

**YCCCART 2017/1  
North Somerset HER 8608; 45502**

**Gang Wall, Yatton and Rennie's siphon, Congresbury**

**YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL  
RESEARCH TEAM (YCCCART)**

*General Editor: Vince Russett*



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## **Abstract**

*Gang Wall is a medieval drainage bank and associated ditches, constructed before 1382 to separate the drainage areas of Yatton Moor to its west, and Congresbury Moor to its east. The monument is virtually complete and is extremely unusual for such a bank in having no road along its surface. Associated with it is Rennie's siphon, a structure designed by Sir John Rennie, to take the New Rhyne, new drainage works for Congresbury Moor, under the Yeo to an outfall downriver in Wick St Lawrence, during works of 1819-1827. The association of the two is unique.*

## **Acknowledgements**

This work very much builds on the pioneering work of Mark Hildich, who I would like to thank for his help and encouragement at the beginning. I have also been greatly helped by Faith and Tony Moulin of YACWAG (Yatton and Congresbury Wildlife Action Group), who's management of the Biddle Street SSSI on either side of the Wall helped to initiate the compiling of this report.

## **Introduction**

Yatton, Congresbury, Claverham and Cleeve Archaeological Research Team (YCCCART) is one of a number of community archaeology teams across northern Somerset, originally supported by the North Somerset Council Development Management Team.

The objective of the teams is to carry out archaeological fieldwork, for the purpose of recording, and better understanding and management, of the heritage of northern Somerset.

The fieldwork for this report was largely carried out in early 2017.

## Site location

Gang Wall is a double-ditched earthwork, partly on the border of the parishes of Yatton and Congresbury in North Somerset. It commences close to the Congresbury Yeo at ST4166864776, against the bank of the modern course of the river, and ends at approximately ST4257965132, where it has been disturbed by the construction of the Cheddar Valley Railway in 1867.

Rennie's siphon lies at the lower (river Yeo) end of Gang Wall on the New Rhyne/Binhay Rhyne, at ST4167864747. The majority of it lies under the bed of the Congresbury Yeo.



*Fig 1: Gang Wall is the narrow linear strip of trees running across from upper right to lower left. Rennie's siphon lies at the extreme lower left, where the entrance and exit to it on the New Rhyne can be seen either side of the Congresbury Yeo*

## Land use and geology

Gang Wall and the Siphon lie on the alluvial Wentlloog clays of the Northmarsh. The land on either side of Gang Wall is used for grazing, but Gang Wall is largely scrub, with a clear path through the middle only.

There is a public footpath along the whole length of the wall, and permissive paths along the banks of the Yeo. There is also a used path from Rennie's siphon back to the Cheddar Valley Railway Line, but this is not an official footpath.

The area around Gang Wall is the Biddle Street Site of Special Scientific Interest (BIDDLE STREET, YATTON, [http://www.sssi.naturalengland.org.uk/citation/citation\\_photo/1006788.pdf](http://www.sssi.naturalengland.org.uk/citation/citation_photo/1006788.pdf) Recovered 12 February 2017).



## Historical and archaeological context

As with most historic drainage banks (Historic England 2011: 2), documentary evidence for the Gang Wall is limited and scattered.

There is a clear reference to the bank in 1382 (*'Gangewalle'* in Lambeth Palace Court Rolls No 1182), and mentions of the bank are 'frequently noted in documentation of the 14<sup>th</sup> century' (Broomhead 1999: 4).

The upkeep and protection of the bank was recognised as a manorial duty in the 17<sup>th</sup> century: *'Anyone driving goods upon Gangwall would be liable to a 20s fine'* (Barracrough 1991:29). This was a considerable sum, although it is understandable that graziers might wish to move sheep and cattle along these relatively dry paths.

This tension between users of a flood bank and its protection was documented in a case on a bank called the 'Wowwall' at nearby Locking in 1404x1419, when removal of 'stowks' (fences to prevent animal movement along the wall) was accompanied by violence.

A 'stowk' was a form of stockade or high fence of wooden stakes, an interpretation which accords with a clause which accompanies almost every mention, in the text, of building either the wall or a 'stowk': so that there may be no bridle-path (*via equestris*) nor drove (*ad animalia fuganda*). (Coward 1980: 153)

Cartographic evidence of the Gang Wall is, unfortunately, late. A map of 1799 is the earliest so far found.

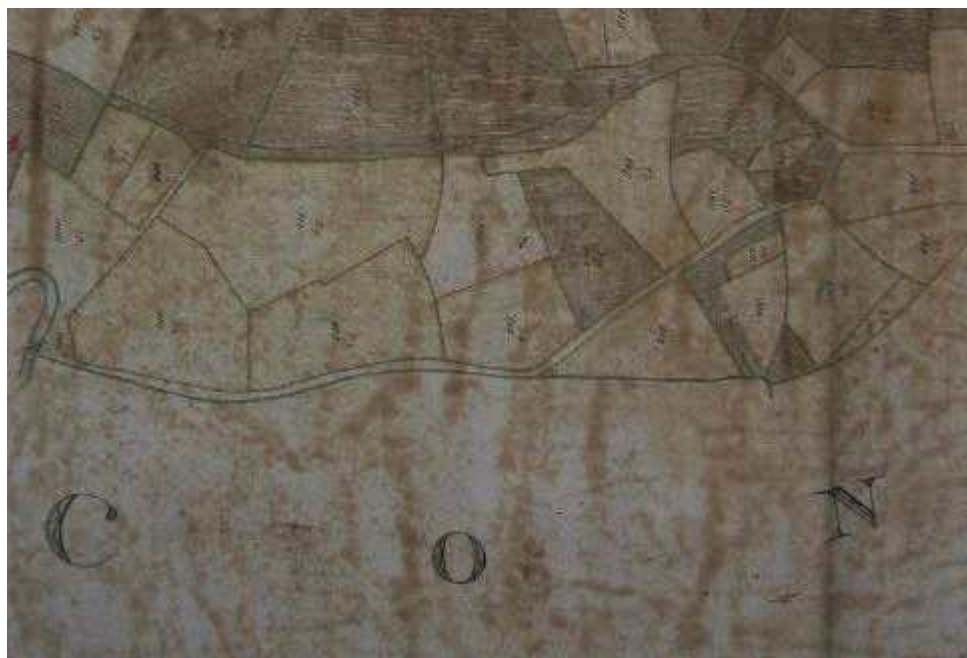


Fig 2: Gang Wall on the 1799 plan of Yatton (SHC DD\SAS/C212/MAP/167)

This map is coloured to indicate ownership, and the pale yellowish fields in this image are those of the Rectorial Manor, a small manor in Yatton, of whose holdings these fields formed the largest part.

