 700mm east-west. Length unknown.	Possible masonry, abutting east pier of Bridge, south side, randomly coursed, with pinkish mortar.
116	South end of Bridge, east side	>420mm deep by >1.6m east- west	Reddish brown clay subsoil.
117	South end of Bridge, east side	1.3m east-west by 120mm maximum height, seen in north- facing elevation only	Line of small-medium stones, up to three courses high, no mortar visible. Possible remnant track surface.
118	West side of Bridge	12.7m north- south	Coping stones surmounting parapet wall of Bridge, west side, demarcated by larger squared stones (c.670mm sq.) at either end, modern cement bonding. Iron "dogs" used to attach one stone to the next.
119	North end of Bridge, west side	25.8m north- south	Cocks and hens surmounting retaining wall to north of Bridge, west side, modern cement bonding.
120	South end of Bridge, west side	5.9m north-south	Cocks and hens surmounting retaining wall to south of Bridge, west side, modern cement bonding.
121	South end of Bridge, west side	3m north-south	Cocks and hens surmounting southern terminal of retaining wall to south of Bridge, west side, modern cement bonding.
122	South end of Bridge, west side	2m high, surmounted by coping stone	Pilaster surmounted by modern cement coping stone, between Contexts 120 and 121.

		570mm square	
123	West side of Bridge	6.2m north-south by 2m high (minimum, in centre)	Area of Pennant sandstone masonry, comprising parapet wall of Bridge (west-facing elevation), incorporating date-stone, Context 125. Even coursing, modern repointing. Foundation at northern end of parapet extended >1m deep and measured >730mm wide.
124	West side of Bridge	6.2m north- south, thickness 360mm to 380mm	Arch of Bridge with central keystone, Pennant sandstone with modern repointing.
125	West side of Bridge	Dimensions unknown	Date stone, located roughly centrally over keystone of arch, inscribed, "18"
126	North end of Bridge, west side	25.8m north- south, maximum height 3m, width at northern terminal 530mm	Pennant sandstone rubble retaining wall, modern repointing, surmounted by cocks and hens, Context 119, north end collapsed. Some blocks squared and dressed. Maximum block size: 350mm by 350mm by 100mm. Internal bonding: grey lime-based mortar with charcoal flecks.
127	South end of Bridge, west side	9m north-south by 350mm wide, maximum height 2.5m	Pennant sandstone retaining wall, modern repointing, surmounted by cocks and hens, Contexts 120 and 121. Southern terminal is rounded.
128	Arch of Bridge	6.2m north-south by approx. 6m east-west by approx. 1.5m high	Internal fabric of arch comprises Pennant sandstone blocks, bonded largely with pinkish lime-based mortar, but with frequent patches of cream lime mortar and some modern cement repointing. Large area of patching with thick lime-based mortar with charcoal flecks, at western side of arch. Large crack running north-south, approx. 3.65m from east side of Bridge. During demolition, this Context was subdivided into Context 520, masonry to the east of the crack, and Context 521, masonry to the west.
129	Northern abutment	1.5m high (approx.) by 7.3m east-west	Pennant sandstone abutment, similar in fabric to Contexts 112 and 128. Modern cement repointing. Crack (Context 131) partially visible.
130	North side of Bridge, west parapet wall	630mm long by 300mm wide by 140mm maximum breadth	Inscribed stone, located roughly centrally within east-facing elevation of west parapet wall. Inscription largely eroded. Letters, "ge/o" remain. (Probably "Matford Bridge" (SGSMR 3567, source (1)).
131	Internal fabric of arch	6.2m east-west by 50mm maximum width	Crack in internal fabric of arch, pointed with modern cement-based mortar, marking location of butt joint between Masonry 520, to east and Masonry 521, to west.
500	North side of Bridge, rear (north) side of Walls 518 and 519	>6m east-west by >1.4m north- south by 400mm thick (maximum)	Brown silty clay deposit containing charcoal, observed to rear (north) of entire combined eastwest length of Walls 518 and 519. Overlain by thin ginger deposit, Context 501 at east end and Context 530 at west end. Within probable Cut, Context 504.
501	North side of Bridge, visible in section to rear (north) side of Wall 518	>1m east-west by 30mm thick	Thin band of gingery clay, probably truncated by foundation cut for Wall 518. (Probably same as Context 530 to west).
502	North side of Bridge, visible in section to rear (north) side of Wall 518	>1m east-west by <30mm thick	Area of decayed timber(s), corresponding in part to location of Context 501 (above). Some individual stakes visible (Contexts 514 and 515).
503	North side of Bridge, visible in section to rear	>6m east-west by >850mm deep by >1.4m north-south	Bands of red/grey marl (Keuper mudstone), truncated by Cut 504.

