Archaeological watching brief and building recording at Eastham Bridge, Eastham, Worcestershire

Worcestershire Archaeology
Archive and Archaeology Service
The Hive, Sawmill Walk,
The Butts, Worcester
WR1 3PD

Status: Revision 2: 30 March 2017
Date: 18 August 2016
Author: Tim Cornah, tcornah@worcestershire.gov.uk
and Tom Vaughan, tvaughan@worcestershire.gov.uk
Illustrator: Carolyn Hunt, chunt@worcestershire.gov.uk
Project reference: P4867
Report reference: 2367
HER reference: WSM 67959 and 67960
Oasis id: fieldsec1-259801

Contents

Archaeological watching brief and building recording at Eastham Bridge, Eastham, Worcestershire

Tim Cornah and Tom Vaughan

Illustrations by Carolyn Hunt

Summary

A programme of archaeological watching brief and building recording was undertaken at Eastham Bridge, Eastham, Worcestershire (NGR SO 65917 69060). It was undertaken on behalf of Worcestershire County Council following the collapse of the bridge on 24 May 2016.

The watching brief was undertaken during the soil strip for a compound on the south side of the River Teme and subsequent ground reduction ahead of construction works on the north and south banks. A photographic survey of the remaining structure was undertaken, both before and after removal of the collapsed masonry, along with a drone flight soon after the initial bridge collapse, from which a three dimensional model was created of the remains. This can be accessed at https://skfb.ly/P9VC .

An area was stripped of topsoil in the field on the south side of the river in order to create a compound, along with access to the river. Excavation was only to a shallow depth, at most *c* 0.35m. There was no disturbance of deposits relating to a medieval castle motte, which lies south-east of the bridge. No residual artefacts of this period were noted within the topsoil.

Documentary sources indicate that Eastham Bridge was built as a toll bridge in 1793, replacing Whitcombes Ford. It does not appear to have replaced an earlier structure. The bridge was largely rebuilt in 1898 when its ownership was transferred to Worcestershire County Council. A set of records exist from this date. They contain remarkable detail and correspond closely with the bridge structure extant before the recent collapse in terms of both materials and construction methods. Both of these sets of records, along with the recording undertaken of the remains of the bridge, give a clear picture of the fabric, development and context of the bridge from the point of its initial construction. The only feature observed for which there are no documentary records, were a series of tie rods, inserted into the bridge structure probably in the latter half of the 19th century.

The 1793 documents also include the costing for the construction of a toll house, the brick footings of which were exposed during groundworks on the northern side of the river.

Report

1 Background

1.1 Reasons for the project

A programme of archaeological watching brief and building recording was undertaken at Eastham Bridge, Eastham, Worcestershire (NGR SO 65917 69060). It was commissioned by Worcestershire County Council, following the collapse of the Grade II listed structure on 24 May 2016, and discussions between Malvern Hills District Council and Historic England.

The site is considered to include heritage assets and potential heritage assets, the significance of which may be affected by the works (WSM 00282 and 37006; Historic England List Entry Numbers 1081429 and 1081439).

The project conforms to the standard brief prepared by Worcestershire County Council (WCC 2014) and the scope of works discussed in correspondence dated 6 June and 21 September 2016, for which a project proposal (including detailed specification) was produced (WA 2016).

The project also conforms to the *Standard and guidance: Archaeological watching brief* (CIfA 2014a), *Standard and guidance for the archaeological investigation and recording of standing buildings or structures* (CIfA 2014b), and the *Standards and guidelines for archaeological projects in Worcestershire* (WCC 2010).

The event references for this project, given by the Historic Environment Record (HER) are WSM 67959 (watching brief), and WSM 67960 (building recording).

2 Aims

The aims of the watching brief were to observe and record archaeological deposits and structures, and to determine their extent, state of preservation, date and type, as far as reasonably possible within the constraints of the works.

The Chartered Institute for Archaeologists defines the aims of building recording as 'a programme of work intended to establish the character, history, dating, form and archaeological development of a specified building' (CIfA 2014b).

3 Methods

3.1 Personnel

The project was led by Timothy Cornah (BA (hons.), MSc) who joined Worcestershire Archaeology in 2006 and has been practicing archaeology since 2003; assisted by Tom Rogers (BA (hons.); MSc). The project manager responsible for the quality of the project was Tom Vaughan (BA (hons.); MA; ACIfA). Illustrations were prepared by Carolyn Hunt (BSc (hons.); PG Cert; MCIfA).

3.2 Documentary research

Documentary research for this project included the cartographic evidence, original documents for the bridge held by the owners of Eastham Court Farm, original documents relating to a rebuild of the bridge held at Worcestershire Archives and research undertaken by Eastham Historical Society.

Prior to fieldwork commencing a search was made of the Historic Environment Record (HER).

3.3 List of sources consulted

Cartographic sources

- 1839 Tithe Plan of Eastham (WRO ref X760-274) (Fig 2)
- 1840 Tithe Plan of Lindridge (HER; transcribed by David Gyatt)

- 1st edition, 1884, Ordnance Survey map, scale 25":1 mile
- 1903 Ordnance Survey map, scale 25":1 mile (Fig 3)
- 1949 Ordnance Survey map, scale 1:25,000

Documentary sources

- 1793 Toll bridge construction and accounts archive (held by Celia Adams, Eastham Court Farm)
- 1898 Bridge ownership transfer and reconstruction archive (WRO BA2324 ref 250-1)

Published and grey literature sources are listed in the bibliography (Section 11).

3.4 Fieldwork strategy

A detailed specification has been prepared by Worcestershire Archaeology (WA 2016).

Fieldwork was undertaken between 8 June and 8 December 2016. The site reference numbers and site codes are WSM 67959 (watching brief) and WSM 67960 (building recording).

3.4.1 Watching brief

A watching brief was undertaken of the topsoil strip for a works compound in the field to the south-east of the bridge and associated access ramp down to the river on the south bank (Trench 1), along with ground reduction on the north and south banks ahead of construction (Trenches 3 and 2 respectively; Figs 1 and 2, 5 and 6; Plates 9-19).

Deposits considered not to be significant were removed using a 360º tracked employing a toothless bucket. Clean surfaces were inspected and selected deposits were hand excavated to retrieve artefactual material and environmental samples, as well as to determine their nature, as appropriate. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012).

3.4.2 Building Recording

Building recording consisted of a photographic survey of the bridge, before and after removal of the debris within the riverbed and loose masonry within the surviving structure (Plates 20-25), and analysis of its development. All photographs were taken with photographic scales visible in each shot where possible, although this was rarely the case due to practical and health and safety constraints. The photographic survey was carried out with a Sony α350 digital SLR camera. All photographs were recorded on a pro-forma Photographic Record Sheet.

A further photographic survey was undertaken by Aerial-Cam using a UAV (drone) and a camera elevated on a pole for the purpose of producing an archive from which rectified photographs could be produced. The three dimensional model created by Aerial-Cam is accessible at https://skfb.ly/P9VC .

The full completion of pro-forma Building Record and Building Phase sheets was not possible due to the lack of safe access to the structure. Similarly, no scale drawings of the bridge could be completed.

A level 4 survey was originally stipulated by Historic England. However it was not possible to undertake this, due to the health and safety constraints of working close to the largely collapsed bridge structure. The project therefore conformed where possible to a level 3 survey as defined in the Historic England document *Understanding historic buildings: a guide to good recording practice* (HE 2016). This level of survey is described as ‘an analytical record’ comprising of ‘an introductory description followed by a systematic account of the building's origins, development and use’ (*ibid*.). This required the following elements of survey.

Photography

- Detailed coverage of the building’s external appearance.

- Any detail, structural or decorative, relevant to the building's design, development and use, which does not show on general photographs.

Building analysis

Analysis of the structure was based on the study of the photographic record. It was also informed by the documentary sources listed above. This allowed a descriptive phasing of the building to be produced, highlighting the structural development of the building.

3.5 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

3.6 Artefact methodology

3.6.1 Artefact recovery policy

Recovery of artefacts was undertaken according to standard Worcestershire Archaeology practice (WA 2012). In the event no artefacts other than building materials were present. These were used for dating but not retained within the site archive.

3.7 Environmental archaeology methodology

3.7.1 Sampling policy

Sampling was undertaken according to standard Worcestershire Archaeology practice (WA 2012). In the event no deposits were identified which were considered to be suitable for environmental analysis.

3.8 Statement of confidence in the methods and results

The methods adopted allow a high degree of confidence that the aims of the project have been achieved, particularly in relation to the watching brief. A detailed record of the bridge structure was not possible due to a lack of safe access. However, the data collected did allow for the production of a detailed description or the phasing of the former structure.