By an ordinance of Robert, the Bishop, about 1136, the church of 'Jatton' was granted to St. Andrews, Wells - the cathedral - for a prebend. The rectorial tithe and glebe were the prebendary's, but a vicar's stipend was set apart. However, by 1327 Walter the vicar

complained to Bishop Drovensford that the revenues of the church were 100 marks but his portion was only 12, and he had to maintain two chaplains. The Bishop therefore increased his share and defined exactly what was due to him, including the tithes of milk, cheese, calves, foals, swine, geese, doves and eggs. He could put two beasts in the prebendary's pasture and have an acre of the meadow called Hengstham to maintain his horse. The north end of this meadow, the present Hangstones, adjoined the vicar's garden. The rector of Claverham chapel was to pay him ten shillings annually (Barraclough 1991:10).

This prebend was known to have been in existence in 1292 (Collinson 1791 (2): 624). Before 1066, Yatton seems to have been held by the shadowy figure of 'John the Dane' ('*Iohs. Dan*') (<http://opendomesday.org/place/ST4365/yatton/> Recovered 11 February 2017) who only held this manor and Clevedon in 1066. Two other local manors were held by lords titled 'the Dane' in 1066: Thorkil at Chelvey and Gunni at Walton-in-Gordano.

Unfortunately, no pre-Norman local documentation such as boundary perambulations or wills exist for either parish, so historic documentation can do little more to establish the date of construction of the Gang Wall. This is in contrast to some other areas of marsh enclosed in the medieval period, for example, Romney Marsh (see Eddison 2000). However, in many such areas, drainage has been so successful that modern farming has been able to convert to arable, destroying much of the early drainage features. In Romney Marsh, 90% of the land area was in arable cultivation in 2000 (ibid: 26).

It would be possible to just squeeze the construction of the Gang Wall into the years between the enhancement of the vicarage (1327) and the first known mention of the Wall in 1382, but it seems unlikely that this work would be undertaken in the years following the Black Death in 1348-50 and subsequently.

So, how much earlier could it be?

A Roman origin has occasionally been suggested, largely based on Broomhead's finding of evidence of Roman activity close to the Gang Wall buried by minimal post-Roman clays. There is no dispute that the Romans did drain the Northmarsh (Rippon 2006: 31 *et seq.*), but there is equally no dispute that it mostly returned to tidal marsh after some time in the mid 4<sup>th</sup> century (*ibid*: 80). There is little evidence that any other tidal banks survived the end of the Roman period, and the burial of much of the Northmarsh under varying depths of alluvial clay has been demonstrated many times (e.g. King 2006).

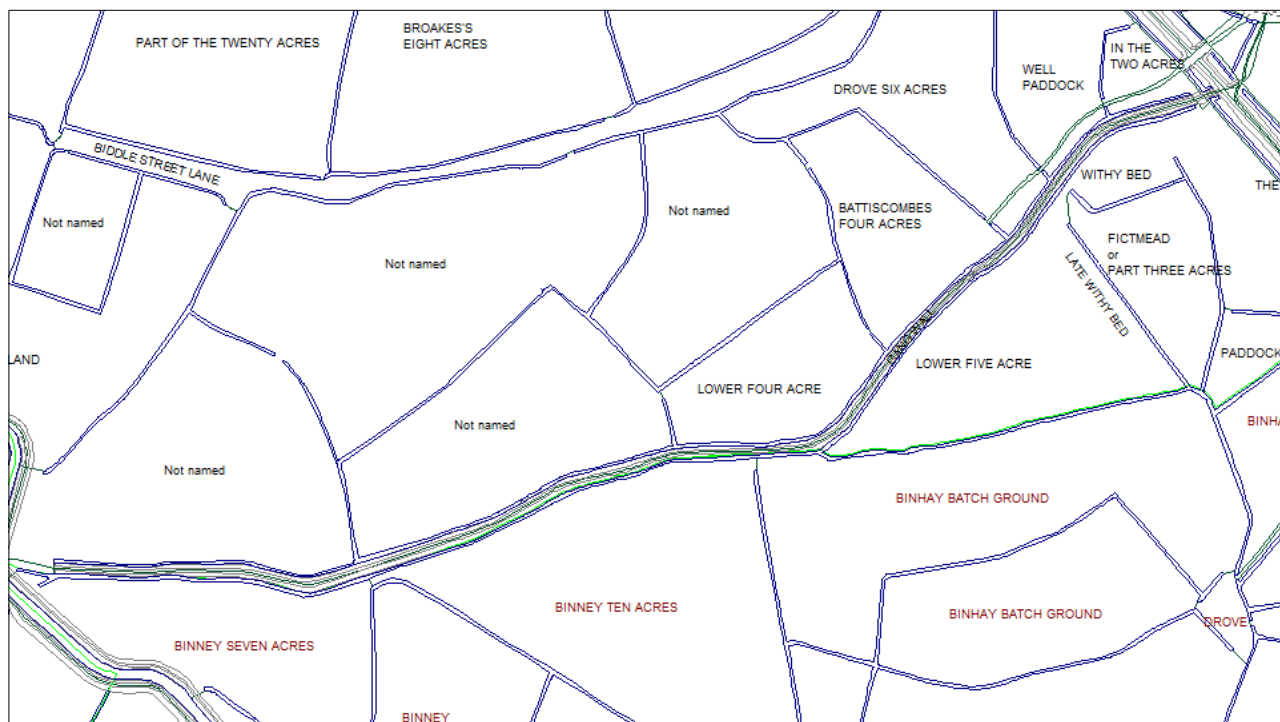
The Wall for much of its length, follows the course of the Congresbury / Yatton parish boundary, which in turn follows the north-west bank of the partly natural Binhay Rhyne. Rippon (2006) envisages an early 'Greater Congresbury' estate, which split into Congresbury and Yatton with their associated parishes, presumably at some time after the abandonment of the post-Roman occupation at Cadbury hillfort c650 AD, and Hildich (2003) speculated that this was one of the times when the Wall could have been constructed.

A more plausible hypothesis, preferred by Hildich (2003: 29 and see Appendix 1) is that the Gang Wall, along with the Biddle Street track and a potential 'infield' at a site later known as 'Framptons' in Yatton Moor were constructed in the early medieval period, which type of infield construction Rippon has dated at Puxton to 'pre-11<sup>th</sup> century' (Rippon 2006:

195). This is a period of huge engineering works (especially for mill leats, such as at West Mill in Congresbury, or Max Mills, in Winscombe): Gang Wall in its present form contains around 17,500 metric tonnes of clay, all of which was presumably dug from the ditches alongside.

