



**TRANSPORT  
SCOTLAND**  
CÒMHDHAIL ALBA

**Environmental Impact  
Assessment  
Environmental  
Statement A887 Allt  
Lagain Bhain Appendix  
C1.1**

**Standing Building Recording  
Survey**

Prepared by CFA Archaeology Ltd

The Old Engine House Eskmills Business Park Musselburgh  
East Lothian EH21 7PQ

Tel: 0131 273 4380

Fax: 0131 273 4381

email: [info@cfa-archaeology.co.uk](mailto:info@cfa-archaeology.co.uk) web: [www.cfa-archaeology.co.uk](http://www.cfa-archaeology.co.uk)

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## Introduction

### General

This report presents the results of an archive assessment and bridge assessment survey undertaken during October 2012 on the Allt Lagain Bhain Bridge on the A887 near Dundreggan, Glenmoriston (NGR: NH 3096 1354) in advance of its demolition in order to install a box culvert. The work was commissioned by Scotland Transerv.

### Background

The site comprises two bridges: a road bridge currently in use on the A887 and an older, disused bridge which lies immediately to its north. The main Allt Lagain Bhain Bridge has a history of frequent accident damage to the parapet, and has been propped since 2001. The older bridge is in overall poor condition. The proposed culvert works will involve the demolition of both bridges.

Several features of significant historical interest lie within 500m of the bridges including the 'A' listed Torgyle Bridge built by Thomas Telford, Torgyle Lodge and Torgyle Chapel. Various sections of the Fort Augustus to Bernera Barracks military road also pass nearby.

### Objective

The objectives of the programme of archaeological work were:

- To review and assess the history of the A887 through examination of relevant cartographic sources with an assessment of the importance of the bridges in relation to date, construction, fabric detail and uniqueness of their survival and engineering association.
- Conduct a site visit to assess the bridges and undertake a photographic survey and produce annotated measured sketches of the existing bridges.

## Methodology

### General

CFA follows the Institute for Archaeologists' Code of Conduct, and Standards and Guidelines for Historic Building Survey as appropriate.

## Archive Assessment

A desk-based assessment was conducted prior to fieldwork, which collated relevant information on the historic development of the bridges:

- National Monuments Record of Scotland. All relevant records were checked and bibliographic sources followed up.
- Early map coverage for the area. An examination of all the Ordnance Survey 6" map editions was made, together with any other readily available cartographic information on the history of use of the bridges. Unpublished maps in the National Map Library and National Archives of Scotland also provided other useful information.

## Bridge Assessment Survey

All survey records were maintained according to the IfA's Standards on Building Recording and CFA's in-house methodology.

A written descriptive record of the bridges was made in line with a Level 1 standing building survey (English Heritage 2006). Notes of areas of stone repair, types of stone used and any architectural features such as string courses, ashlar and coursing work were made. Measured sketches of the bridge decks with relevant dimensional annotations were made.

CFA uses a Digital Nikon D300 to take high resolution digital photographs of structures and specific architectural features. An appropriate photographic record was made of the bridges. Both the decks and parapets were photographed with a 2m ranging rod for scale. A record of all the photographs taken forms an appendix to this report.

## Archive Assessment

### General

The desk-based results provide a summary of the readily available historical and cartographic sources that have been examined, to provide a succinct account of how the bridges fit within their historical context.

### History of road building

Drove roads were established in many parts of the Highlands during the 17th and 18th centuries (Haldane 1952), and it is likely that most glens, including

Glenmoriston, had a track for moving cattle along the glen to connect with longer distance drove roads.

Larger scale, more formal road construction in the Highlands was undertaken by the military in the 18th century and was designed to facilitate rapid movement of troops in response to growing dissent and the Jacobite rebellion of 1745. The road building programme was instigated by Field Marshal George Wade during the early-mid 18th century and continued by Major William Caulfeild, who was appointed Inspector of Roads in North Britain in 1732 with responsibility for road maintenance under Wade. Wade's arrival in Scotland in the 1720s was the start of a more concerted effort on the part of the military to improve the communications between the military garrisons. Wade, but more especially his successor, William Caulfeild, was responsible for mapping and constructing a network of roads through the Highlands that opened-up the interior of Scotland to the military. Existing roads were often upgraded to military roads.

