

Hayle Causeway Bridge, Cornwall

Archaeological Assessment



Historic Environment Service (Projects)

Cornwall County Council

A Report for the Design and Maintenance
Consultancy, Cornwall County Council

Hayle Causeway Bridge, Cornwall

Archaeological Assessment

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Within the Historic Environment Service, the Project Manager was Nigel Thomas.

The views and recommendations expressed in this report are those of the Historic Environment Service projects team and are presented in good faith on the basis of professional judgement and the information currently available.

Cover illustration

Hayle Causeway Bridge pictured in 2004.

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Abbreviations

HER	Cornwall and the Isles of Scilly Historic Environment Record
HES	Historic Environment Service, Cornwall County Council
NGR	National Grid Reference
PRN	Primary Record Number in Cornwall HER
OS	Ordnance Survey

1 Summary

HES were commissioned by the Design and Maintenance Consultancy of Cornwall County Council to carry out an archaeological assessment of Hayle Causeway Bridge. It is a Grade II Listed Building.

Built in 1825, the bridge was widened in the 1970s at the same time as other road improvements in this area. The new section of bridge, immediately to the north of the original, was constructed of concrete with a killas wall parapet.

The proposed works are to replace the 'modern' part of the bridge, the condition of which has deteriorated since it was built. There will be a limited impact on the original bridge.

It is recommended that a photographic record should be made before and during the progress of the works and that copies of the photographs and accompanying records should be lodged with the Cornwall and Isles of Scilly Historic Environment Record.

2 Introduction

2.1 Project background

The Historic Environment Service was commissioned in February 2004 by the Design and Maintenance Consultancy of Cornwall County Council to undertake an archaeological assessment of a causeway bridge near Hayle (SW 5470 3632). The bridge itself is part of an early 19th century causeway which provides a road link (B3301) between the town and Lelant (see Fig. 1). The bridge was widened in the 1970s at the same time as other road improvements in this general area.

The proposed works are to replace the ‘modern’ portion of the bridge, the condition of which has deteriorated since it was built. There will be a limited impact on the original bridge.

The original bridge is well preserved. It is protected as part of the Grade II Listed causeway.

2.2 Aims

The aims of the project were to:

- Prepare an assessment of the archaeological and historical importance of the causeway bridge at Hayle.
- Prepare an assessment of the archaeological impact of the strengthening scheme.
- Prepare a mitigation strategy for any necessary further investigation and recording.

2.3 Methods

The archaeological work comprised a brief desk-based study of available map and other accessible sources, followed by a field visit.

2.3.1 Desk-based assessment

During the desk-based assessment historical databases and archives were consulted in order to obtain information about the history of the site. The main sources consulted were:

- Cornwall and Scilly Historic Environment Record.
- Images of England, English Heritage’s online database of Listed Buildings.
- Published histories.
- Early maps.

A full list of the sources consulted appears in the References (see Section 8).

2.3.2 Fieldwork

A field visit to the bridge was made in February 2004. As the visible south-facing elevation of the historic bridge was not to be affected by works, archaeological recording was limited to note-taking and photography. Photographs were taken to record details and to obtain general views of the bridge and its setting.

The weather conditions were poor during the visit and all the work was carried out from the pavement or the footpath leading off the road to the south.

3 Background

3.1 Location and setting

The Hayle Causeway Bridge lies 1 km to the west of the centre of Hayle. It is part of the 19th century causeway, which is now the B3011. Positioned along the southern edge of the Hayle Estuary, the bridge spans the River Hayle which flows into the estuary (see Fig 1).

The estuary itself is an Area of Great Scientific Value and is protected as a Special Site of Scientific Interest. It is also a nature reserve maintained by the Royal Society for the Protection of Birds.

3.2 Historical background

The causeway on the western side of Hayle was constructed in 1825, at a time when the importance of Hayle as an industrial centre was growing. It was officially opened in 1826.

Henderson and Coates write that the causeway had previously been “a passage at ebbe over a great strand and then over Hayle River” (Henderson and Coates 1928, 102). This is borne out by the 1813 Ordnance Survey Map (Fig. 2) which shows a track around the eastern side of the Hayle Estuary as well as two paths cutting right across the estuary.

