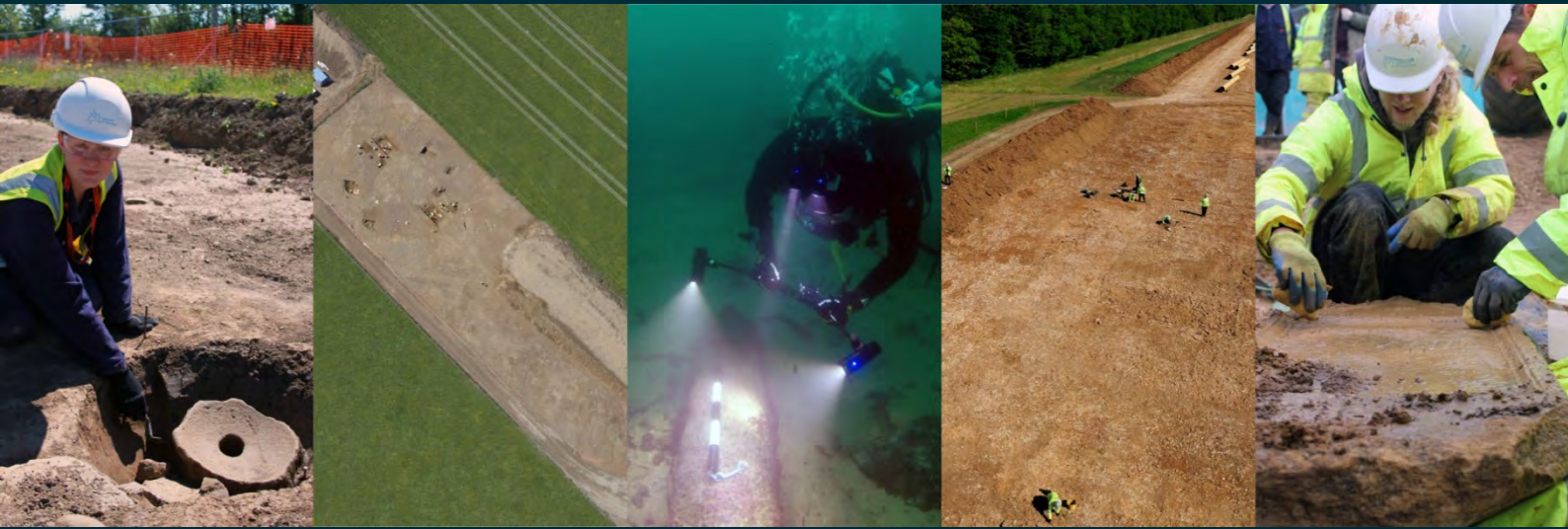


Powick Weir Powick Worcestershire

Archaeological Watching Brief



for
Team Van Oord

on behalf of
Environment Agency

CA Project: 6680
CA Report: 18442

November 2018



Powick Weir Powick Worcestershire

Archaeological Watching Brief

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CA Report: 18442



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A	9 November 2018	Monica Fombellida	Richard Young	Internal review		Richard Young
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SUMMARY

Project Name:	Powick Weir
Location:	Powick, Worcestershire
NGR:	383422 252307
Type:	Watching Brief
Date:	July, August and October 2018
Location of Archive:	To be deposited with Worcestershire County Museum
HER:	WSM70503
Site Code:	PWP 18

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with the partial removal of part of Powick Weir built in 2000, and the establishment of the site compound and material handling area.

Portions of an earlier, post-medieval weir were uncovered during the works, comprising of timber posts and a sandstone structure. Two further clusters of timber posts were identified both up and downstream of the weir. The remains of the timber posts were left *in situ*. No further archaeological features were observed either at the weir or during the groundworks in the compound area.