The military road from Fort Augustus to Bernera Barracks is well documented as having been constructed during 1755 by Caulfeild (Nicholson 1975) and as such it is depicted on maps with sufficient scale or detail from around this date. A road had been proposed from Fort Augustus (built c.1715) to Bernera (where barracks had been built c.1723, after the 1715 uprising, to guard a route from Skye) as early as 1746 but construction only started in 1755 and took several years to complete. The barracks were abandoned in 1790 but maintenance seems to have ceased some time prior to that and the road deteriorated very quickly being almost unusable by the early 1790s.

In 1785 road maintenance was passed from the military to the civil authorities. Parliament set up the Commission for Roads and Bridges in 1803, including Thomas Telford as engineer. Telford was commissioned to assist in the development of the Scottish Highlands through improvement of its transport infrastructure and, along with such feats of engineering as the Caledonian Canal, he was responsible for the building of approx. 900 miles of roads, including many bridges.

[The Fifth Report of the Commissioners for Roads and Bridges in the Highlands of Scotland](#), dated April 1811, includes the following paragraph on the Glen Moriston Road and Torgyle Bridge on page 11:

*"Glenmorrison Road. - The work on the Glenmorrison Road was commenced by Messrs Clarks the Contractors in March 1809, and has been conducted during its whole progress with judgement and skill. The whole of the roadway is now formed and gravelled, and all the Bridges built and neatly finished, including the Bridge of Three Arches over the River Morrison at Torgyle, the Water-way of which is a Hundred and Sixteen Feet, and which has now stood the test of Two Winters. The*

*Contractors have shown themselves very desirous of giving entire satisfaction, and have lately been engaged in finishing the small deficiencies on the Road as pointed out to them by Mr Mitchell our Superintendent: and it would be injustice to them not also to note, that the time limited by their Contract extends to the end of the present working Season, whereas the Road is already finished, a final Inspection having taken place, and the County Committee having agreed in opinion with our Superintendent, the Contract has been satisfactorily fulfilled."*

It is expected that this report was compiled by Telford himself for presenting to the Commissioners and the date ties in with the date of the Torgyle Bridge. The A-Listed Torgyle Bridge (HB Number 14996), on the A887 just 0.5km to the south-west of the Allt Lagain Bhain Bridge, was built by Telford in c.1810, destroyed by floods in 1818 and re-built by Joseph Mitchell in 1823. It is assumed that this is the same Mr Mitchell mentioned above as Superintendent.

This report, then, strongly indicates that the road along Glen Moriston (the current A887, which switches from the north side of the river to the south over the Torgyle Bridge) was built as a single contract sometime during 1809-11, was overseen by Telford, and included the smaller bridges as well as the more famous Torgyle Bridge. It can therefore be reasonably assumed that the old bridge surveyed at Allt Lagain Bhain formed part of this contract from Telford.

## NMRS and SMR

No records are held by the National Monuments Record of Scotland (NMRS) or Highland Council Historic Environment Record (HER) relating to the Allt Lagain Bhain Bridge.

## Cartographic

The existence of the bridges are associable with the construction of the A887 road; thus, while the bridges themselves may not be depicted on the maps, the construction date of the road can be regarded as a reliable indicator of the old bridge's date.

## Early Maps

General Roy's military survey map (1747-52) shows a road (annotated as 'Road from Bernera to Fort Augustus') running on the south side of the River Moriston and roughly following the route of the 'old military road' annotated on the current Ordnance Survey mapping. There is no road depicted on Roy on the north side of the River Moriston at Dundreggan, despite a number of small settlements being



present here. Roy's map dates slightly earlier than the documented date of construction of the Bernera to Fort Augustus military road (c. 1755), although the road had been planned in 1746.

A road running west from Invermoriston along the north bank of the River Moriston is first depicted on Dorret's 1750 edition map of Scotland (Fig. 2). The lack of detail does not allow the accurate pinpointing of the location of the Allt Lagain Bhain Bridge and it is to be expected that the depiction of the road is fairly schematic. The road subsequently appears on the 1751 and 1761 editions of Dorret's maps. The southerly, military, road to Fort Augustus is still present.

The road is absent from Taylor and Skinner's 1776 map but reappears on the 1780 Mueros map, on Knox's 1782 and 1784 (Fig. 3) Commercial Maps of Scotland and on Campbell's 1794 map; it is depicted on two intervening maps (Ainslie 1789 (Fig. 4), Campbell 1790) with a slightly altered route. The southerly, military, road to Fort Augustus is still present. Again, the lack of detail makes it difficult to pinpoint the location of the Allt Lagain Bhain Bridge.