A pictorial publication produced by the Packet newspaper group recounts how dangerous the estuary was prior to the construction of the new road. “Before then, the journey across the sandy estuary could be hazardous, with several lives lost as the unwary misjudged the tides. Before the causeway was built, road traffic to Penzance used the very old and narrow St Erth Bridge and carts trekked across a track in the sand at low tide. The problem was that a rising tide could engulf travellers very quickly ... and took a heavy toll over the years ... even the preacher John Wesley was in peril as the horse drawn cart in which he was travelling sank deeper and deeper into the rising water. But, ever calm, his faith held good and he was spared” (Packet Publishing n.d., 33).

Henderson and Coates added that “the prospectus for building the causeway was issued on 11th September, 1824. It refers to the importance of the port of Hayle with its trade in coals, timber, lime and ores, and to the dangers of the ford across the sands. It proposes to build a causeway with two bridges at a cost of £5,000 to be recovered by a low toll which was expected to produce in the summer at the rate of £577 per annum, ie. ½d. for each foot passenger, 1d. for each horse, 2d. for a cart, and 6d. for a coach or chaise” (Henderson and Coates 1928, 102-103).

Cyril Noall wrote about the development in greater detail.

“The growth in mining and trade during the late 19th century made the inadequacy of the existing rough roads and trackways linking Hayle with neighbouring towns increasingly apparent. In an attempt to remedy this unsatisfactory state of affairs, proposals were made for a Bill to construct a turnpike road from the west end of Redruth to the Longbridge in Ludgvan, passing through the parishes of Redruth, Illogan, Camborne, Gwinear, Gwithian, Phillack, Uny-Lelant and Ludgvan. This, and similar schemes put forward in 1806, 1808, 1810 and 1814 unfortunately proved abortive, due to insufficient capital. On 20th July 1824, at a meeting held at the White Hart, agreement was reached to proceed with a more limited project for a bridge and a causeway over Hayle Sands, with a turnpike road extending from Griggs’ Quay in Lelant ‘to the village of Hayle, in the parish of Phillack,’ passing through Hayle Foundry and Penpol estate, linking up with the existing highway at the northern end of the Royal Standard Inn, near Hayle Quays. Harveys, and the Cornish Copper Company, sinking their differences for once, gave strong financial backing to the

proposal, as did many influential Cornish gentlemen including Sir Rose Price, Davies Gilbert, William Praed and E. W. W. Pendarves. As a result, the necessary sum of £5,000 (later increased to £6,000) was quickly subscribed, and an Act of Parliament (dated 23 March 1825) obtained, to enable the work to proceed.

“Construction began soon afterwards, and went on rapidly; on 5 September an unfortunate accident occurred, when two workmen were buried by the sudden collapse of a piece of ground they were excavating. One called Bryant was killed. On 29 October it was announced that the causeway had been rendered passable, several carts having traversed the whole line from Griggs’ to Carnsew. The official opening took place on 20 March 1826 when tolls were first collected. The rates charged were:

For every foot passenger	One Half-penny.
For every Horse or Mule	One Penny.
For every Ox, Ass or Bullock	One Half-penny.
For every Cart drawn by 1 Horse	Two pence.
For every Cart drawn by 1 Horse	Three pence.
For every Gig, Tax Cart &c. drawn by one Horse	Three pence.
For every Cart drawn by 3 Horses	Four pence.
For every Waggon	Six pence.
For every Coach or Chaise drawn by 2 Horses	Six pence.
For every Coach or Chaise drawn by 4 Horses	One shilling
For every Wagon, Timber or other Carriage, drawn by more than 5 Horses, at the rate for every Horse, exceeding five	Two pence
For Sheep and Pigs per score	Sixpence
Horses and Carriages for carrying or drawing Sand and Manure, to be exempted from Toll	

“There were two gates, one at either end, the collection of tolls being let by tender to the highest bidder.

“The causeway represented, for its time, a notable engineering achievement. It’s total length was 2,000ft, and the road, raised well above the level of the sands, was enclosed in strong granite walls, the width between them being 30ft, with a 4ft footpath running along the southern side. Along the embankment, in its early days, ran the Truro and Penzance stage coach; lumbering wagons drawn by teams of straining horses with massive engine bobs and boilers from Harveys for the western mines; fish jousters’ and farmers’ carts; gentlemen’s carriages; riders on horseback, and a multitude of humble foot passengers on their way to mine or market or Foundry or to join the crew of some merchant vessel lying at Hayle” (Noall 1984, 112-113).