1. INTRODUCTION

1.1 In July, August and October 2018 Cotswold Archaeology (CA) carried out an archaeological watching brief for Team Van Oord on behalf of the Environment Agency (EA), on land at Powick Weir (centred at NGR: 383422 252307; Fig. 1). The watching brief monitoring formed part of a programme of archaeological works undertaken at the site during the partial removal of the weir and construction of a temporary compound and materials handling area. The development scheme falls within the EA's Permitted Development Rights and the programme of archaeological works, which also included a metal detector survey, was agreed in discussions between the EA, Historic England, Worcestershire County Council Historic Environment Team, James Dinn, Archaeological Officer, Worcester City Council (WCC), and Aiden Smyth, Archaeology And Planning Advisor, Wychavon and Malvern Hills District Councils (hereafter referred to as the Local Authority Archaeological Advisors). This document comprises the results of the watching brief; a separate report on the results of the metal detecting survey has been compiled.

1.2 The watching brief was carried out in accordance with a detailed *Written Scheme of Investigation* (WSI) produced by Royal Haskoning DHV (2018) and approved by the Local Authority Archaeological Advisors (Royal HaskoningDHV 2018). The fieldwork also followed *Standard and guidance: Archaeological watching brief* (ClfA 2014).

The site

1.3 Powick Weir is situated on the River Teme c. 700m north of Powick village and c. 300m south-west of the suburbs of Worcester. The weir feeds Powick Mill Leat which joins the Laughern Brook c. 260m to the north and then extends eastwards towards Powick Mills. The land immediately around the weir is the floodplain of the River Teme and is currently under rough pasture which is crossed by a network of footpaths. The A440, Worcester bypass (Hams Way) runs c. 60m to the south-west of the weir (Royal HaskoningDHV 2018). The site lies at approximately 15m AOD and is relatively flat.

1.4 The underlying bedrock geology of the area is mapped as Sidmouth Mudstone Formation of the Triassic Period with superficial alluvial deposits of clay, silt, sand and gravel of the Quaternary Period (BGS 2018). The natural substrate observed during the course of the watching brief consisted of clay and gravel.

2. ARCHAEOLOGICAL BACKGROUND

- 2.1 The archaeological and historical background of the site has been previously subject of Cultural Heritage Desk-Based Assessment (Connolly 2015) and a recent addendum (Dean 2018). The following is a brief summary of these assessments.
- 2.2 There is no evidence of Prehistoric or Roman activity within the boundaries of the site. Iron Age activity was recorded at Holly Lodge, to the southwest of site and to the south of Malvern Road. The presence of a Romano-British settlement has also been recorded at the confluence of the river Teme and Severn, c.1.4km downstream.
- 2.3 During the Medieval period, the landscape was dominated by agricultural activity. Large open fields systems are likely to have been present in both river terraces, while seasonally flooded meadows occupied the valley floor. There is evidence of industrial activity to the north bank of the river Teme, mentioned in the Domesday as Wick Mill on the river Teme and Cut Mill on the Laughern Brook.

The Civil War (1642 – 1651)

- 2.4 During the 17th-century Worcester was an important political, economic and religious centre and was the site of two battles during the English Civil War; the skirmish at Powick Old Bridge on the 23rd September 1642 and the Battle of Worcester on 3rd September 1651 (Dean 2018). The Battlefield of Worcester (containing the earlier action at Powick Old Bridge), which is included on the Register of Historic Battlefields (HE List Entry Number: 1000042), is located immediately to the north-east of the survey area (see Fig.2).
- 2.5 Whilst the site lies outside the bounds of the Registered Battlefield there remains potential for the presence of previously unrecorded elements of both the 1642 skirmish and the 1651 battle to exist within the site.

Powick Weir and Mill

- 2.6 The weir and mill leat at Powick are likely to have been associated with the complex of mills which developed on the north bank of the River Teme during the 18th-century. A non-intrusive study in advance of previous EA work on the weir identified at least three phases of structure (Cook 1996). It's also believed an earlier wooden structure is likely to have been present in this area during the late medieval period;

however, no physical evidence for this structure was identified in the channel bed as part of that study (*ibid.*).

2.7 A watching brief maintained during works associated with the partial demolition and replacement of the weir in 2000 (Edwards & Cook 2000) confirmed the 18th-century construction date and recorded the presence of 183 timber piles, roughly shaped and each fitted with an iron shoe (to facilitate its driving into the riverbed). Furthermore, ten complete hearth bottoms, one half bottom and five smaller fragments were recovered during the dismantling of the weir. This waste material is likely to have derived from the nearby metalworking processes, which would have provided a ready source of construction materials for the weir (*ibid.*). The general re-use of hearth bottoms as road make up, building foundations or walls supporting the banks of watercourses was common practice in the 19th century (*ibid.*).