	/\		T
	(north) side of		
	Walls 518		
504	and 519 North side	>6m east-west	Cut which truncates the natural mark substrate
304			Cut, which truncates the natural marl substrate,
	of Bridge,	by >1.4m north-	visible in east and west-facing sections, possibly for
	visible in	south by 200mm	construction of fore-runner to Bridges 520/521.
	section to	deep	
	rear		
	(north)		
	side of		
	Walls 518		
	and 519		
505	North side	>6m east-west	Keuper mudstone, seen in plan only, at a depth of
	of Bridge,	by >1.5m north-	39.70m a OD (approx.).
	visible in	south	
	plan to		
	rear		
	(north)		
	side of		
	Walls 518		
	and 519		
506	North side	>1.2m north-	Mixed redeposited brown silty clay, overlies Context
	of Bridge,	south by 1m	514.
	seen in	deep	
	west-	•	
	facing		
	section to		
	rear		
	(north)		
	side of		
	Wall 518		
507	North side	3.6m east-west	Possible foundation cut for Wall 518, truncating
	of Bridge	by >700mm	deposits 501 and 500.
	J. B.lago	north-south	aspestio our and our.
508	North side	140mm east-	One of a row of post-holes to rear of Wall 518, filled
550	of Bridge	west by 80mm	by dark grey silty clay with frequent charcoal smears.
	to rear	deep	by dain grey sitty day with nequent charcoal silledis.
	(north) of	acch	
	Wall 518		
509	North side	130mm east-	One of a row of post-holes to rear of Wall 518, filled
000	of Bridge	west by 170mm	by dark grey silty clay with frequent charcoal smears.
	to rear	deep	by dain grey only day will hequeil charcoal sineals.
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510	North side	170mm east-	One of a row of post-holes to rear of Wall 518, filled
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	of Bridge	west by 400mm	by dark grey silty clay with frequent charcoal smears.
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	to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge	120mm east- west by 70mm deep	One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.
	to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear	120mm east- west by 70mm deep	One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled
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512	to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side	deep  120mm east- west by 70mm deep  90mm east-west by 120mm deep  70mm east-west by 140mm deep  <50mm diameter, >50mm long	One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  In situ stake, one of row of post-/stake-holes edging rear elevation of Wall 518.  Probable post-hole, with possible in situ timber, one
512 513 514	to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518	deep  120mm east-west by 70mm deep  90mm east-west by 120mm deep  70mm east-west by 140mm deep  <50mm diameter, >50mm long  150mm by 100mm (in plan	One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  In situ stake, one of row of post-/stake-holes edging rear elevation of Wall 518.
512 513 514	to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side of Bridge to rear (north) of Wall 518 North side	deep  120mm east- west by 70mm deep  90mm east-west by 120mm deep  70mm east-west by 140mm deep  <50mm diameter, >50mm long	One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  One of a row of post-holes to rear of Wall 518, filled by dark grey silty clay with frequent charcoal smears.  In situ stake, one of row of post-/stake-holes edging rear elevation of Wall 518.  Probable post-hole, with possible in situ timber, one