4 Description of the bridge

The south-facing elevation of the causeway bridge is still visible, surrounded on its southern side by a number of modern killas walls and a concrete sluice constructed in 2002 as part of a flood defence scheme for the Hayle River. The northern face is hidden by the widened road, though a sketch drawing of this north-facing elevation does survive (Fig. 6).

A section of the road, produced prior to 1970 and supplied by the Design and Maintenance Consultancy, shows that the original width of the carriageway was 27 feet and 4 inches (8.35m). Taking into account the footpath on the southern side of the carriageway

and the two parapets, the width of the original causeway bridge was just over eleven metres.

The bridge is constructed of dressed granite and comprises five round arches, each divided by decorated semi-circular piers on a square base which makes up the individual cutwaters. The paved arch floor of the westernmost arch is interestingly raised above the level of the other four.

Above the arches, there are three courses of the original walling. This is made up of granite blocks, each about 0.4m in height. Incorporated into these courses is a decorative plaque which dates the bridge to 1825. From this point, the parapet has been increased in height. A further single course of granite block (also measuring 0.4m) has been added with the original chamfered granite coping stones re-used on the top of the wall. This addition is visible, due to its distinctly lighter colour, while the semi-circular pier extensions at this level are replicated out of small killas pieces, set vertically in concrete.

The northern parapet of the original bridge no longer exists having been removed when the causeway was widened in the 1970s.

The pre-1970 drawings show the distance from the top of the parapet to the soffit of the arch as six foot (1.83m). The present measurements are 2.25m however, demonstrating that the modification of the parapet may have been carried out with the other improvements in this area dating to the 1970s, when the level of the road was raised.

Either side of the south-facing frontage of the bridge there are the retaining walls, which have been variously patched in the recent past.

The new section of bridge to the north comprises four channels constructed from concrete uprights and concrete lintels, set within killas walling. The parapet over the bridge is taller than the other 'new' walling which extend along the northern part of the present road. On the northern side of the roadway, banks have been built up against the causeway to protect the structure against the estuary

5 Listed Building Consent

It is clear that the Listing covers the whole of the causeway. The listing description of the causeway is reprinted below, although it must be noted that it mistakenly refers to the bridge over the River Hayle as a seven-span structure.

Causeway with bridges to carry road over the Hayle River estuary. Datestone 1825. Granite rubble walls granite ashlar, dressed granite copings. Plan: Elliptical-on-plan causeway with bridges at either end : 7-span bridge over River Hayle at the west end (widened C20 on the north side) and single span bridge over stream at the east end. Main 7-span granite ashlar has round arches and semi-circular-on-plan piers forming cutwaters. The parapet has been heightened reusing the original chamfered coping stones. Single span bridge with round brick arch at the west end. The original parapets of the causeway have chamfered copings and round-on-plan terminal copings at the east end. C20 parapet to widened causeway at the north side of the west end.

The Secretary of State for the Department of Culture, Media and Sport is responsible for compiling a list of buildings of special architectural or historic interest in accordance with the Planning (Listed Buildings and Conservation Areas) Act 1990. English Heritage advises the Secretary of State on criteria to be adopted in the selection of buildings for listing. Listed Buildings may be grade I, II* or II. Grade I buildings are those of exceptional

interest, grade II* are of more than special interest, and grade II are of special interest. Works involving the demolition of a Listed Building, or its alteration or extension in a manner which would affect its character, require Listed Building Consent (LBC) from the local planning authority or the Secretary of State.

6 Summary of the impact on the bridge

The proposed works have not yet been formulated in detail. CAU therefore only has limited information on the likely works and their impact. It is understood however that they will concentrate on reconstructing the widened section of bridge dating from the 1970s, along with associated modern walling.

It has been stated that the proposed works will not affect the visible south-facing elevation of the historic bridge or its associated parapet. There will need to be some form of bonding between the north-facing elevation of the historic bridge and the new construction, which could include limited drilling into the fabric of the 1825 bridge. This part of the bridge, which is symmetrical to the visible frontage of the bridge, will remain hidden following the works.

