Holy Brook Culvert
Bridge Street West, Reading

Archaeological Survey and Watching Brief Report

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BRIDGE STREET WEST
READING
HOLY BROOK CULVERT

30842

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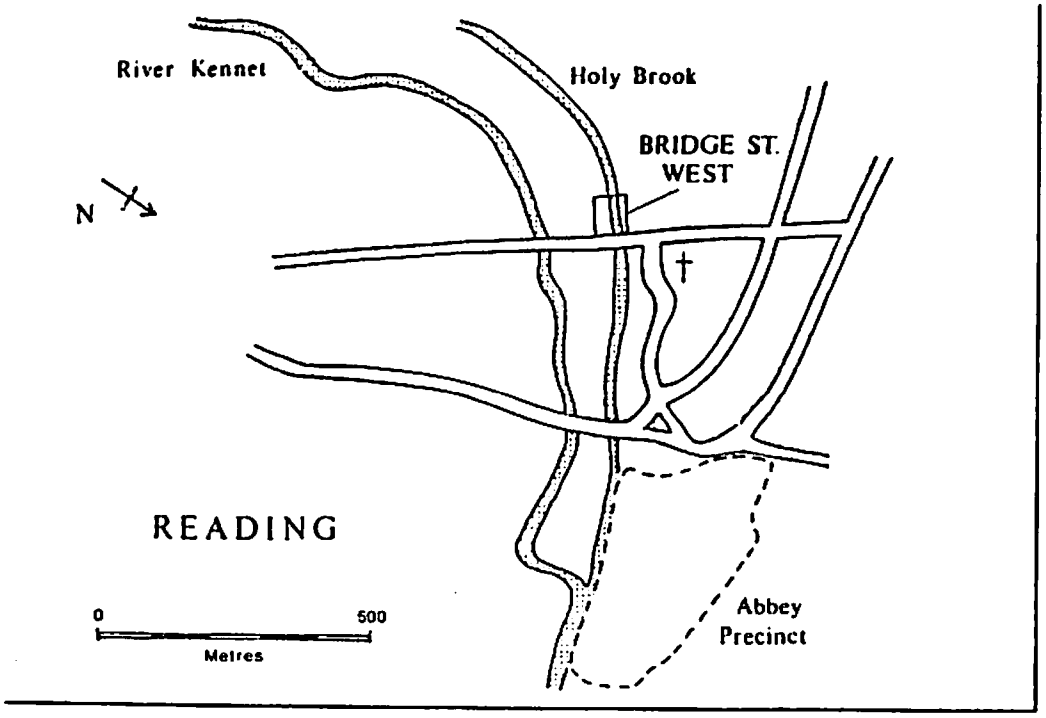
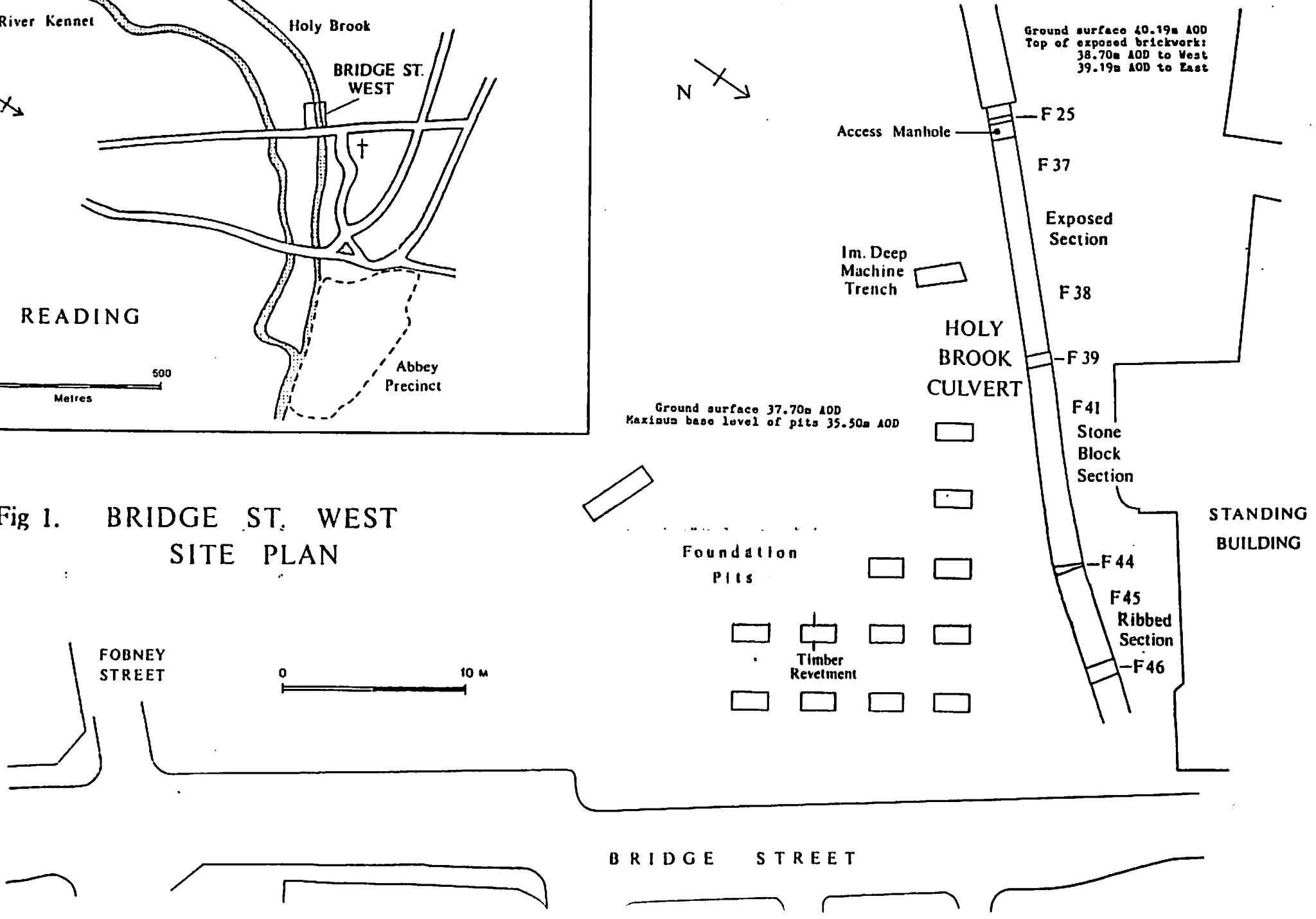


