



Couch's Mill Weir, Boconnoc, Cornwall Archaeological watching brief



Cornwall Archaeological Unit

Report No

2015R045

Report Name

Couch's Mill Weir, Boconnoc, Cornwall,
Archaeological watching brief

Report Author

Jo Sturgess

Event Type

Watching brief

Client Organisation

Westcountry Rivers Trust

Client Contact

Giles Rickard

Monuments (MonUID)

Weir

Fieldwork dates (From)

11/6/2015

(To)

(Created By)

Jo Sturgess

(Create Date)

15/6/2015

Location (postal address; or general location and parish)

South of Couch's Mill on the River Lerryn (the border
between Boconnoc and St Winnow parishes)

(Town - for urban sites)

(Postcode)

(Easting) X co-ord

SX 14854

(Northing) Y co-ord

58979



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1 Project background

The weir at Couch's Mill straddles the River Lerryn to the south of the village on land that belongs to the Boconnoc Estate. It is located on the line of the parish boundary separating Boconnoc and St Winnow at NGR SX 14854 58979 (Figs 1 and 2). The weir is not shown on historic maps and is not designated as a listed building but it is likely to have been constructed as part of the historic management of this section of the River Lerryn since it lies at a junction between the river and a former mill race shown on the parish Tithe map of c1840. It is located on a stretch of the river where the banks are lined with trees within an Area of Great Landscape Value and lies at a height of between 18m and 20m OD. The underlying bedrock is Lower Devonian mudstone siltstone and sandstone.

When a decision was made to remove the weir, advice was given by Ann Reynolds (Senior Archaeologist, Countryside Advice, Cornwall Council) to create an archaeological record of the structure before its demolition. Cornwall Archaeological Unit was then approached by Giles Rickard, Senior Land and Fisheries Officer at Westcountry Rivers Trust to undertake the archaeological work.

2 Aims and objectives

The aim was to create an archaeological record of the weir before its removal and record its structural elements and composition during deconstruction.

3 Working methods

All recording work was undertaken according to the Chartered Institute for Archaeologists *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures*.

The historic building record consisted of three stages: a desk-based study, followed by a site visit and analysis/report.

3.1.1 Desk-based study

This reviewed all readily available documentary and cartographic sources for the weir itself and also its local historic landscape context. The study involved searches of the Cornwall HER (Historic Environment Record) as well as the following:

- Published sources, including local histories and *Old Cornish Bridges and Streams* by Charles Henderson and Henry Coates (1928)
- Historic maps, including:
 - OS 1 inch survey (c1809)
 - parish Tithe maps (c1840),
 - 1st and 2nd Editions of the OS 25 inch maps (c1880 and c1907)
- Modern maps

3.1.2 Site visit

A site visit was made in order to record the surviving historic fabric of both the weir and immediate surrounding area before and during its deconstruction. This was undertaken by means of a photographic and roughly measured sketch survey, together with written notes. The field visit was made on 11/6/2015.

3.1.3 Post-fieldwork

During this phase the results of the fieldwork were collated for archiving and the results of the desk-based assessment and fieldwork drawn together in this report.

4 Historic background

Couch's Mill, which lies immediately south of the main part of the Boconnoc Estate, appears to have been named after the Couch family who were first recorded in the parish in 1327 (Gover 1948).

The c1809 1" to 1 mile Ordnance Survey map (Fig 3) does not show fine detail but clearly shows that Couch's Mill had been established as a settlement by this date and also depicts the course of the River Lerryn. The c1840 Tithe Map for Boconnoc (Fig 4) is more detailed and shows that by this date a mill leat had been constructed to the east of the river running southwards to supply the mills at Kingston with water power. The north end of this mill leat joined the river immediately adjacent to the weir which indicates that the weir was constructed as part of the same scheme, creating a pool of water for supplying sufficient flow along the mill leat. The First Edition OS map of c1880 (Fig 5) shows that the mill leat which supplied water power for the mills at Kingston was still in use at this date and that a sluice gate was positioned at the start of the leat adjacent to the weir. The Second Edition OS map of c1907 (Fig 6) also shows the same arrangement, indicating that no changes had occurred during the late 19th century through to the early 20th century. At some point during the 20th century however, the mill leat fell into disuse and now much of it has been infilled or silted up. The weir has remained unaltered since its construction, which may well have occurred during the 18th century.