7 Recommendations

A photographic record should be made during the progress of the works. This recording could be carried out by officers of the Design and Maintenance Consultancy when visiting the site. The photographs should be taken in black and white and, where appropriate, be accompanied by a brief descriptive record. Any works which impact on the north-facing elevation of the historic bridge should be recorded in this way.

Copies of the photographs and accompanying records should be lodged with the Cornwall and Isles of Scilly Historic Environment Record.

8 References

8.1 Primary sources

Ordnance Survey, c1813. *1 Inch Map*

Ordnance Survey, c1880. *25 Inch Map* First Edition (licenced digital copy at CAU)

Ordnance Survey, c1907. *25 Inch Map* Second Edition (licenced digital copy at CAU)

Ordnance Survey, c1930s. *25 Inch Map* Second Edition (licenced digital copy at CAU)

Ordnance Survey, 2004. *LandLine Digital Mapping at 1:2500*

Tithe Map and Apportionment, c1840. *Parish of St Erth* (microfiche copy at CAU)

8.2 Publications

Henderson, C. and Coates, H., 1928. *Old Cornish Bridges and Streams*, Bradford Barton, Truro (republished in 1972)

Noall, Cyril., 1984. *The Book of Hayle*, Barracuda Books, Buckingham

Packet Publishing, date not known. *The Old Days in Hayle*, Packet Publishing, Penryn.

8.3 Websites

<http://www.imagesofengland.org.uk/> English Heritage's online database of Listed Buildings

9 Project archive

The CAU project number is **2004016**

The project's documentary, photographic and drawn archive is housed at the offices of Cornwall Archaeological Unit, Cornwall County Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Black and white photographs archived under the following index numbers: **GBP 1629 / 3-26.**
3. This report held in digital form as: **G:\CAU\DOCUMENT\THE PROJECTS\SITES\SITES HHAYLE CAUSEWAY 2004016\HAYLE CAUSEWAY BRIDGE REPORT.DOC**