Fig 1. BRIDGE ST. WEST SITE PLAN



BRIDGE STREET WEST, READING

Introduction

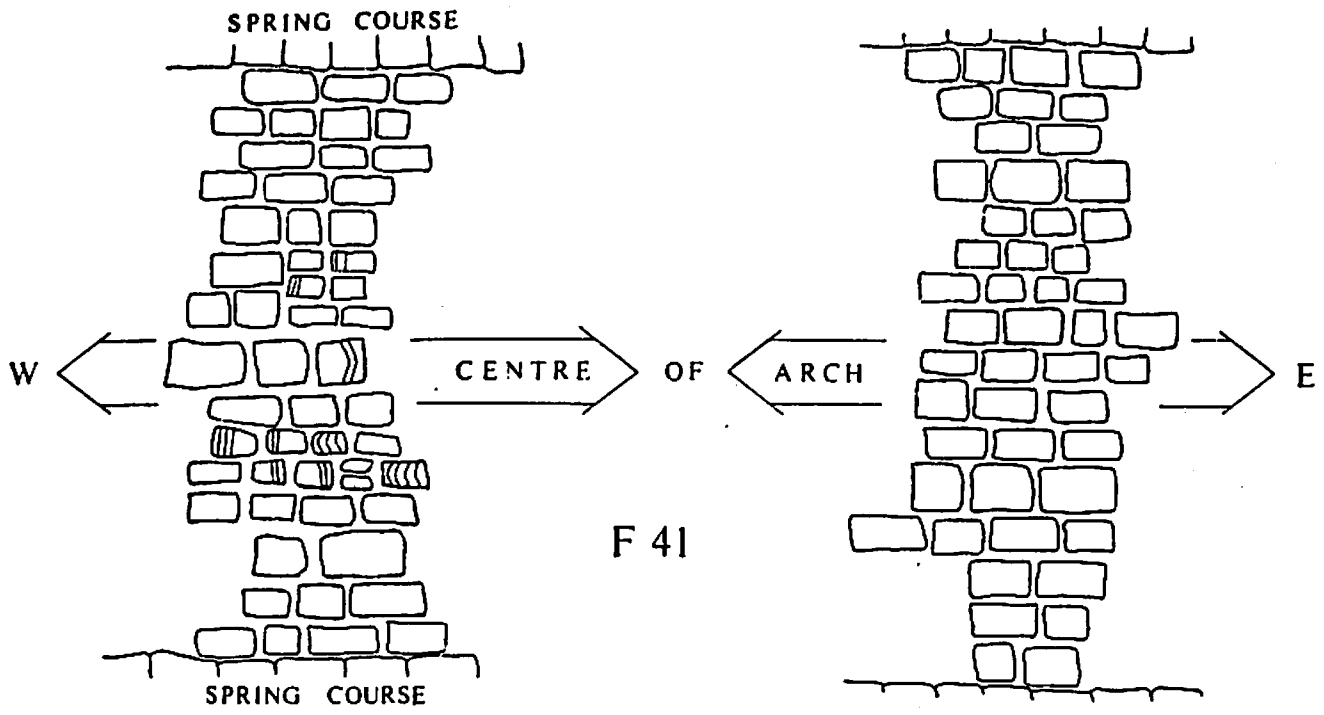
Following the disuse of the Courage Brewery sites on the south side of Reading to the east and west of Bridge Street, an area some 70 m east-west by 90 m north -south is presently being redeveloped on the west of Bridge Street.

The Trust for Wessex Archaeology was requested to do an archaeological survey comprising;-

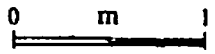
1) A detailed archaeological survey of the alignment of the culvert and an internal archaeological survey of the Holy Brook

2) An archaeological strata survey and watching brief to the excavation by Balfour Beatty Building Limited of a trench through the remaining 1 m of unexcavated material adjacent to the Holy Brook.

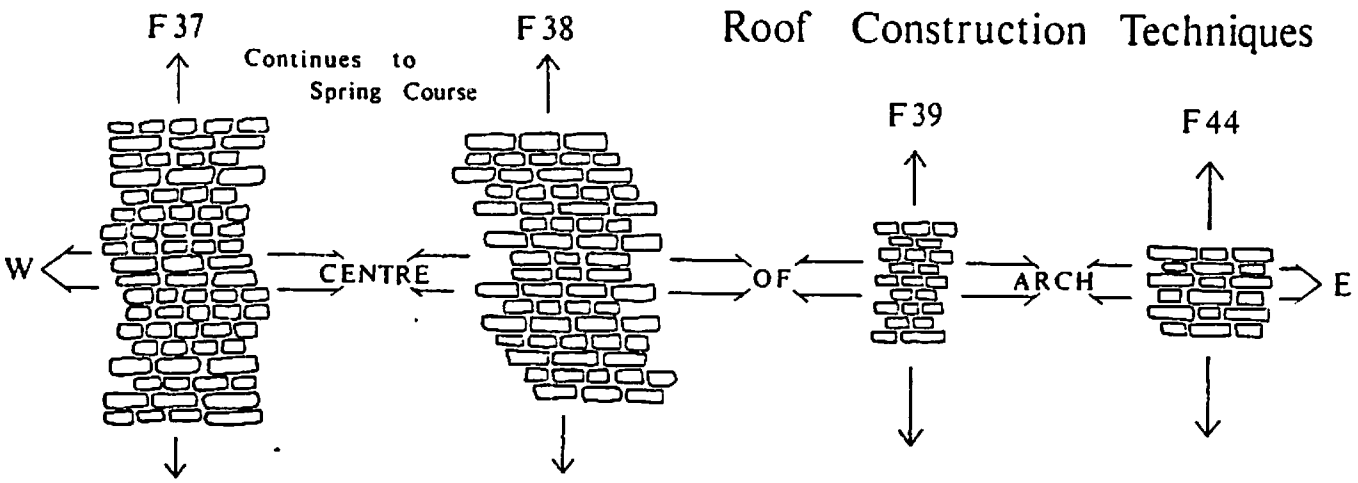
The Holy Brook flows west to east across the northern edge of the site through an enclosed culvert, SU 7145/7320 to SU 7132/7314, (fig 1). Most of this culvert is of 18th to 19th century date or later, consisting in the main of brick work. However, one section is of 16th century date and reuses much 12th to 13th century stone work which may have come from Reading Abbey following the dissolution in 1539. It is therefore of archaeological interest and became a Grade II* Listed structure in October of 1984.

