

**Archaeological Watching Brief  
Bexley High Street Bridge  
London Borough of Bexley**

**NGR: 54967 17352  
(TQ 4967 7352)**

**ASE Project No: 8499  
Site Code: HST15  
ASE Report No: 2016278  
OASIS id: archaeol6-256975**





**By Sarah Ritchie, MA, ACIfA**

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**Abstract**

*Archaeology South-East was commissioned by Waterman Group to undertake an archaeological observation and recording brief at Bexley High Street Bridge, London Borough of Bexley, during the refurbishment of the existing bridge. The watching brief was carried out between the 20<sup>th</sup> November 2015 and the 24<sup>th</sup> February 2016.*

*The watching brief revealed the remains of a red brick bridge built c. 1770 encased within the extant 1872 bridge. The early bridge was observed at 12.20m OD, and were built on the natural sands and gravels of the River Cray at c.10.75m OD.*

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## **1.0 INTRODUCTION**

### **1.1 Site Background**

1.1.1 Archaeology South-East was commissioned by the Waterman Group to undertake an archaeological observation and recording brief at Bexley High Street Bridge, London Borough of Bexley, NGR: TQ 4967 7352 (Figure 1).

### **1.2 Geology and Topography**

1.2.1 The solid geology of the site is shown by the British Geological Survey (BGS Map Viewer online, 2015) as Seafood Chalk Formation and Newhaven Chalk Formation; a sedimentary bedrock formed approximately 71 to 89 million years ago in the Cretaceous Period with overlying deposits of river alluvium, silt, sand and gravel.

1.2.2 The site comprises the section of Bexley High Street where it is bridged over the River Cray in Bexley. The centre of the bridge is located at 12.66m OD.

### **1.3 Planning Background**

1.3.1 A planning application has been approved by Bexley Council (Planning Ref: 15/01031/FUL) for the demolition of the existing bridge over the River Cray and adjacent footway and the construction of a new bridge accommodating both traffic and pedestrians.

1.3.2 Having considered the implications of the development the Greater London Archaeology Advisory Service (GLAAS), the part of Historic England that advise the London Borough of Bexley on its archaeological obligations, has stated the following:

*“Having reviewed the currently supplied details, it is concluded that elements of the works may have the potential to cause impact upon the potential archaeological resource of that area of Bexley Old Town. It is recommended that a programme of archaeological Observation and Recording would be appropriate in this instance in respect of key aspects of the works such as the temporary footbridge, the trench for the replacement pipe and services diversions, plus any other temporary works including site compound, access road, landscaping etc. for example.”*

### **1.4 Scope of Report**

1.4.1 This report details the results of the archaeological watching brief carried out on the site between the 20th November 2015 and the 24th February 2016. This report has been prepared in accordance with the Written Scheme of Investigation (ASE, 2015).

1.4.2 The site work was carried out by Sarah Ritchie; Ian Hogg and Steve White.

## **2.0 ARCHAEOLOGICAL BACKGROUND**

### **2.1 Prehistoric**

2.1.1 A series of Palaeolithic flint tools and flakes have been found in the area, mostly within close proximity to the River Cray. Of particular note are the flint working sites from quarries in the area (Stoneham's Pit; Furner's Old and New Pits; Rutters Pit and Talbot's Pit). The Mesolithic period is also well represented with flint tools and flakes present at Stable Meadow Allotments, Bunkers Hill and, more substantially, at Thanet Road where a Late Mesolithic/Early Neolithic hearth was found in the 1990s.

2.1.2 The Neolithic and Bronze Ages are less prevalent in the area, with the exception of some 'background noise', by way of occasional findspots of flint artefacts.

2.1.3 No Iron Age finds are present within the vicinity of the site and the nearest trace of Iron Age occupation comes from Crayford, some distance to the north.

### **2.2 Roman**

2.2.1 The closest known Roman site is a Roman "building" recorded at the Stable Meadows Allotments site. The present day line of the A207 is thought to follow the line of the principal Roman road (Watling Street) from London to Dover, but this is some 2km to the north of the site.