2.8 The Powick Weir and associated mill leat supplied water to Powick Mill, which likely dates to the 18th century. A forge and a separate slitting mill were added to the existing mill in 1825 and in 1892 the mill was reconverted into a power station (The City of Worcester Electric Works). The production of hydro-electric power continued until 1950s and the building is still standing.

3. AIMS AND OBJECTIVES

3.1 The objectives of the archaeological works were to:

- Determine the degree of survival of the historic weir at the site of Powick Weir and record the surviving structure remains;
- locate, inform and investigate archaeological evidence associated with the Battles of Worcester;
- locate, inform and investigate archaeological evidence associated with the metal working industry in the area around Powick Mills;
- identify and record evidence of earlier human activity close to the river;
- at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.



4. METHODOLOGY

- 4.1 The fieldwork followed the methodology set out within the WSI (Royal HaskoningDHV 2018). An archaeologist was present during intrusive groundworks comprising the partial removal of Powick Weir and the removal of topsoil and subsoil for a compound and material handling area (see Fig. 2 for locations and extent).
- 4.2 During the excavations associated with the partial removal of the weir, the area was entirely drained and kept dry through the use of temporary coffer dams. The excavated area was monitored in dry, sunny weather conditions, enabling careful cleaning and investigation of the exposed features. In contrast the clusters of posts observed both up and downstream of Powick Weir were located outside the temporary coffer dam and access to these features was restricted due to the depth and speed of the river at these points. The two areas could be approached to enable photographs to be taken, but the posts themselves sat in the water at all times and their bases could not be closely investigated.
- 4.3 Where archaeological deposits were encountered written, graphic and photographic records were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual*.
- 4.4 The archive from the watching brief is currently held by CA at their offices in Kemble and will be deposited with Worcestershire County Museum under HER WSM70503. A summary of information from this project, set out within Appendix B, will be entered onto the OASIS online database of archaeological projects in Britain.

5. RESULTS (FIGS 2-5)

- 5.1 The archaeological mitigation works were carried out in two separate areas of site, Trenches 1 and 2 (Fig.2).

Trench 1: the compound and material handling area (Fig.2)

- 5.2 The natural geological substrate 102, consisting of red-brown alluvial clay, was revealed at an average depth of 0.4m below present ground level (bpgl). This was overlain by brown silt clay subsoil 101, averaging 0.1m in thickness, which was sealed by brown clay silt topsoil 100. No archaeological features were observed and no artefactual material (including any evidence of Civil War activity) was recovered.

Trench 2: The Weir (Figs. 3, 4 and 5)

- 5.3 The alluvial river bed substrate 221, consisting of sandy gravel, was revealed at a depth of 0.8m bpgl at the west end of the weir. This was overlain by red sandstone structure 201, which ran north-west to south-east (Figs. 3 and 4). This consisted of a single course of blocks, arranged in two parallel rows. In between these stones lay nineteen timber posts, roughly organised in two rows. The preservation of the posts was poor although most could be seen to be circular in shape. They survived to a height of between 0.3 and 0.6m. The sandstone structure and posts were sealed by modern backfill 200, associated with the weir built in 2000.
- 5.4 These remains were left *in-situ* at the deeper excavation area at the west of the weir and backfilled under archaeological supervision. The north-eastern end of the modern weir was only excavated for to a depth of 0.1m bpgl; therefore the levels of archaeology were not reached.
- 5.5 Due to the drop in level of the river Teme after the partial removal of the weir a further seventy timber posts were also observed, although only fifty could be safely surveyed with GPS (see Figs. 3 and 5). Forty nine of the timber posts were located upstream of the concrete weir, in both banks of the river Teme. Four more posts were observed in the river bed, under the water level, forming a north-east to south-west alignment, but there was no safe access to them. Downstream of the river an isolated cluster of thirty one timber posts were observed, although only one of these could be surveyed (see Fig. 3 for approximate location and extent). This cluster of timber posts lay in a roughly square formation and was in a poor state of preservation.