516	North side of Bridge, to rear (north) side of Wall 519	160mm diameter (approx.) with timber >300mm long	Post-hole with in situ timber at north-west terminal of Wall 519.
517	North end of Bridge, to south of Wall 519.	160mm diameter by 350mm deep	Post-hole with in situ timber (Context 529), at southwest terminal of Wall 519.
518	North end of Bridge, east side	3.6m east-west (approx.) by 500mm north- south by >600mm high	Lowest nine or ten courses of north abutment wall (Context 129), east side. Total width includes stepped foundation course, 230mm wide. Wall is of Pennant sandstone roughly squared blocks, with fair face to south. Bonding material varies, including hard dark grey mortar and creamy yellow mortar with frequent charcoal, lime and clay. Possibly sited within a cut, Context 507, which truncates deposits 500 and 501.
519	North end of Bridge, west side	3m (approx.) east-west by 400mm to 900mm wide by >600mm high	Lowest nine or ten courses of north abutment wall (Context 129), west side. West terminal includes stepped foundation course flanked by two post-holes (Contexts 516 and 517). Wall is of Pennant sandstone roughly squared blocks, with fair face to south. Bonding material variable, similar to Wall 518, lime mortar with frequent charcoal, lime chunks and clay smears. Possibly sited within a foundation cut.
520	East side of Bridge	3.6m east-west by 6.2m north- south	Context number assigned to masonry arch to east of longitudinal crack (Context 131), after removal of modern road surface and make-up. Masonry consisted of Pennant sandstone rubble, bonded with grey lime mortar (pers.comm. Ron Keene, 13.10.11).
521	West side of Bridge	3.8m east-west by 6.2m north- south	Context number assigned to masonry arch to west of longitudinal crack (Context 131), after removal of modern road surface and make-up. Masonry consisted of Pennant sandstone rubble, clay bonded (pers.comm Ron Keene, 13.10.11).
522	North end of Bridge	Width (east- west) 4.6m (approx.), length: > 10m, thickness <50mm	Tarmacadam road surface.
523	North end of Bridge	Width (east- west) 4.6m, length: >10m, thickness: 600- 650mm	Make-up for road surface, Context 130, consisting of scalpings. Possible earlier tarmac road surface visible at a depth of approx. 350mm.
524	North end of Bridge	>800mm thick, >4.6m east-west, > 10m north- south	Redeposited red clay subsoil, visible in plan and section on removal of retaining walls, Contexts 126, 107 and 108, north end of Bridge.
525 526	Not used.  North end of Bridge, to north of abutment, Context 129	>800mm thick by >4.1m east-west	Re-deposited red clay subsoil, seen in section approx. 1m to north of north abutment. Contains some charcoal, lime mortar lenses and rare small stones. Fill of Cut 527.
527	North end of Bridge, to north of abutment, Context 129	>800mm deep, width and length unknown	One side only of possible Cut, visible only in section as truncation of west side of Wall 528. Filled by Context 526.
528	North end of Bridge, approx. 1m north of north abutment	>470mm high by >750mm east- west by >800mm north-south	Area of undated masonry, approx. 1m west of parapet wall (Context 107) and on a slightly different alignment. At least ten courses high, with fair face to east, suggesting that it may have formed part of an earlier, slightly narrower bridge. The masonry was of Pennant sandstone rubble, small roughly squared slabs, bonded with clay.
529	North end of Bridge, west terminal of	160mm diameter by 350mm long	Timber post, retrieved from post-hole 517. Upper face is sawn roughly flat and marked twice with impressed initials, "TO". Lower end is roughly hewn. Waterlogged.

