

DAWLEY BROOK CULVERT, KINGSWINFORD, STAFFORDSHIRE.

Report on an Archaeological Watching Brief

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South west end of Dawley Brook Culvert emerging from the embankment.

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Summary

- Trent & Peak Archaeology was contracted by the Environment Agency to conduct an archaeological watching brief on ground works associated with the demolition of a culvert and the creation of a new channel at Dawley Brook, Kingswinford, Staffordshire, centred on SK 86643 88821.
- The railway had been constructed in the early 20th century and de-commissioned in the 1960's. The culvert beneath the embankment is contemporary with the construction of the railway.
- The area surrounding the development contains known Romano-British remains, the most significant being a Roman road, the course of which runs to the west of the site.
- All intrusive ground work was monitored during the course of the watching brief. Topsoil and all underlying strata were excavated under archaeological supervision and recorded
- A south west/north east orientated area 60m wide was excavated through the existing railway embankment. This revealed south west and north east facing sections in which the structure of the embankment could be recorded.
- The machine excavation revealed a topsoil which had formed subsequent to the de-commissioning of the railway. This overlay compacted sand which comprised the main element of the embankment's structure.
- The sand which comprises the main element of the embankment has been interpreted as constituting a cushion to prevent the crushing and collapse of the culvert carrying the Dawley Brook which ran beneath it.
- During machine excavation of the embankment the brick culvert was exposed. This was then demolished and the existing channel dredged to ensure improved flow. Sections of the culvert were recorded prior to its complete removal.
- At the base of the excavation through the embankment large blocks of worked masonry were observed sealed below the sand that makes up the embankment. These have been interpreted as the remains of a possible crossing of the brook at this point. No artefacts which could help to date the masonry were present.
- No pre-industrial archaeological features or artefacts were exposed as a result the groundworks. Any surviving remains of archaeological significance/interest are likely to have been removed during the construction of the railway in the early 20th century.

Dawley Brook Culvert, Kingswinford, Staffordshire. Report on an Archaeological Watching Brief

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1. INTRODUCTION

1.1 Trent & Peak Archaeology was contracted by the Environment Agency to conduct a watching brief during intrusive ground works associated with the demolition of Dawley Brook culvert centred on SO 86643 88821 (Figure 1), and to create a profile of the disused railway embankment under which the culvert ran. The culvert was to be demolished and the channel through which the Dawley Brook runs exposed.

1.2 The proposed demolition involved the excavation of a 60m section through the disused railway embankment and the removal of the brick built culvert. The surrounding area including the brook was to be returned as far as possible to its original state.

1.3 The aim of the watching brief was to identify the presence of any archaeological remains which may be affected by the ground works, and to achieve an appropriate level of preservation by record of any surviving archaeology and the culvert prior to its demolition. This included a profile of the disused railway bank and a record of its construction layers

2. PROJECT BACKGROUND, OBJECTIVES AND TOPOGRAPHY.

2.1 Geology:

2.1.1 **Superficial:** Holt Heath sand and gravel deposit. **Bedrock:** comprises pebbly Triassic sandstones of the Kidderminster Formation. A strip of Alluvium is mapped along the course of the Dawley Brook immediately north east of the site. (BGS Geology Viewer 2012)

2.2 Archaeological Background

2.2.1 The railway bank and culvert date from approximately 1912 when construction began of the Great Western Wolverhampton and Kingswinford Railway Line. Due to a lack of use, the line closed to the public in 1932, and to all goods traffic in 1965 (Wolverhampton City Council 2012).

2.2.2 The course of a Roman road, (Monument Number 1358747), runs approximately 500m to the west of the site in a north west – south east direction. A further possible Roman Road, (Monument Number 1326559), running south west-north east lies approximately 200m to the west of the site. The Ashford Marina, which is approximately 750m south of the bank and culvert, is the site of a probable Roman fort, Greensforge 2 (Smestow River Valley 2012 ;Pastscape), suggesting the potential for archaeology buried beneath the railway bank and culvert.

2.3 Objectives:

2.3.1 The objective of the watching brief was to identify the presence of any archaeological remains that may be impacted by the intrusive aspects of the development and to achieve an appropriate level of *preservation by record*. Where practical (within the constraints of the watching brief and development), this was to include an assessment of the overall extent, date and state of preservation of archaeological remains. Any features of geoarchaeological significance were also recorded and where there was the potential for palaeoenvironmental data, an appropriate level of sampling was undertaken.