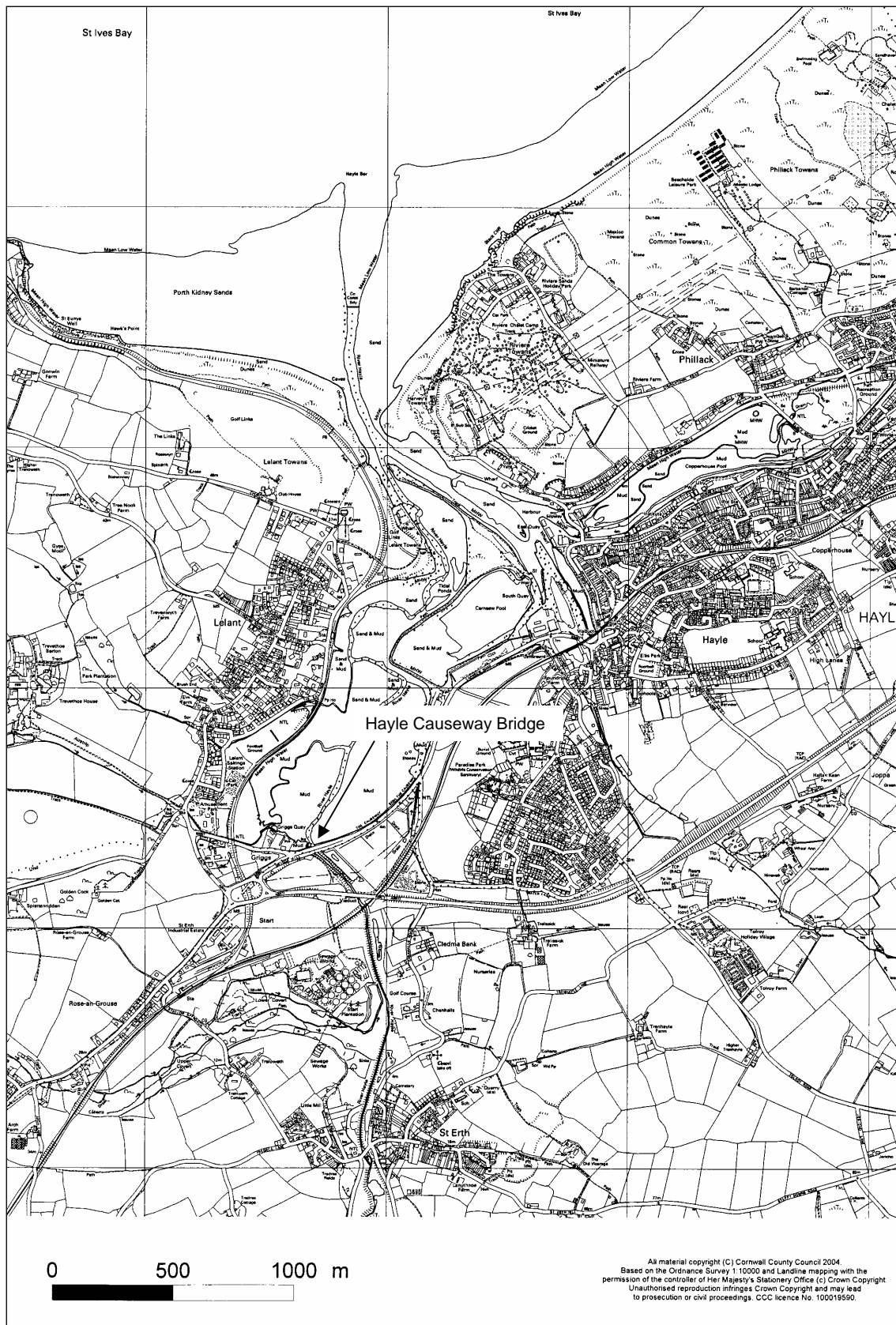


Fig 1 Location of Hayle Causeway Bridge in relation to Hayle and Lelant.