	Wall 519.		
530	North end of Bridge, east- facing section to rear (north) of north abutment	>1.4m north- south by 50mm thick	Thin ginger clay band, overlying brown silty clay, Context 500. Probably truncated by Context 507, cut for Wall 519. Similar to same as Context 501, to east.
531	North end of Bridge, to east of retaining wall, Context 126.	>1m thick by >6m north-south	Redeposited red clay subsoil, with some mortar smears and rare small stones. Similar to Context 524.
532	North end of Bridge to rear (north) of Wall 518	>1.2m north- south by 600mm thick	Redeposited manganese-rich clay layer, overlies brown silty clay, Context 500, in west-facing section.
533	North end of Bridge to rear (north) of Wall 129	>1.8m east-west by >500mm deep	Redeposited reddish brown clay, similar to Contexts 524 and 531.
534	North end of Bridge, west- facing section	500mm thick by >1.2m north- south	Redeposited red clay.
600	South end of Bridge, east side	3.8m east-west by >300mm high, width 1m (approx.)	Base of east side of south abutment wall, Context 112, overlying stepped foundation, Context 601. Pennant sandstone blocks, fair face to north, modern cement repointing externally.
601	South end of Bridge, east side	3.8m east-west by >700mm high, width 1.2m (max.)	Foundation to Wall 600, stepped 50mm to north. Pennant sandstone blocks, fair face to north, irregular to south, with varying mortars, including creamy lime mortar and reddish brown clay mortar with charcoal and lime chunks. Appears to lie within Cut 604.
602	South end of Bridge, west side	3.5m east-west by 1.2m wide (max.) by >450mm high	Lower six courses of west side of south abutment wall, consisting of Pennant sandstone blocks, fair face to north, bonded with varying mortars, as 601, including reddish brown clay mortar and greyish brown lime mortar with frequent charcoal. Larger blocks towards base of wall. Rear face of wall (as also Wall 601) is lined with creamy lime mortar. Appears to lie within Cut 611.
603	South end of Bridge, south of abutment, Context 112	>7.3m east-west by >50mm north- south by >400mm thick	Redeposited red clay subsoil, possibly truncated by Cuts 604 and 611.
604	South end of Bridge	3.8m east-west by >1.6m north- south by >50mm deep	Foundation cut for Wall 601, truncating brown silty clay layer, Context 605. May also truncate redeposited clay, Context 603. See also Context 607, below. Base of Cut is located at approximately 40.89m a OD.
605	South end of Bridge	>7.3m east-west by >350mm thick by >1.6m north- south	Brown silty clay deposit, similar to Context 500 to north of Bridge, truncated by Cut 604.
606	South end of Bridge	270mm deep by 200mm east- west by 1m north-south	East end of Cut 611, at east terminal of Wall 602.
607	South end of Bridge	150mm deep by 170mm east- west by 1m north-south	West end of Cut 607, at west terminal of Wall 601.

608	South end of Bridge	160mm deep by 110mm east- west	Cut/fill of post-hole to rear (south) of Wall 602, truncating Context 605 and possibly pre-dating the wall. Filled by grey silty clay with some charcoal.
609	South end of Bridge	7.3 east-west by <260mm thick by approx. 500mm wide	Concrete sill, slightly undercutting base of Walls 601 and 602, running the entire width of the Bridge on the south side. Same as Context 111.
610	South end of Bridge	>3m east-west by >3m north- south, depth unknown	Grey marl natural substrate visible in base of excavated area, at a depth of approximately 40.69m a OD.
611	South end of Bridge	3.5m east-west by >1m wide by >270mm deep	Foundation cut for Wall 602. See also Context 606.  Base of Cut is located at approximately 40.89m a  OD.
612	South end of Bridge	1.5m north-south by 600mm deep	Mixed silty clay deposit, truncated by possible cut for retaining wall (Context 127).
613	South end of Bridge	>5.4m east-west by >1m deep	Redeposited red clay layer, overlain by road make- up (Context 523).