2.4 Site Topography

2.4.1 The ground surface of the disused railway bank above the culvert averages 63mOD. The bed level of the brook is 60mOD.

2.4.2 The ground slopes down to the east forming a shallow but wide valley through which the Dawley Brook flows. The railway embankment was constructed against this slope being steeper along its north western side in order to create a level surface for the track at its summit (Figure 3).

3. METHODOLOGY

3.1 All intrusive groundwork and the demolition of the culvert were carried out by a tracked 360° excavator using a smooth-edged ditching bucket. The sides were battered during the course of the excavation due to the unstable nature of the deposits making up the embankment (Plate 2).

3.2 Any archaeological deposits were recorded by scale drawing, sections at 1:20, plans at 1:50, and photography (digital and 35mm black and white film). Any finds of archaeological significance were given a unique three letter code, e.g. AAA, and their location marked on the site plan or on the relevant section drawing or plan. Any archaeological features or layers were given an individual context number, e.g. 0001.

4. RESULTS

4.1 A 60 metre wide area was excavated through the railway embankment on a south west/north east alignment following the line of the culvert (Figure 2). Initially excavated to an average depth of 2.5m the excavation was stepped along its central axis by a further 1m to expose the brick culvert. The two sections were recorded, and the context descriptions are as follows:

4.2 North East facing section of the embankment:

| CONTEXT | DESCRIPTION | THICKNESS |
|---------|--|----------------|
| 0001 | Modern mid brown clay loam, topsoil | 250-350mm |
| 0002 | Clinker deposit | 100-700mm |
| 0003 | Compacted bright yellow/orange sand | 400mm |
| 0004 | Angular stones, graded aggregate surfacing | 150mm |
| 0005 | Brown clay loam, subsoil | 166mm |
| 0006 | Mid to light brown clay | 424mm |
| 0007 | Grey clay | 320mm observed |

4.2.1 A consistent stratigraphic sequence was observed in the north-east facing section. The topsoil (0001) has probably developed after the railway was decommissioned, overlaying the deposits used to form the railway bank (Plate 3). These deposits consist of mainly sand and clinker (0002-0004). Below these layers were lenses of grey sand and clay, which have been initially been interpreted as being part of the original ground surface.

4.2.2 There were no archaeological features or deposits revealed in the north-east facing section of the new channel, any archaeology present prior to the building of the railway bank and associated culvert would have been removed during that phase of construction.

4.3 South West facing section of the embankment:

| CONTEXT | DESCRIPTION | THICKNESS |
|---------|--|----------------|
| 0001 | Modern dark grey topsoil | 250-350mm |
| 0002 | Clinker deposit | 100-700mm |
| 0003 | Compacted bright yellow/orange sand | 400mm |
| 0004 | Angular stones, graded aggregate surfacing | 1500-2000mm |
| 0005 | Brown clay loam, subsoil | 166mm |
| 0006 | Mid to light brown clay | 424mm |
| 0007 | Grey clay | 320mm observed |

4.3.1 The sequence observed in the south-east facing section mirrored that of the opposing section. The topsoil (0001) overlay the sand and clinker deposits used to form the embankment (0002). Below these deposits a brown clay loam subsoil, (0005), was observed. This subsoil is sat above mid-light brown clay, (0006), which merges into, a grey clay (0007). Together these layers probably form part of the original ground prior to the construction of the embankment but are redeposited having been used to infill the cut in which the culvert sits (Figure 3 and Plate 3).

4.3.2 There were no archaeological features or deposits revealed in the south east facing section of the new channel. Any archaeology present prior to the construction of the railway embankment and the culvert is likely to have been removed during that process which involved significant truncation.

4.4 The Culvert:

4.4.1 The culvert (0008) sealed below the sand deposit (0003), measures 2m wide and 1.8m high including the brick courses.

4.4.2 The culvert consisted of 10 brick courses which formed the sides. A single course of bricks formed the arched roof and base. The bricks forming the base are set into the natural clay underneath and were unmortared. The bricks measure 225mm x110mm x 90mm. The sides and the arched roof are cemented by lime mortar white/grey in colour.

