EXEBRIDGE, MOREBATH, DEVON

(Centred on SS 92992 24446)

Results of historic building recording

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On behalf of:
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AC archaeology

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CONTENTS

Summary

Historic building recording was undertaken by AC archaeology in August and September 2014 during repairs to the bridge at Exebridge, Morebath, Devon (centred on SS 92992 24446). The bridge is a Grade II Listed Building and the present structure was erected during the 18th century.

The works exposed the foundations of the piers, and a record of the construction techniques was made. Timber stakes were observed adjacent to the bases of some of the piers and associated cutwaters, and were driven directly into the bedrock. Some are probably associated with the original construction, whilst others, including some with iron sheathes, may be later addition. Modern repairs to the cutwaters were also recorded.

There was no evidence for an earlier structure on the site of the current bridge, and any earlier structures or a crossing point may have been located further upstream.

1. INTRODUCTION (Fig. 1)

1.1 A programme of historic building recording was undertaken by AC archaeology during repairs to Exebridge, Morebath, Devon (centred on SS 92992 24446; Fig. 1) in August and September 2014. The investigations and recording were commissioned by Devon County Council and required under condition 3 of the grant of Listed Building Consent by the Secretary of State for Communities and Local Government (planning reference 14/00681/DCC) for a scour protection scheme. Guidance on the scope of works was provided by the Devon County Historic Environment Team.

2. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 The road bridge at Exebridge carries the B3222 over the River Exe which here forms the county boundary between Somerset and Devon. It is a Grade II Listed building (National Heritage List for England entry 1247753 under the name *Exe Bridge at NGR SS 9299 2445*), and is described as follows:

> Road bridge over River Exe on county boundary. Erected in C18 on site of earlier bridge, repaired 1929 by John Stone, altered C1853, parapets rebuilt or extended mid -late C20, Random rubble local stone rubble voussoirs, saddleback coping of slate stone set on end. Three arch span, semi-circular headed arches, low pointed cutwater on down-stream side, set on raised plinths on upstream side; parapet continued as wall for about 25 m and 16 m respectively on north bank (Somerset), south bank (Devon) parapet continued as wall for 19 m and 28 m respectively; coping renewed in C20.

2.2 The underlying geology comprises Carboniferous mudstone of Bailey's Beds, overlain by Quaternary alluvium of clay, slit and sand.

3. AIMS

3.1 The aim of the work was to inspect the fabric of the bridge following damming of the river (and where necessary excavation of the river-borne gravels) to identify and record historic fabric, in particular any evidence for earlier bridges on the site of the current structure.

4. METHODOLOGY

4.1 The recording was undertaken in accordance with a method statement prepared by AC archaeology (Passmore 2014). A detailed photographic, drawn and written record of the fabric of the underside of the arches, cutwaters and revetment walls was prepared following the damming of the river that allowed safe access to the underside of the structure. The groundworks and therefore recording were undertaken in three stages when dry working areas were created. A general photographic record showing the overall character of the bridge and exposed historic fabric and architectural details was also made.

5. RESULTS (Figs 2-4; Plates 1-16)

5.1 The fabric of each pier and associated cutwaters (where present) were recorded and are described below, followed by a description of other observations, namely a riverside revetment wall, timbers exposed within the river bed, and a record of one of the parapets. The bridge is 6m wide, excluding cutwaters.

5.2 Piers

The three spans of the bridge are constructed on top of four piers, labelled 3, 1, 2, and 4 when viewed from the north, looking downstream, with piers 3 and 4 located within the river banks and piers 1 and 2 located within the river bed (Fig. 2a; Plate 1).

The foundations of the bridge piers (103) are constructed directly onto the natural mudstone bedrock (104), and consist of three courses of roughly faced, rectangular blocks of local stone averaging 0.40m long, 0.20m wide and 0.20m deep, and large and medium-sized rounded river-derived gravels averaging 0.20m long by 0.10m wide and 0.10m deep, all bonded with a hard dark grey mortar (Fig. 2b; Plates 2-3). The foundations measure up to 0.60m deep, and project up to 0.70m from the face of the piers. They survived best on piers 3 and 4, but had been largely either washed away or removed in the central piers 1 and 2. Repairs had been made to both these piers (see 5.4 below; Plate 4).