### **2.3 Anglo Saxon and Medieval**

2.3.1 There are no known Saxon remains within the vicinity of the site, the focus of such activity being in Crayford. Bexley is mentioned as belonging to the archbishop of Canterbury in the Domesday Book of 1086 where it is referred to as *Bix*.

### **2.4 Post Medieval and Modern**

2.4.1 Bexley remained as a rural hamlet centred on the Old Mill and St Mary's Church until the 19<sup>th</sup> century. From the mid-19<sup>th</sup> century, however, major development began, with the construction of South East Railway's Dartford loop and Bexley Railway Station in 1866.

## **2.5 Project Aims and Objectives**

2.5.1 The general aims of the observation and recording brief were:

- To define, insofar as possible, the date, character, form and function of any archaeological features observed on site
- To establish the presence or absence of archaeological remains within the footprint of the proposed development and to preserve by record any such remains
- To determine the survival, extent and minimum depth below modern ground level of any such remains
- To determine the nature and significance of any archaeological deposits



### **3.0 ARCHAEOLOGICAL METHODOLOGY**

#### **3.1 Fieldwork Methodology**

- 3.1.1 A Risk Assessment and Method Statement (RAMS) were prepared prior to commencement of the work. A site code (HST15) was obtained from the London Archaeological Archive and Research Centre (LAARC) and was used as the unique site identifier for all records.
- 3.1.2 The watching brief work comprised the monitoring of intrusive works associated with the demolition of the existing bridge and the construction of the new bridge.
- 3.1.3 All machine excavation was undertaken using a suitable back-acting mechanical excavator provided by the client or their contractor and fitted with a wide flat-bladed ditching bucket. The machine excavation was excavated through undifferentiated topsoil and modern made ground in spits of no more than 0.25m until archaeological deposits or the top of the underlying natural sediments were reached.
- 3.1.4 While a watching brief is designed to cause minimal disruption to a development, sufficient time was granted to the archaeologist on site to properly excavate and record the site sequence.
- 3.1.5 All recording was undertaken in line with the WSI (ASE 2015).

**3.2 Archive**

3.2.1 ASE informed LAARC prior to the commencement of fieldwork that a site archive would be generated. The site archive is currently held at the offices of ASE and will be deposited at the LAARC in due course. The contents of the archive are tabulated below (Tables 1 & 2).

Context sheets	2
Section sheets	0
Plans sheets	0
Colour photographs	0
B&W photos	0
Digital photos	85
Context register	0
Drawing register	0
Watching brief forms	1
Trench Record forms	0

Table 1: Quantification of site paper archive

Bulk finds (quantity e.g. 1 bag, 1 box, 0.5 box 0.5 of a box )	0.5 box
Registered finds (number of)	0
Flots and environmental remains from bulk samples	0
Palaeoenvironmental specialists sample samples (e.g. columns, prepared slides)	0
Waterlogged wood	0
Wet sieved environmental remains from bulk samples	0

Table 2: Quantification of artefact and environmental samples

## 4.0 RESULTS

Context	Type	Description	Max. Length m	Max. Width m	Deposit Thickness m	Height (m OD)
1	Layer	Tarmac	20m	10m	0.25m	12.65m OD
2	Layer	Made Ground	20m	10m	0.60m	12.40m OD
3	Mas	Bridge	20m	10m	c.3m	13.75m OD
4	Mas	Bridge	10m	1.30m	1.45m	12.20m OD
5	Natural	Sand and gravel	10m	1.30m	NFE	10.75m OD