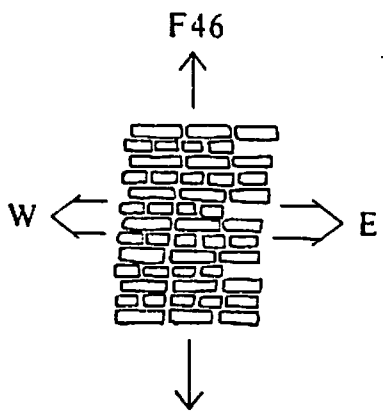


F 41

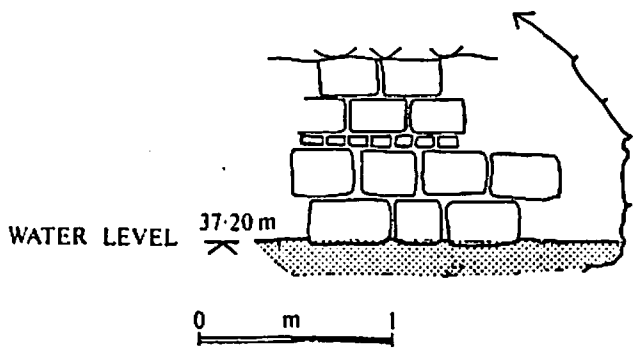


Internal Plan Views of Roof Construction Techniques





Elevation and Profile of F88



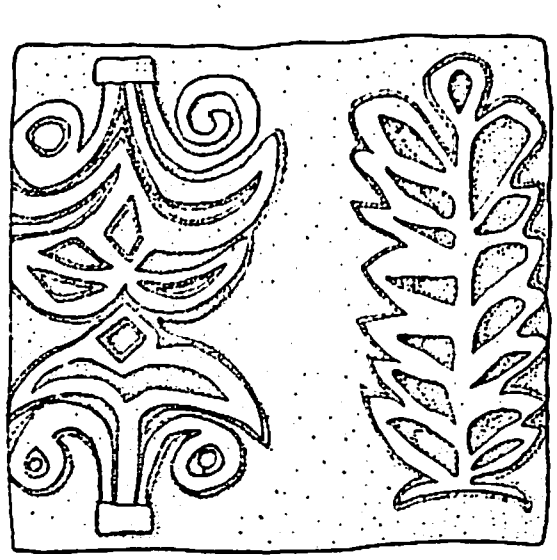
A row of brick headers forming an integral part of the limestone block walling.

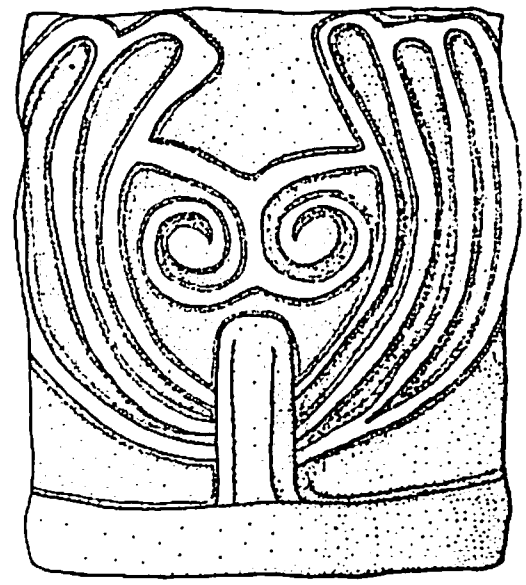
Fig 2.

The Culvert Survey

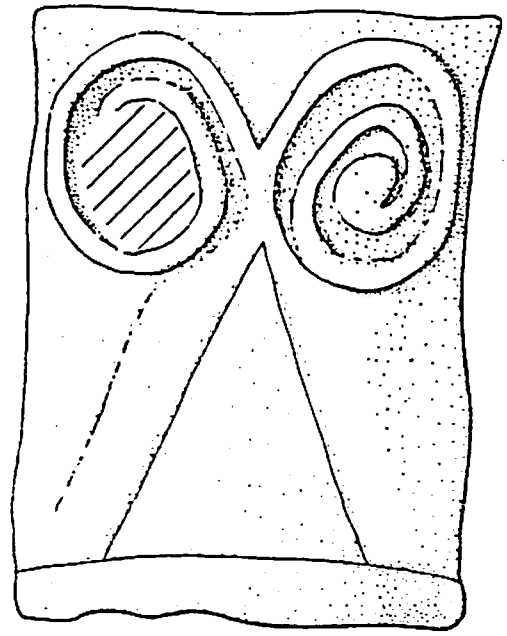
In the course of their work the contractors exposed 22 m of culvert in the north-western part of their site. This section consisted of 18th to 19th century horseshoe section brick culvert (F37/38). The outside of the culvert was covered in lime mortar and little constructional detail could be seen. The brick arching spanned 2.80 m to 3.00 m. Access was gained through a manhole at the western end of this section and internal examination revealed rough brick work with some use of broken and reused bricks.