4 The application site

4.1 Topography, geology and archaeological context

The site lies within the floodplain of the River Teme. The compound is within a field on the southern bank of the river, which the bridge spans. The bedrock geology of the area is recorded as Raglan Mudstone Formation, overlain by alluvium such as clay, silt, sand and gravel (BGS 2016)

The following is taken from a search of the Worcestershire HER with a radius of 500m centred on the bridge.

The earliest known activity within the area relates to the medieval era. Just outside the south-east corner of the site is a former castle motte of about 50m diameter and surrounded by a ditch of about 10m in width (WSM 00282). The ditch extended slightly into the site boundary. No specific date or documentary evidence for this earthwork is recorded. The field containing the monument is noted as Castle Tump Meadow on the Tithe plan of 1839 (Fig 2), although it is considered most likely to have been a watch tower to guard the river ford, rather than an actual castle.

A similarly broad medieval date is given to the settlement of Eastham, thought to have been centred on the current village to the south-west of the site, where earthworks indicate that it may have been a larger settlement in the medieval period which subsequently shrank (WSM 06703). The possible presence of a former moat (WSM 06704) around Eastham Court Farm (WSM 62135) also indicates a medieval date, although the current house is 17th century. The church of St Peter

and Paul (WSM 08101), within the centre of the village, dates from the 12th century, although there is noted to have been a priest in Eastham at the time of the Domesday survey (Thorn and Thorn 1982). To the south of the church nave are the remains of a 14th century cross (WSM 37007). A holloway of a broadly medieval date leads towards the south-west from the south-west corner of the churchyard, a position maintained by the current road.

The village developed through the post-medieval era with Eastham Court Farm constructed in the early 17th century. The Old Rectory Cottage (WSM 37008) is likely to be of late 16th century date, although it has previously been suggested it was part of an earlier monastic precinct. Also registered are two sets of agricultural buildings. One is a barn north-west of the church (WSM 05936) and the other are those associated with Eastham Court Farm (WSM37010). Eastham bridge itself and its associated toll house (WSM 37006) are noted to have been constructed by 1793, and modified at various later dates (Figs 3 and 6). These details shall be further described below. The latest feature of note is the site of a former Second World War pill box on the northern side of the bridge (WSM 17803).

4.2 Documentary information

A significant collection of original documents relating to the construction of the bridge in 1792 are in the ownership of Eastham Court Farm (reproduced as Plate 1 to Plate 5, courtesy of Celia Adams), and have been summarised by the Eastham Historical Society (Eastham Historical Society n/d). The documents are considered to have been part of the correspondence of the Reverend Christopher Whitehead.

One document (Plate 1) states that the bridge was to be built at a spot called Whitcombes Ford, where people had previously been "going through the water at the hazard of their lives". The bridge was to consist of three arches with piers of stone, at an estimated cost of £600, though half of this was for a toll house as seen on later mapping on the northern side of the river. Further more detailed estimates of costing and materials exist (Plate 2), which included 130,000 bricks for the construction of the bridge. Ashlar was detailed for the "springing of the arches" (Plate 3), stone coping for the side walls and "backing up the arches with rubble stone work". Two sketches of the bridge location and one of the arches compare favourably with the bridge as it stood before the recent collapse (Plate 4). A list details those who had contributed to paying for the bridge, along with the amount of their contribution (Plate 5).

A painting of 1830-1853 shows the northern half of the eastern elevation of the bridge and the toll house adjacent on the north bank (Plate 6; Figs 3 and 6), which was demolished in the early 20th century.

Further information includes the source of the bricks, the Brick Works identified on the 1st edition Ordnance Survey map of 1884 and the 1903 edition, *c* 200m north of the river; the stone, from Orelton three miles downstream; and lime, also made locally from an outcrop of tufa. It further details the contract with Thomas Nelson, the bridge's builder, the timescale for its construction and the toll rates (Eastham Historical Society u/d).

Records available at Worcestershire Archives detail the reconstruction of the bridge which commenced in August 1898 and had been completed by May 1899, when the bridge was bought by Worcestershire County Council. A detailed specification set out by the council catalogues the works required, from removing elements of the old structure to its rebuilding (primarily the southern half). The new bricks were specified as "the best Staffordshire Brindle bricks" and the old bricks were to be taken down to be reused in the inner part of the bridge. Cement mortar using best heavy Portland was to be used. Tie rods running through the bridge were to be repaired and reused where possible, so must have been present before this point. The document also details the construction of a temporary footbridge whilst the works take place (WRO BA5512 ref 250-1). Various documents exist documenting Thomas Vale of Stourport as the contractor to undertake the repairs, at a cost of £503 (WRO BA2324 ref 250-1). The scope of the intended rebuild is indicated on a surviving proposed elevation drawing (Plate 7, WRO BA2324 ref 250-1).

Further repair works were undertaken in 1994 including repointing, brickwork repairs and a divers inspection of the underwater foundations (Eastham Historical Society u/d; Plate 8).

The bridge was designated as Grade II listed in 1952 and described as follows within the listing information (Historic England List Entry Numbers 1081429 and 1081439):

> Road bridge over the River Teme. 1793 with mid- to late C19 repairs. Part red brick, part red and blue brick with sandstone ashlar dressings. Three elliptical arches of regular size, the central one is larger than the outer two; the central and north arch have stone keyblocks; two circular flood outlets in central spandrels and short angled buttresses to central piers; two-course band beneath parapet which is splayed at both ends and terminated by square piers with pyramidal capping. The bridge was originally in private ownership and a toll was charged for crossing it; in [1898] it was bought by the County Council and freed from toll.

4.3 Current land-use

The field to the south-east of the bridge was in cultivation and the bridge itself remained in use connecting the road from the village with the A443 along the north side of the river, up until the collapse on 24 May 2016.

5 Watching Brief Results

5.1 Structural analysis

The areas monitored are shown in Figs 1, 4-6 and Plates 9-19.

5.1.1 Phase 1: Natural deposits

No defined geological deposits were revealed although mid red-brown silty clay deposits (102, 202) were seen at points on the slope down to the river, at a depth of *c* 0.60m below the ground surface. This may have been the top of the natural geology, but may similarly have been undated alluvial deposits (Plate 9 and Plate 10).

Subsoil deposits were noted on the south side of the river (Plate 11), though the depth of excavation was not always sufficient to reach it. These deposits (101, 201) were compact homogenous orange clayey silts, observed at 0.25m below the surface in Trench 1 and 0.40m in Trench 2. No dating material was recovered from these layers.

On the north side of the river, deposit (312) in Trench 3 consisted of light pink orange sandy silt. It was observed directly below the modern road matrix, at a depth of c 0.50m. It may represent a subsoil or alluvial deposit (Plate 12).

5.1.2 Phase 2: Post-medieval deposits

Within Trench 2, an earlier road surface was present under the modern road (201) (Plate 13 and Plate 14; Fig 4). This was 4.10m wide and extended to a depth of 0.38m, with a noticeable camber to either side from the centre. Its top layer (206) consisted of a sub-rounded stones within a compact white lime matrix. Below this was a layer of sub-rounded stones (207) within a light pink clay matrix, likely to have been a bedding layer for (206). A light brown grey silt layer (205) had built up in the eastern side of the road.

Within Trench 3, the infill and structure of the bridge were clearly visible (Plate 15). The infill (313) comprised compact clay marl, with sandstone stone fragments. This deposit extended approximately 1.5m to the north of the bridge structure, indicating that only this small area of the bank beyond the superstructure was consolidated.

Also within Trench 3, a series of walls were present. Wall (304) (Plate 16; Fig 6) consisted of a foundation of rubble sandstone, with one small area of brick on the south-east corner, indicating that the structure above was originally brick built. The structure was 5.80m long and truncated on the northern side by the modern road, indicating that it may have been demolished when the road was widened to its present width. This corresponds closely to the position of the toll house visible

on the 1839 tithe plan and Ordnance Survey maps up to 1903 (Figs 2 and 3) and a mid-19th century painting (Plate 6). The painting shows the building as rectangular and aligned east to west, which would make (304) the longer dimension of the building. This would have made for a small single room building, with one room above, as suggested in the painting.

Butted onto the south of wall (304) was further brick wall foundation (306) which created a small room on the south side of the toll house, further added to with walls (305). Two areas of brick flooring remained intact (307 and 308). A single squared stone at the east end of wall (308) suggests a doorway position at this point, as confirmed by break in the wall and a possible small slate drain. Structures are not depicted on the 1839 tithe plan, but are shown in the painting which predates 1853. The painting depicts them as having a cat slide roof, so ground floor only. All of the brick structures cut deposit (311) which was soft light brown silt sand, possibly a levelling deposit associated with the initial construction of the toll house and bridge.