Table 3: list of recorded contexts

- 4.1 The works monitored included the excavation of existing cable trenches; removal of existing tree stumps and the excavation of two pile location trenches across the width of the bridge. The cable trench and tree stumps were located on the east side of the river, on the south side of the bridge at c.12.41m OD. The cable trench measured 0.50m deep revealing modern made ground. The removal of the tree stumps revealed garden soil (Figure 3).
- 4.2 The two pile trenches were located north-east—south-west across the width of the bridge, and measured 10m long by 1.30m wide and c.1.90m deep. Natural river deposited sands and gravels [5] from the River Cray were observed within both trenches at 10.75m OD. Overlying the natural sands and gravels [5] was masonry [4]. The masonry was located within both trenches, and measured at least 10m x 1.30m and 1.45m deep, made of unfrogged red bricks measuring 110mm x 70mm x 220mm and bonded with a hard white mortar. Masonry [4] is believed to be the remnants of an earlier phase of the bridge over the River Cray, which was subsequently truncated to c.12.20m OD, and encased within the existing bridge structure built in 1872 (Figures 4 & 6). This hypothesis is supported by a description of the bridge from 1797, which describes there being a *...brick bridge, erected a few years since by the subscription of the neighbouring gentry* (Bristow, 1797).
- 4.3 Encasing masonry [4] was existing yellow stock-brick bridge [3] (Figures 4 & 6). A simple deck beam design, with exterior walls measuring c.0.50m thick, and c.3m deep, and longitudinal cast iron beams bearing the inscription *W. Weeks & Son, Maidstone*. A date stone incorporated into the fabric of the south facing exterior wall of the bridge dates its build to 1872 (Figure 5). This is further corroborated by the presence of a coping stone, found during the dismantling of bridge structure [3] which bore the inscription:
- Martin Bulmer, County Surveyor***  
**1872**  
***Old Bridge***  
**1770**
- 4.4 Overlaying masonry [4] within the trenches were modern made ground and cables [2], which varied in depth from 0.20-0.60m, and were sealed by 0.25m of tarmac [1]. The surface of the bridge was located at 12.65m OD.

## 5.0 THE FINDS

### 5.1 Ceramic Building Material (CBM) by Isa Benedetti-Whitton

- 5.1.1 Two bricks were collected from a single context, [4]. Both were formed from the same orange-brown fabric, with common fine and medium quartz, sparse black oxide speckle and very coarse red ferrous deposits, and were approximately the same size; one brick measured 223mm x 100mm x 62mm and the other 220mm x 97mm x 70mm.
- 5.1.2 Neither brick was frogged, but both evenly fired and well formed. This, in conjunction with the quantity of lime rather than concrete mortar attached, is suggestive of a later 18<sup>th</sup>-19<sup>th</sup> century date.

## **6.0 DISCUSSION AND CONCLUSIONS**

### **6.1 Overview of stratigraphic sequence**

6.1.1 The watching brief revealed a sequence of natural river gravels overlain by red brick masonry believed to correspond to the 18<sup>th</sup> century bridge. This was encased by the 19<sup>th</sup> century yellow stock brick bridge, and sealed with modern made ground and tarmac.

### **6.2 Potential impact on archaeological remains**

6.2.1 Planning permission has been granted (Planning Ref: 15/01031/FUL) for the demolition of the existing bridge and the erection a new bridge.

6.2.2 The building design of the new bridge was planned so that the new concrete beams will over-span the existing abutments to the new piled foundations, thus preserving what is left of both the 1770 and 1872 bridges, except within the two pile trenches. The design plans to reuse the existing 1872 brickwork parapets and copings as cladding to the new bridge parapets.

### **6.3 Consideration of research aims**

- *To define, insofar as possible, the date, character, form and function of any archaeological features observed on site.*

The watching brief revealed the remains of an earlier red brick bridge, believed to have been erected c. 1770.

- *To determine the survival, extent and minimum depth below modern ground level of any such remains*

The red brick masonry was horizontally truncated to 12.20m OD, and a depth of c. 1.05m of the masonry survived

- *To determine the nature and significance of any archaeological deposits*

The remnants of the 1770 bridge are of local significance.

### **6.4 Conclusions**

6.4.1 The watching brief revealed that, encased within the structure of the existing 1872 bridge, survives an earlier red brick bridge built in c.1770. Aside from within the new pile locations, the remnants of both the 1770 and 1872 bridges will be preserved within the new bridge.

