STOKE CANON BRIDGE, STOKE CANON, EAST DEVON

Centred on SX 93795 97561

Results of archaeological monitoring and recording

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On behalf of:
Devon County Council

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AC archaeology

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Centred on SX 93818 97499

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Summary

An archaeological watching brief was undertaken by AC Archaeology Ltd in July and August 2013 during repairs to the invert under one of the arches of Stoke Canon Bridge (centred on SX 93818 97499). The bridge and causeway is a Grade II Listed building, and contains medieval fabric as well as masonry associated with 19th-century widening and repairs. The invert had been partially washed away and a scour hole created by water action under the arch.*

The stone invert had been laid onto a raft constructed of gravel laid into brushwood and was supported by a grid of wooden stakes. The date of these is likely to be early 19th-century, associated with the widening of the bridge.

The recording also identified two phases of previous repairs to the invert surface.

1. INTRODUCTION (Fig. 1)

1.1 A programme of historic building recording and an archaeological watching brief was undertaken by AC archaeology Ltd during the repairs to the Stoke Canon Bridge (centred on SX 93818 97499; Fig. 1) in July and August 2013. The archaeological investigations were recommended by East Devon District Council, and were carried out during the repairs to the stone invert below an arch of the bridge. The work was commissioned by Devon County Council.

2. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Stoke Canon Bridge and Causeway is a Grade II* Listed building (National Heritage List for England entry 12253020) and the main span over the River Culm only is a Scheduled Ancient Monument (National Heritage List for England entry 1004581). The main part of the bridge is probably a 15th century rebuild of an earlier medieval structure, which was known to have been in existence by the late 13th century. Stoke Canon was held by the Bishop of Exeter in the Domesday survey of 1086 and in 1326, Bishop Stapeldon left £4 in his will for the upkeep of the bridge (Hoskins 1954, 480-81; Martin and Williams 2003, 283). In 1809, the bridge was noted as being in need of 'considerable repair' and it is likely that it was widened to the east and repaired shortly after this date.

2.2 The 15th century segment of the bridge is located at the north end and consists of 3 main spans over the river and a flood arch to the north. The causeway section to the south has 2 flood arches and an arch or a mill race at the south end.

2.3 Investigations associated with the recent improvements to the Stoke Canon Flood Defence Scheme (Dean 2011; Kerr-Peterson forthcoming) did not identify any palaeoenvironmental deposits within the floodplain. On the bridge itself, monitoring and recording of repairs to the 19th-century parapet took place.

3. AIMS OF THE WORK

3.1 The investigation had two principle aims. The first aim was to prepare a record of the surviving stone masonry of the invert prior to the repair work commencing. The second aim was to record the scour hole below the invert to identify and record any

exposed archaeological deposits, with the particular emphasis on the recovery of environmental deposits if they were present.

4. METHODOLOGY

4.1 The recording was undertaken in accordance with a method statement prepared by AC archaeology Ltd (Passmore 2013). It comprised the monitoring of all groundworks and a preparation of a detailed photographic, drawn and written record of the surviving invert masonry and scour hole. Following initial recording, the excavation of the scour hole was carried out in two halves, in order to maintain access through the invert for livestock. Water action in the scour hole had caused significant removal of archaeological deposits, and the deposit sequence described below was not present across the whole invert.

5. RESULTS (Fig. 2)

5.1 The invert measures 5.90m by 5.20m, and is defined on its north and south sides by the span of the bridge (Plate 1). The east and west sides are defined by wooden beams (101) set between the faces of the arch at a slightly lower level than the invert. These beams measured 0.40m wide by 0.30m deep. The stone invert (100) comprised blocks of square and ashlar limestone measuring upto 0.75m long, 0.45m wide and 0.40m deep, although the average size was around 0.3m long, 0.1m wide and 0.1m deep. The surviving stones were randomly coursed and bonded with a light buff lime mortar. On the east side, there were two areas of modern repair – grey concrete (102) and buff yellow, angular mortar bedding (105); the stones above this bedding (104) were reset from the earlier invert and had been partially laid over beam 101 (Plate 2). In addition, the scour hole had recently been in-filled with modern rubble and gravel (103) to allow the invert to be used for access.