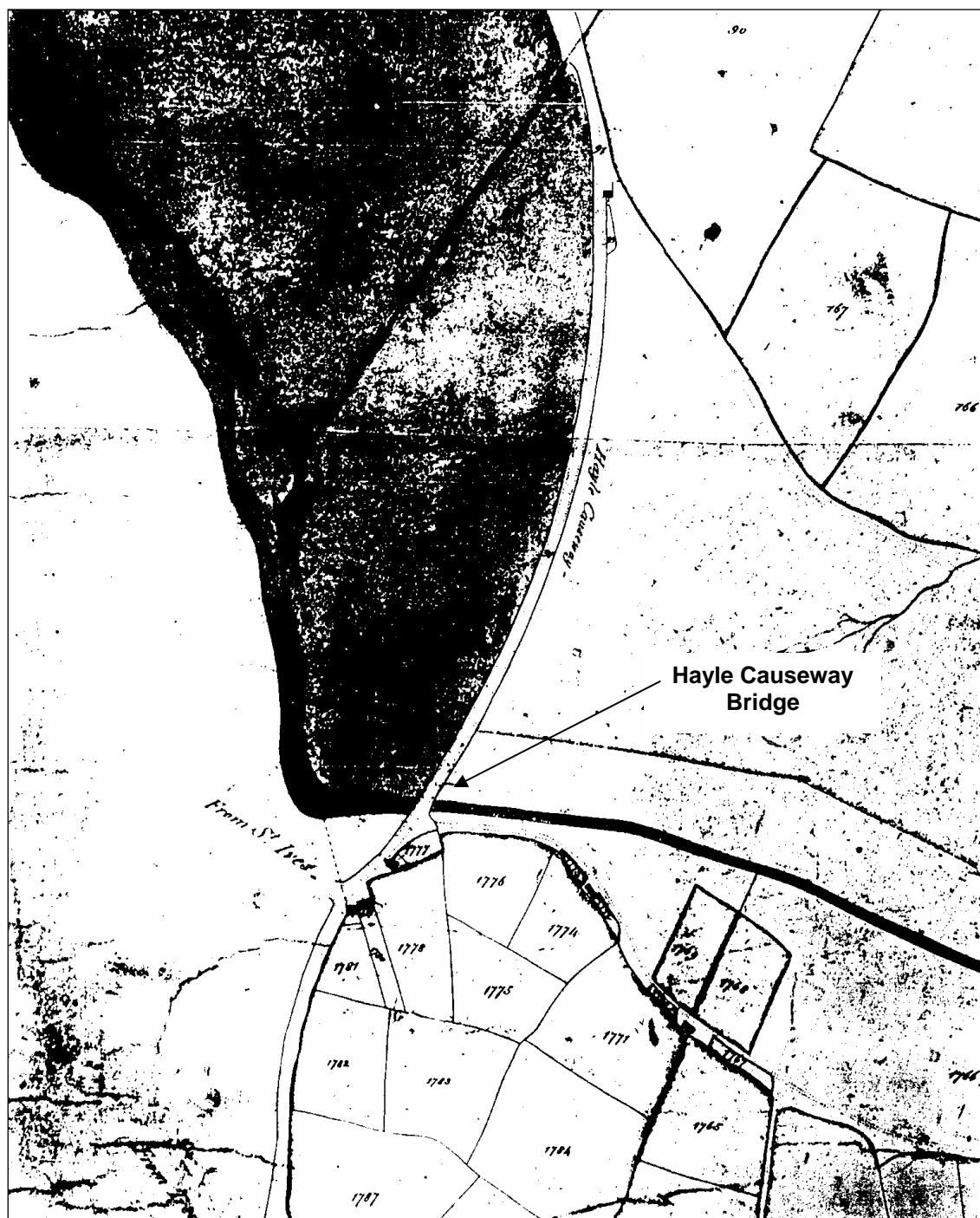


Fig 3 Hayle Causeway in 1842 (from St Erth Tithe Map).