4.4.3 The sides of the culvert appeared to be distorted and this was probably caused by the weight of material above it. The arched roof at the south western extent of the culvert appeared to be compressed with the arch becoming pointed in contrast to the even curve of the arch as demonstrated by the central section of the culvert (Plates 10 to 12 and Plates 13 to 17). The height of the arch varies from 60cm from the top of the upright courses at the south west extent, to 80cm at the north east end (Plates 5 and 6).

4.4.4 With the brick work of the culvert removed the existing channel was dredged to ensure improved flow. Much of the material removed from above and to the sides of the culvert comprised re-deposited sands and clays that had been used to cover the structure at the time of the original build. No cut for the culvert was discerned. Access to the newly cut channel was restricted due to the unstable nature of the resulting sections and detailed recording was not possible in these circumstances (Plates 7 and 8).

4.5 Masonry:

4.5.1 Large pieces of masonry were lifted out of the lower levels of the sand and clinker deposits (0002, 0003). Although not a distinct layer the masonry was given the number 0009 for discussion purposes. Some of these had clearly been worked, and may have been a part of a previous bridge structure that had spanned the brook although no verification of this is currently available. (Plate 9).

4.5.2 The masonry (0009), was at the interface of the material used to construct the embankment and what has been interpreted as a subsoil layer (0007), at the base of the excavation. It is not clear whether the masonry had been reused as an element of the embankment construction or having been removed from its original location it was simply left in the base of the excavation.

5. CONCLUSIONS

5.1 The excavation through the railway embankment revealed a higher quantity of sand within the formation deposits than may have expected (E.A. Project Manager pers com). It is not clear whether the sand, 0002, which comprised the major element of the embankment is material that had been brought in or whether it was sourced locally. There are available sources of sand in the locality. Its use in the structure may have been to act as a cushion over the brick culvert. The weight of more solid material, e.g. clay and/or rubble, may have crushed the culvert.

5.2 The profile of the culvert may have been distorted due to the weight of the material above it and its original profile may have been more regular.

5.3 No features, finds or deposits of archaeological significance were exposed during the ground works associated with the excavation of the railway embankment and the removal of the culvert.

5.4 Given that the study area had already been subjected to significant ground works (the construction of the railway in the early 20th century), it is possible that archaeological deposits had been removed prior to the present watching brief taking place. The rectangular masonry blocks may represent of an earlier crossing of the brook dismantled when the railway embankment was constructed.

5.5 No geo-archaeological deposits of palaeo-environmental potential were exposed as a result of the current groundworks.