6. DISCUSSION

Trench 1: The compound and material handling area

- 6.1 Despite the archaeological potential of the application area (see archaeological background above), the watching brief identified no archaeological remains within the area of observed groundworks.



Trench 2: The Weir

- 6.2 The partial removal of the west end of the weir built in 2000, revealed a portion of the historical weir, which had previously been identified during the watching brief of 2000 and studied in detail in 1996 (Cook 1996). A single course of the sandstone blocks as described by Cook was still *in situ*, along with nineteen of the timber posts.
- 6.3 As Cook detailed in his study, the sandstone weir appears to have been built c. 1795. Cook described the weir as an “*hybrid in character, comprising spillways and an upstream face of ashlar stones, backed by an embankment constructed with wooden stakes and a timber lacing*” (Cook 1996, 7). This description could be applied to the remains observed during the current watching brief.
- 6.4 A total of 70 timber posts were observed upstream and downstream of the exposed remains of the weir. Due to the limited access to these groups of posts, only tentative interpretation can be undertaken at this stage. These posts could represent further in-channel structures which may be contemporary with, or indeed earlier than, the 18th-century weir discussed above; the downstream group of posts could represent the remains of the late medieval weir detailed above (see Archaeological Background). There is little indication from historic mapping as to what these posts could represent, and detailed analysis of the timbers was not possible; further programmes of study would be required to allow for detailed consideration of these post groups, should future opportunities present themselves.

7. CA PROJECT TEAM

- 7.1 Fieldwork was undertaken by Luke Brannlund and Monica Fombellida. The report was written by Monica Fombellida. The illustrations were prepared by Aleks Osinska. The archive has been compiled and prepared for deposition by Hazel O'Neill. The project was managed for CA by Richard Young.

8. REFERENCES

- BGS (British Geological Survey) 2018 *Geology of Britain Viewer*
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed 9 November 2018

Connolly, E. 2015 *Archaeological Desk-Based Assessment of Powick Weir, Worcester*, Worcestershire Archaeology report reference: **P4521**.

Cook, M. 1996 *Archaeological Recording at Powick Weir, near Worcester*, Worcestershire Archaeology report reference: **505**

Dean, S. 2018 *Powick Weir, Worcester. Environment Agency Addendum to the Cultural Heritage Desk Based Assessment (WCM102278)*, Environment Agency.

Edwards, R. & Cook, M. 2000 *Watching Brief at Powick Weir, Powick, Lower Wick, Worcestershire*, Worcestershire Archaeology Report ref: **776**

Royal HaskoningDHV 2018 *Powick Weir, Powick, Worcester: Written Scheme of Investigation for Metal Detecting Survey and Archaeological Watching Brief*. Report ref: **PB5753I&BRP18051716**