The road is subsequently absent from two later maps (Cary 1801, Kirkwood 1804) and is only consistently depicted from 1806 (Stockdale; Fig. 5) and 1807 (Arrowsmith) onwards, although it is not present on Kirkwood's 1810 map.

The inconsistent depiction of the road suggests that it evolved as a minor road used primarily by local traffic rather than it being built from the beginning as a main artery; the military road from Fort Augustus appears to remain in use during this time and would have presented a more direct route from the larger centre of Fort Augustus to the north-west, albeit via a more elevated route which would be more exposed to weather, especially during winter.

Cartographic sources suggest a construction date for the A887 between the late 18th century and the beginning of the 19th century. It seems likely that while a built route was in place from 1784 it was developed into a more vital conduit towards the end of the first decade of the 1800s and recognised as such by cartographers. The completion of the nearby Torgyle Bridge by Thomas Telford in 1811, thus improving access from Invermoriston to the west, supports a hypothesis that the road began as a minor local track and developed into a main road around this time.

## Ordnance Survey Maps

The 1871 edition of the 6" Ordnance Survey map (Fig. 6) depicts the road largely as it exists today. The road is depicted as a mostly metalled road running from Invermoriston to the Allt Lagain Bhain bridge, while the continuation westwards from the bridge is depicted as being unmetalled. This is unchanged on the 1904 map.

A small enclosure with two associated buildings are located on the north side of the road close to the bridge and a third building is annotated as 'Smithy,' which is accessed by a path from close to the west side of the bridge. The same appears on the 1904 edition Ordnance Survey 6" map.

## Bridge Survey Results

### General

The two bridges will be described separately below. For clarity, the bridge currently in use as part of the A887 will be referred to as The New Bridge and the earlier disused bridge to its north will be referred to as The Old Bridge.

Apart from the bridges, no other features or sites of archaeological interest were noted.

### The New Bridge

#### General

The New Bridge is a simple truss bridge, currently in use as a road bridge on the A887. It is described below in relation to an inventory of features comprising the bridge. The bridge is aligned east to west and comprises a deck with north and south parapets, east and west abutments, a retaining wall, a paved overflow race and recent reinforcements.

#### Deck

The deck measures 11.5m long by 6.5m wide and is surfaced with tarmac. It is bounded on its north and south sides by parapets.

#### Parapets

Both parapets measure 11.5m long and are 0.9m high above the road surface (Fig. 7- 8). On both elevations the parapets are 1.1m to 1.3m high. They are built of rough-hewn local schist and have been extensively repaired. The parapets are capped with curved coping stones and are bonded and pointed with cement. Both parapets have been extended at each end. The main central parapets are 6.5m long and have been extended for 2.5m at each end. The extensions are indistinguishable in build style and material, and are butted against the cheek-ends of the central parapets.

The south-facing elevation of the north parapet has an Ordnance Survey benchmark on a flush bracket (No. G4534) (Fig. 10). [The G-series flush brackets](#) appeared at the beginning of the Second Geodetic Levelling of Scotland in 1936; however, this particular flush bracket is associated with the [Third Geodetic Levelling on the Glen Cluanie to Glen Moriston levelling line G358](#), dating to 1956-68.

## Abutments and Retaining Wall

Both abutments are built into their respective stream banks and act as retaining walls (Fig. 8). They measure c. 8.25m long by 0.8m thick and 1.4m high and are built from random coursed schist and basalt blocks with regular string courses. They abut the side of the old bridge at the north side.

From the south side, a retaining wall extends to the south for 4.7m along the east bank (Fig. 8). It is 0.55m wide and c.1m high. It is built from rough hewn basalt blocks and capped with curved coping stones.

## Overflow Race

The entire bed of the stream between the bounds of the abutments is surfaced with a finely laid block-built overflow race which abuts the sides of the abutments (Fig. 9).

## Recent Reinforcements

The main bridge beam is supported on reinforced concrete beams and supported in the middle by timber battens and jacking posts (Fig. 9). These were installed in the early 21st century.

## The Old Bridge

### General

The Old Bridge is located immediately to the north of, and at a shallow acute angle to, the New Bridge (Fig. 13-14). It is a single arch bridge and comprises two spandrels either side of a segmental arch. It is in poor overall condition.