5 Description of structure

(See weir plan Fig 8).

The weir comprised several different structural components including a row of large boulders for stabilisation at the base, a stone-built surface covering the slope and set into a bank of clay and fragmented mudstone, granite capstones at the top of the structure and riverbank retaining walls on either side. It clearly had only one construction phase with no visible evidence of later repairs. The leat adjoining the top of the weir on the eastern side is contemporary and part of the same build as the eastern retaining wall. The weir itself measured approximately 4m in width between bank retaining walls by 3m long and had a height difference between top and bottom of approximately 1m creating a slope angle of approximately 25°.

Along both riverbanks, mudstone rubble retaining walls measuring approximately 0.7m high had been constructed overlying the weir structure and extending along the length of it in order to strengthen the structure. The retaining wall on the east bank (Fig 11) returned eastwards to form the south wall of the adjoining leat. The leat measured approximately 1m wide at the opening into the river and a slot for a sluice gate was clearly visible in the south wall along with two timbers set crossing the base at this point (Fig 12).

The weir itself was a well-made structure, reflecting high status and almost certainly constructed as part of estate works carried out by the Pitt family of Boconnoc. Three large, dressed and chamfered granite capstones formed the top (upstream) edge of the weir (Figs 8, 9, 10, 13 and 14). These had clearly been purpose-made for the structure and chamfered in a way that would allow a stream-lined flow of water over the surface. They were secured together with iron ties leaded into hand-cut sockets which created a strong barrier to protect the sloping structure to the south. Each of the granite capstones measured 1.87m long by 0.53m wide by 0.22m high (6'2" by 1'2" by 9") and none of them showed signs of quarry drill marks indicating that the weir is likely to have been pre-19th century in date. The sloping structure to the south of the capstones comprised flat mudstone/siltstone blocks laid vertically on their edges and aligned east-west across the weir in courses (Figs 8 and 15). An average stone measured 0.5m x 0.4m x 0.10m and they were bedded in a thick bank of silty clay containing frequent mudstone fragments. At the base of the structure (downstream), holding the vertically laid stones forming the slope in place, there was a row of large mudstone/siltstone

boulders of various sizes (Fig 8). The larger boulders measured approximately 0.75m x 0.65m x 0.50m and this part of the structure was not visible in the riverbed prior to deconstruction.

Deconstruction work involved removal of the weir structure itself although the retaining walls on both banks were left *in situ* as well as the leat structure. Once the weir had been removed the water level upstream was reduced by approximately 0.6m (Fig 16).

6 References

6.1 Primary sources

Ordnance Survey First Edition 1 inch map, c 1809

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

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

Ordnance Survey, 2007. Mastermap Digital Mapping

Tithe Map and Apportionment, c1840. Parish of Boconnoc (licensed digital copy at CRO)

6.2 Publications

Gover, JEB, 1948. *Place-Names of Cornwall* (manuscript at RCM, Truro)

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

7 Project archive

The CAU project number is **146492**

The project's documentary, digital, photographic and drawn archive is maintained by Cornwall Archaeological Unit, Cornwall Council, Fal Building, County Hall, Treyew Road, Truro, TR1 3AY.