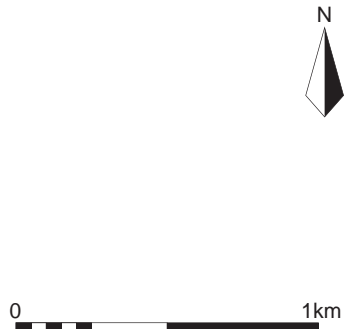
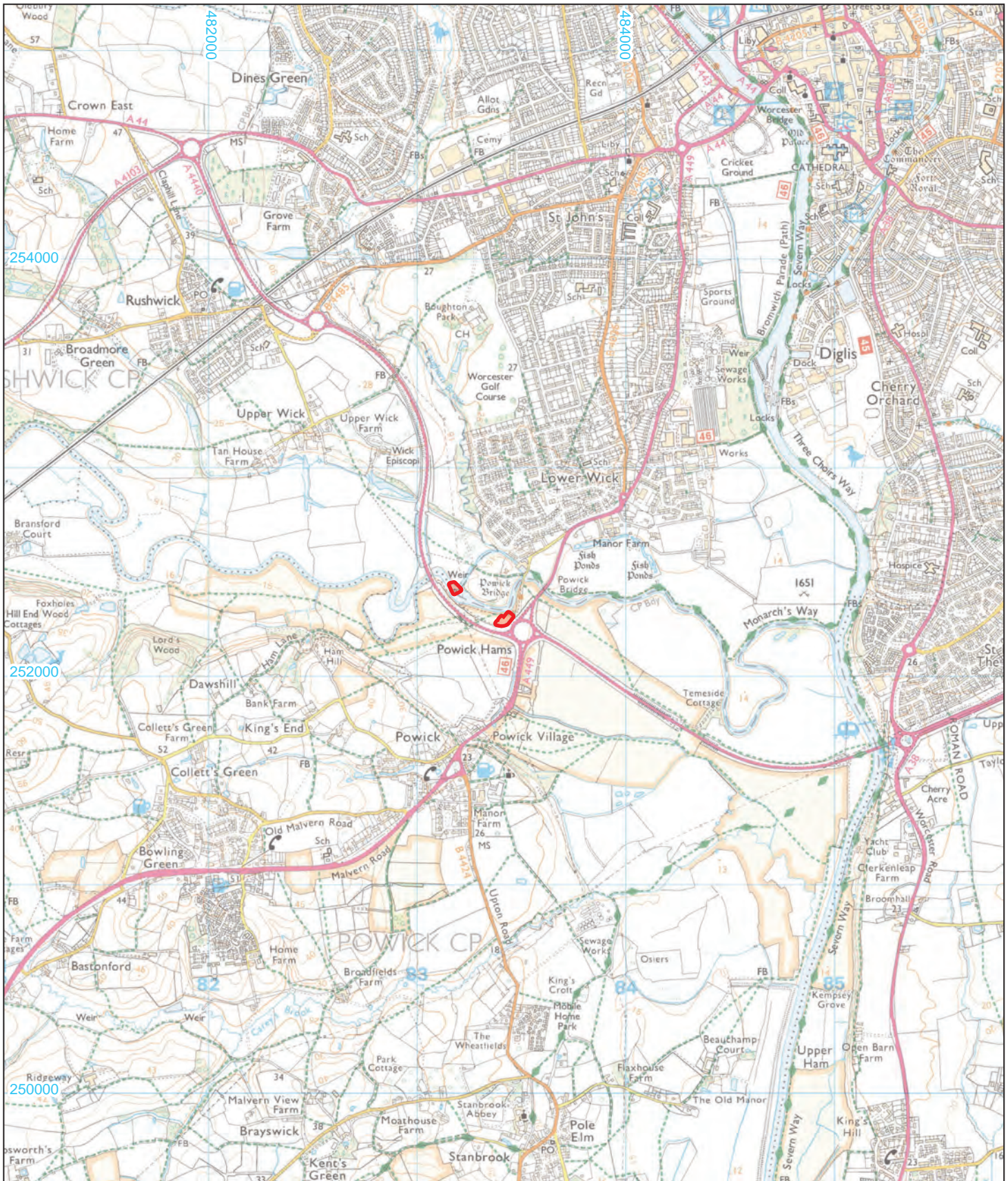


APPENDIX A: CONTEXT DESCRIPTIONS

Trench No.	Context No.	Type	Context interpretation	Description	L (m)	W (m)	Depth /thickness (m)
1	100	Layer	topsoil	Mid brown clay silt	65	25	0.4
1	101	Layer	subsoil	Mid brown silt clay	65	25	0.1
1	102	Layer	natural	Mid red brown alluvial clay	65	25	n/a
2	200	Layer	weir	Modern stony silt backfill of modern weir			0.9
2	201	Structure	weir	Red sandstone blocks for post-med weir	2.22	0.3	0.2
2	202	Timber	post	Brown timber post of post-med weir	0.1	0.1	>0.5
2	203	Timber	post	Brown timber post of post-med weir	0.1	0.1	>0.5
2	204	Timber	post	Brown timber post of post-med weir	0.12	0.12	>0.5
2	205	Timber	post	Brown timber post of post-med weir	0.1	0.1	>0.4
2	206	Timber	post	Brown timber post of post-med weir	0.07	0.07	>0.4
2	207	Timber	post	Brown timber post of post-med weir	0.1	0.1	>0.5
2	208	Timber	post	Brown timber post of post-med weir	0.1	0.1	>0.35
2	209	Timber	post	Brown timber post of post-med weir	0.12	0.12	0.61
2	210	Timber	post	Brown timber post of post-med weir	0.06	0.06	0.35
2	211	Timber	post	Brown timber post of post-med weir	0.1	0.1	0.12
2	212	Timber	post	Brown timber post of post-med weir	0.16	0.16	0.55
2	213	Timber	post	Brown timber post of post-med weir	0.1	0.1	0.37
2	214	Timber	post	Brown timber post of post-med weir	0.1	0.1	0.38
2	215	Timber	post	Brown timber post of post-med weir	0.16	0.20	0.3
2	216	Timber	post	Brown timber post of post-med weir	0.06	0.06	0.28
2	217	Timber	post	Brown timber post of post-med weir	0.1	0.1	0.3
2	218	Timber	post	Brown timber post of post-med weir	0.11	0.11	0.32
2	219	Timber	post	Brown timber post of post-med weir	0.06	0.06	0.28
2	220	Timber	post	Brown timber post of post-med weir	0.12	0.12	0.2
2	221	Layer	alluvial	Light pink grey sandy gravel	n/a	n/a	n/a