A further small surface constructed of flat laid bricks (309) (Plate 17; Fig 6) partially remained, aligned in a north-east to south-west direction, between the toll house to the bridge. On the north-east side of the bridge was a further wall (310) (Plate 18) which formed a corner and is likely to have been part of a wall running up to the bridge, as seen on the 1903 map (Fig 3). These structures had concrete footings and are likely to be late 19th century or early 20th century alterations.

5.1.3 Phase 3: Modern deposits

Topsoil (100, 200 and 300) was a firm mid brown clay, which was noted across all three areas, to a depth of approximately 0.25m. The topsoil and subsoil profile was clearly visible in the strip for the access ramp on the bank sloping down to the river (Plate 9 to Plate 11; Fig 1: Trench 1).

A single small dump of modern material (103) was recorded in the north-west corner of Trench 1, close to the road, immediately below the topsoil which contained coal and small, undiagnostic brick fragments.

A number of deposits and features were present on the north and south side of the bridge which related to the rebuilding of the bridge in the 1890s and after. Whilst the bridge on the south side was dug out and rebuilt at this time, the infill on the north side was also excavated at this time or later and the walls reinforced with concrete (Plate 19 and Plate 23). A 20th century water pipe was also noted, under the modern road surface to the north of the bridge, along with associated containing concrete structures.

The modern tarmac road surfaces with associated hard standing below extended to a depth of around 0.50m.

6 Building Recording Results

6.1 Building development

6.1.1 Phase 1: 1792-3

The bridge as it existed before its collapse retained the general shape and layout of its first phase (Plate 20 to Plate 22). This can be seen by the two piers within the river which were not rebuilt in Phase 2 in 1898, or after. These positions demonstrate that the bridge was designed with three arches, the central arch being slightly wider than the two others. Only about one third of this phase of the bridge remained after the Phase 2 rebuild.

The river was spanned by elliptical brick arches, one and a half bricks length in width (Plate 21). These arches were further supported by rough stonework on their upper side (Plate 23) and two circular holes within the spandrels above the two piers to allow flood water through, though only one of this phase remained. The fill within the bridge was compacted clay marl, visible within the section closest to the northern bank (Plate 24), and also visible during the watching brief as deposit (313). This was held in place by flanking walls either side, also of one and a half brick lengths in

width. This wall had a brickwork string course at broadly road surface height and was capped with stones.

Stone work detailing was used elsewhere on the bridge, most noticeably at the base of the piers where triangular shaped 'cut water' buttresses were used, topped with pyramid shaped capping (Plate 24). Keystones were also used at the centre of the bridge. All of these details appear to have been limestone, a rock type which was available locally. Sandstone ashlar, also available locally, was visible on the northern side closest to the bank at water level.

The flanking walls splayed outwards on the northern side, a style retained during the 1898 repair work on the southern side (Plate 25). The flanking walls ended at a brick pillar. No original road surfaces remained, presumably having been removed during later alterations. As the debris of the collapsed bridge was removed by machine, no bricks certain to have originated from this phase could be recovered for detailed recording.

Two metal plates (Plates 21 and 23), for tie rods running through the structure, were visible in the bridge walls on the north bank. These are unlikely to be part of the original design as they were not specified in the original documentation, but were identified as present before the Phase 2 rebuild (Plate 7). This indicates a previously unrecorded phase of repair of the bridge, and, assuming it is accurate, post-dates the watercolour painting of 1830-53 (Plate 6).

6.1.2 Phase 2 1898

This phase involved the rebuilding of the southern half of the bridge, with the southernmost arch replaced from the top of the southern pier within the river (Plate 7; rebuild identified in pink). The southern support of the arch where it met the bank was also entirely replaced and it was dug back into the bank. The whole structure above this was replaced and the interior filled with concrete and rubble (Plate 25) while the side was purple engineering bricks, the same as the new southern arch. The side walls were replaced as far as the centre of the bridge, although some of the interior fill was replaced as far as the northern flood hole. These repairs maintained the general character of the Phase 1 bridge, although without the use of a keystone in the southern arch.

The extent of the works can be seen in a late 20th century photograph of the bridge (Plate 8), which compares closely with the intended repairs (Plate 7); the only significant visual difference being a change in the height of the side wall, to mirror the wall on the northern half.

6.1.3 Phase 3 20th century

The tarmac road surface overlying hardcore bedding layers will have been repaired and replaced periodically through the latter half of the 20th century. A pipe lay across the bridge; under the road surface along the western side. In the late 20th the bridge was repointed and some areas of brickwork repaired, although the full extent of these alterations was not obvious after the bridge had collapsed.

7 Synthesis

Eastham developed in the medieval era, primarily based upon the current village centre. During the watching brief no remains or evidence was seen of medieval activity, which is striking given the presence of a medieval castle motte immediately adjacent. This may indicate that occupation of the motte was short lived, although it may also simply be due to the shallow depth stripped, with only topsoil generally removed, and only a small patch of natural, possibly alluvial clay, noted along the edge of the river bank.

Records indicate that the river was crossed by a ford known as Whitcombes Ford prior to construction of the bridge in 1792-3. No evidence has been found, either documentary or archaeological, for a bridge structure before this date.

The documentary records illuminate a great deal in relation to the original construction of the bridge, including its patrons and their subscriptions, the toll charges, the materials used, their cost

and provenance, the conditions of the river and surrounding fields, as well as the original design of the bridge and the construction of a tollhouse on the northern side of the river.

The foundations of the tollhouse were present, and corresponded closely with the historic mapping. Its first phase appears to have consisted of a small single room on the ground and first floor, as seen by sandstone rubble footings and the painting of the building in 1853. The tollhouse was added to with brick structures to its south, within which two floor surfaces partially remained. A further small area of an external path remained, along with a boundary wall to the north-east of the bridge.

The surviving elements of the bridge constructed in 1792-3 fit closely with records, it having been constructed of three brick arches, set upon two piers in the river and further brickwork set into the banks. Of these, only that on the northern side remained. Many of the visible construction details fit closely with the documentary records, even the "ashlar for the springing of the arches" and "backing up the arches with rubble stone work" (Plate 1).

Further records relate to the rebuilding of the southern half of the bridge in 1898. This shows the rebuild using Staffordshire Brindle bricks and concrete mortar with a concrete and rubble infill. All of these were visible in the remaining fabric. Otherwise, the rebuild broadly continued the earlier style.

The materials and construction methods used for the bridge, along with the extensive documentary evidence, make a remarkably complete picture of its construction and development.

8 The impact of the development

There was no impact upon significant subsurface archaeological features during the strip for the compound and access to the river on the south in Trench 1. This was due to largely only topsoil being stripped. Within Trench 2, a former road surface was identified, along with underlying subsoil and colluvial deposits.

The impact upon the bridge itself has been extensive, with the removal of all of the collapsed material and much of the rest of the bridge. The latter was undertaken in order ensure the stability of the remaining structure. The impact on the northern side, in the area of Trench 3 was to remove the footings of the tollhouse and associated structures. Beyond this, only topsoil and subsoil deposits were affected.

9 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

A programme of archaeological watching brief and building recording was undertaken at Eastham Bridge, Eastham, Worcestershire (NGR SO 65917 69060). It was undertaken on behalf of Worcestershire County Council, following the collapse of the Grade II listed structure on 24 May 2016.

The watching brief was undertaken during the soil strip for a compound on the south side of the River Teme and subsequent ground reduction ahead of construction works on the north and south banks. A photographic survey of the remaining structure was undertaken, both before and after removal of the collapsed masonry, along with a drone flight soon after the initial bridge collapse, from which a three dimensional model was created of the remains. This can be accessed at https://skfb.ly/P9VC .

An area was stripped of topsoil in the field on the south side of the river in order to create a compound, along with access to the river. Excavation was only to a shallow depth, at most c 0.35m. There was no disturbance of deposits relating to a medieval castle motte, which lies south-east of the bridge. No residual artefacts of this period were noted within the topsoil.

Documentary sources indicate that Eastham Bridge was built as a toll bridge in 1793, replacing Whitcombes Ford. It does not appear to have replaced an earlier structure. The bridge was largely rebuilt in 1898 when its ownership was transferred to Worcestershire County Council. A set of records exist from this date. They contain remarkable detail and correspond closely with the bridge structure extant before the recent collapse in terms of both materials and construction methods. Both of these sets of records, along with the recording undertaken of the remains of the bridge, give a clear picture of the fabric, development and context of the bridge from the point of its initial construction. The only feature observed for which there are no documentary records, were a series of tie rods, inserted into the bridge structure probably in the latter half of the 19th century.