English Heritage/ADS OASIS online reference: cornwall2-214146

Couch's Mill weir, Boconnoc, Cornwall, Archaeological watching brief

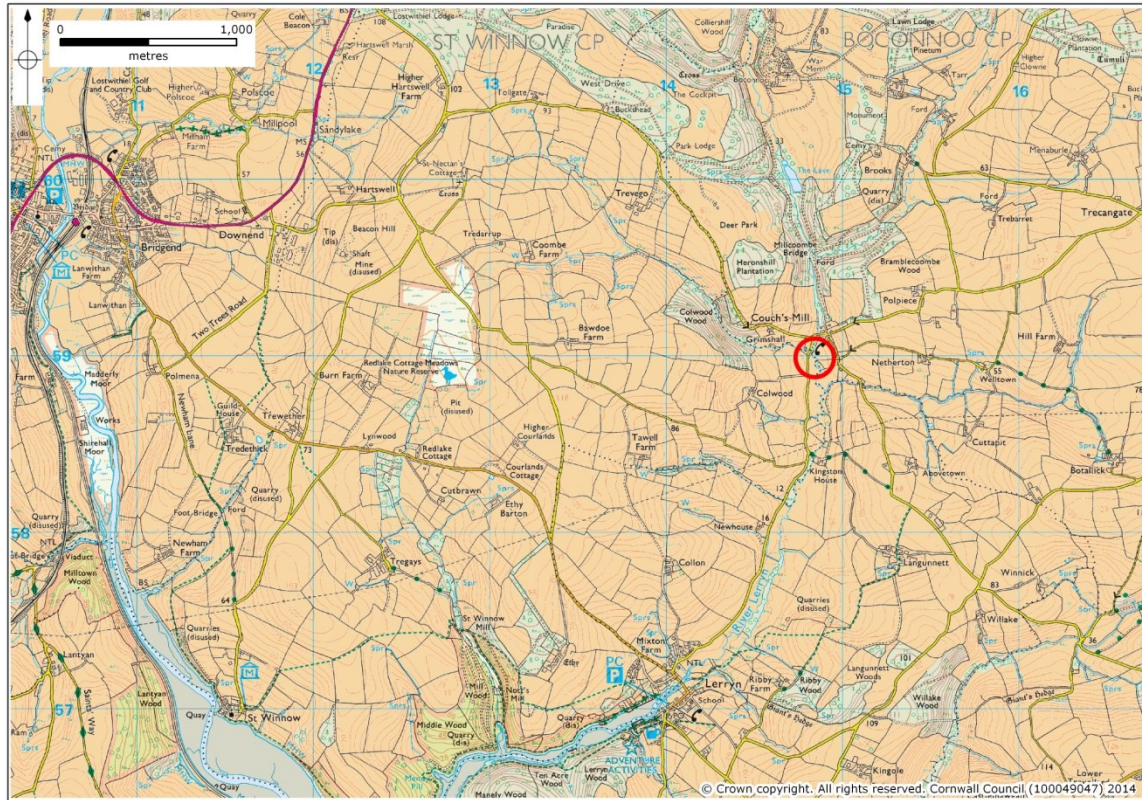


Fig 1 Location map

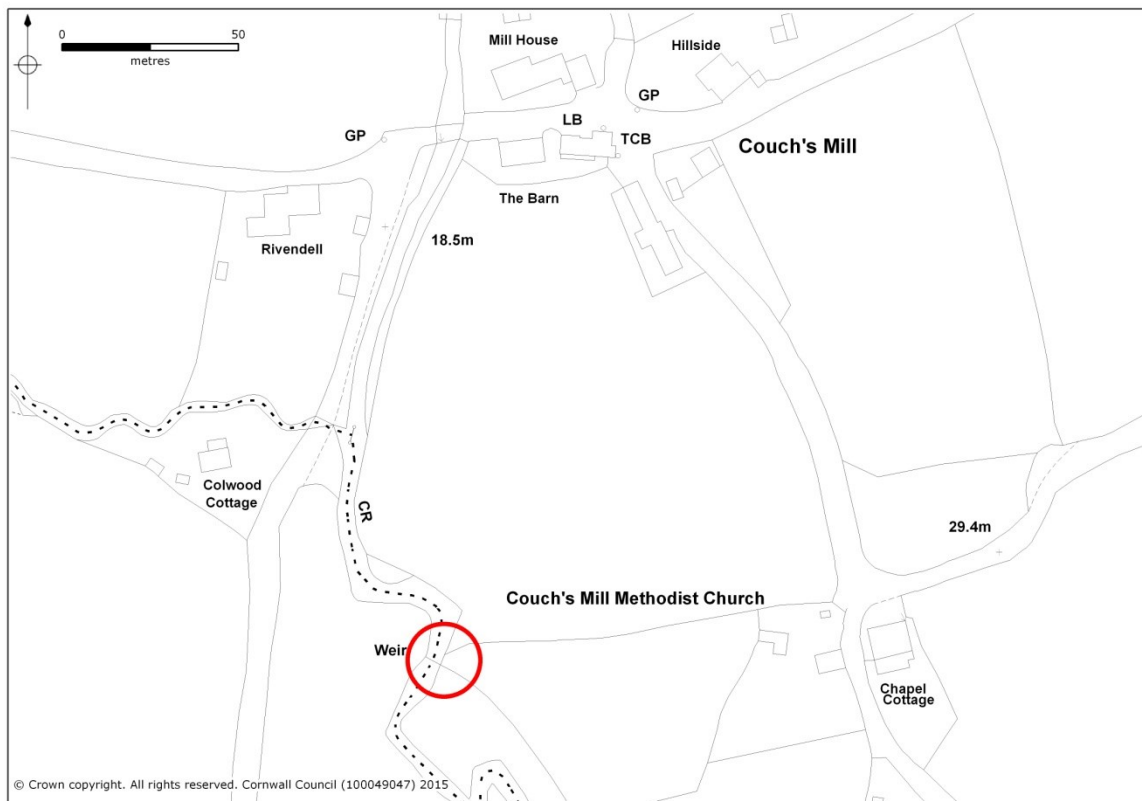