Above the foundations, the main body of the piers (100) are constructed of neatly coursed rows of faced square and rectangular blocks averaging 0.50m long, 0.20m wide and 0.20m deep. The arches generally rise from between 2-3 courses above the base of the piers, and their faces are finished with rectangular voussoirs (Plate 5). The undersides of the piers have been partially repointed with concrete (102) in the recent past. This has obscured some areas of the masonry.

5.3 Cutwaters

Cutwaters are present on both the upstream and downstream sides of central piers 1 and 2. The lower courses of masonry are integral to the basal courses of the piers. Above this, due to the use of voussoirs on the arches, the facework is not bonded into the pier; the core material was not exposed. Tool marks were observed on one of the blocks of the downstream cutwater on pier 1. The cutwaters are finished with two styles of capping. On the upstream side of the bridge they have a stepped capping comprising three courses of large dressed blocks with vertical and angled faces (Plate 4). On the downstream side they have sloping capping consisting of four courses of small mudstone blocks (Plate 6).

On the upstream side the cutwaters have been strengthened with the addition of further masonry constructed of concrete blocks finished with concrete and a concrete capping (Plate 4). These have been constructed onto concrete-filled sandbags. These additions were removed during the groundworks. A small area of the northwest side of the cutwater on pier 1 has been repointed with concrete.

5.4 Riverside abutments

Only one section of the revetment wall at river level was visible – that on the upstream side of pier 4. It is aligned northeast-southwest, parallel with the river (Plate 7). It is constructed using the same techniques as the piers and cutwaters, although some of the blocks are a more laminar mudstone. It stands *c.* 1.3m high and extends for a distance of *c.* 10m upstream. The masonry abuts pier 4 including part of its foundation, although the lowest exposed course has been set into the pier foundation.

On the eastern side of the bridge, adjacent to pier 3, the river bank is retained by timber planks held up by wooden stakes driven into the bedrock.

5.5 Timber Stakes

A number of oak stakes were exposed during the groundworks. A row of 25 stakes was exposed *in situ* aligned northeast-southwest, parallel to the base of pier 3 (105). The stakes were located between 0.50m and 0.80m away from the foundations of the pier, and generally set up to 0.30m apart (Fig. 2a). Two of the stakes at the southwest end supported the river bank. The stakes were driven directly into the bedrock up to a depth of 0.40m. The total length of the stakes was between 0.60m and 0.80m, and they were between 0.07m and 0.09m wide. They tapered to a point. No tool marks were observed. Other stakes, possibly from the same location, had been removed by the contractor (Plate 10). Two were pointed, and measured 0.50-0.70m long by 0.07-0.09m wide, and displayed between 4 and 6 faced sides.

A single stake was recorded *in situ* adjacent to north side of pier 2 cutwater. A total of 15 stakes had been removed from this location by the contractors (Fig. 3; Plate 12). These had been located in a horseshoe–shaped arrangement around the north side of the cutwater, and were present below the modern concrete repairs. They had been cut from the heartwood of the trees, and were generally larger than those recorded adjacent to pier 3, and measured between 0.65-1.83m long by 0.10-0.26m wide. Many displayed several flat faces, and all were tapered to a point. Five of the stakes had been fitted with iron sheathes around their pointed ends, presumably to add their insertion into the ground. These comprised two versions – a simple V-shaped sheath with two short arms (Plate 13), and a version with four longer arms (Plate 14). All are fixed to the stakes with three hand-forged nails; several of the timbers without sheaths displayed nail holes. In addition to those attached to the stakes a further two loose sheathes – one of each design – were recorded (Plate 15).

5.6 Other observations

The parapets of the bridge are heavily repointed in cement obscuring any historic bonding materials. On the southeast side of the bridge the parapet had been rebuilt in stone (cf the Listed Building description), probably using the masonry from the earlier parapet. This is defined by a horizontal and vertical break (Plate 16). To the east, the earlier wall continues forming a revetment to the road and supports a modern wooden fence.

6. DISCUSSION (Fig. 4)

6.1 The monitoring during the repairs has allowed a record of the construction method for the bridge to be prepared. Foundations to the piers and associated contemporary cutwaters were exposed, and had been constructed directly onto the natural bedrock. The bridge spans rose from these piers. The upper parts of the cutwaters were added after the bridge had been constructed, but due to the design of their integral foundations they are clearly contemporary features.