References

BGS Geology Viewer, 2012. Online: www.maps.bgs.uk/geologyviewer

Smestow River Valley, 2012, Online: www.smestow.blogspot.co.uk/

Pastscape.english-heritage.org.uk

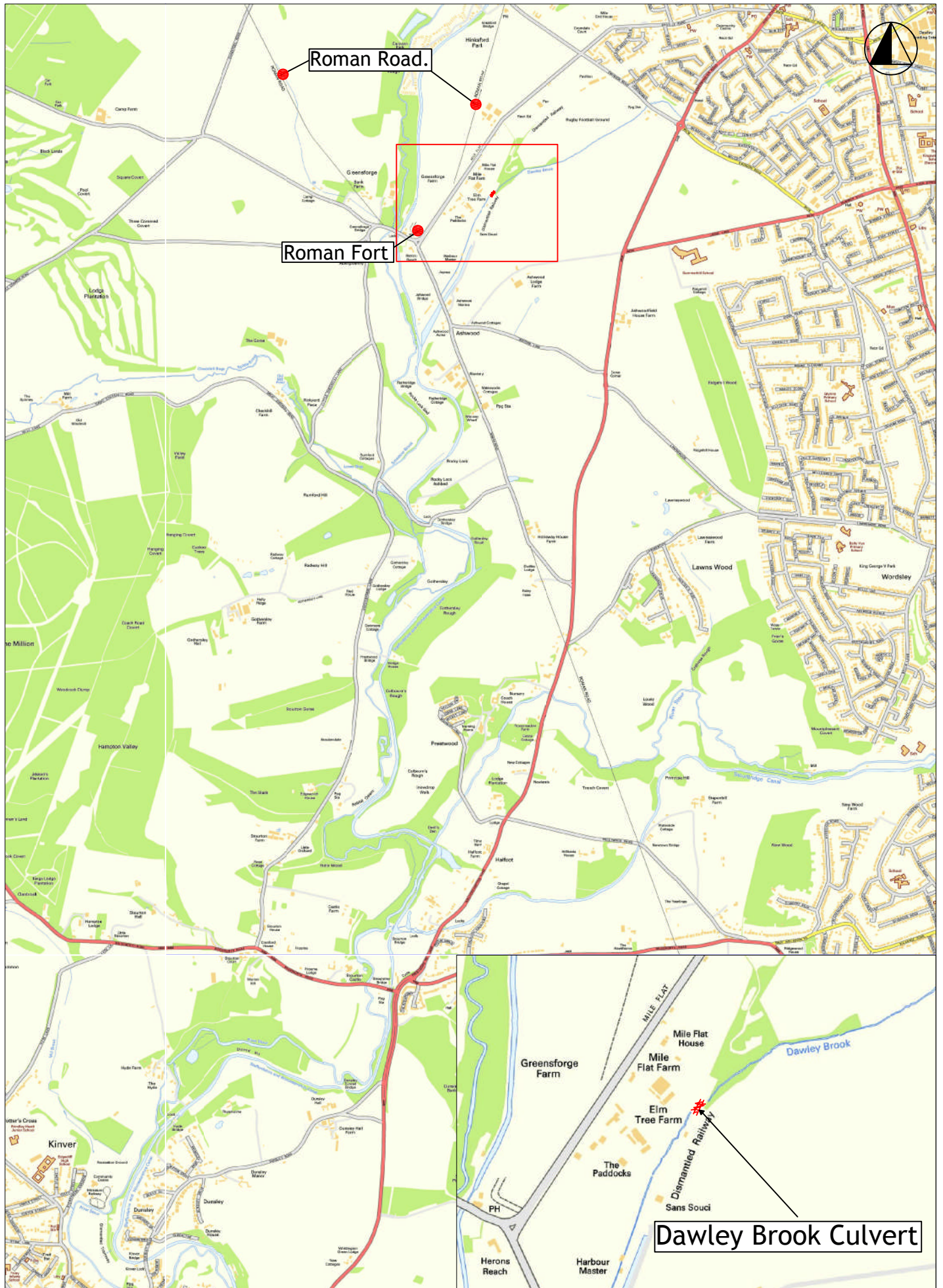
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Acknowledgements

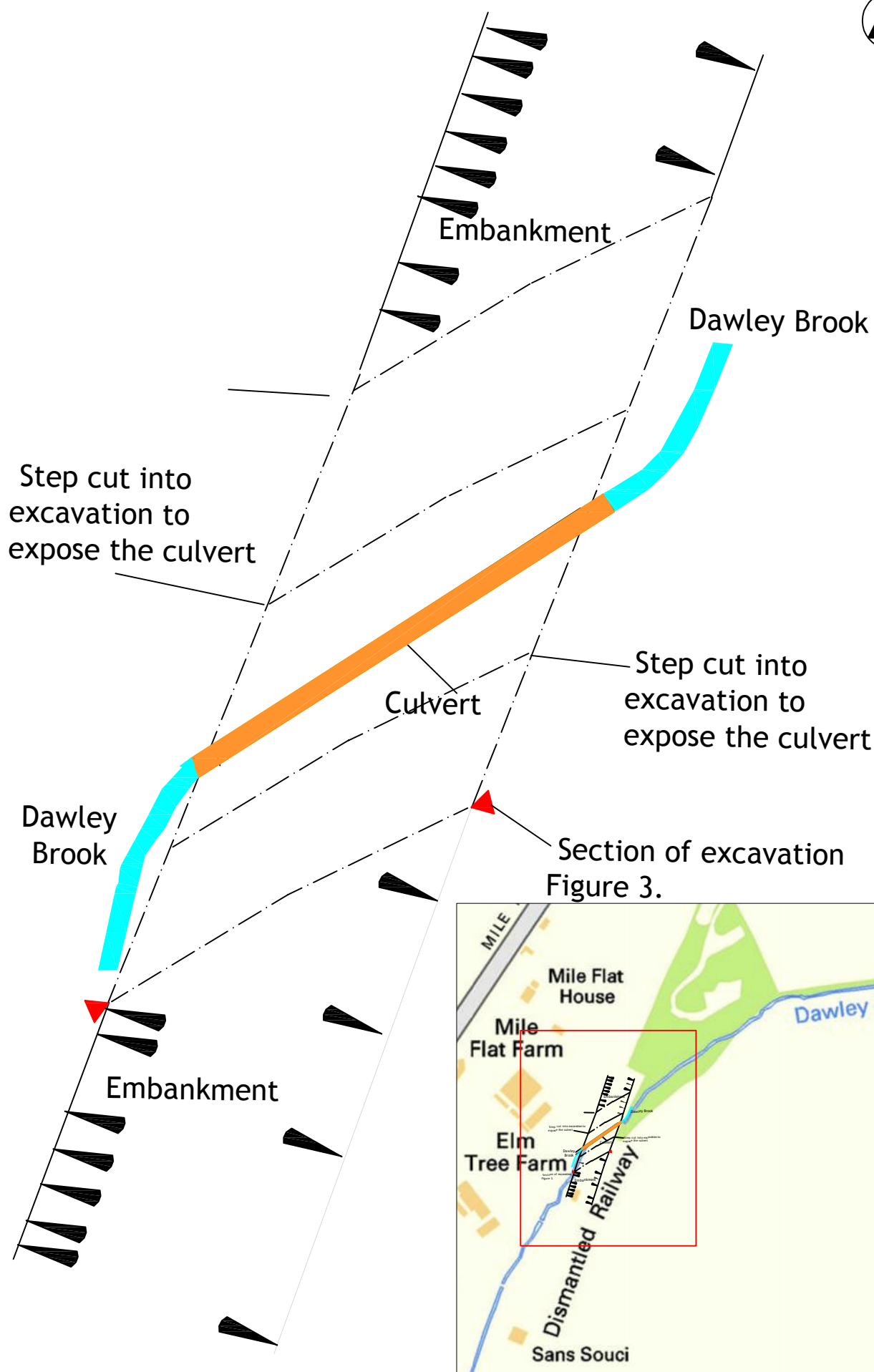
Thanks are due to Frank Birch and his contractors for their co-operation and assistance during the course of the watching brief. The field work was carried out by Laura Binns. The project was managed by L. Platt of Trent & Peak Archaeology.