Fig 2 Site location



Fig 3 Extract from the OS First Edition One Inch Map c1809



Fig 4 Tithe Map for the parish of Boconnoc, c1840

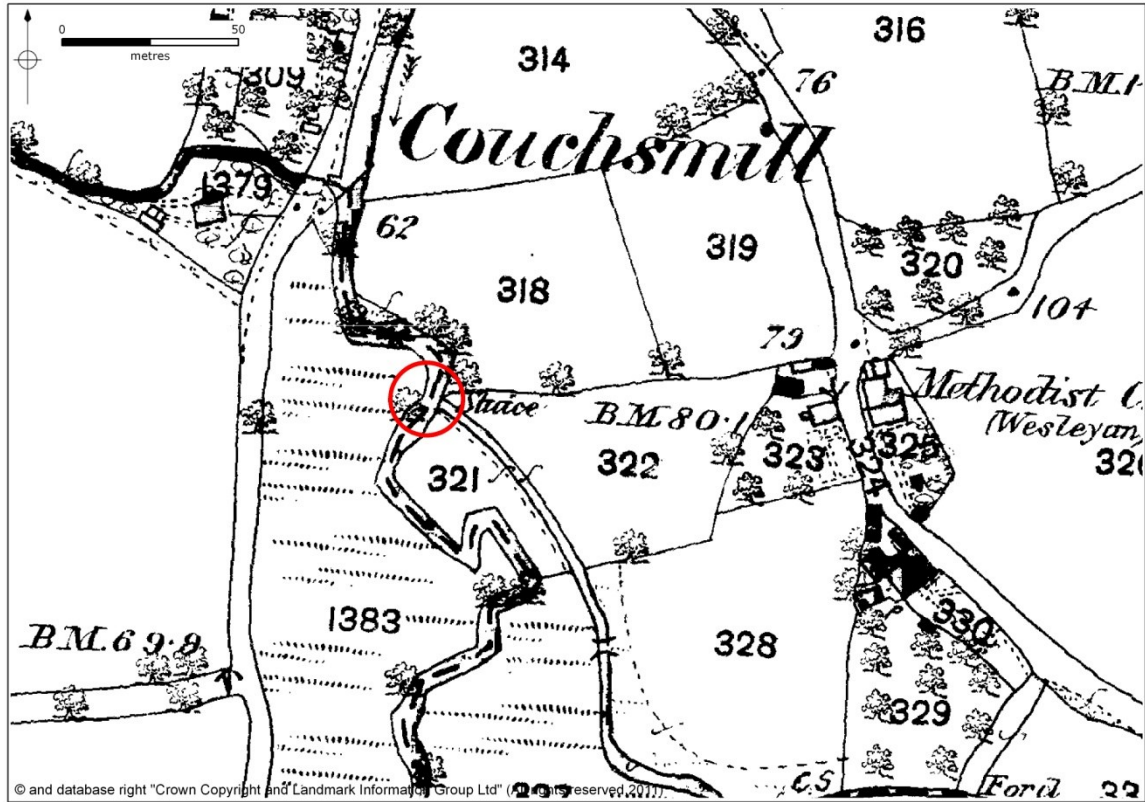