These major engineering works, as Hildich and Rippon both point out, require strong central control to amass the labour and organise and direct the projects. Not knowing, then, the political strength or otherwise of John the Dane, it seems likely that the controlling hand of the bishop of Wells after the Norman Conquest might provide a plausible compromise date.

That this was entirely a Yatton project is shown by the fieldnames on each side (Fig 4).



*Fig 3: Tithe field names c1840*

It is clear from the field names that the Binney / Binhay field names totally dominate the Congresbury side of the Wall, those in Yatton (on either side of the Wall) are mixed. Some fields are not assigned names here because of the Yatton Rectorial Manor's habit of not giving its fields names in later documents.

## Landscape analysis

The Northmarsh of North Somerset covers an area of some 120km<sup>2</sup> (including the Gordano Valley) much of which was at least partially reclaimed in the medieval period.

Because of the post-Roman tidal inundation and consequent siltation, which did not reach some of the backfens, the coastal strip tends to be higher than those backfens today.

In a smaller sense, this is the case in Yatton and Congresbury moors north of the Yeo. While Congresbury Moor is generally perceived as being lower than Yatton Moor, there is an area of extremely vulnerable backfen in Yatton Moor even today.

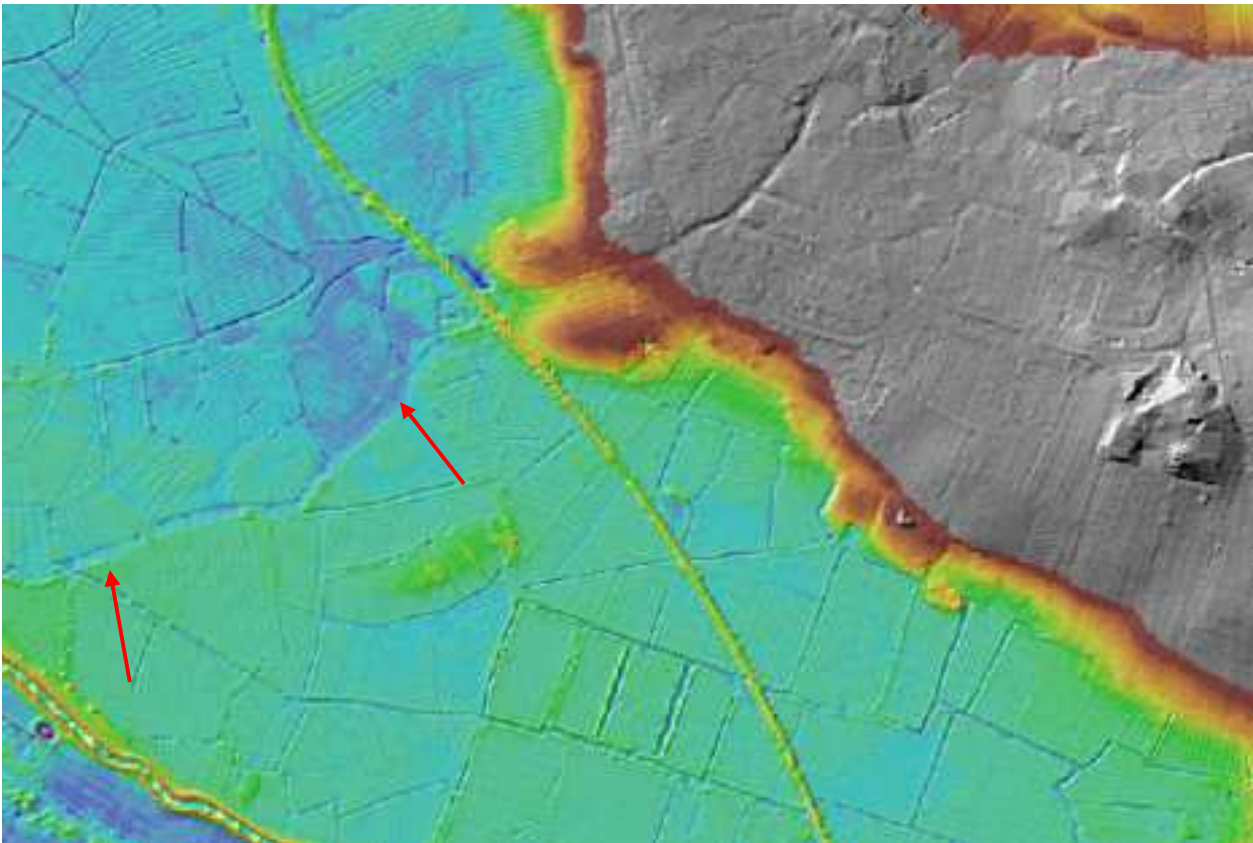


Fig 4: Lidar image, Congresbury and Yatton Moors (c) Environment Agency 2005. Gang Wall indicated by red arrows.

Lands to the south of the Gang Wall in Congresbury are 0.75m to 1.0m (yellow and green) above the Yatton Moor (cyan and blue) backfen to its north. Ignoring the continuous line of the 1867 Cheddar Valley Railway cutting across the image, and severing the landfall end of the Gang Wall, it can be seen that the Wall makes landfall at the two lobes of slightly higher land either side of Biddle Street today.

At some point, a conscious decision must have been made to colonise Yatton Moor. A number of tenements with common rights are recorded on the Moor. Hildich (2003) proposed a sequence of enclosure with an 'infield' in the moor, later 'Frampton's tenement', already 'roofless' by 1790 (Barraclough 1991: 21) being the first step, and dated to before or around the 11<sup>th</sup> century, followed by additions to the infield, themselves occupied by tenements. Other tenements followed, such as Benilands, roofless before 1730 (*ibid*), and an adjoining property (e.g.

[http://www.ycccart.co.uk/index\\_htm\\_files/BURDGE%20%20Y13%20final.pdf](http://www.ycccart.co.uk/index_htm_files/BURDGE%20%20Y13%20final.pdf)). Biddle Street served these tenements, and Gang Wall was built to protect these sites and the



backfen (see Appendix 1: Hildich sequence).

On the other hand, only one medieval tenement is known on the Congresbury Moor, in the raised area known as 'Binhay' or 'Binney', and this was on the higher area close to the river. It may be that Congresbury Moor was felt to be valuable as grazing, and flooding (in moderation) was accepted as siltation may have enhanced its fertility.