### Deck

The deck measures c.12m long by 5m wide and is surfaced with pioneer grass covering the remains of a rough metallised gravel surface. The west end of the bridge merges into the surrounding landscape and the east end merges into the road verge.

## Arch

The bridge is built around a 4.7m wide and 1.6m high segmental arch set on 0.6m high abutments set into the banks (Fig. 11-12). The arch is constructed from granite voussoirs and both abutments are built from basalt blocks. The abutments were not clearly visible due to being both overgrown and hidden by gravels and stones washed down by the stream. The arch soffit is thickly lime rendered (Fig. 15).

## Spandrels

The bridge spandrels measure 9.7m wide together and 2.7m high at the apex (Fig. 11- 12). They reduce in height at their termini and are c.0.9m high, although this reduction in height also reflects the rising of the ground from the riverbank. The spandrels are built of rubble coursed basalt blocks and are mortar bonded. A few capstones, which would have formed a low parapet, survive above the apex, although in the main the top edges of the bridge are in poor condition and in a partial state of collapse.

## Conclusion

An archive assessment, bridge assessment and photographic survey have been carried out on the Allt Lagain Bhain Bridges.

Archive assessment indicates that the road on the north side of the River Moriston, now the A887 at Allt Lagain Bhain, was not part of the 1755 military road from Fort Augustus to Bernera, built by Caulfeild to improve the link between Bernera Barracks and Fort Augustus: the military road lay on the south side of the river, following the current A887 from the west before cutting south-east at Achlain down to Fort Augustus, as marked on current Ordnance Survey mapping.

A road along Glen Moriston on the north side of the river was in existence during the mid to late 1700s but is intermittently depicted on maps from this period, and it seems likely that this was a drove road or track of informal construction, serving the small settlements between Invermoriston and Loch Cluanie. It seems likely that the stream crossing of the Allt Lagain Bhain was a ford or simple wooden bridge during this period.

As reported to the Commissioners for Roads and Bridges in the Highlands of Scotland, the route along Glen Moriston following the existing A887 was built, with its associated bridges, under the direction of Thomas Telford in 1809-11. It is highly likely that the old bridge is associated with this phase of construction and thus can be directly linked with Telford, forming part of the road which includes the A-Listed

Torgyle Bridge. The survey of the bridge has identified that the old bridge spandrels are in poor condition but the structure of the segmental arch is good.

The new bridge is harder to date as the cartographic sources do not show sufficient detail to be able to distinguish the old bridge from the replacement. It is not clear whether the 1956-68 Ordnance Survey benchmark incorporated into the parapet is contemporary with the construction of the bridge or was incorporated into the parapet by the OS surveyors at a later date, perhaps being contemporary with a re-built parapet. The Ordnance Survey maps of 1871 and 1904 also record a benchmark on a bridge at this location, so a bridge in this location had been used previously for this purpose. Either way, the new bridge was certainly in place by 1956 and is likely to be a late 19th century or early 20th century replacement for the older Telford Bridge, associated with a very slight smoothing of the curve in the road and a widening of the bridge deck.

The new bridge was built abutting the old bridge: however, the abutments and race of the new bridge are potentially the only original elements, while the truss, parapet and deck are re-built above the modern concrete beams. The upper structure of the new bridge is thus of little historic interest although the abutments and race are likely to be late 19th/early 20th century in date.

## **Recommendations for mitigation**

The present survey is considered to form a sufficient record of the new bridge. However, the Telford bridge is of significant historic importance and it is recommended that a metric survey, analytical recording and further photographic survey commensurate with a Level 3 (English heritage) Standing Building Survey be undertaken prior to demolition with a view to creating an accurate and comprehensive record of the bridge.

A watching brief during demolition works is recommended, to record additional information about the Telford bridge, such as the nature of the metalling and deck construction, which are currently masked by vegetation, and the nature/construction methods of the abutments. In addition, ground breaking works to either side of the bridges may expose the original 18th/19th century road make up, both leading from the old bridge or preserved beneath the new road, or may expose traces of a bridge or crossing dating earlier than Telford's bridge, and this would be recorded during the watching brief.

Any scope of works required in mitigation will need to be agreed with the Highland Council Historic Environment Team and set out in a Written Scheme of Investigation.