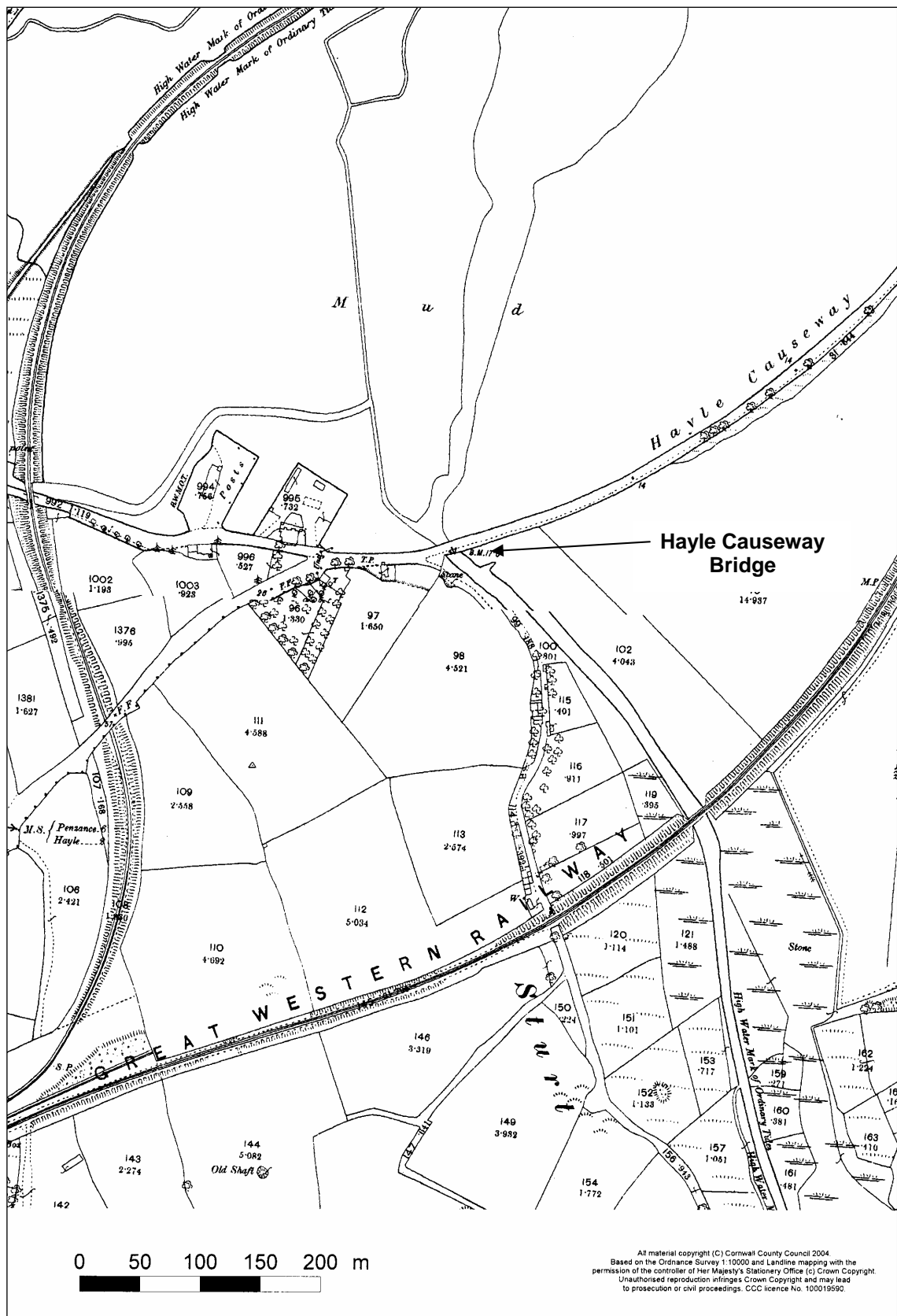


Fig 4 Hayle Causeway Bridge in 1880 (from Ordnance Survey Map).