5.2 Removal of the surviving *in situ* invert 100 exposed a red gravel bedding layer (108). This overlaid a waterlogged deposit that consisted of variously-sized water-derived oval or rounded pebbles within a matrix of blue-grey silt (109). Below 109 several patches of preserved brushwood branches (107) were exposed that had been laid between rows of stakes (107) at a depth of 0.3m from the surface (see below). The brushwood consisted of a series of branches laid out parallel to each other, with a maximum of five branches laid between each row of stakes (Plates 3-8). The largest surviving patch of brushwood was *c*. 3m long and 0.75m wide. The branches were all of a similar size with an average diameter of 0.06-0.08m. Tooling marks were identified on one of the brushwood branches; this is likely to have been made with a metal axe.

5.3 The stakes (106) were aligned in approximate rows running north-south and east-west. The stakes varied slightly in shape and size but generally had rectangular profiles and were spaced between 0.65-0.75m apart. They were approximately 0.1m wide and 0.1m thick. The largest stake was exposed up to a depth of 0.4m; the total length of the stakes is unknown as they were left *in situ* and the invert was reconstructed around and above them.

5.4 A pair of attached timbers fixed in a cross-shape (110) was exposed at the west end of the invert (Plates 9-10). They were positioned beneath the large beam (101) defining the end of the invert, and had been pinned together with a large iron nail. The upper surface of the wood was flat and smooth, the underside was rounded and a notch had been cut into the back on the longer section to receive the shorter piece

behind it. The ends of the wooden beams displayed saw marks. It seems likely that both pieces were part of the same tree trunk that has been cleaved in half. The longer section of the structure had been pinned underneath 101 with a large iron nail which was *c*. 0.25m long and had a rectangular profile and head and a rounded end. The function and date of this structure is uncertain as it did not appear to be in its original position, but had clearly been attached to the beam 101.

5.5 In the area of the scour hole an east-west aligned concrete-encased service was exposed. This had truncated all of the archaeological deposits beneath it.

5.6 The bridge

Detailed recording of the arch of the bridge and associated piers was not undertaken but some observations were made.

Two distinct builds are present within the masonry. The majority of the fabric is constructed of neatly tooled and coursed volcanic trap and Thorverton stone. This may be of medieval date. At the east end of the southern pier, the masonry continues beyond the line of the arch and may represent a cutwater or retaining wall. In the 19th-century the bridge was widened on its east side. The masonry of the piers is similar to the earlier fabric, but stonework of the arch is much cruder.

At least five square or rectangular limestone blocks (111) were exposed, projecting out from the north side of the bridge arch, three of which survived *in situ*. These appeared to be part of the foundations of the arch since they continued under the bridge to the north, rather being flush with the face of the arch as the invert stones 100 lad been laid (Plate 11). These measured between 0.3m and 0.45m wide.

Several masons' marks were identified on the underneath of the bridge arch within the medieval fabric at the northwest corner (Plates 12-13). There were two different marks. One consisted of a set of four vertical, parallel lines, each measuring *c*. 0.05m long. These marks were present on two blocks located next to each other. The other type of mark was a V shape, cut into two blocks located close to one another. The V measured *c*. 0.05m long and up to 0.05m wide.

6. DISCUSSION

6.1 The monitoring and recording during the repairs has identified the invert is located within a part of the bridge that contains early, probably medieval, fabric and stonework associated with 19th-century widening.

6.2 Groundworks were limited to the removal of the invert and associated archaeological deposits only; natural or palaeoenvironmental deposits were not exposed.

6.3 Beneath the stone surface of the invert a series of associated deposits and make up material was present, albeit partially removed by water action. These comprised a grid of 39 wooden stakes, which it is assumed were set into the underlying natural. The ground between the stakes was consolidated and raised with a layer of brushwood, overlain by river gravels onto which the stone invert was laid.

6.4 No artefacts were recovered to date the invert. However, the surface was laid in limestone – a material used extensively for engineering purposes in the late 18th and early 19th centuries – and was confined by wooden beams that were aligned with the

outside of the 19th-century face of the widened bridge. It seems likely that the invert dates to this phase of works.