The 1793 documents also include the costing for the construction of a toll house, the brick footings of which were exposed during groundworks on the northern side of the river.

10 Acknowledgements

Worcestershire Archaeology would like to thank the following for their kind assistance in the successful conclusion of this project, Claire Lockwood (Bridge Engineer, CH2M), Nick Twaite, Infrastructure Asset Manager, Worcestershire County Council), Mark Mills (Contracts Project Manager, Worcestershire County Council), Jim Burgin (Heritage and Conservation Team Manager, Malvern Hills District Council), Adam Stanford (Aerial-Cam), Celia Adams (Eastham Court Farm), Katriona Byrne (Inspector of Ancient Buildings and Areas, Historic England), and Adrian Scruby (Historic Environment Advisor, Worcestershire County Council).

11 Bibliography

AAF 2011 *Archaeological archives: a guide to the best practice in the creation, compilation, transfer and curation,* Archaeological Archives Forum, http://www.archaeologyuk.org/archives/

BGS 2016 *Geology of Britain Viewer*, http://mapapps.bgs.ac.uk/geologyofbritain/home.html, British Geological Survey, accessed 2 August 2016

CIfA 2014a *Standard and guidance: Archaeological watching brief,* Chartered Institute for Archaeologists, http://www.archaeologists.net/codes/ifa

CIfA 2014b Standard and guidance for the archaeological investigation and recording of standing buildings or structures, Chartered Institute for Archaeologists, http://www.archaeologists.net/codes/ifa

CIfA 2014c *Standard and guidance for the collection, documentation, conservation and research of archaeological materials,* Chartered Institute for Archaeologists, http://www.archaeologists.net/codes/ifa

Douglas Opperman, A, 2000 *Eastham Within Living Memory*

Eastham Historical Society, n/d *Eastham Bridge,* undated document

HE 2016 *Understanding historic buildings: a guide to good recording practice*, Historic England

Ragg, J M, Beard, G R, George, H, Heaven, F W, Hollis, J M, Jones, R J A, Palmer, R C, Reeve, M J, Robson, J D, and Whitfield, W A D, 1984 *Soils and their use in midland and western England*, Soil Survey of England and Wales, **12**

Thorn, F, and Thorn, C, 1982 *Domesday Book* - Worcestershire, Chichester

WA 2012 *Manual of service practice, recording manual*, Worcestershire Archaeology, Worcestershire County Council, report **1842**

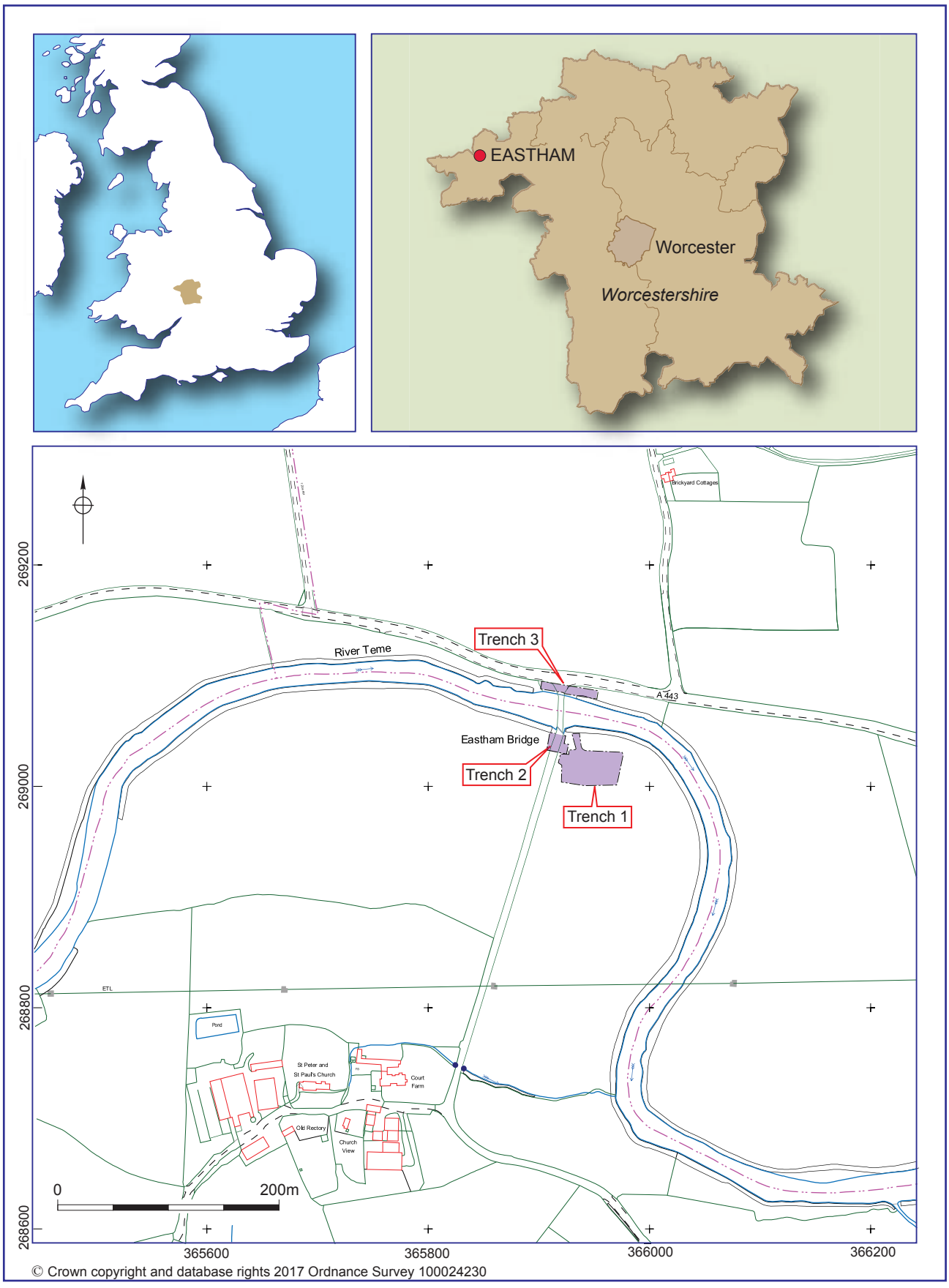
WA 2016 *Proposal for an watching brief at Eastham Bridge, Eastham and Lindridge, Worcestershire*, Worcestershire Archaeology, Worcestershire County Council, unpublished document dated 9 June 2016, **P4867**

Watt, S, (ed) 2011 *The archaeology of the West Midlands: a framework for research*, Oxbow Books, Oxford