It is clear, even from the modern OS plan, that the irregular fields on either side of both Biddle Street and Gang Wall respect both as terminals, and that these are therefore the earliest features in the local landscape. Biddle Street, however, is at grade with the fields on either side, and has no earthwork bank.

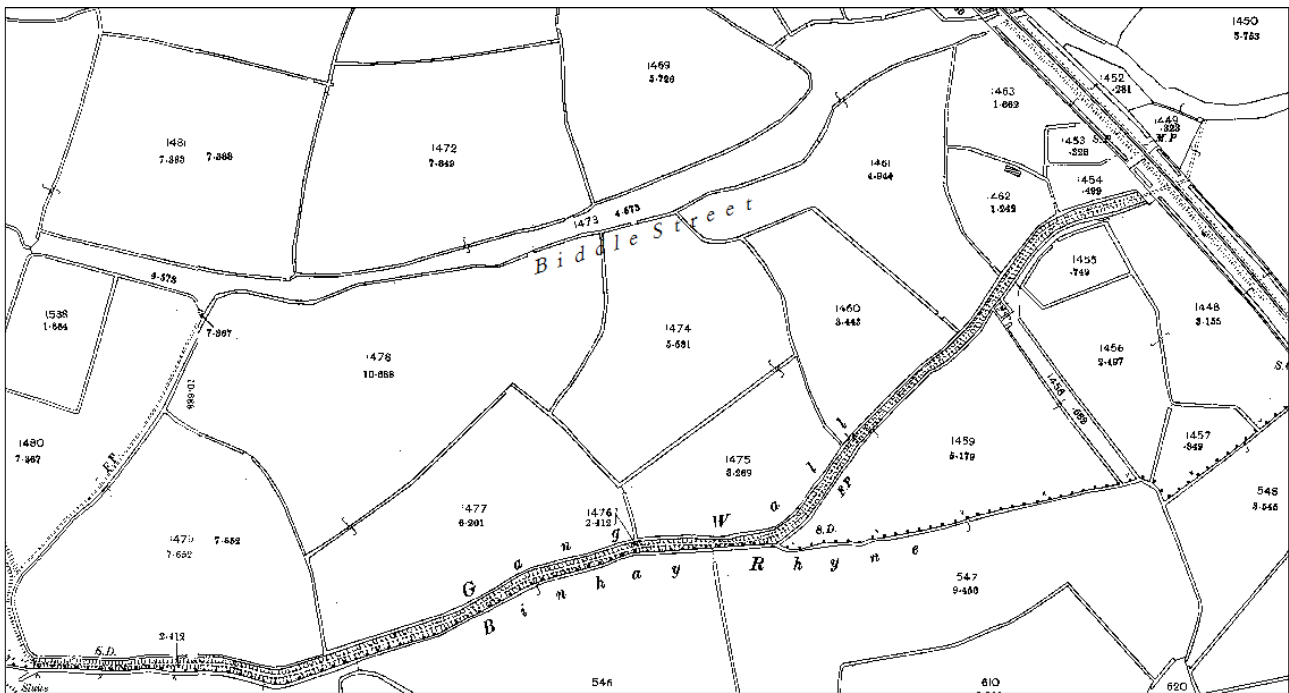


Fig 4: Gang Wall and Biddle Street: note the adjacent fields to each respect their side ditches as terminals. OS plan 1903

These ditches all exist today, and continue to reflect the early arrangement.

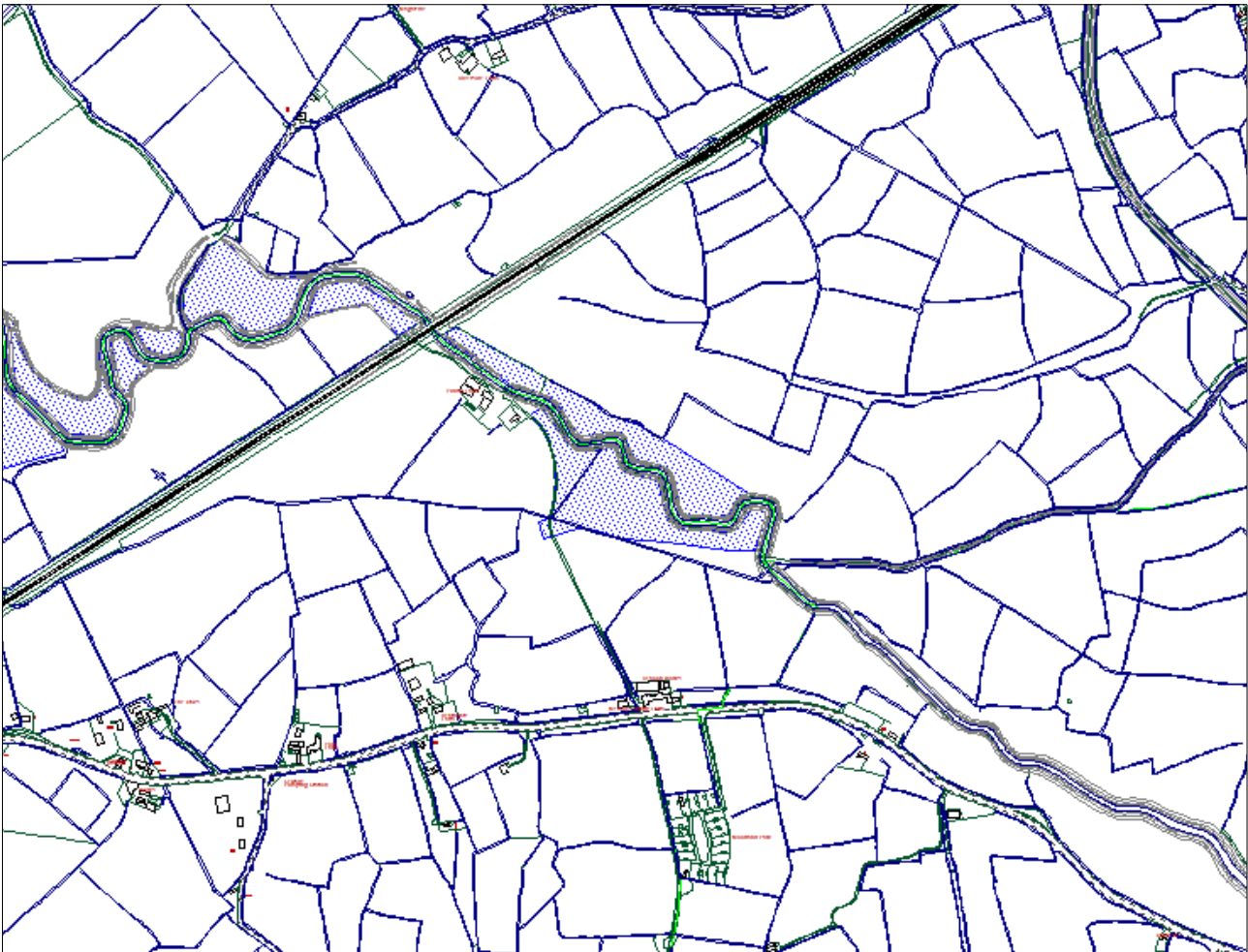
The contrast between the more or less straight section of the Wall between Biddle Street and its meeting with the Binhay Rhyne, and its more sinuous course between there are the Yeo probably means that the Wall was built to follow the Rhyne, as there is no evidence in the lidar or other data that Binhay Rhyne has moved or migrated to the Wall.