6.2 A number of timber stakes were observed adjacent to the bases of the piers 2 and 3 and cutwaters. These were driven directly into the bedrock, and some of the stakes around pier 2 were fitted with iron sheathes. It is likely that the stakes adjacent to pier 3 are associated with the original construction, whilst those those around pier 2 may have been added to the upriver side to provide protection to the cutwater (which had also required later 20th-century repairs). They may have retained gravel or another material, now washed away.

6.3 The groundworks did not expose any palaeoenvironmental deposits; the river bed was relatively shallow and contained only large boulders and river gravels.

6.4 There were patches of repair and repointing in concrete to the bridge piers and cutwaters, in particular on the upstream sides of the cutwaters of piers 1 and 2, which were extended in the second half of the 20th century.

6.5 There was no evidence for an earlier structure on the site of the current bridge. All the exposed masonry and the timber stakes are associated with the construction of the present bridge or later repairs. The current bridge crosses the river at a right angle, and the road deviates from its straighter course to the north and south of the hamlet and present crossing point. The position of the road shown on historic maps, such as the 1838 Morebath tithe map and the first edition 25-inch Ordnance Survey map (Fig. 4), appears to indicate that an earlier crossing point, perhaps a ford and/or a bridge may have been located immediately upstream of the present structure.

7. ARCHIVE AND OASIS ENTRY

7.1 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. On acceptance of the report the paper records will be digitised and the archive deposited with the Archaeology Data Service.

7.2 An entry to the OASIS (Online AccesS to the Index of Archaeological investigationS) database has been created using the unique identifying code 193050, and contains a copy of this report.

8. ACKNOWLEDGMENTS

8.1 The project was commissioned by Devon County Council and managed for them by Lee Meaden and for AC archaeology by Andrew Passmore. The fieldwork was undertaken by Kerry Kerr-Peterson, Will Smith, and Paul Rainbird who undertook the documentary research. The report illustrations prepared by Elisabeth Patkai.

9. SOURCES CONSULTED

DEVON HERITAGE CENTRE

1838 Morebath tithe map
Ordnance Survey first edition 25-inch Devonshire map sheet 24.7, published 1890

Passmore, A, 2014, *Exebridge, Morebath, Devon, (NGR SS 92992 24446), Method Statement for historic building recording*, AC archaeology document no. **ACD963/1/1**