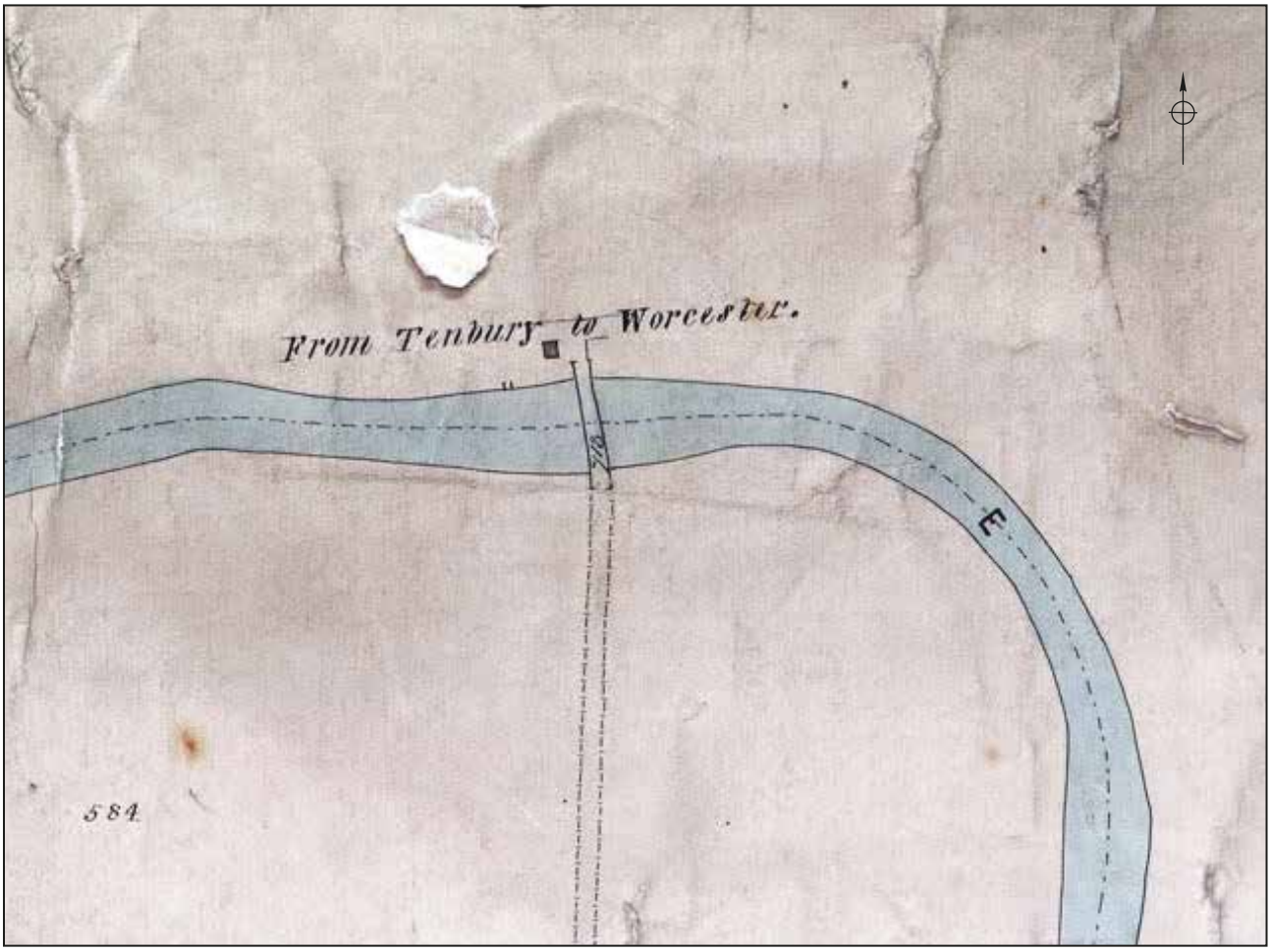
WCC 2010 *Standards and guidelines for archaeological projects in Worcestershire*, Planning Advisory Section, Worcestershire Archive and Archaeology Service, Worcestershire County Council unpublished report **604**, amended July 2012

WCC 2014 *Requirements for an Archaeological Watching Brief as a Condition of Planning Consent,* Worcestershire Archive and Archaeology Service, Worcestershire County Council, unpublished document, Version 1, dated September 2014

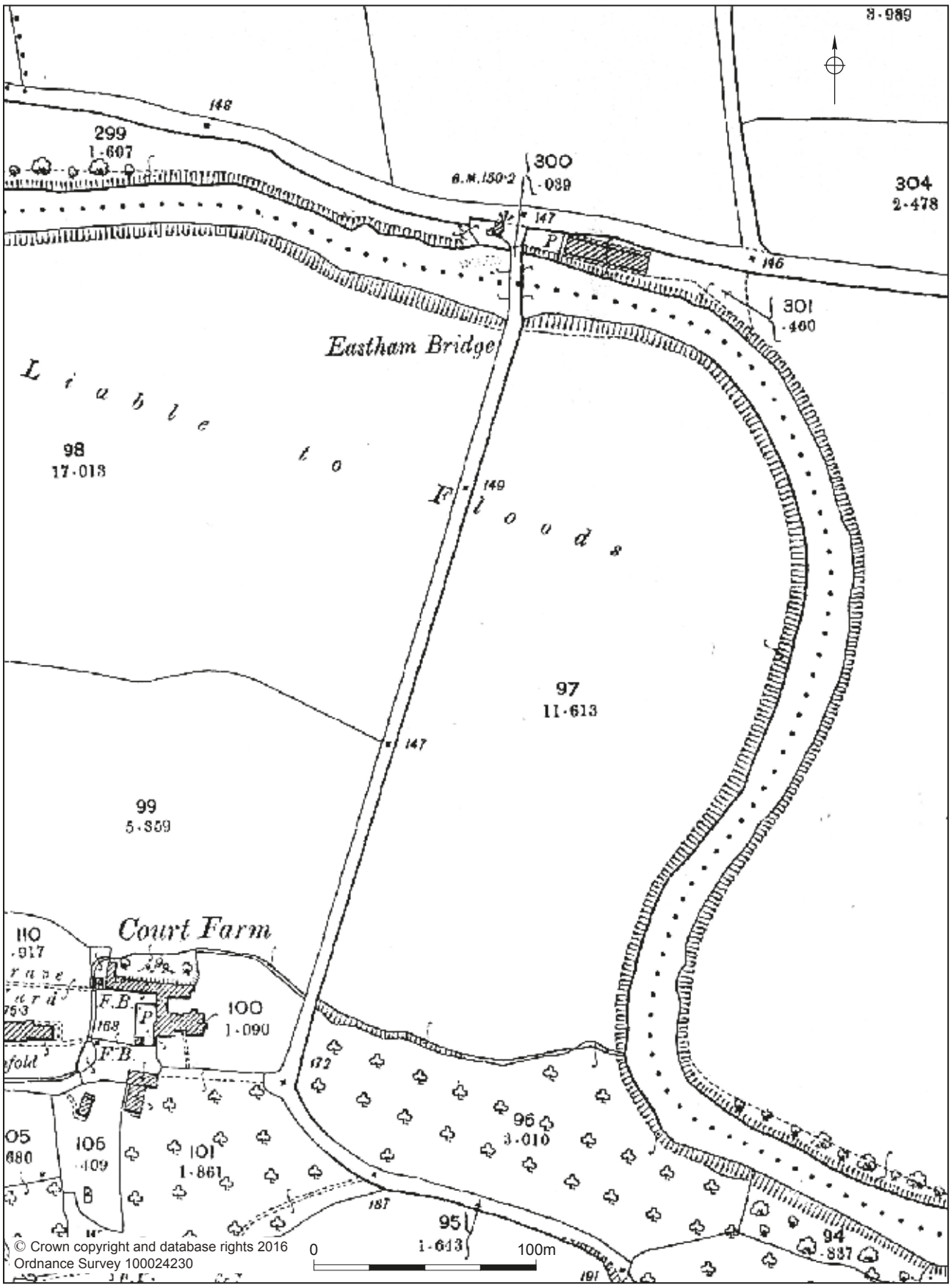
Figures



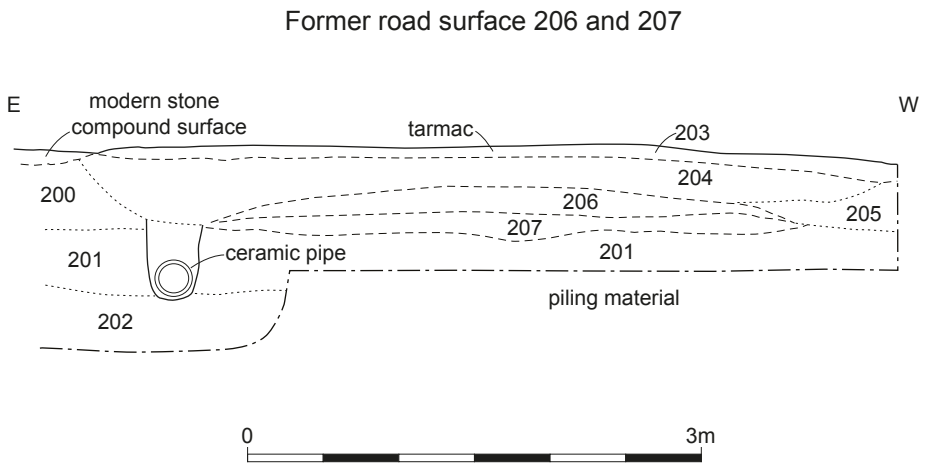
Location of the site and watching brief trenches *Figure 1*