This arrangement, with Yatton's slightly drier ground being protected as suitable for arable, and the flooding of Congresbury, may be linked to a phenomenon called 'warthage'. Three rivers in North Somerset show this: the Axe, the Banwell and most of all, the Congresbury Yeo. This presents itself as patches of land next to the river that are 0.5m to 1.0m higher than the rest of the adjacent landscape, usually defined by early smaller river banks. In some areas, this feature survived long enough to be recorded as 'saltings' on OS plans.

However, when the warthage on the Congresbury Yeo is considered (Fig 5), it quite clearly ends at Gang Wall, and is not seen anywhere higher up the river.

When Congresbury Moor was finally enclosed around 1815, there were persistent complaints about its waterlogging. After an unsuccessful appeal by 54 named individuals

to



*Fig 5: Warthage (raised silted areas close to the river – blue stipple) stretch from the sea as far inland as Gang Wall*

the Commissioners of Sewers, they eventually engaged the engineer John Rennie (the younger) to devise a way of draining the Moor effectively.

His radical solution was to dredge a completely new rhyne from the Moor, to meet Binhay Rhyne beside the Gang Wall, where it still meets today, construct a new rhyne on the other side of the Yeo, to run into the Oldbridge River at Hewish, and connect them under the river by means of a siphon.

Strictly speaking, this is not a true siphon (where gravity and density change in a column of liquid can move liquid over an intervening obstacle, and into a lower). Astoundingly, the principles by which genuine siphons work were only established in the late 20<sup>th</sup> century: (<https://en.wikipedia.org/wiki/Siphon>) they are nothing to do with air pressure, since they work in a vacuum.

In this case, as in all such 'inverted' siphons, the kinetic energy of water flowing into it is responsible for maintaining flow. While the plans for this particular siphon do not seem to exist, plans for one a century later on a proposed Clyde-Forth Ship Canal survive (Fig 6). Note that as in Figure 6, and at Rennie's siphon on the ground, the siphon runs at right angles to the river to minimise the amount of construction needed.

In order to construct the siphon, it would have been necessary to construct a by-channel

to take the river flow: this seems to have cut through the Gang Wall about 40m from the river: the remains of the channel are still visible earthworks in the adjacent fields.

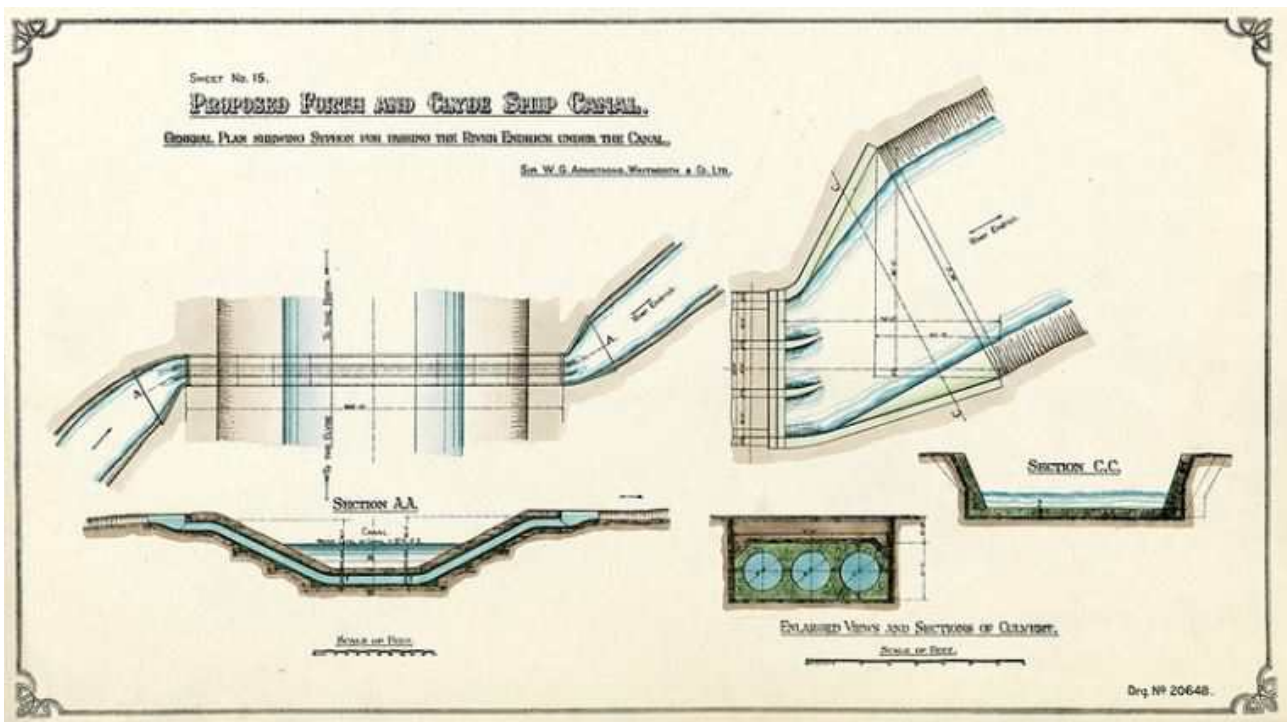


Fig 6: The siphon on the proposed Forth and Clyde Ship Canal 1912

Rennie's works were put into place between 1819 and 1827, and seem to have been immediately successful (Hildich 2003).