## References

### Cartographic

Ainslie, John 1789 Scotland, drawn from a series of angles and astronomical observations

Arrowsmith, Aaron 1807 Map of Scotland constructed from original materials

Campbell, Robert 1794 A new and correct map of Scotland or North Britain, drawn from the most approved surveys

Cary, John 1801 A new map of Scotland, from the latest authorities

Dorret, James 1750 A general map of Scotland and islands thereto belonging.

Dorret, James 1751 A correct map of Scotland from new surveys

Dorret, James 1761 An accurate map of Scotland drawn from all the particular surveys

Kitchin, Thomas 1773 A new and complete map of Scotland and islands thereto belonging

Kirkwood, James 1804 This map of Scotland, constructed and engraved from the best authorities

Kirkwood, James 1810 This map of Scotland, constructed and engraved from the best authorities

Knox, John 1782 A commercial map of Scotland Knox, John 1784 A commercial map of Scotland

Meuros, James 1780 A new and accurate map of Scotland divided into shires from the most authentick surveys

Ordnance Survey 1871 6" Inverness-shire-Mainland Sheet LXVII Ordnance Survey 1904 6" Inverness-shire-Mainland Sheet LXVII Roy, William 1747-1755 Military Survey of Scotland

Stockdale, John 1806 Map of Scotland from the latest surveys

Taylor, George & Skinner, Andrew 1775 A general map of the roads, made out of actual surveys taken by Geo Taylor & Andrew Skinner

## **Bibliographic**

Haldane, A.R.B. 1952 The Drove Roads of Scotland. Edinburgh

Nicholson, James R. 1975 Beyond the Great Glen. British topographical Series, David and Charles.

English Heritage 2006 Recording Historic Buildings - a descriptive specification, 3rd edition. London.

## **Online**

<http://oldroadsofscotland.com/index.html> <http://www.ambaile.org.uk/en/>

## Appendix I: Photographic Register

Photo No.	Description	Taken From
1	New bridge general view	W
2	New bridge general view	W
3	New bridge general view	E
4	New bridge general view	E
5	New bridge south-facing elevation	S
6	New bridge south-facing elevation	S
7	New bridge oblique view of north-facing elevation	NW
8	New bridge oblique view of north-facing elevation	NW
9	New bridge north-facing elevation of south parapet	N
10	New bridge north-facing elevation of south parapet	N
11	New bridge north-facing elevation of south parapet	N
12	New bridge north-facing elevation of south parapet	N
13	New bridge south-facing elevation oblique view	SW
14	New bridge south-facing elevation	S
15	New bridge south-facing elevation	S
16	New bridge south-facing elevation	S
17	New bridge south-facing elevation, east abutment detail	S
18	New bridge south-facing elevation, east abutment detail	S
19	New bridge south-facing elevation, prop detail	S
20	New bridge south-facing elevation, east abutment return wall detail	S
21	New bridge south-facing elevation, east abutment return wall detail	S
22	New bridge south-facing elevation, east abutment return wall detail	S
23	New bridge south-facing elevation general	S
24	New bridge south-facing elevation general	S
25	New bridge, below deck detail showing overflow race	S
26	New bridge, below deck detail showing overflow race	S
27	New bridge, below deck detail showing overflow race	S
28	New bridge, south-facing elevation, east abutment detail	W
29	New bridge, south-facing elevation, west abutment detail	E
30	New bridge, north-facing elevation, west abutment detail	N
31	New bridge, north-facing elevation, east abutment detail	N
32	New bridge, south parapet detail	N
33	New bridge, south parapet detail	N
34	New bridge, north parapet detail	S



Photo No.	Description	Taken From
35	New bridge, north parapet detail	S
36	New bridge, north parapet, flush bracket detail	S
37	New bridge, north parapet, flush bracket detail	S
38	New bridge, north parapet, flush bracket detail	S
39	New bridge, north parapet, flush bracket detail	S
40	New bridge, north parapet detail	N
41	Detail of gap between new bridge and old bridge	NW
42	New bridge, north parapet detail	N
43	Detail of gap between new bridge and old bridge	NW
44	Old bridge, oblique view of south-facing elevation and gap between bridges	W
45	Old bridge, detail of gap between bridges and west abutments	E
46	Old bridge, oblique view of south-facing elevation	SW
47	Old bridge, north-facing elevation	N
48	Old bridge, north-facing elevation	N
49	Old bridge, north-facing elevation	N
50	Old bridge, north-facing elevation	NW
51	Old bridge, detail of segmental arch	N
52	Old bridge, detail of segmental arch	N