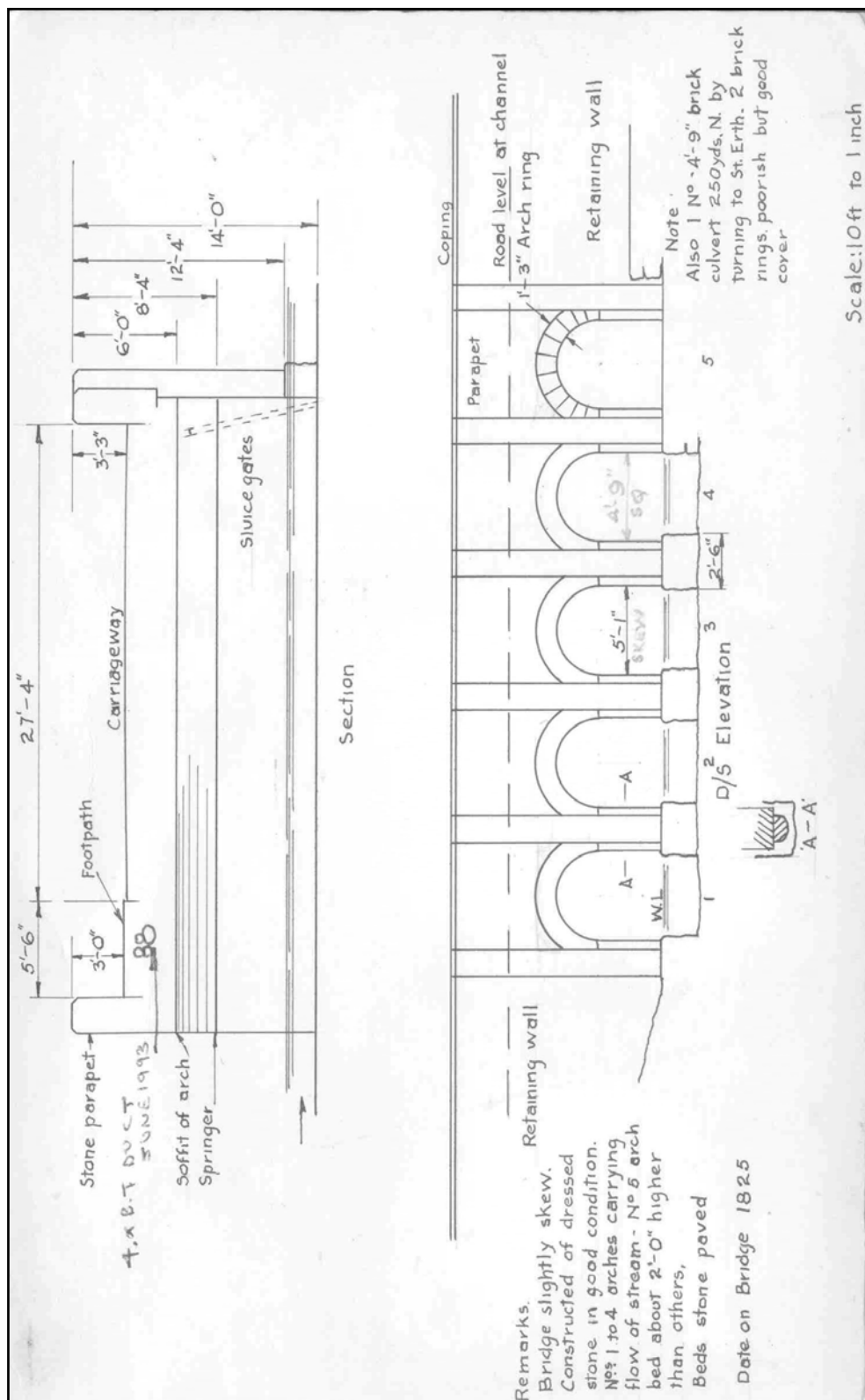
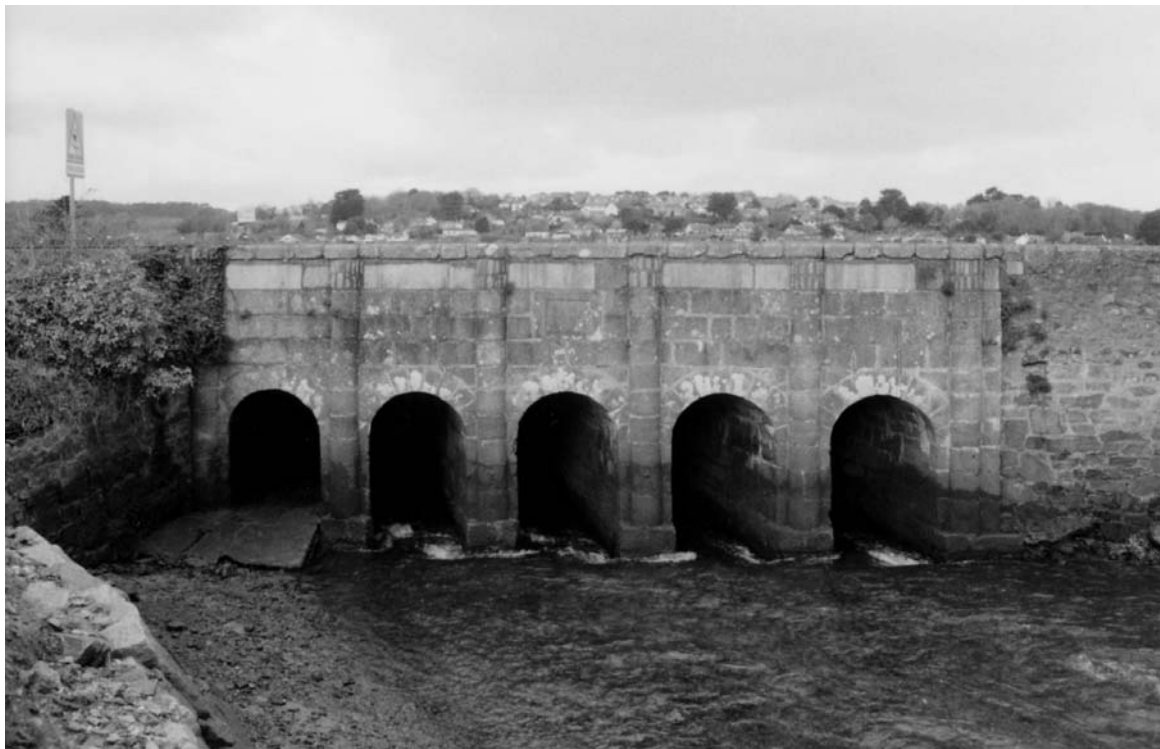


Fig 6 North-facing elevation and plan of Hayle Causeway Bridge (from Design and Maintenance Consultancy, Cornwall County Council).



Figs 7 and 8 The Hayle Causeway Bridge pictured in 2004.