0 2.5km

Scale 1:50,000@A4

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Fig. 1: Site location

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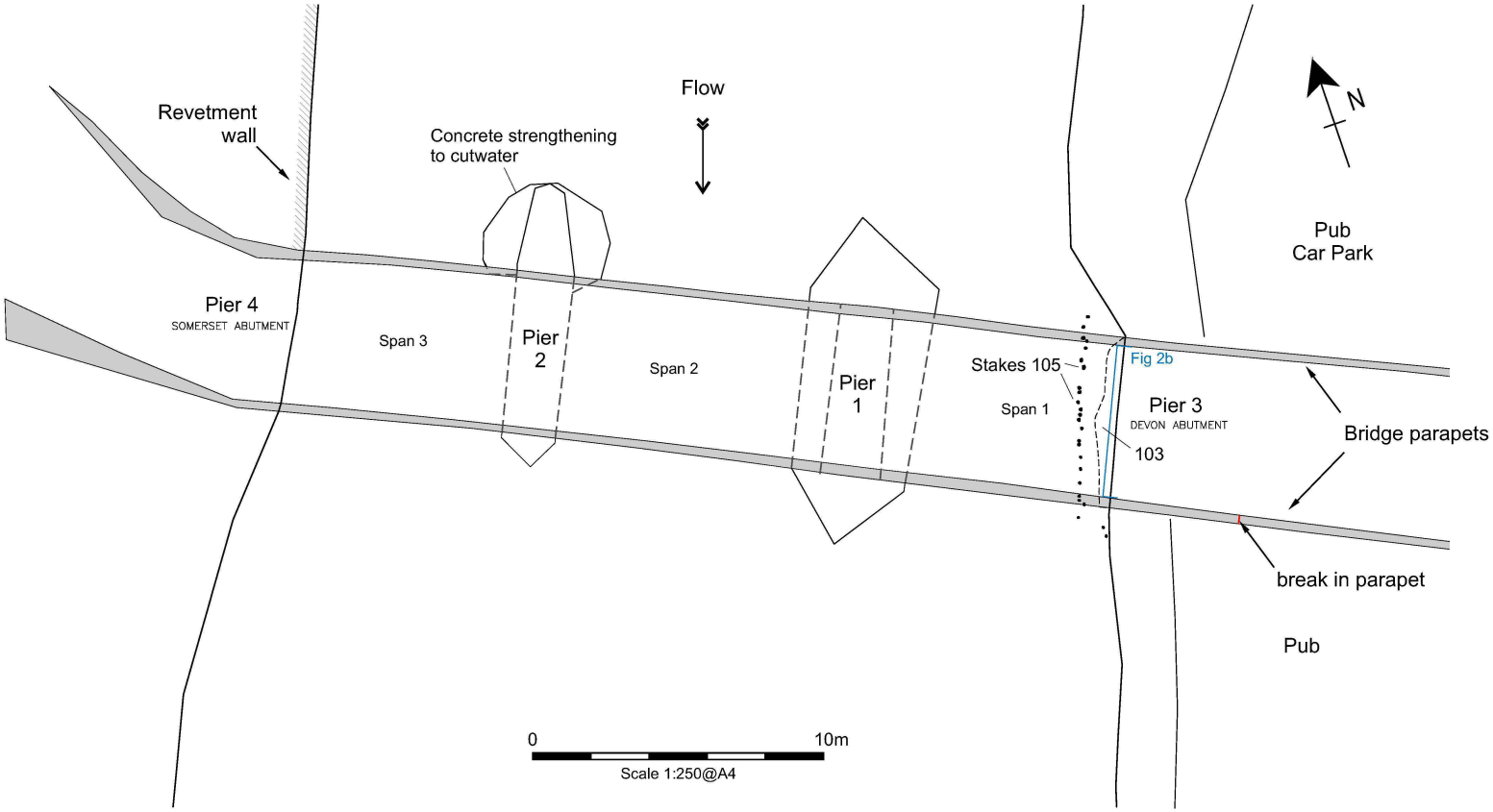
a) Plan of bridge



b) Northwest facing elevation of Pier 3

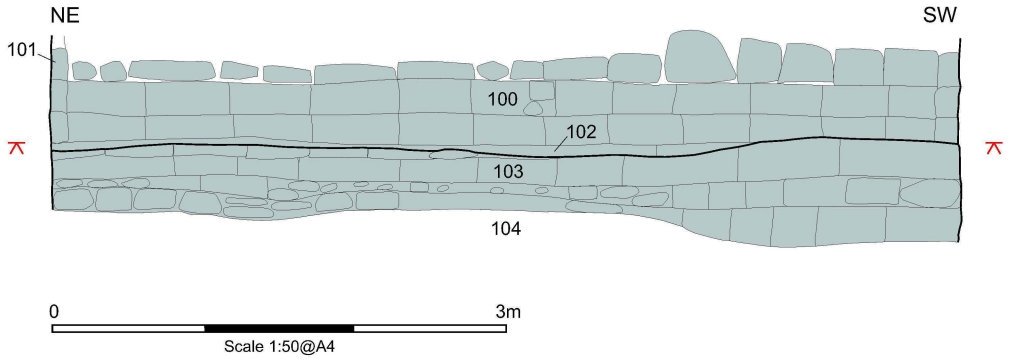


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Fig. 2: Plan of bridge showing observations, and elevation of pier 3