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ASE would like to thank Waterman Group for commissioning the work and Mark Stevenson, Archaeological Advisor for Greater London, for his guidance and monitoring. The watching brief was carried out by Sarah Ritchie, Ian Hogg and Steve White. Andy Leonard managed the excavations, Jim Stevenson and Dan Swift the post-excavation process.

**HER Summary**

Site Code	HST 15				
Identification Name and Address	Bexley High Street Bridge				
County, District &/or Borough	London Borough of Bexley				
OS Grid Refs.	TQ 4967 7352				
Geology	Seaford Chalk Formation and Newhaven Chalk Formation				
Arch. South-East Project Number	8499				
Type of Fieldwork			Watching Brief		
Type of Site			Deep Urban		
Dates of Fieldwork			20/11/15 - 24/2/16		
Sponsor/Client	Waterman Group				
Project Manager	Andy Leonard				
Project Supervisor	Sarah Ritchie,				
Period Summary					
			PM	Modern	
<p>Summary</p> <p>Archaeology South-East was commissioned by the Waterman Group to undertake an archaeological observation and recording brief at Bexley High Street Bridge, London Borough of Bexley, during the refurbishment of the bridge. The watching brief was carried out between the 20th November 2015 and the 24th February 2016.</p> <p>The watching brief revealed the remains of a red brick bridge built c. 1770 encased within the extant 1872 bridge. The early bridge was observed at 12.20m OD, and was built on the natural sands and gravels of the River Cray at c.10.75m OD.</p>					

## OASIS Form

**OASIS ID: archaeo16-256975**

### Project details

Project name	An Archaeological Observation and Recording Brief at Bexley High Street Bridge, London Borough of Bexley
Short description of the project	Archaeology South-East was commissioned by the Waterman Group to undertake an archaeological observation and recording brief at Bexley High Street Bridge, London Borough of Bexley, during the refurbishment of the bridge. The watching brief was carried out between the 20th November 2015 and the 24th February 2016. The watching brief revealed the remains of a red brick bridge built c. 1770 encased within the extant 1872 bridge. The early bridge was observed at 12.20m OD, and was built on the natural sands and gravels of the River Cray at c.10.75m OD.
Project dates	Start: 20-11-2015 End: 24-02-2016
Previous/future work	No / No
Any associated project reference codes	HST15 - Sitecode
Type of project	Recording project
Site status	Conservation Area
Current Land use	Transport and Utilities 1 - Highways and road transport
Monument type	MASONRY Post Medieval
Significant Finds	BRICK Post Medieval
Investigation type	"Watching Brief"
Prompt	Direction from Local Planning Authority - PPS

### Project location

Country	England
Site location	GREATER LONDON BEXLEY BEXLEY Bexley High Street Bridge
Postcode	DA5 1JX
Study area	40 Square metres
Site coordinates	TQ 4967 7352 51.440356788998 0.153744163608 51 26 25 N 000 09 13 E Point
Height OD / Depth	Min: 10.75m Max: 10.75m

### Project creators

Name of Organisation	Archaeology South-East
Project brief	Waterman Group



originator  
Project design originator Archaeology South-East  
Project director/manager Andrew Leonard  
Project supervisor Sarah Ritchie  
Type of sponsor/funding body Client

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**Project archives**

Physical Archive recipient LAARC  
Digital Archive recipient LAARC  
Paper Archive recipient LAARC