## Appendix 2: Photographs

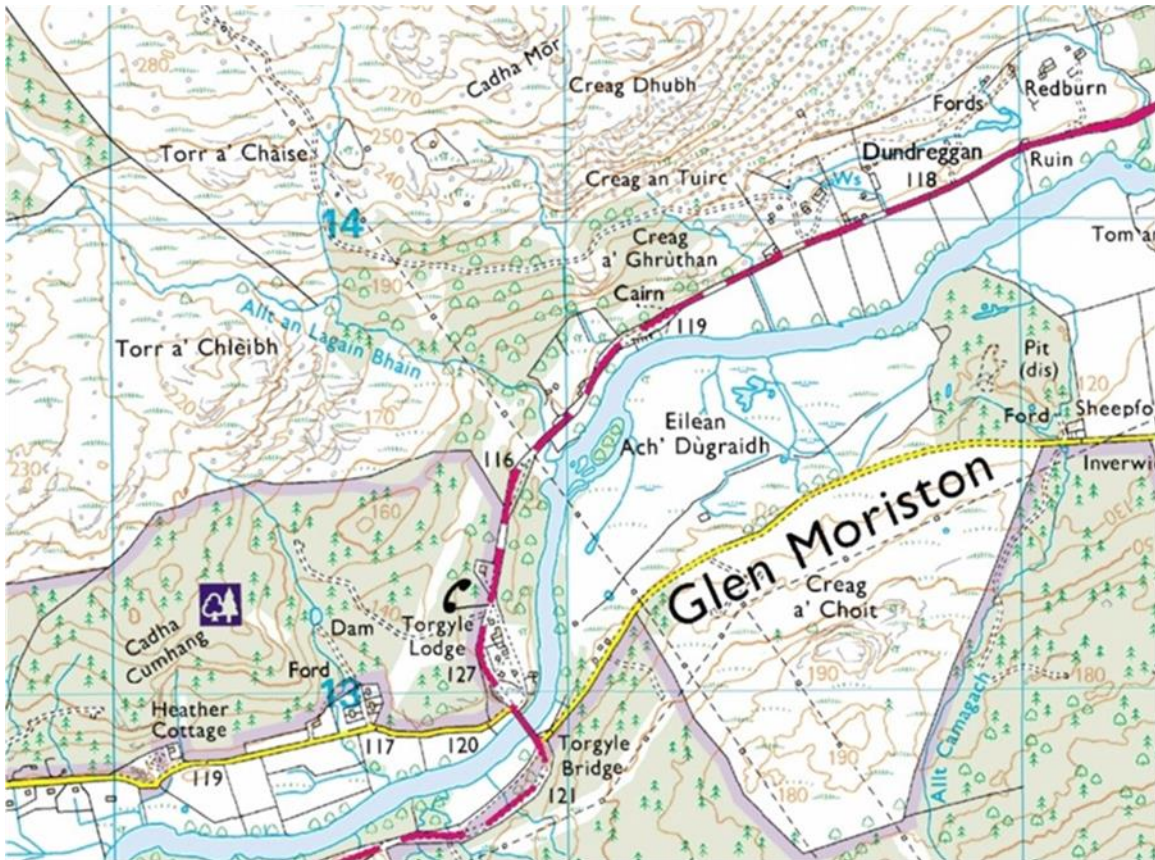


Figure 1 - Bridge Location, Map Detail

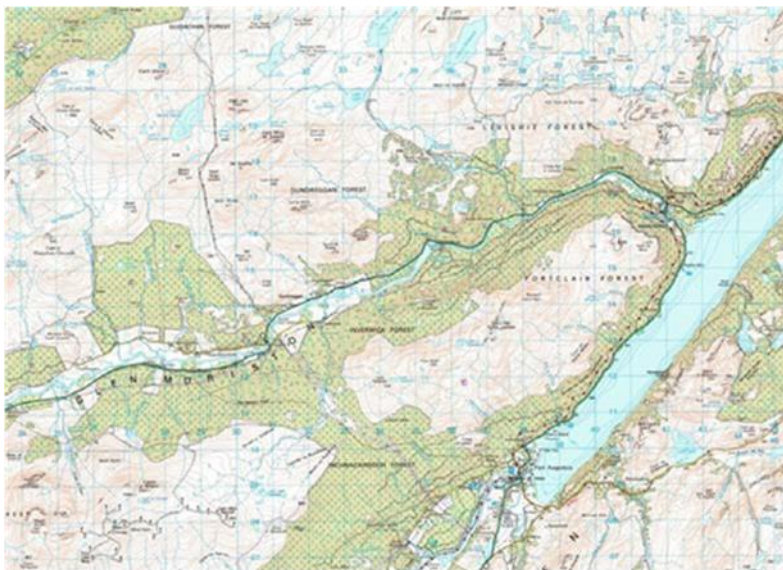


Figure 2 - Bridge Location



Figure 3 - Detail from map by J. Dorret, 1750



Figure 4 - Detail from map by J. Knox, 1784

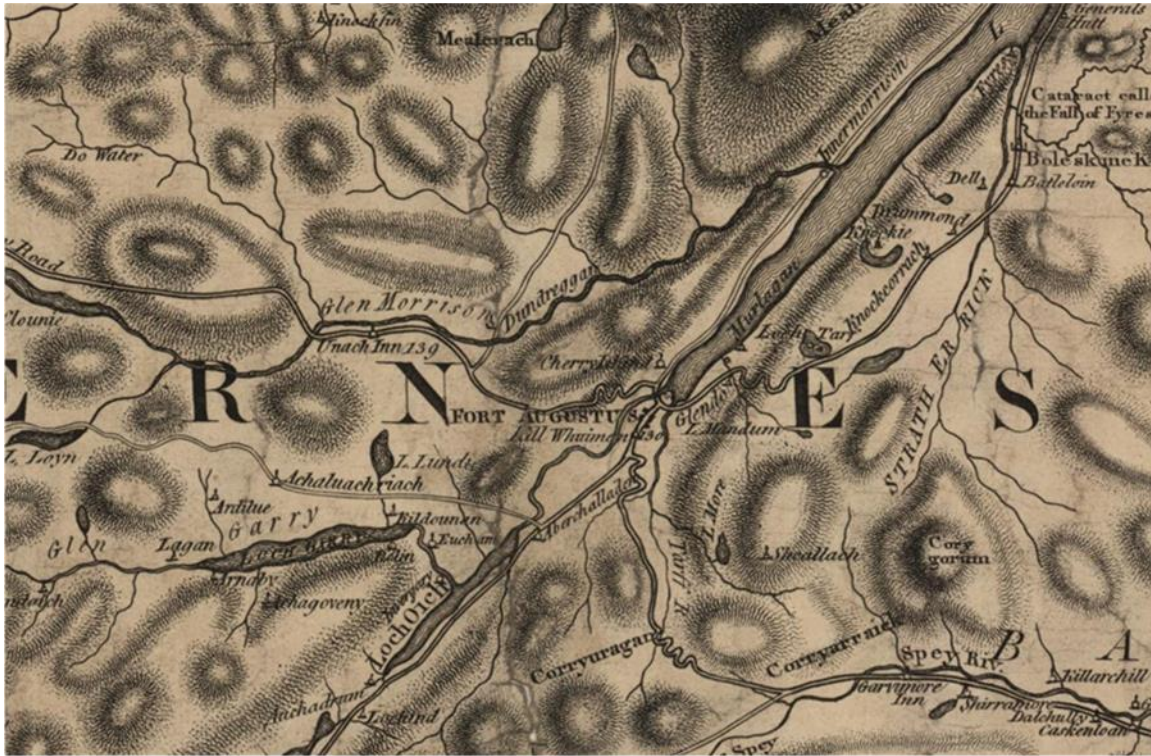


Figure 5 - Detail from map by J. Ainslie, 1789



Figure 6 - Detail from map by J. Stockdale, 1809



Figure 7 - Detail from 1st edition map by Ordnance Survey, 1871



Figure 8 - New Bridge, oblique view of north-facing elevation



Figure 9 - New Bridge, south-facing elevation



Figure 10 - New Bridge, below deck detail showing overflow race



Figure 11 - New Bridge, north parapet, flush bracket detail



Figure 12 - Old Bridge, north-facing elevation



Figure 13 - Old bridge, oblique view of south-facing elevation



Figure 14 - Old bridge, oblique view of south-facing elevation and gap between bridges





Figure 15 - Old bridge, detail of gap between the bridges



Figure 16 - Old bridge, detail of segmental arch



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