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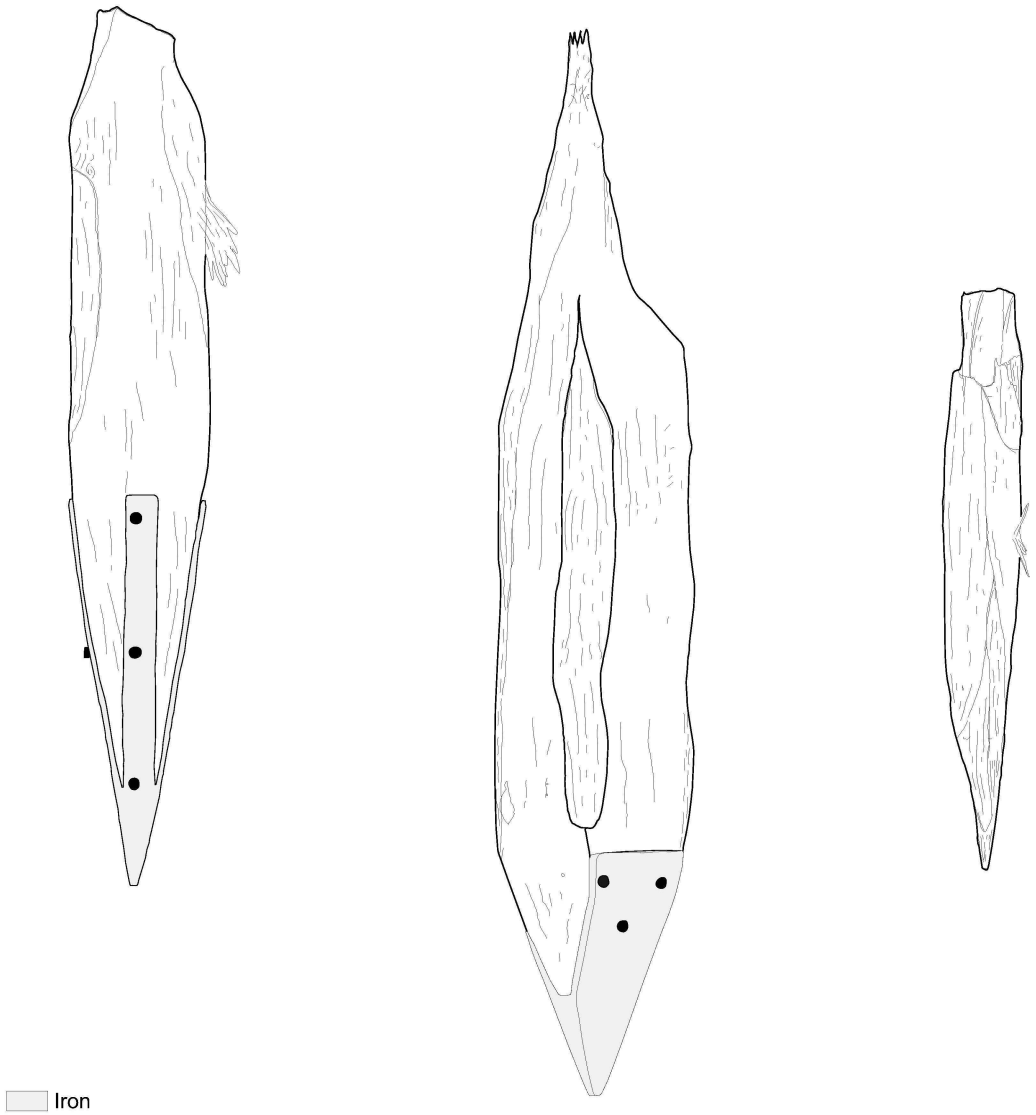

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Fig. 3: Wooden stakes (105) from Pier 2