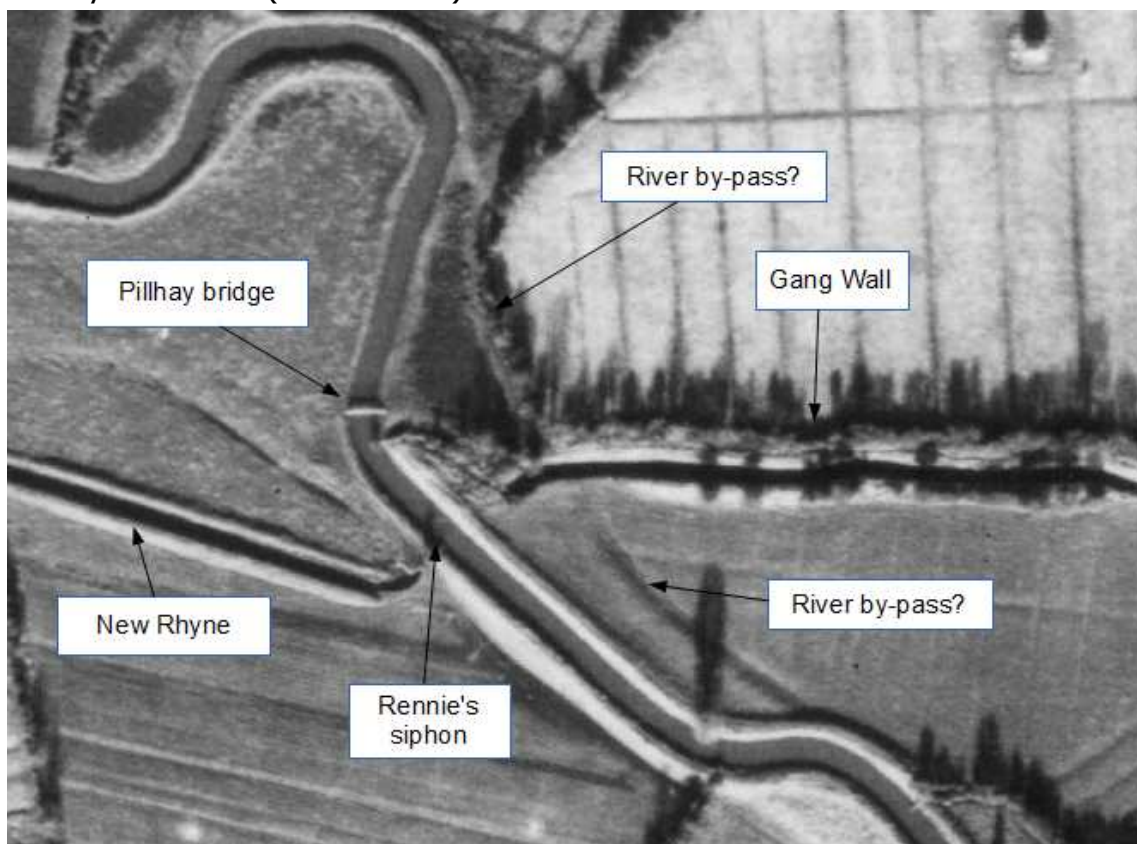


Fig 7: Features relating to Rennie's siphon (1946 RAF photograph)



## **Gang Wall and Rennie's Siphon today**

The Gang Wall structure consists of a bank of remarkably consistent cross-section. It stands 1.5m above grade along its length, some 3m wide at the top, and c9m wide at the base. It is 1012m long from the Cheddar Valley Railway line to the bank of the Congresbury Yeo.

Each side is ditched, the ditches connecting into the separate drainage areas on either side of the bank. Where maintained, the ditches are up to 5m wide (the New Rhyne is maintained by the local North Somerset Levels Internal Drainage Board (2014) as is Rennie's Siphon). Most of the Binhay Rhyne and the northern ditch of the Gang Wall are not maintained for reasons of biodiversity and habitat conservation.

Rennie's siphon appears from external examination to consist of a pipe under the river, with head and cheekwalls of coursed rustic Pennant Sandstone blocks. On its exit side on the south of the Yeo, the eastern cheekwall is continued into a bend to prevent erosion of the bank of the New Rhyne. The cheekwalls on each side are about 2m high, and the structure around 6m wide. On the northern bank, a modern sluice and walkway has been added, obstructing the view of the original semi-circular vault of the entrance.



*Fig 8: Surface of the Gang Wall looking south from near the railway line, February 2017*





*Fig 9: Lower (river) end of Gang Wall, with Binhay (maintained) Rhyne, looking south from junction of rhyne and wall*



*Fig 10: Lower end of the Wall from the Yeo bank, looking east. The bank can be seen at the foot of the heavy tree cover*





*Fig 11: Ditch on north side of the Wall, still directly connected to the wallside rhyne (looking northwest)*



*Fig 12: Yatton back fen area, January 2017, after prolonged rainfall. This is the area in blue on the lidar image (Fig 4)*





*Fig 13: Natural curve in Binhay rhyne reflected in bank plan (looking south towards Yeo)*



*Fig 14: Anti-erosion measures at the junction of the New Rhyne and Binhay Rhyne*





*Fig 15: Fallen over-mature withy pollard on Congresbury side of the Wall*



*Fig 16: Rennie's siphon, north entrance (note the stone arch visible behind the walkway)*





*Fig 17: Rennie's siphon, southern (exit) end. Note anti-erosion extended curving cheek wall*

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## Archive

The archive is entirely digital. Stored in YCCART files under folder 'GANG WALL'

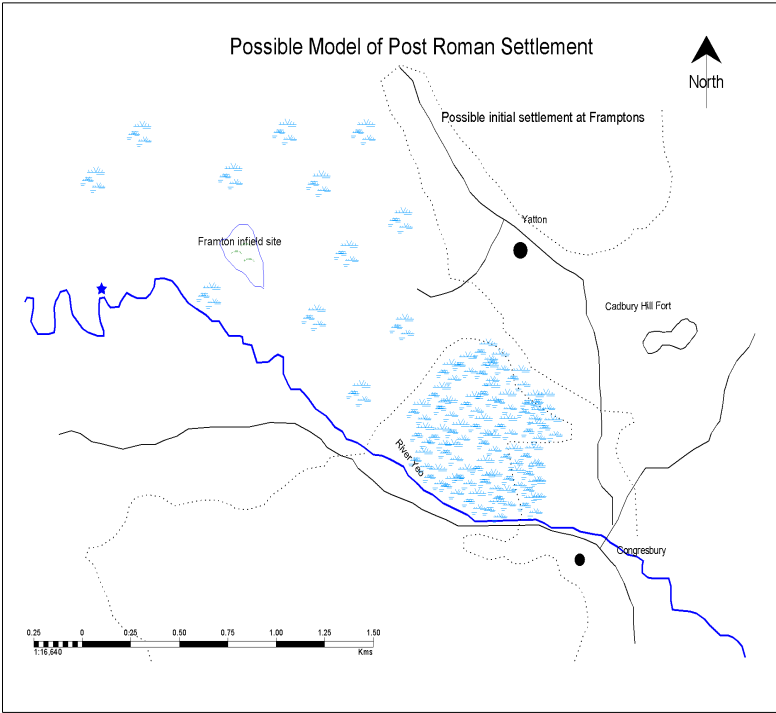
## Further work

A drawn survey of Rennie's siphon would be useful for future reference, as would a series of sections of the Gang Wall itself.