To the west of the manhole the culvert passes through a damaged stone reinforcing arch F25 (fig 4) made up of reused limestone arch blocks. Thereafter, the body of the culvert changes to a modern concrete rectangular form as it passes beyond the present site boundary. However, working downstream to the east, once past the exposed section, there are about 35 m of stone constructed culvert. The first 22 m is roofed with re-used limestone blocks F41 (figs 2,4) and incorporates a number of decorated architectural fragments which were provisionally dated to the 12th or 13th centuries (fig 3, photo 1). Downstream from this is 11 m of ribbed arch roofing, F45, (fig 4, photos 2,3), which is the main section of interest. This is made up of 40 contiguous ribs running north-south forming the roof across the Holy Brook channel. These ribs span 3 m with a maximum rise of 0.50 m from the springers. Each rib is made up from an average of 14 blocks. The blocks come in four main types and some attempt was made to form each rib from one single type. The blocks average 0.27 m





Decorated fragments and mason's marks in roof of F.41



Obscured by later mortar

0 5 10 cm

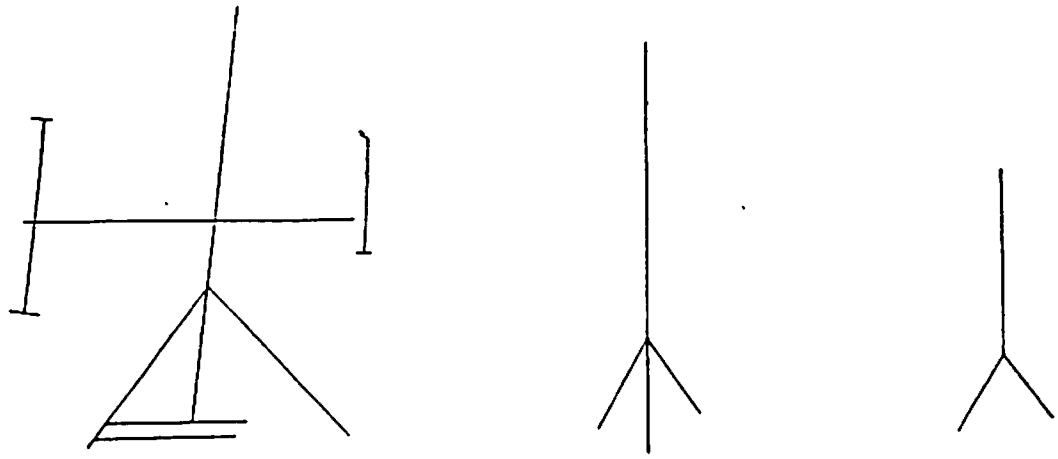


Fig 3.

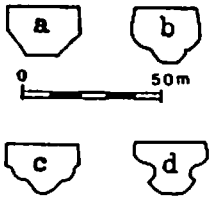
wide and vary from 0.10 m to 0.35 m long.

Both the limestone block arch section and the ribbed section rest on limestone block walling of apparently continuous construction which allows for a slight change of alignment to the north-east as the culvert travels east through the ribbed section. While some of the brickwork in this area is the result of later interference, enough 16th century brickwork occurs in integral relationships with the stonework eg F88 (Fig 2) to allow the suggestion to be made that the limestone block arch, the ribbed arch and a central infill of brickwork F44, which exists on the stone walling and covers the wedge shaped gap between the two stone sections, (Fig 1), all represent one building phase which might be contemporary with the dissolution of the Abbey. To the east and west, separating the stonework from the 18th to 19th century brickwork, are two short brick arches of 16th to 17th century date which abut the stone sections F39 and F46 respectively (photo 4). These may or may not be contemporary with the main stone construction phase. In either case some 35 m of the Holy Brook had been roofed over in the 16th century possibly as support for a road bed and /or building of some size.

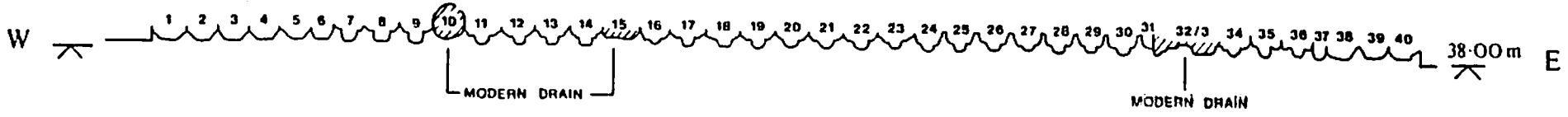
The original floor of the culvert was entirely obscured throughout the length under observation and at present consists of mixed lengths of gravel and concrete varying in depth by up to 0.40 m.

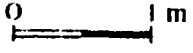
Rib 10	1.0m missing on North side	Ribs 1 - 6, 38, 40	type a
Rib 15	0.5m missing on North side	7 - 23	b
Rib 18	1.0m missing on South side	24 - 34	c
Rib 19	1.0m missing on South side	35 - 36	d
Rib 32	0.5m missing on North side	37, 39	mixed types
Rib 33	0.5m missing on North side		

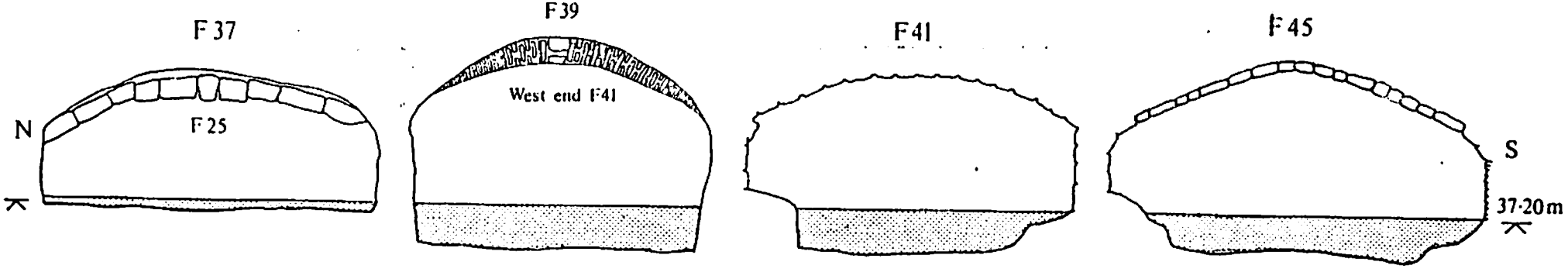
Main Types after Cram.