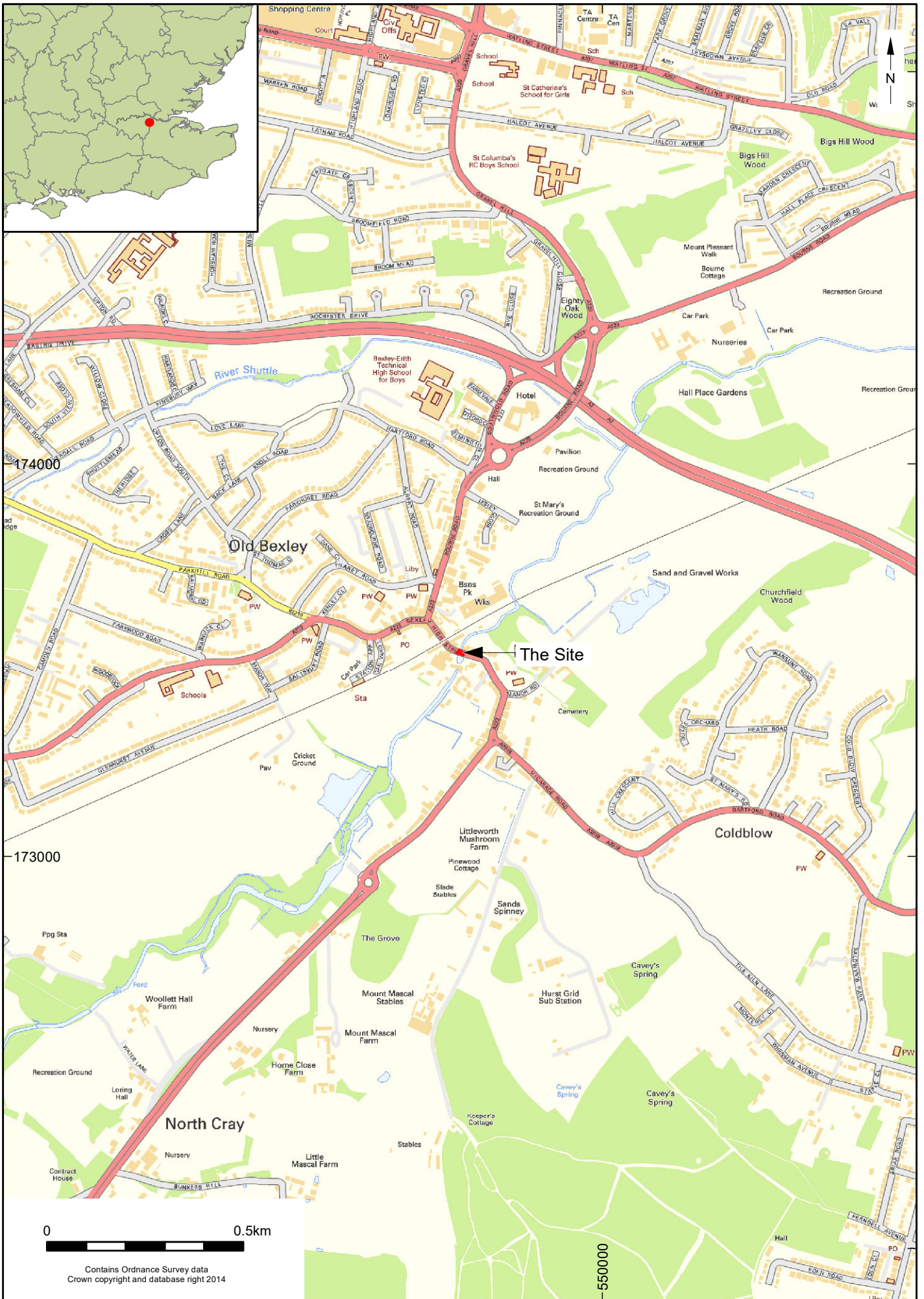
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**Project bibliography 1**