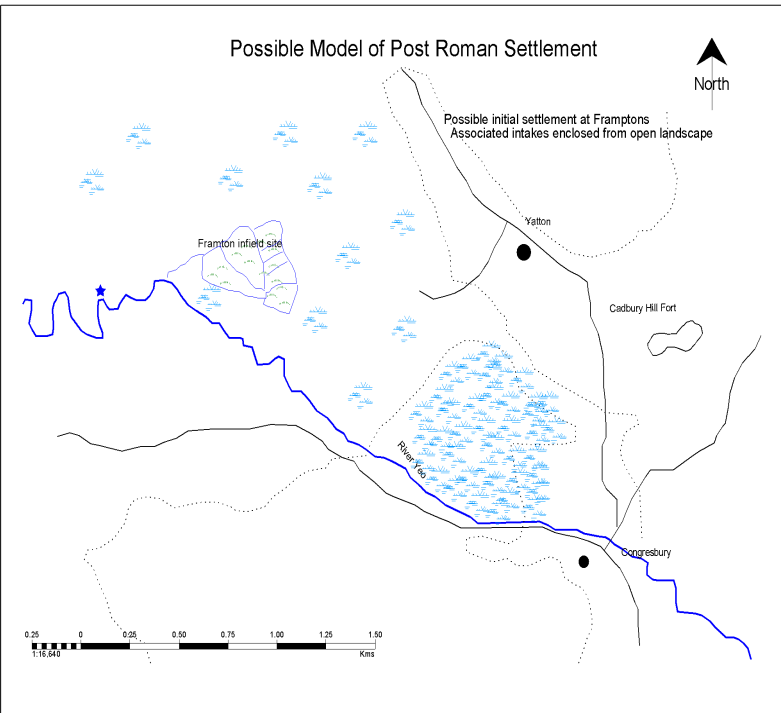
## General author

Vince Russett February 2017

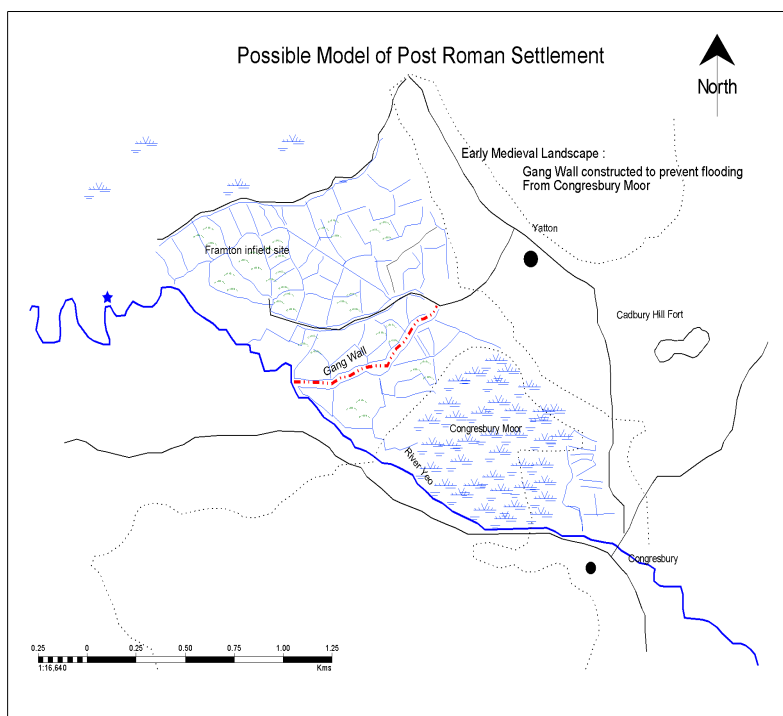
**Appendix 1** The Hildich Sequence (from Hildich 2003)



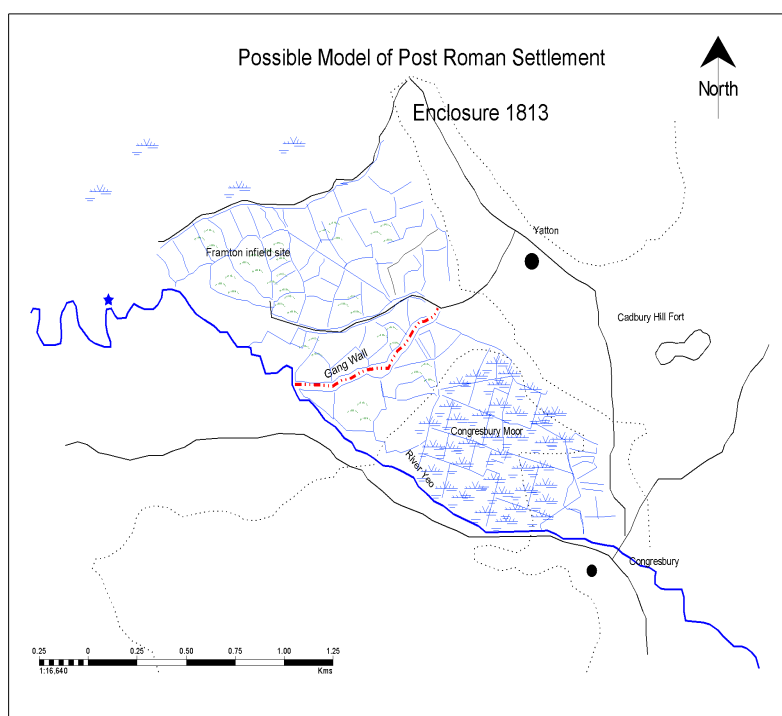
*Map 1: Possible first settlement at Frampton*