West-East Profile of Ribbing F45







North-South Profile of Culvert

Fig 4.

The insertion of a manhole through the roof of the ribbed section has resulted in some subsidence up to a maximum of 0.20 m. This has caused a flattening of the arch with gaps of up to 0.04 m appearing between the undersides of some rib blocks. While not of immediate concern this has probably affected the long-term integrity of this structure.

The Strata Survey and Watching Brief

A 1 m deep machine trench, which ran 5 m north-south and was 2 m wide, was dug by Balfour Beatty Construction Limited some 5 m south of the centre of the exposed section of culvert. The section of this trench (fig 5) recorded a sequence of silt clays, flint gravels and organic debris. The changing nature and angle of deposition of these layers suggests a succession of periods of reclamation and consolidation activity followed by periods of slow river silt deposition. Feature 8 was a lime barrel 0.75 m in diameter which survived to a height of 0.45 m. Its primary deposit, layer 6, was a 0.10 m thick layer of lime. Layers 9 and 10 contained late medieval roof tile while layers 11 and 12 contained late 12th to early 13th century pottery. Horn cores were recovered from layer 13.

Observations made during the Construction Work

The sections of thirteen of the foundation pits dug by Balfour Beatty Construction Limited to the south of the Holy Brook were inspected. These pits were laid out on a square grid 7.5 m apart. From these pits, record was made of a timber waterfront

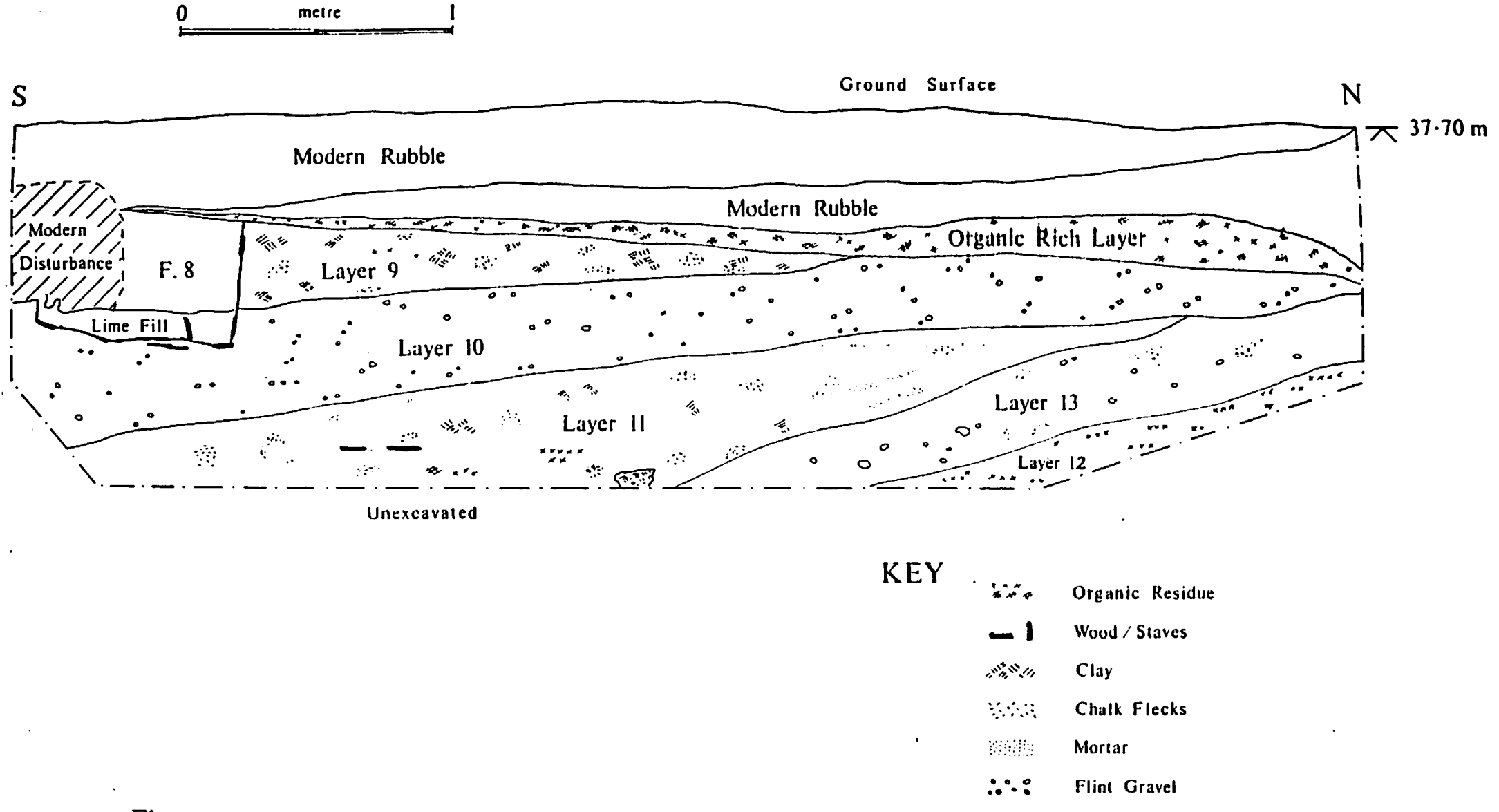


Fig 5.

Western section of machine trench through 1m of stratified waterside deposits, including lime barrel F. 8.

with associated consolidation layers (photo 5), traces of medieval industrial activity, possibly tanning, and a number of undated wooden piles which probaly indicated structures or river management.