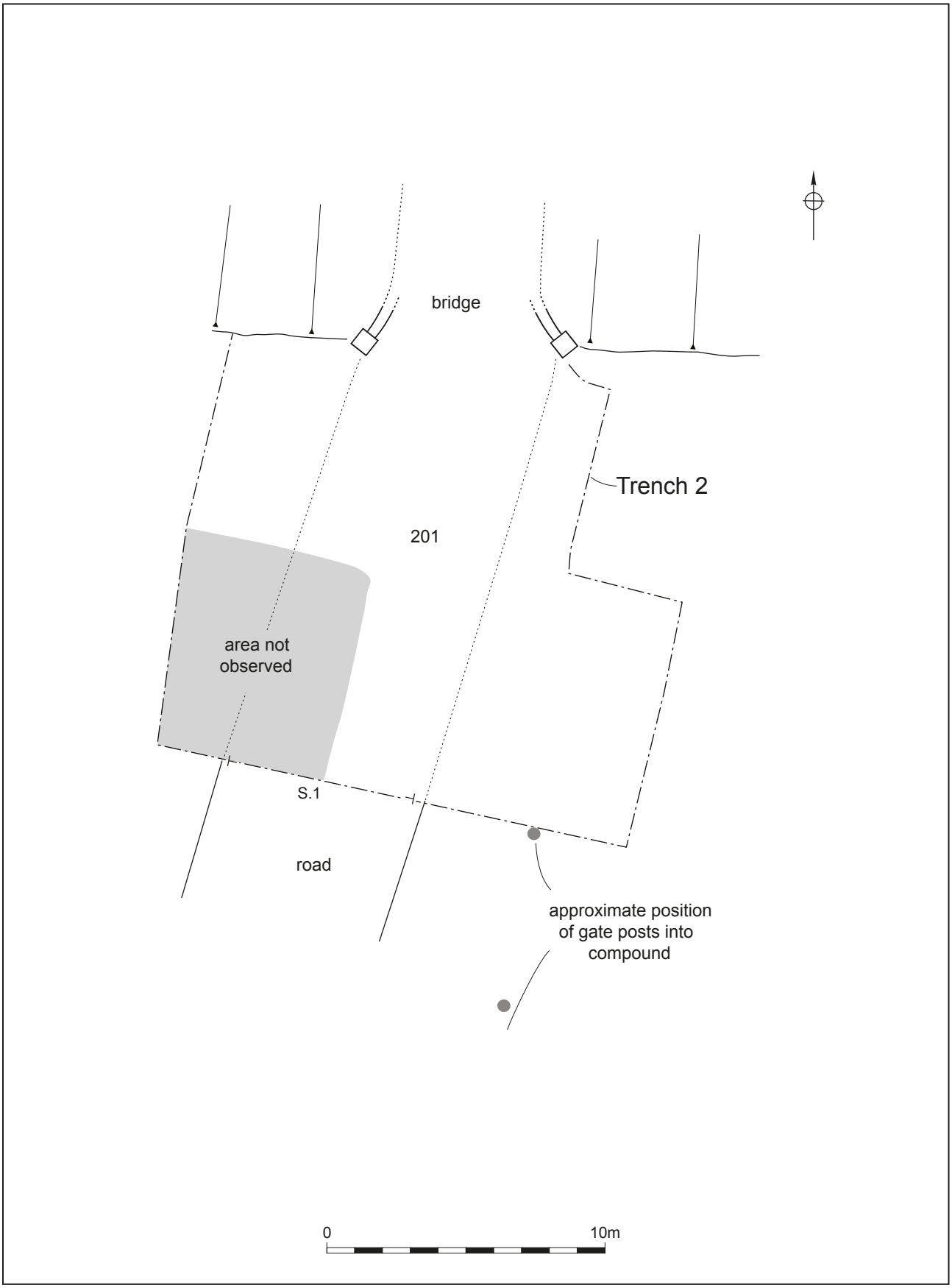
Extract of 1839 tithe *Figure 2*



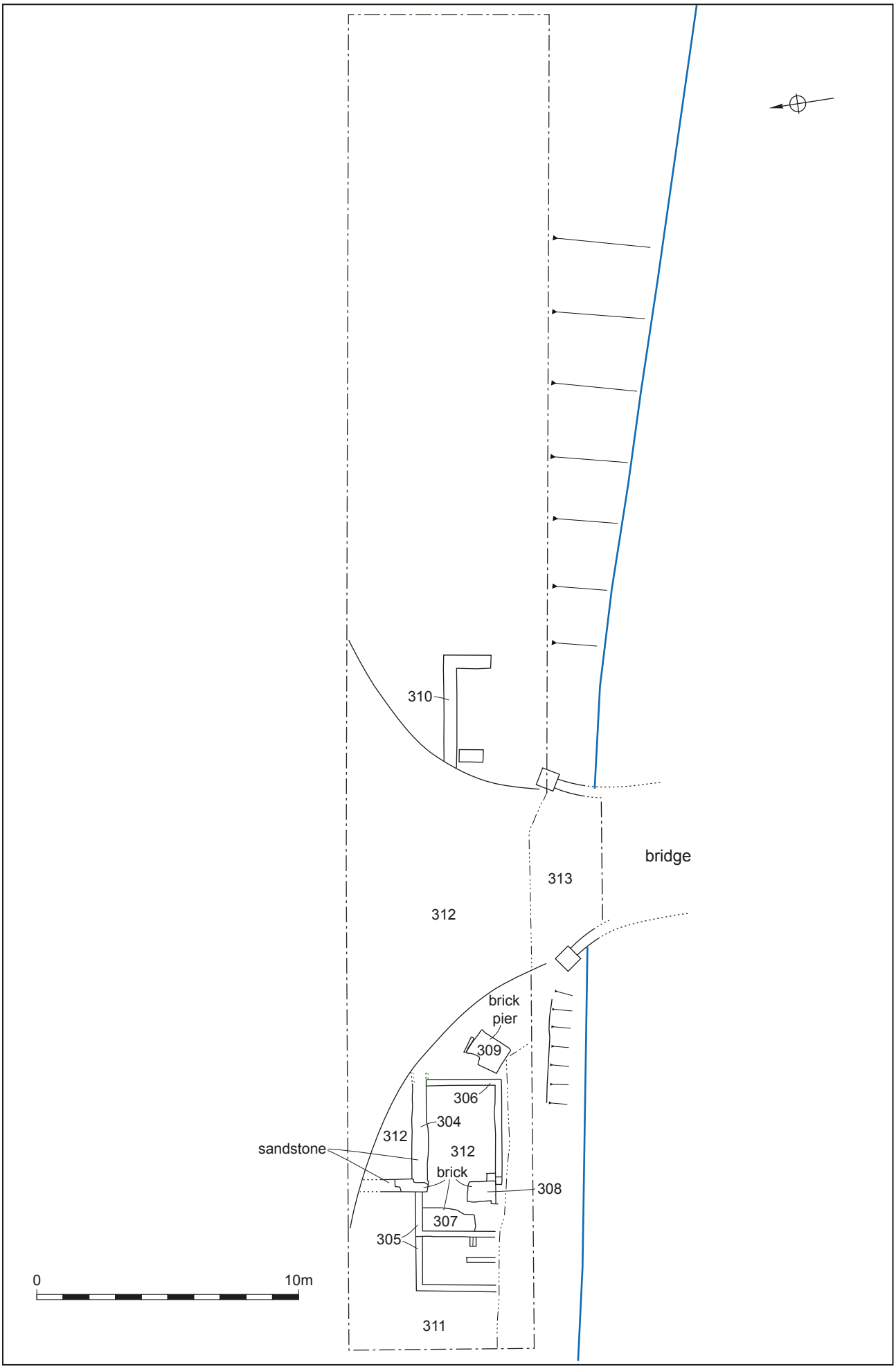
Extract of Ordnance Survey map, 1903 *Figure 3*



Trench 2: section through road south of bridge (see Fig 5 for location) *Figure 4*