Fig 5 First Edition of the Ordnance Survey 25 Inch Map, c1880

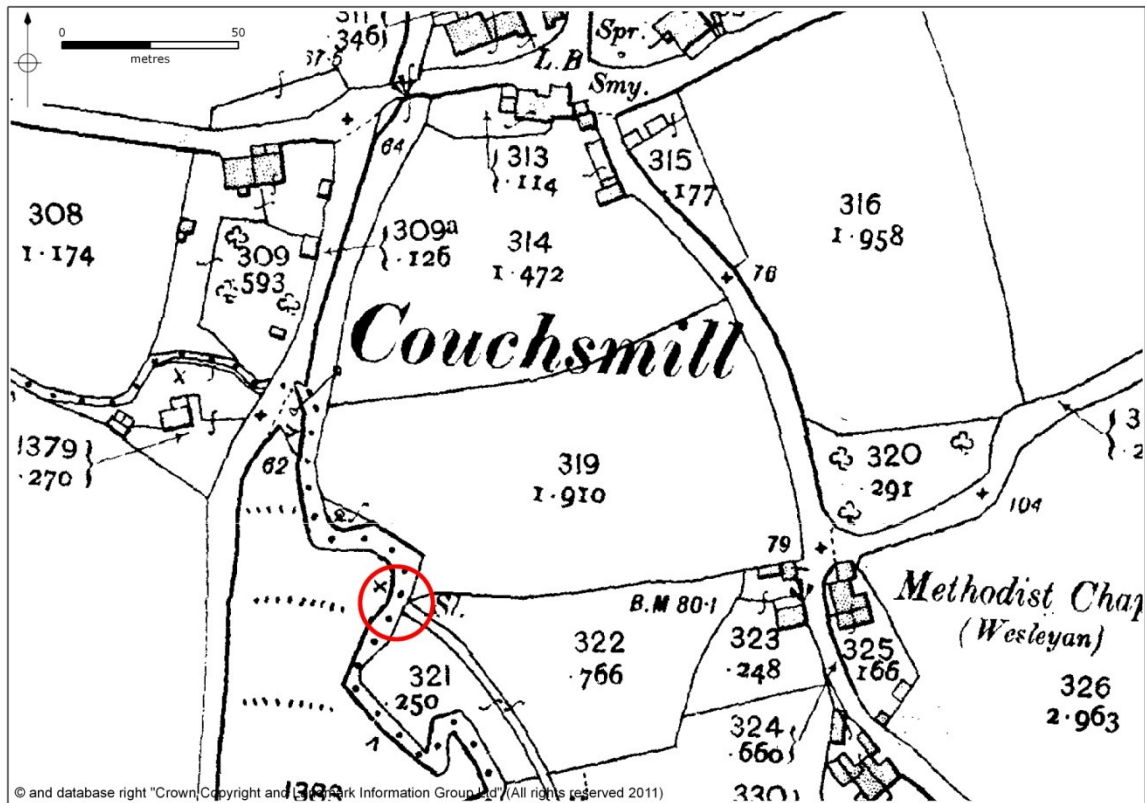


Fig 6 Second Edition of the Ordnance Survey 25 Inch Map, c1907



Fig 7 Aerial photograph showing the site and its environs (2007)