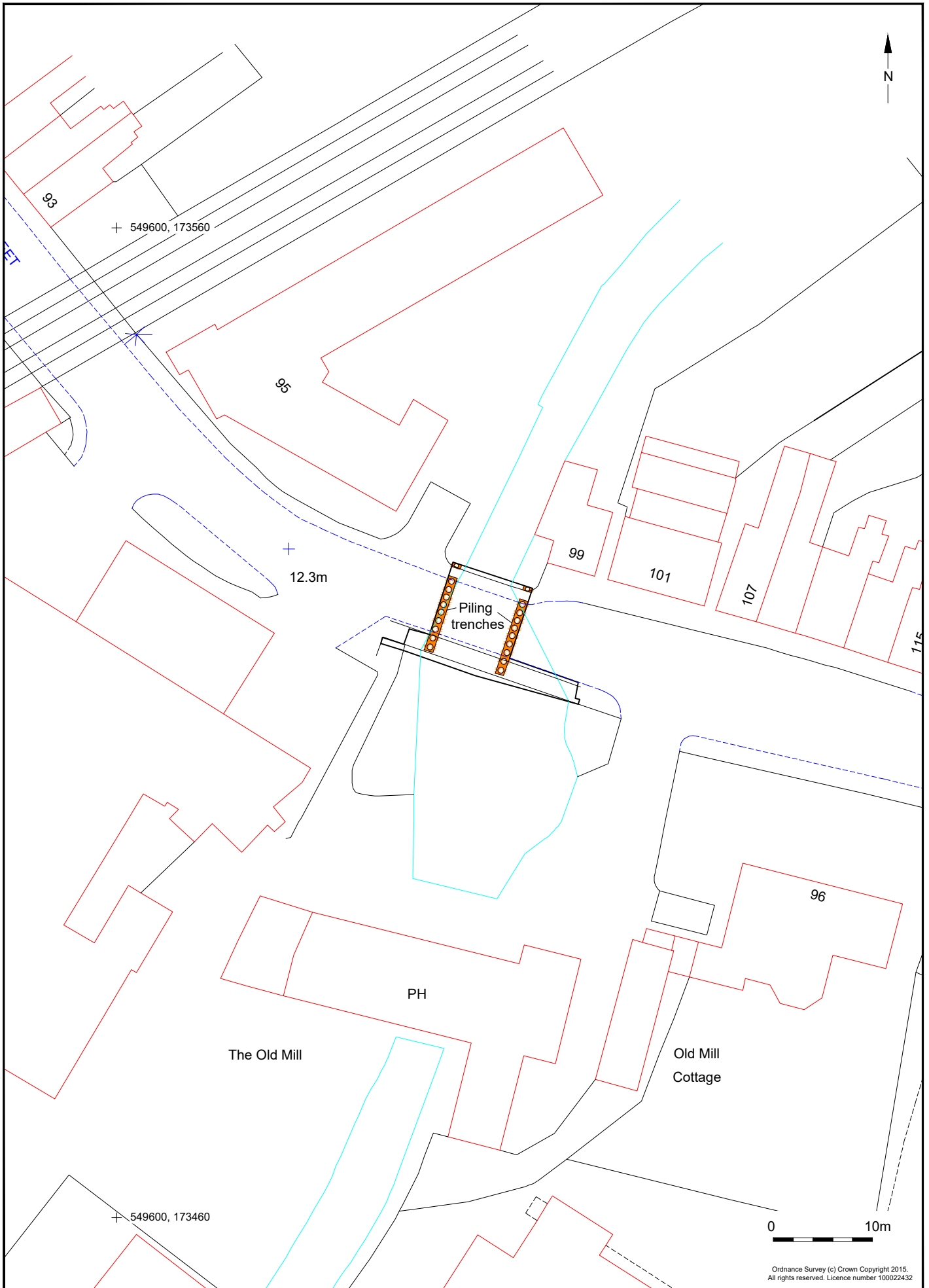
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© Archaeology South-East		Bexley Bridge	Fig. 1
Project Ref: 8499	Oct 2015	Site location	
Report Ref:	Drawn by: JLR		



© Archaeology South-East		Bexley Bridge	Fig. 2
Project Ref: 8499	July 2016	Location of piling trenches	
Report Ref: 2016278	Drawn by: AR		



Cable trench excavation



Tree stump removal with existing bridge in the background



Partially dismantled existing bridge , looking north-east



Partially dismantled existing bridge , looking north-east



Partially dismantled existing bridge , looking south



Inscription on the cast iron beam



Coping stone



Photo of the 1770 bridge, taken c. 1880



Photo of the 1872 bridge, taken c. 1899

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