6.5 In addition to the recent infilling of the water scour, two earlier episodes of repair to the invert were recorded.

7. OASIS ENTRY AND ARCHIVE

7.1 An entry to the OASIS (Online AccesS to the Index of Archaeological investigationS) database has been assigned, and has the identifying code 159344.

7.2 The paper and digital archive are currently held at the offices of AC archaeology Ltd, in Unit 4 Halthaies Workshops, Bradninch, Nr Exeter, Devon, EX5 4LQ.

8. ACKNOWLEDGMENTS

8.1 The project was commissioned by Devon County Council and managed for them by Simon Gibbon and for AC archaeology by Andrew Passmore. The fieldwork was undertaken by Kerry Kerr-Peterson and the report illustrations prepared by Sarnia Blackmore.

9. BIBLIOGRAPHY

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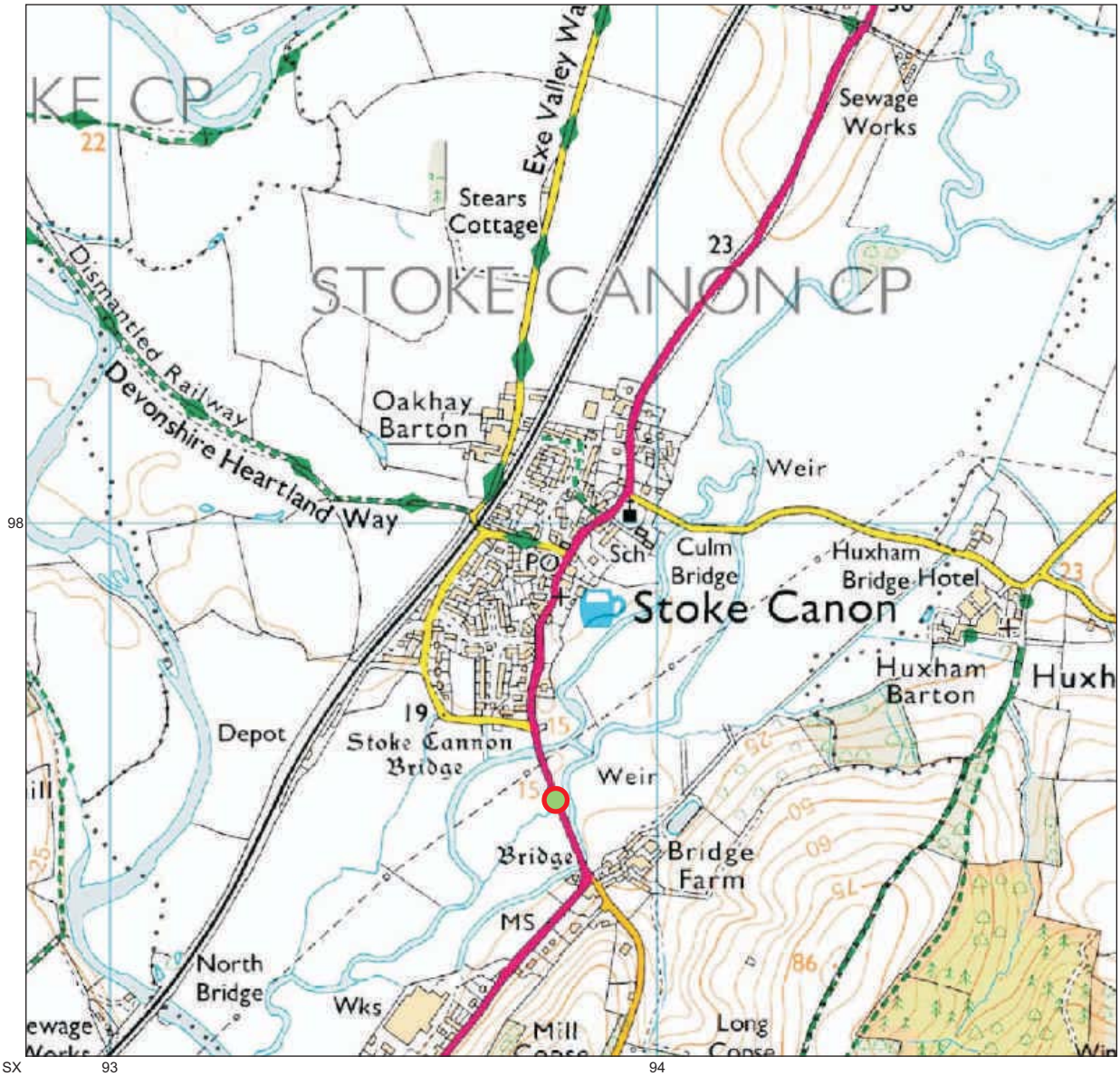