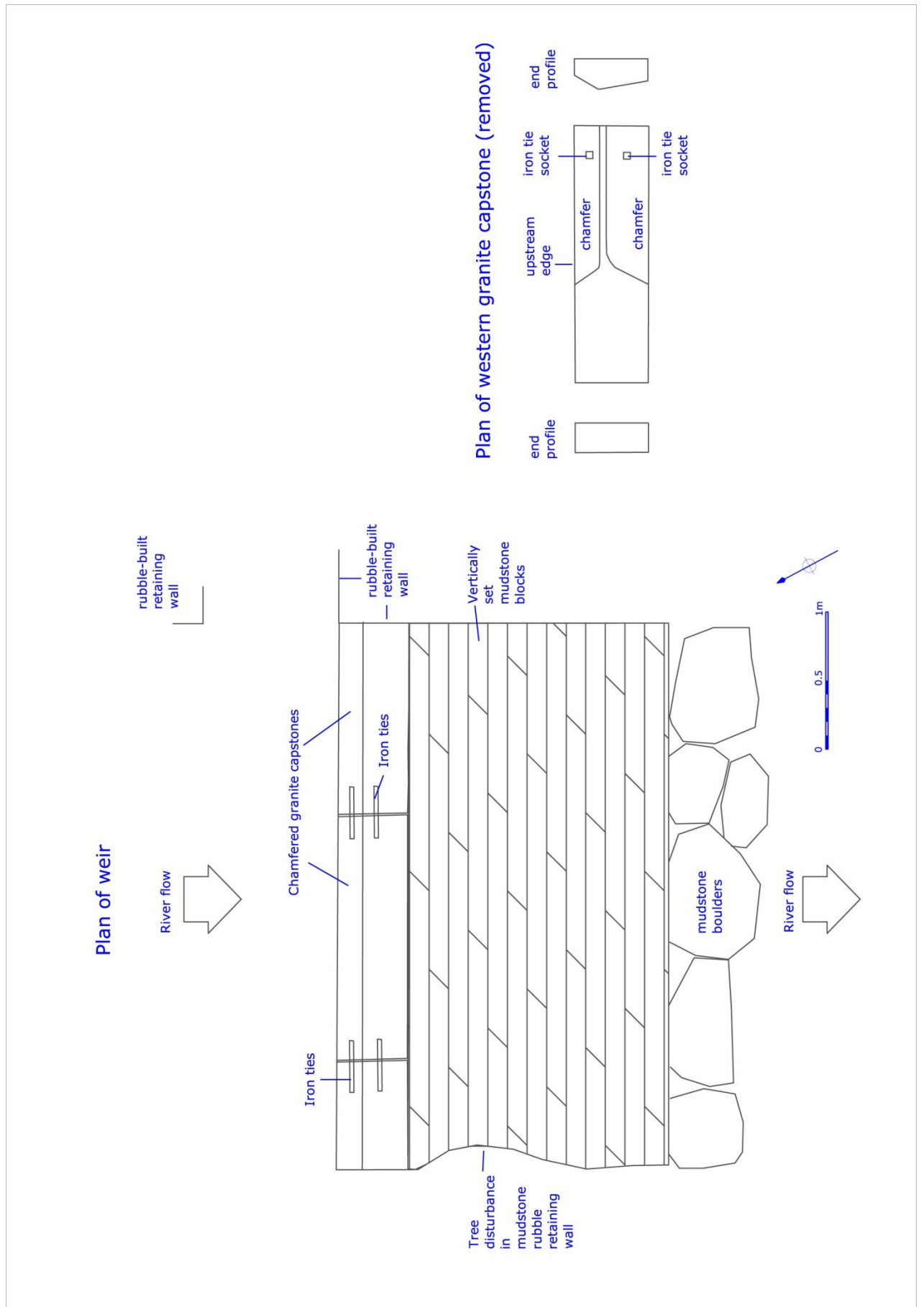


Fig 8 Plan of weir and plan of western capstone



Fig 9 Weir before deconstruction looking east



Fig 10 Capstones looking east prior to deconstruction



Fig 11 Eastern riverbank retaining wall



Fig 12 South wall of leat showing slot for sluice gate and timbers at base



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