*Map 2: Early enclosures around initial site*

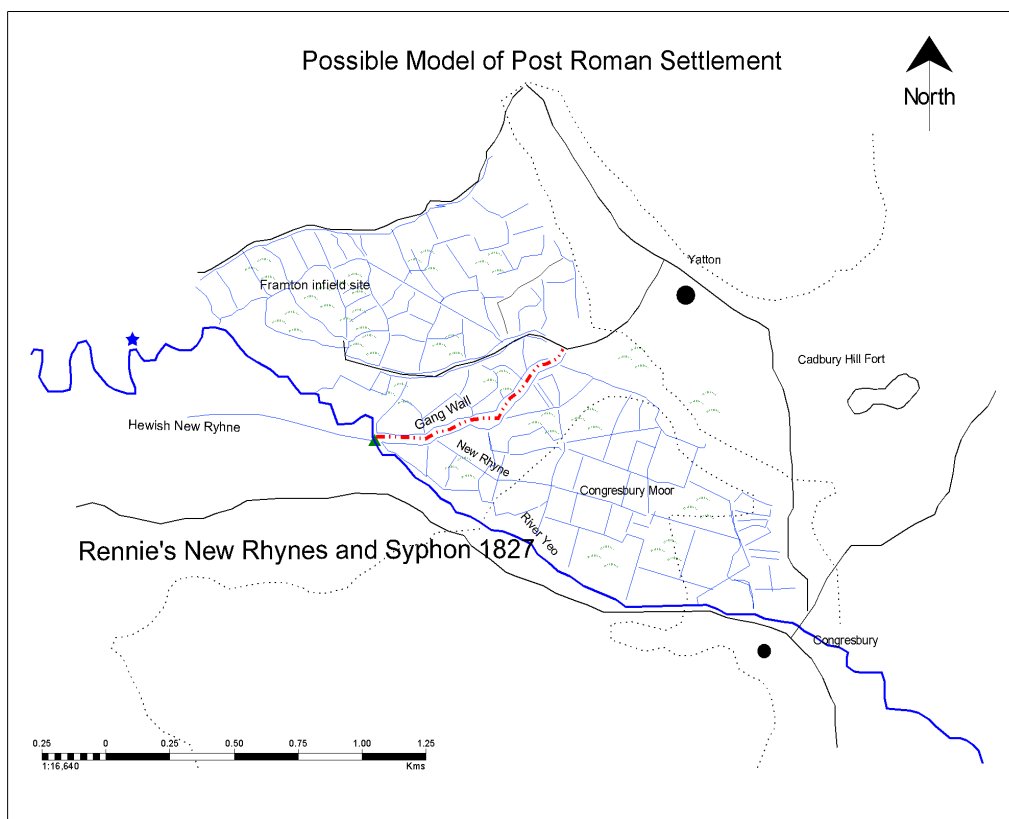


*Map 3: Drainage system expands and Gang Wall constructed to prevent flooding from Congresbury Moor*



*Map 4: Enclosure 1813 but Congresbury Moor still subjected to flooding possibly for 4/5 months in wet years*





*Map 5: Rennie creates new Rhynes and constructs siphon near end of Gang Wall. Congresbury Moor now only suffering flooding during high rain fall*

## **Appendix 2: 'Reasons for Scheduling' part of a document submitted to Historic England**

Consideration for Scheduling was turned down by Historic England for perceived lack of threat to the structure.

### **Reasons for Scheduling**

This proposal recognises and welcomes the protection of biodiversity around the Gang Wall by the Biddle Street SSSI designation, but also recognises the national archaeological importance of the medieval structures of the Gang Wall and its context.

Roman and medieval flood defences were barriers designed to prevent the inundation of land by salt or freshwater floods, and to assist in the reclamation and drainage of large areas of low lying land. They normally survive as a low elongated earth bank with a ditch on the landward side. The banks were made of local clay or turf and were sometimes strengthened by internal wooden frameworks, wattling or stone facing. Regular repair of flood defences meant they often had a long life span of many hundred years with some medieval embankments still in use today. Unaltered examples, ie surviving medieval defences not subsequently reused in the post-medieval period, are comparatively rare, and Roman examples rarer still. Flood defences are one of a small number of Roman and medieval monuments to show the effects of man on water control. Their longevity and their influence on the layout and pattern of large areas of low lying land all contribute to their importance. (Historic England 2011)

Gang Wall is possibly unique in England (certainly in southern England). While the wildlife in its ditches is protected by the SSSI status of Biddle Street SSSI, there is currently no legal protection for the structure itself.

A quick search of the Historic England List for southern England has revealed only three similar banks which are Scheduled.

Balt Moor Bank in Somerset (List Entry No 1018952) is Scheduled primarily for its inclusion in the Athelney group of monuments, and 'It is well preserved having been encased in stone in the post-medieval period, overlain by a metalled road surface for part of its length, and more recently protected by a clay embankment for the remainder of its length' (Historic England Scheduling document, 2017).

Meer Bank in Avonmouth (List entry no. 1020664) is not only a partial survival, but has completely lost its landscape context in the industrial development of Avonmouth (Historic England Scheduling document, 2017).

Botolph's Bridge bank in Romney Marsh (List entry 1016518) is also partial, and specifically Scheduled to reflect a larger monument that has now been largely destroyed (Historic England Scheduling document, 2017).

Obviously, this is not to decry the Scheduling of these three sites, which is clearly both necessary and important, but the documents lend extra strength to the argument for the Scheduling of Gang Wall

- Gang Wall, Yatton, can be shown by documentary and field evidence to be of medieval date, and undoubtedly, medieval drainage engineering.
- It is substantially complete. The minimal destruction caused by the former railway

at its landfall end is regrettable, but may possibly provide a potential area for archaeological evaluation of the Gang Wall at some point with minimal disturbance to the monument.

- The wall still has its medieval context intact. The ditches that were originally constructed to drain the newly-colonised moors in Yatton and Congresbury by feeding into two drainage systems separated by the Wall, still do so.
- It is one of the few intact medieval drainage banks in Somerset (and probably in southern England) that does not have a metalled road on its surface, but retains only footpath rights (it is not, nor has it ever been, a bridleway).
- The lack of later disturbance, and the waterlogged nature of the site has the potential for the preservation of archaeological and palaeoenvironmental information not possible in other areas.
- An increasing level of future threat to this monument from engineering and other works is perceptible.

On these grounds, we request that Gang Wall be awarded the status of Scheduled Monument.