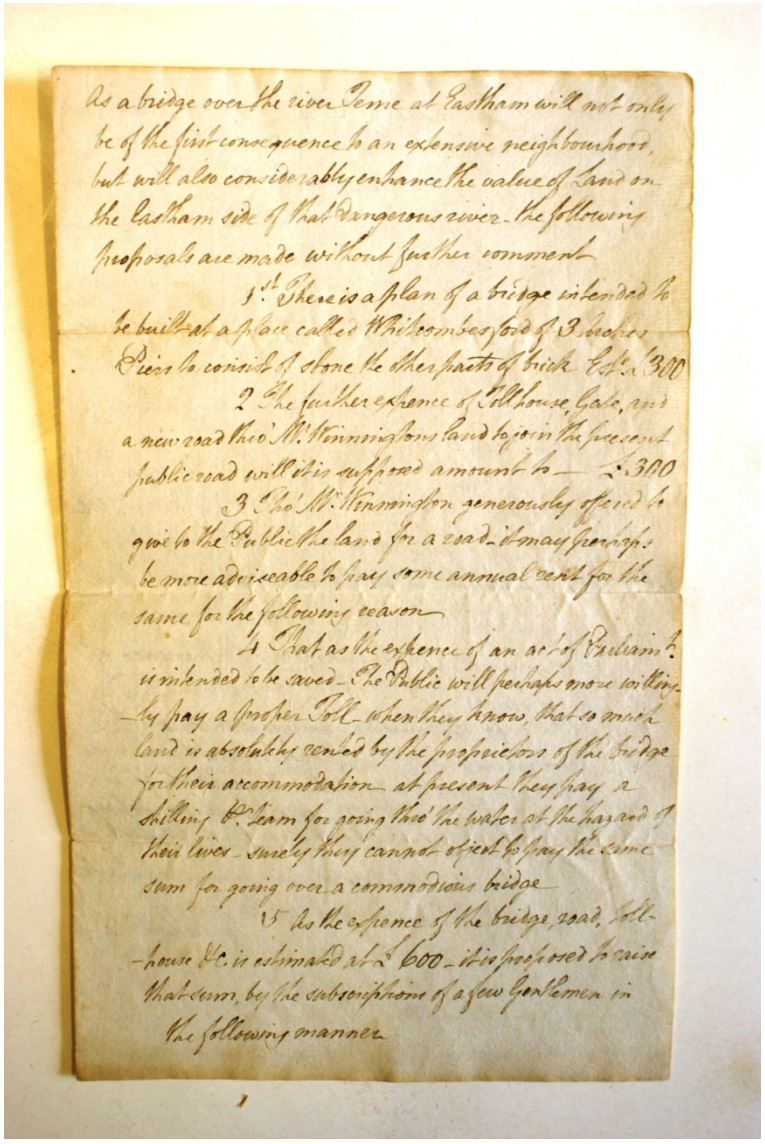
Plan of Trench 2 *Figure 5*



Plan of Trench 3 north of bridge with toll house footings to west

Figure 6

Plates



As a bridge over the river Teme at Eastham will not only be of the first consequence to an extensive neighbourhood, but will also considerably enhance the value of Land on the Eastham side of that dangerous river - the following proposals are made without further comment

1st There is a plan of a bridge intended to be built at a place called Whitcombes ford of 3 Arches Piers to consist of stone the other parts of brick Estd £300

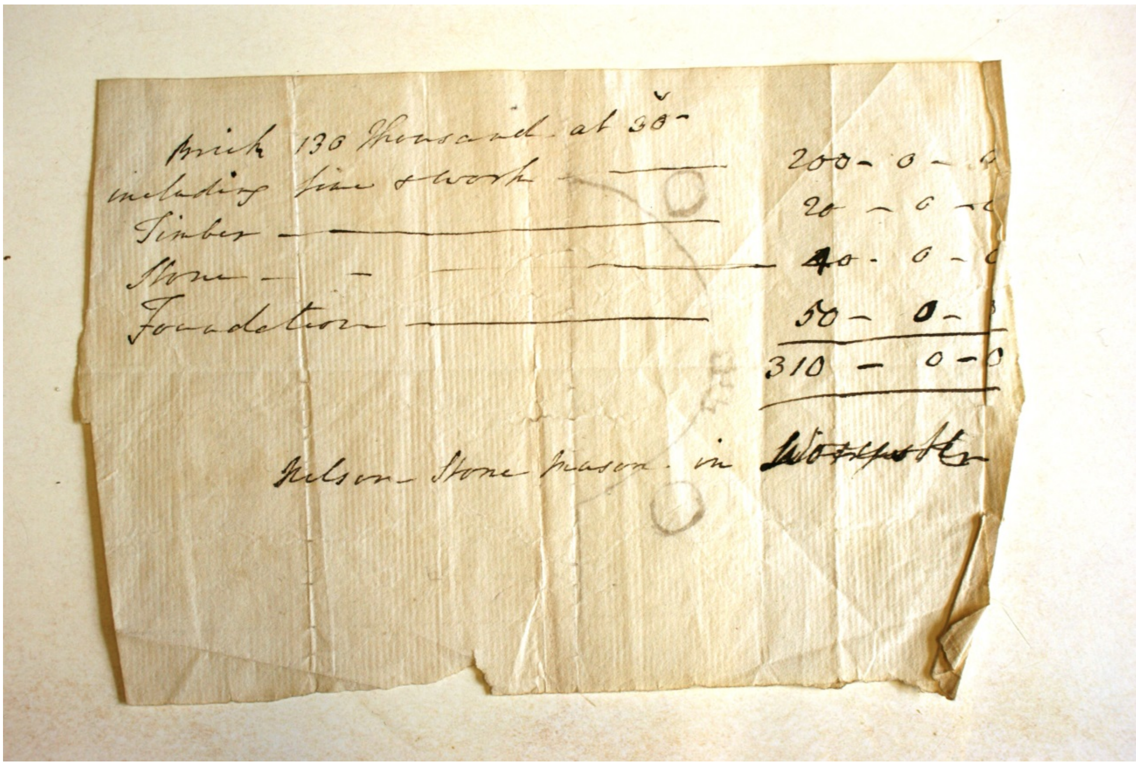
2 The further expence of Tollhouse Gate, and a new road thro' Mr Winnington's land to join the present public road will (it is supposed) amount to — £300

3 Tho' Mr Winnington generously offered to give to the Public the land for a road - it may perhaps be more adviseable to pay some annual rent for the same for the following reason

1 That as the expence of an act of Parliament is intended to be saved - The Public will perhaps more willingly pay a proper Toll - when they know that so much land is absolutely rented by the proprietors of the Bridge for their accommodation - at present they pay a shilling p.r Team for going thro' the water at the hazard of their lives - surely they cannot object to pay the same sum for going over a commodious bridge

2 As the expence of the bridge, road, Toll-house &c is estimated at £600 - it is proposed to raise that sum by the subscriptions of a few Gentlemen in the following manner

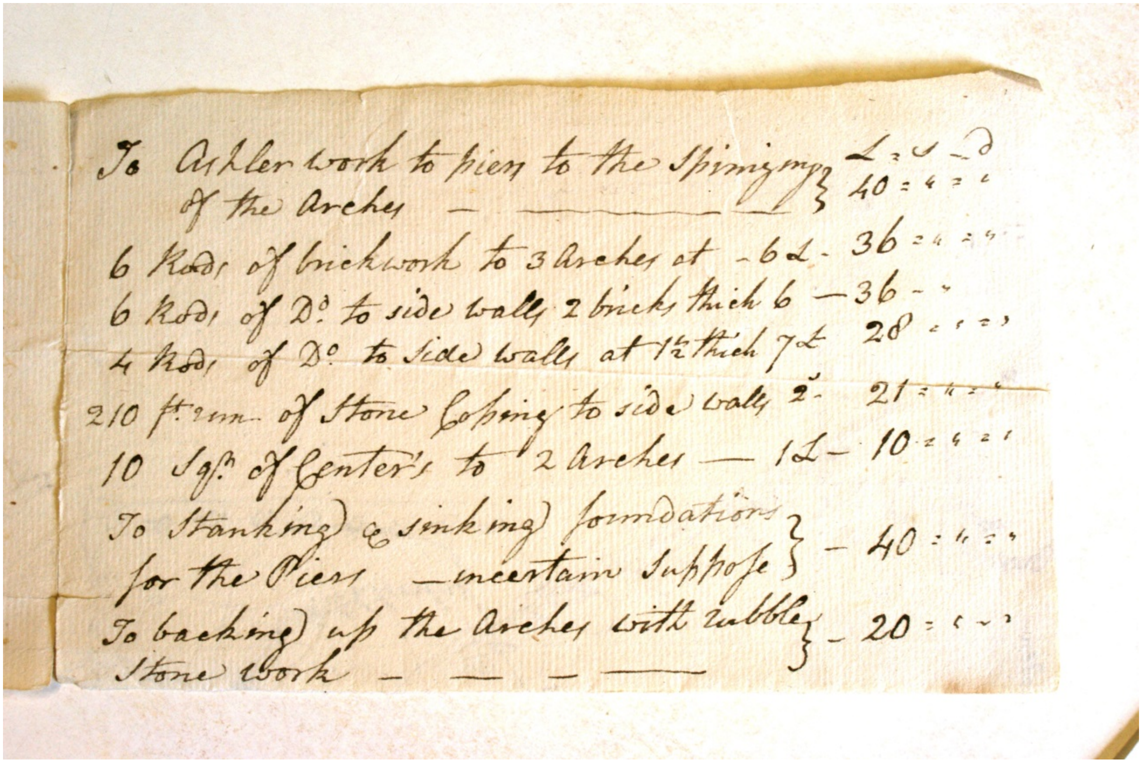
Plate 1 Original document relating to the construction of the bridge in 1792-3 (courtesy of Celia Adams)