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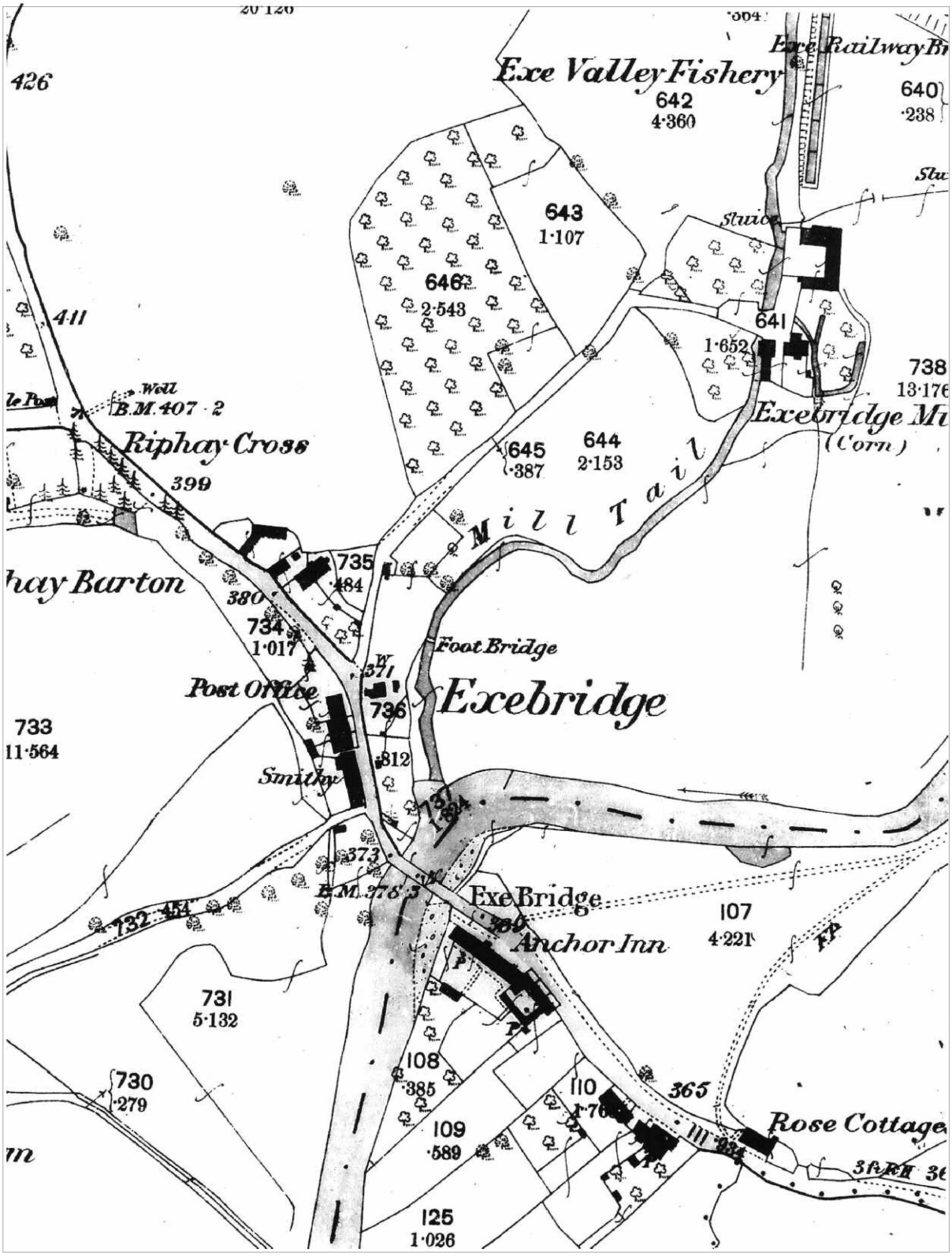

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Fig. 4: The bridge and road as depicted on the First Edition 25-inch Ordnance Survey map

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Plate 1: View of the downstream elevation of the bridge prior to commencement of groundworks, viewed from the southeast

Plate 2: Pier 2 showing pier and cutwater foundations with pier 4 in the background showing foundations laid onto bedrock, viewed from the northeast. Scale 1m

Plate 3: Pier 2 showing stepped cutwater foundations, viewed from the south. Scale 2m

Plate 4: Pier 2 showing 20th-century repairs to the cutwater, viewed from the northeast

Plate 5: View of excavations between pier 1 and 3 showing the elevation of the arch, viewed from the southwest

Plate 7: Revetment wall adjacent to pier 4, viewed from the southeast. Scale 1m

Plate 6: The downstream cutwater on pier 2 showing the construction details of the masonry abutting the pier, viewed from the southwest. Scale 1m

Plate 8: The foundations of pier 3 showing stakes 105, viewed from the northwest. Scale 0.40m

Plate 10: Timber stakes 105. Scale 0.40m

Plate 9: Row of timber stakes 105 adjacent to pier 3, viewed from southwest. Scale 0.40m

Plate 11: Timber stakes possibly from group 105. Scale 0.40m

Plate 12: The stakes recovered by the contractor. Scales 1m and 2m

Plate 13: A stake with a two-armed sheath. Scale 1m

Plate 14: A stake with a four-armed sheath. Scale 1m

Plate 15: A loose two-armed sheath. Scale 0.50m

Plate 16: The vertical break in the southern parapet, viewed from the south

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