APPENDIX B: OASIS REPORT FORM

PROJECT DETAILS		
Project Name	Land at Powick Weir	
Short description	<p>An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with the partial removal of part of Powick Weir built in 2000, and the establishment of the site compound and material handling area.</p> <p>Portions of an earlier, post-medieval weir were uncovered during the works, comprising of timber posts and a sandstone structure. Two further clusters of timber posts were identified both up and downstream of the weir. The remains of the timber posts were left in situ. No further archaeological features were observed either at the weir or during the groundworks in the compound area.</p>	
Project dates	July, August and October 2018	
Project type	Watching Brief	
Previous work	Watching Brief (WAAS 1996) Watching Brief (WAAS 2000) DBA (WAAS 2015) Addendum DBA (EA 2018)	
Future work	Unknown	
PROJECT LOCATION		
Site Location	Land at Powick Weir, Powick, Worcester	
Study area (M ² /ha)	0.4ha	
Site co-ordinates	383422 252307	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project Brief originator	N/A	
Project Design (WSI) originator	Royal HaskoningDHV 2018	
Project Manager	Richard Young	
Project Supervisor	Luke Brannlund and Monica Fombellida	
MONUMENT TYPE		
Weir		
SIGNIFICANT FINDS		
None		
PROJECT ARCHIVES		
	Intended final location of archive	Content
Paper	Worcestershire County Museum. HER WSM70503	Trench sheets and photo registers
Digital	Worcestershire County Museum. HER WSM70503	Digital photos
BIBLIOGRAPHY		
CA (Cotswold Archaeology) 2018 <i>Powick Weir, Powick, Worcestershire: Archaeological Watching Brief</i> . CA typescript report 18442		