Brick 130 thousand at 30/- including lime & work	200 - 0 - 0
Timber	20 - 0 - 0
Stone	40 - 0 - 0
Foundation	50 - 0 - 0
	310 - 0 - 0

Nelson Stone mason in Worcester

Plate 2 Original document relating to the construction of the bridge in 1792-3, part of the correspondence of the Reverend Christopher Whitehead (courtesy of Celia Adams 2016)



	£ : s : d
To Ashler work to piers to the Springing of the Arches	40 : 0 : 0
6 Rods of brickwork to 3 Arches at 6£	36 : 0 : 0
6 Rods of Do. to side walls 2 bricks thick 6	36 : 0 : 0
4 Rods of Do. to side walls at 1½ thick 7£	28 : 0 : 0
210 ft run of Stone Coping to side walls 2/-	21 : 0 : 0
10 Sqs. of Center's to 2 Arches — 1£	10 : 0 : 0
To Stanking & sinking foundations for the Piers — uncertain suppose	40 : 0 : 0
To backing up the Arches with rubble Stone work	20 : 0 : 0

Plate 3 Original document relating to the construction of the bridge in 1792-3 (courtesy of Celia Adams)

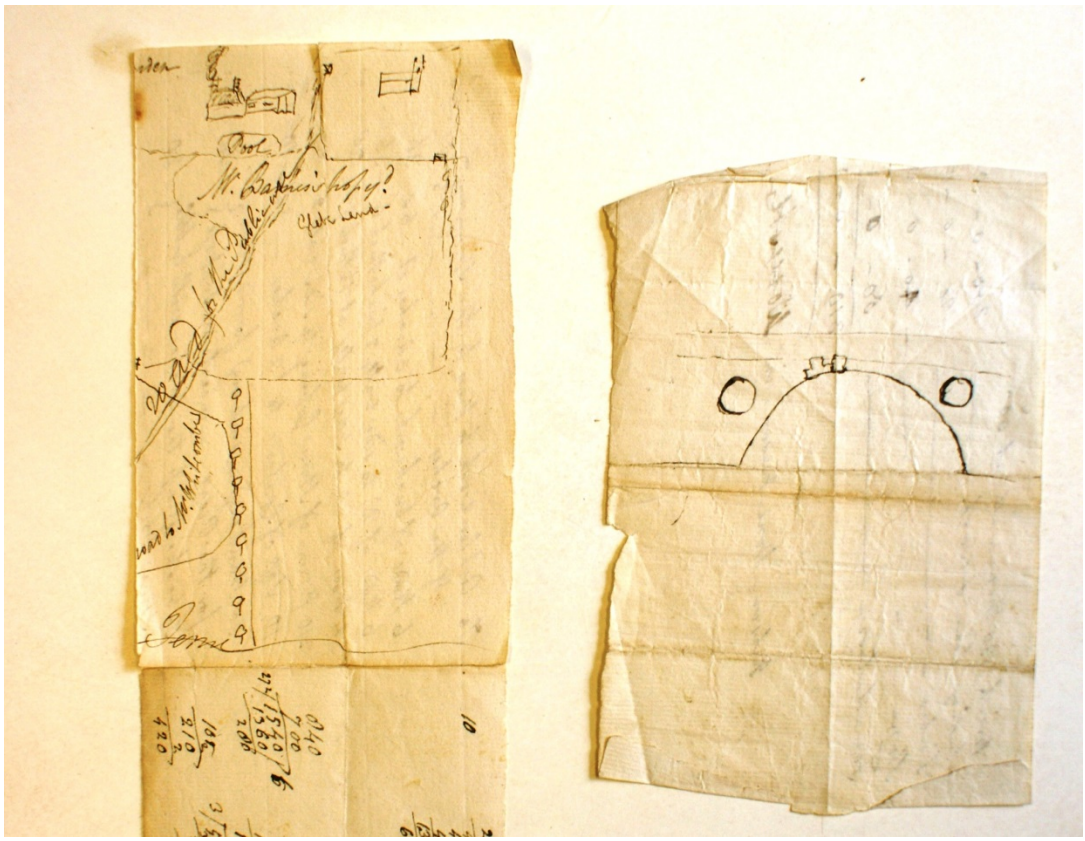
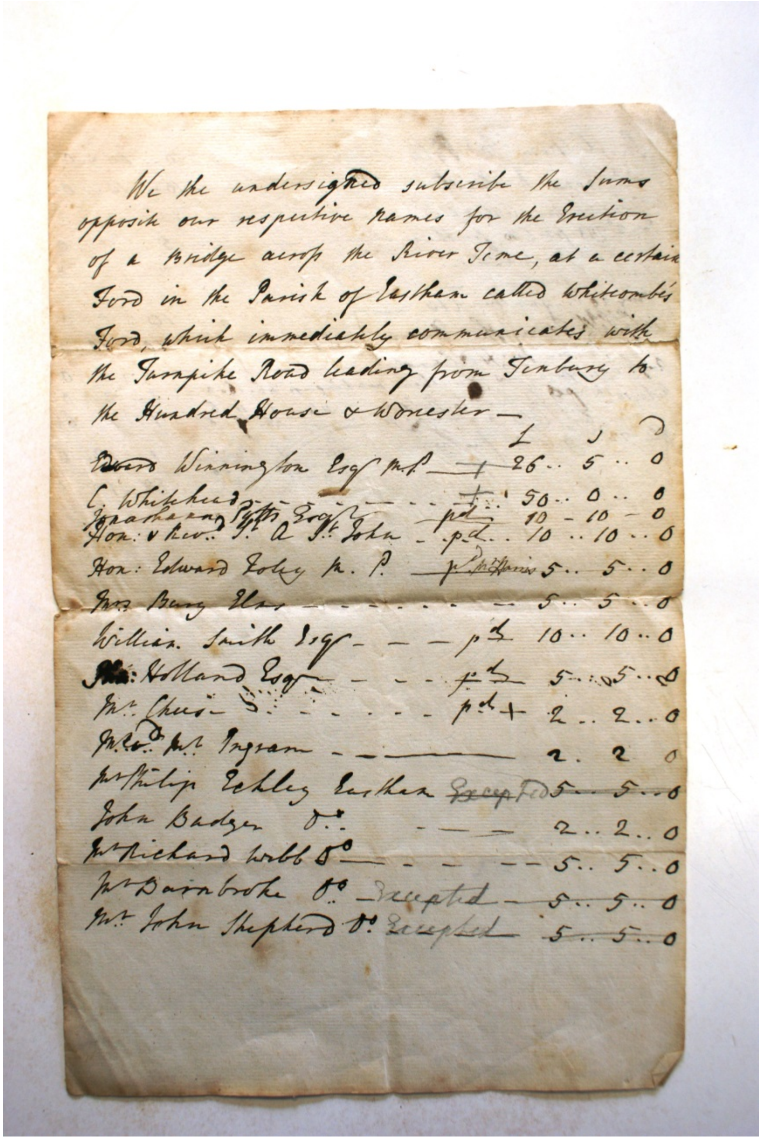


Plate 4 Original documents relating to the construction of the bridge in 1792-3 (courtesy of Celia Adams)



We the undersigned subscribe the Sums opposite our respective names for the Erection of a Bridge across the River Teme, at a certain Ford in the Parish of Eastham called Whitcombe's Ford, which immediately communicates with the Turnpike Road leading from Tenbury to the Hundred House & Worcester —

		£	s	d
Edward Winnington Esq M.P.	+	26	5	0
C. Whitehead	+	50	0	0
Jonathan [illegible] Pytts Esq	pd	10	10	0
Hon: & Rev: J. A. St John	pd	10	10	0
Hon: Edward Foley M.P.	pd [illegible]	5	5	0
Mrs Berry [illegible]		5	5	0
William Smith Esq	pd	10	10	0
[illegible] Holland Esq	pd	5	5	0
Mr Cheese	pd +	2	2	0
Mr [illegible] Ingram		2	2	0
Mr Philip Eckley Eastham	~~Excepted~~	~~5~~	~~5~~	~~0~~
John Badger Do		2	2	0
Mr Richard Webb Do		5	5	0
Mr Bainbroke Do	~~Excepted~~	~~5~~	~~5~~	~~0~~
Mr John Shepherd Do	~~Excepted~~	~~5~~	~~5~~	~~0~~

Plate 5 Original document relating to the construction of the bridge in 1792-3 (courtesy of Celia Adams)

Plate 6 Watercolour by William Lea, between 1830 and 1853, view north-west (reproduced in Douglas Opperman 2000; from Museums Worcestershire collections)