Position of archaeological monitoring and recording

0 500m

PROJECT

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Fig.1: Location of site

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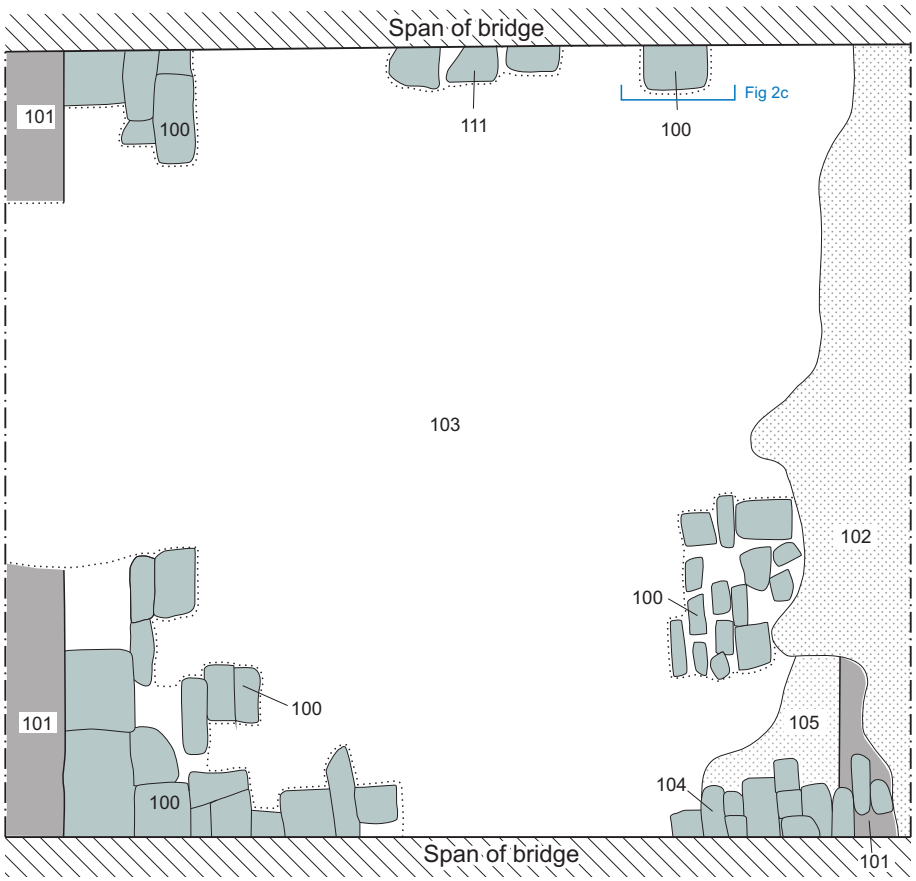
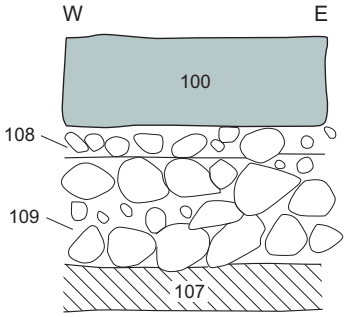
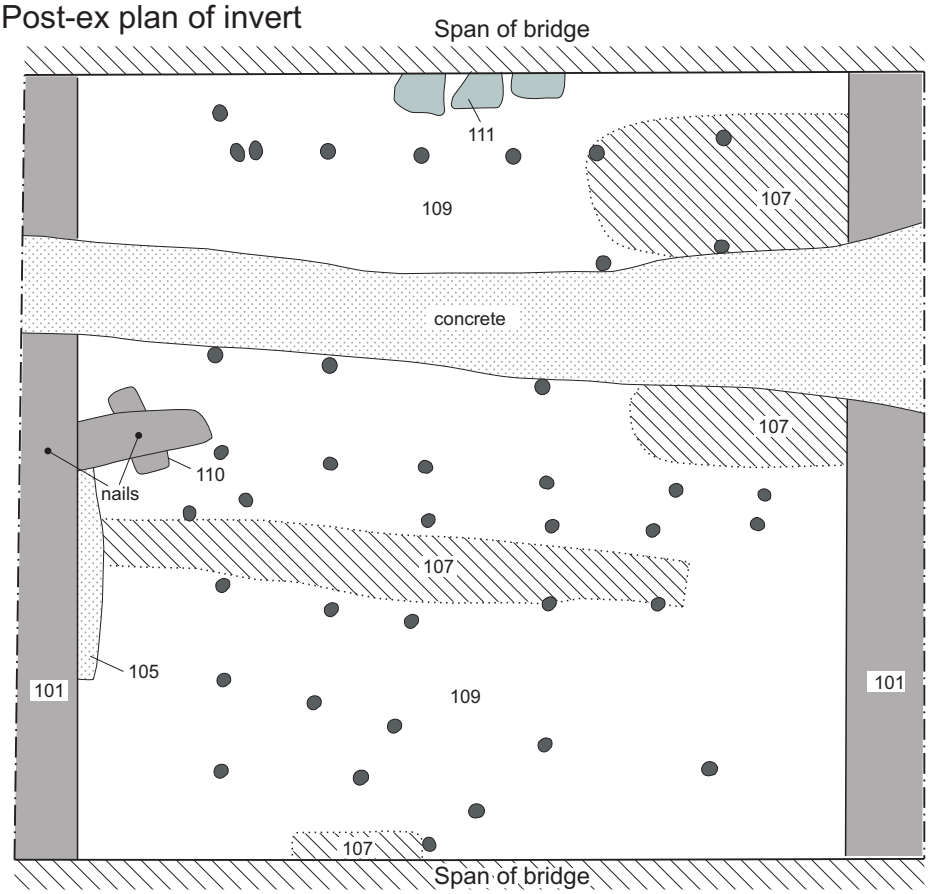
a) Pre-ex plan of invert