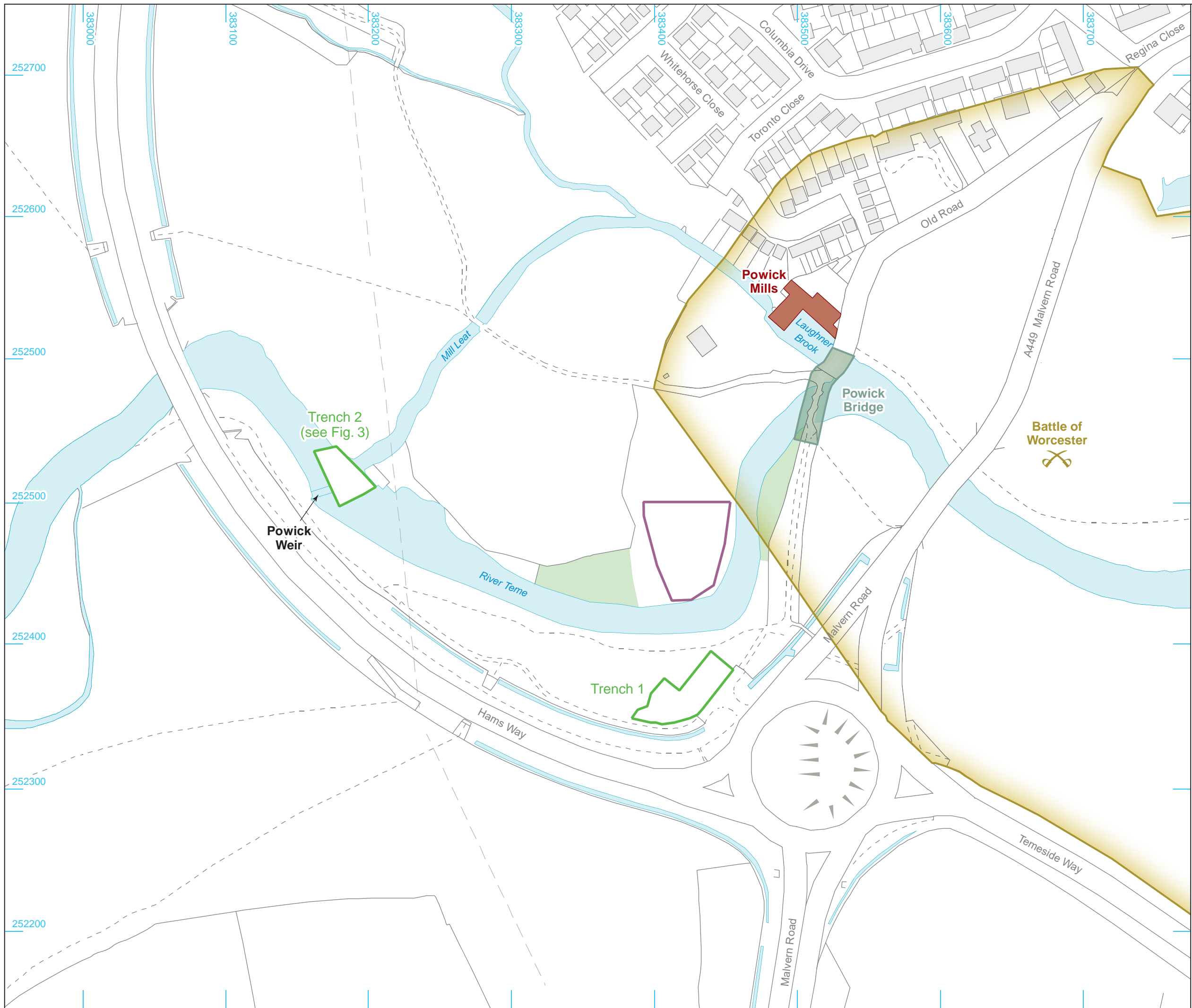
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PROJECT TITLE
 Powick Weir, Powick, Worcester

FIGURE TITLE
 Site location plan

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DRAWN BY AO	PROJECT NO. 6680	FIGURE NO.
CHECKED BY DJB	DATE 31/10/2018	1
APPROVED BY REY	SCALE@A4 1:25,000	



- Metal Detecting Survey Area
- Archaeological Watching Brief Area
- Registered Battlefield
- Scheduled Monument
- Grade II* Listed Building