The timber waterfront consisted of a east-west planked revetment consolidated to the north by compact chalk rubble. The revetment occurred some 28m south of the Holy Brook with secondary lines of possible back braces between 20 m and 13 m south of the Holy Brook. Alternating layers of grey brown silt clay and black organic material continued to the south of the revetment with isolated posts recorded as far south as 45 m from the Holy Brook.

Culvert Discussion

The 35 m of 16th century Holy Brook culvert is best considered as a single construction using a variety of materials. This would reflect the local availability of building material from the Abbey. The form of the ribbed section was probably dictated by the need to re-use arch or column material in a structurally sound manner rather than from any aesthetic considerations. In the stone block arch section the smaller and decorated blocks occur more frequently in the crown of the western end of the section which suggests that this section was completed from east to west and that the decorated blocks were used to overcome a short fall in larger more regular walling blocks. The wedge shaped brick arch which fills the gap between the two stone sections rests on the limestone block walling and is almost

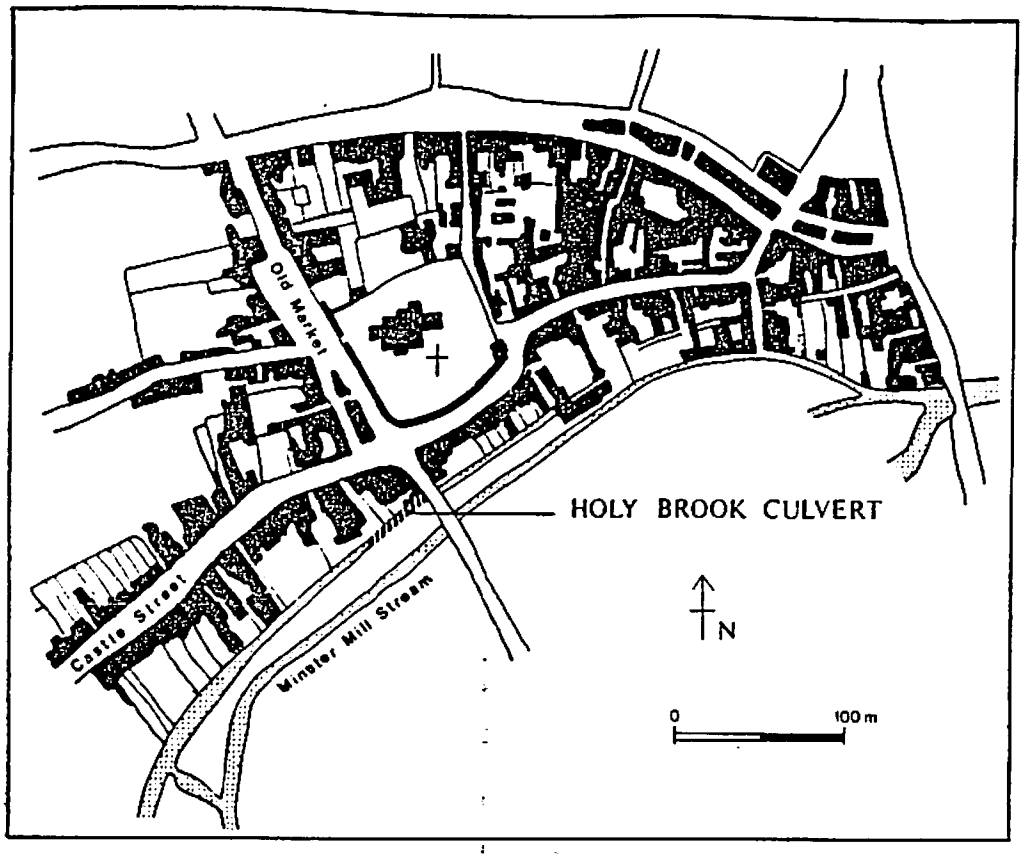
certainly contemporary. The short brick arches at either end of the stone built culvert abut the stonework and continue below the water line. The construction technique of these arches differs and they are probably later piecemeal additions.

Strata Survey Discussion

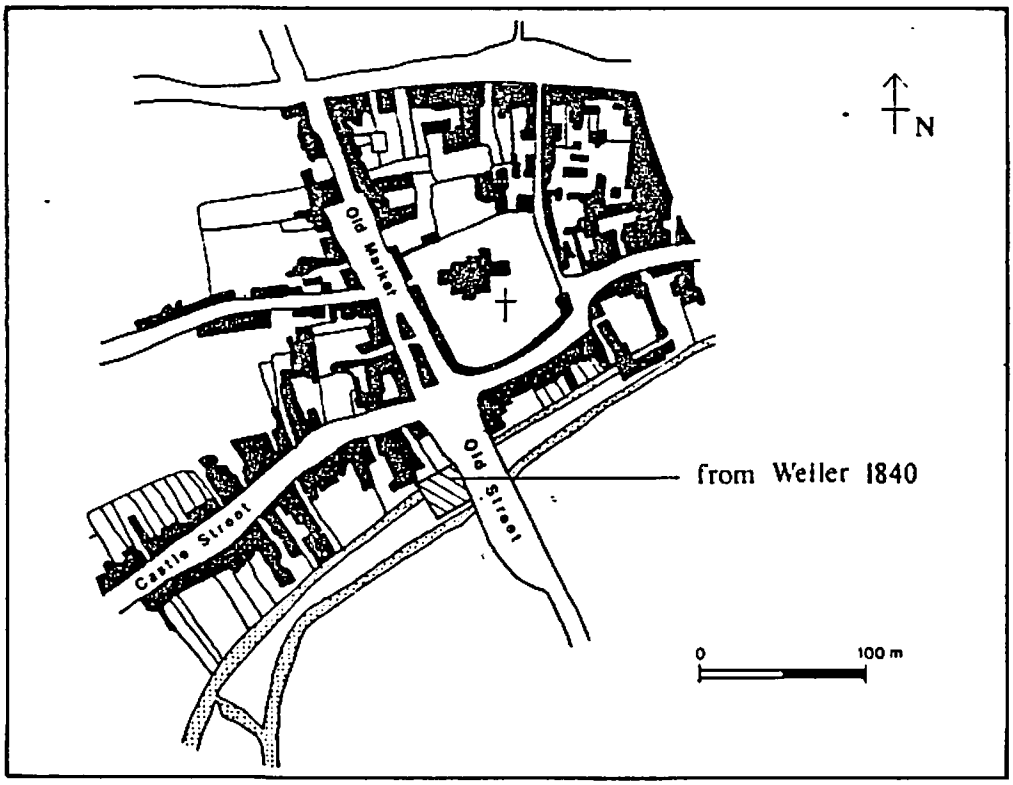
The land to the south of the Holy Brook produced ample evidence for its origin as back swamp and tributary meander within the bottom of the valley of the river Kennet. This was then gradually reclaimed throughout the medieval period to provide an industrial strip close to the medieval town. Both the quantities of animal bone, especially horn cores, which were encountered and the lime barrel sectioned in the 1 m deep machine trench suggest that this area was used as a tannery by the early medieval period. The plank revetted waterfront with its chalk consolidation layers represents a developed form of reclamation which may relate to an expansion of the town southwards and refurbishment of the canalized waterways, in this case, the Minster Mill Stream.