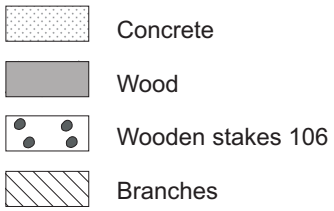


c) Section



b) Post-ex plan of invert





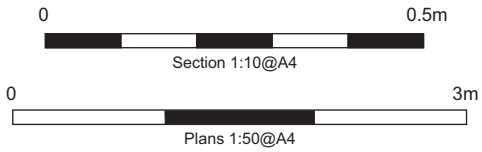


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Fig. 2: Plans and section of the invert

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Plate 1: View of the invert before commencement of the repairs, taken from the east. Scale 1m

Plate 2: Working shot showing repair 104 in foreground, taken from the northeast

Plate 3: View of preserved wooden stakes (106) and brushwood structure (107), taken from the north. Scale 1m

Plate 4: General view of preserved wooden stakes (106) and brushwood structure (107), taken from the northeast. Scale 0.3m

Plate 5: View of a section of the removed brushwood (107). Scale 1m

Plate 6: Piece of brushwood with cut marks. Scale 0.3m

Plate 7: General working shot taken during the excavation of the scour hole showing stakes 106. Taken from the east

Plate 8: View of part of the bridge abutment exposed once the invert had been removed, also showing stakes 106. Taken from the north. Scale 1m

Plate 9: General view of the position of cross-shaped beam 110, taken from the east. Scale 0.3m

Plate 10: View of the underside of the cross-shaped beam 110. Scale 1m

Plate 11: View of part of the bridge foundations (111), taken from the south. Scale 1m

Plate 12: View of masons' marks under the bridge arch, taken from the south

Plate 13: View of masons' mark under the bridge arch, taken from the south

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