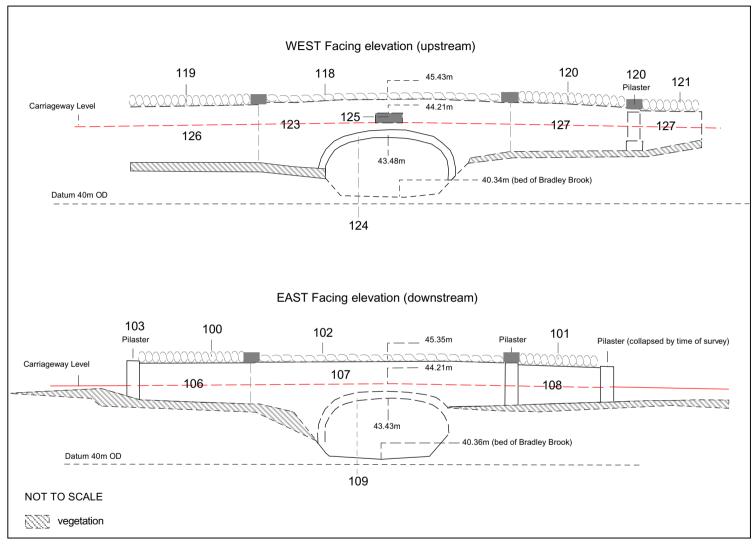


Figure 3
Schematic bridge elevations, showing contexts assigned prior to demolition

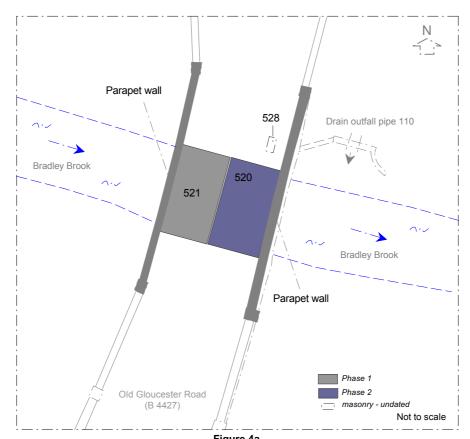
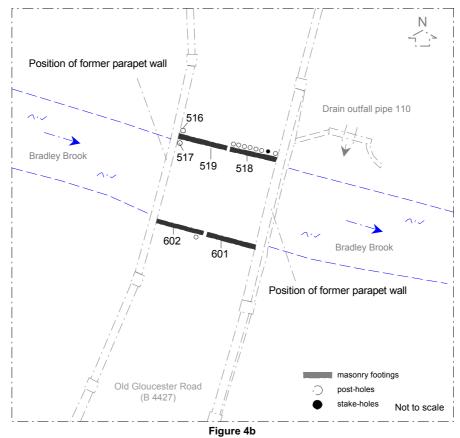


Figure 4a
Phase plan showing two phases of arch construction and undated masonry



Phase plan showing two phases of masonry footings, with location of post-holes

#### **Plates**



a) View of arch of Bridge, after removal of modern road surface, facing north, showing Context 520 to right of frame and Context 521 to left. No scale.



b) Block of masonry, Context 528, to west of retaining wall, Context 108 (in right foreground). North-west-facing view. Scales: 500mm.



c) North-east facing view of section through redeposited clay to rear (north) of north abutment (Context 129), showing location of Masonry 528. No scale.



d) Detail of butt joint between Wall 518, to left and Wall 519, to right, facing south. Scales: 500mm.



e) North bank of Bradley Brook, from south, showing concrete piles, metal shuttering and butt joint between Walls 518 (to right) and 519 (to left, mostly demolished). No scale.



f) West end of Wall 519, from west, showing stepped foundation course and adjacent post-holes, Contexts 516 and 517. Scales: 500mm.

### Plates (continued)



g) View of rear (north) elevation of Wall 518, showing Contexts 501, 500 and 503, from north-west. Scales: 500mm.



h) Oblique view of four of post-holes to rear of Wall 518, Contexts 510, 511, 512 and 513. These cuts truncate brown silty clay, Context 500. Viewed from north-east. Scale: 1m.



i) East-facing view of sequence of deposits to rear (north) of Wall 518. Shows Context 500, truncated by Cut 507 and Context 503, truncated by Cut 504. Scale: 1m.



j) Butt joint between Wall 601, in Cut 607, to right and Wall 602, in Cut 605, to left. Viewed from south. Scales: 500mm.



k) North-west-facing view of Wall 601, Foundation Cut 604 and Contexts 603 and 605. Scales: 500mm.



I) North-facing view of Post-hole 608, with concrete sill and remnants of Wall 602 to rear. Scales: 500mm.