The Origin of the Stone Culvert

The information gathered from this excerise seems to suggest that the area of the Old Market, now St Mary's Butts, extended further south than originally thought (fig 6). Astill's map of medieval Reading (Astill 1978) shows the Old Market widening as it runs south before intersecting with Castle Street. To the



Plan of Medieval Reading (after Astill 1978)
showing position of culvert



Plan of Medieval Reading adapted to show Old Market
extensions and possible structure over Holy Brook

Fig 6.

south of Castle Street, Old Street, now Bridge Street, continues the line of the eastern side of the Old Market. If the line of the western side of the Old Market is continued south of Castle Street it crosses the Holy Brook at the point where the ribbed arched culvert was recorded. The 22 m of stone block arch to the west could have helped to support a large structure on the corner of Castle Street and the revised line of the Old Market. Just such a square structure occurs on Edward Weller's map of 1840 in this position. The change of alignment between the ribbed and block arch section of the culvert could then be explained by differential use. The blocks would have supported a structure while the ribs would have supported part of a roadbed which swung south east to rejoin the line of Old Street. The angle at which some of the buildings on the west side of Old Street are set would seem to support this hypothesis.

D E Farwell

December 1985

Acknowledgements

This work was undertaken for the Fitzroy Robinson Partnership on behalf of their clients.

Assistance was received from the Fitzroy Robinson Partnership and the contractors, Balfour Beatty Building Limited.