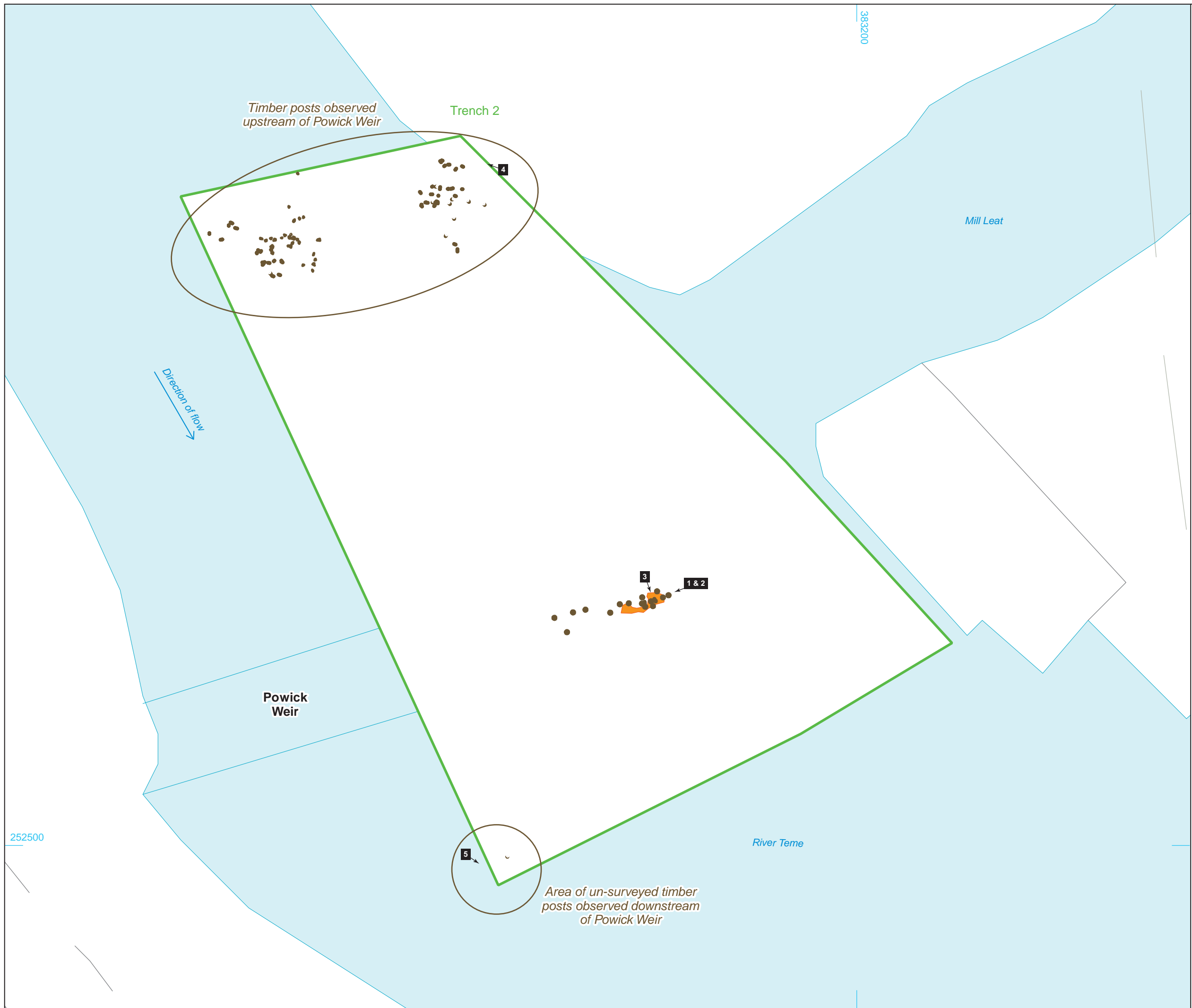
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PROJECT TITLE
Powick Weir, Powick, Worcester

FIGURE TITLE
The site, showing location of groundworks

DRAWN BY	AO	PROJECT NO.	6680	FIGURE NO.
CHECKED BY	DJB	DATE	31/10/2018	2
APPROVED BY	REY	SCALE@A3	1:2500	



- Trench 2: observed groundworks
- Structure 201
- Timber posts
- Timber cluster
- 4 Photo location (see Figs 4 & 5)

0 1:200 10m
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PROJECT TITLE
 Powick Weir, Powick, Worcester

FIGURE TITLE
Trench 2: location plan of timber post and stone structure 201 and further groups of timber posts

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CHECKED BY	DJB	DATE	31/10/2018	3
APPROVED BY	REY	SCALE@A3	1:200	



Photograph 1: General photograph of surviving historical weir, looking south-west (1m scales)



Photograph 2: Detail photograph of post and sandstone structure 201 of historical weir, looking south-west (0.3m scale)



Photograph 3: Detail photograph of post and sandstone structure 201 of historical weir, looking south (0.3m scale)



Photograph 4: Timber posts within the river uncovered upstream, looking west from the north-east bank of the river Teme



Photograph 5: A cluster of timber posts found downstream at the south-west bank of the river Teme, looking south-east



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PROJECT TITLE

Powick Weir, Powick, Worcester

FIGURE TITLE

Photographs 4 & 5

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 CHECKED BY DJB DATE 31/10/2018
 APPROVED BY REY SCALE@A4 N/A

FIGURE NO.

5

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