Illustrations by J Terry

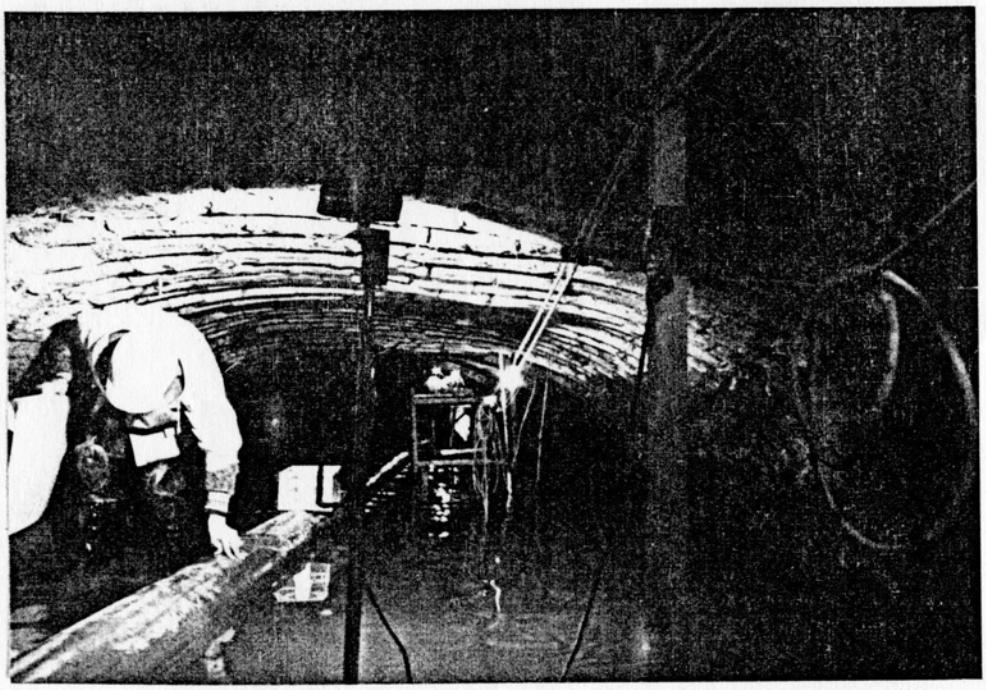
Bibliography

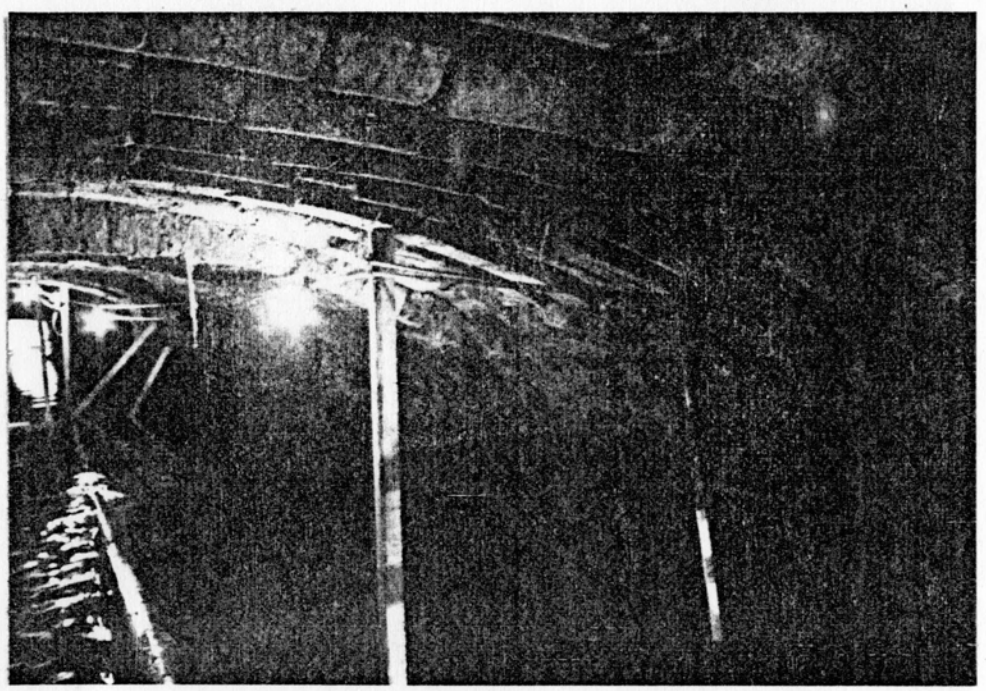
Astill G G 1978 Historic Towns in Berkshire, Reading.

Cram L 1984 Holy Brook Conduit Under Courage's Brewery Site, Reading, Museum Archive.

1 Decorated architectural fragment in roof of F41. (above)

2 F45, ribbed section, looking East. (below)

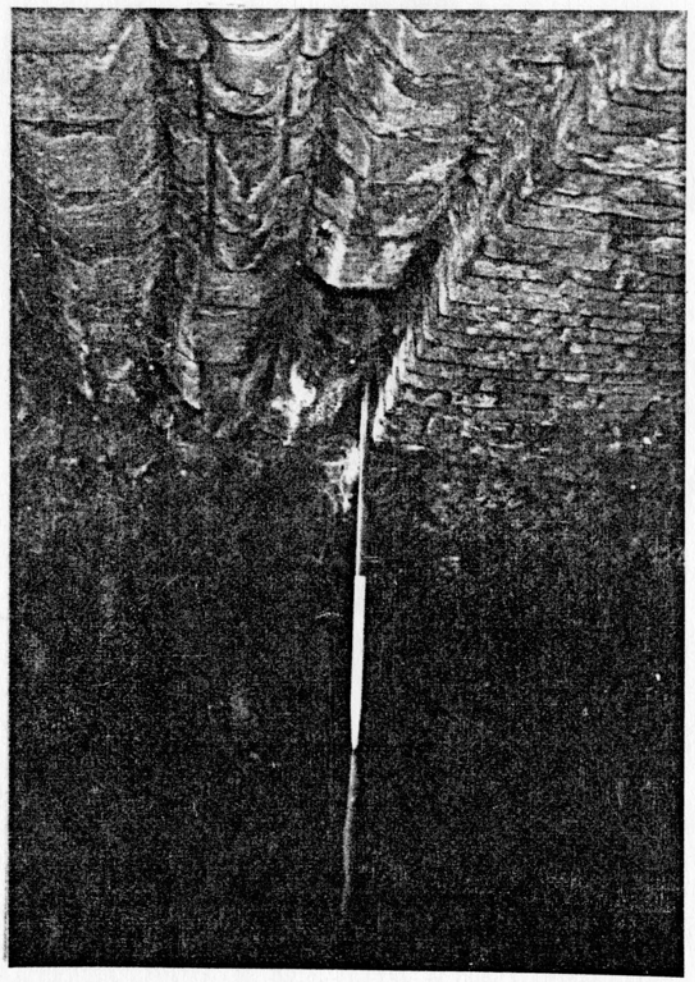


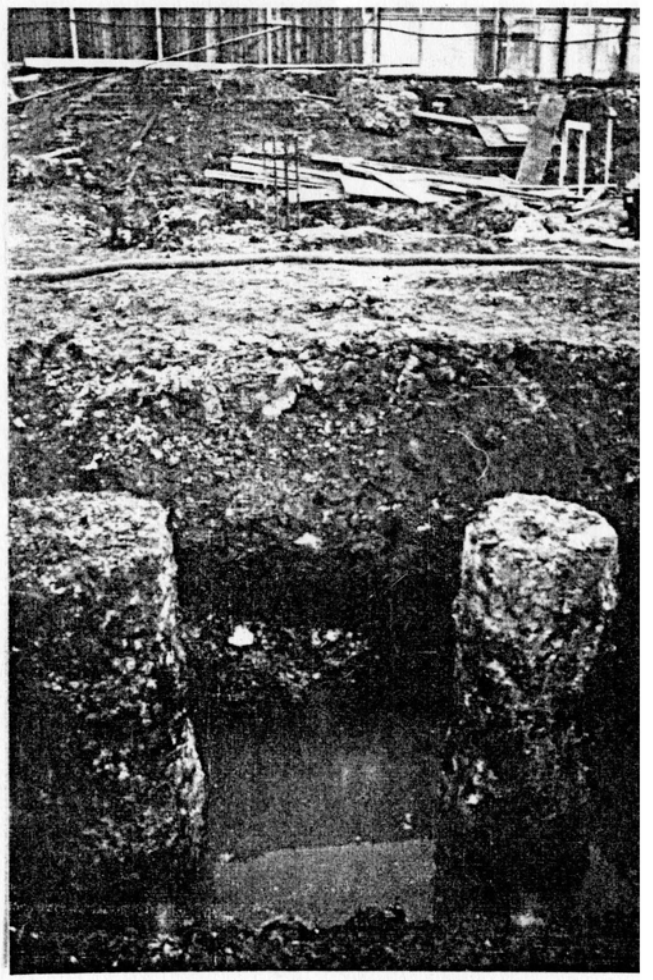


3 Close up of ribs in F45. (above)

4 F45 and F46 looking North. (below left)

5 Timber revetment in foundation pit. (below right)





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