Appendix 1 Summary Context List

| CONTEXT | DESCRIPTION | THICKNESS |
|---------|---|----------------|
| 0001 | Modern mid brown clay loam topsoil | 250-350mm |
| 0002 | Clinker and ash deposit | 100-700mm |
| 0003 | Compacted yellow/orange sand | 400-2500mm |
| 0004 | Angular stones part of graded aggregate surfacing | 150-200mm |
| 0005 | Mid-light brown clay loam, charcoal flecks | 166mm |
| 0006 | Mid-light brown clay | 424mm |
| 0007 | Mid grey clay | 320mm observed |
| 0008 | Culvert (brick) | 2m x 1.8m |
| 0009 | Masonry at base of embankment | |



DBC Figure 1. Site Location. Scale 1:25000@A4. Inset, Scale 1:10,000@A4.



Step cut into excavation to expose the culvert

Embankment

Dawley Brook

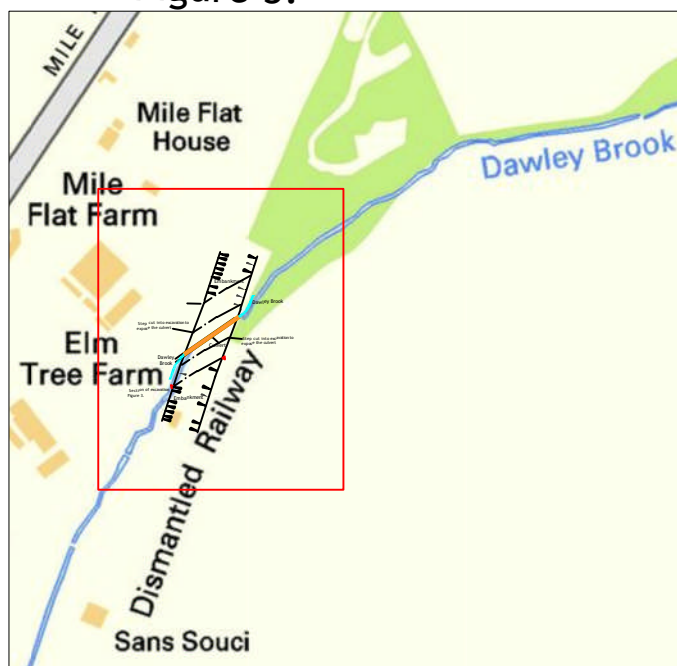
Dawley Brook

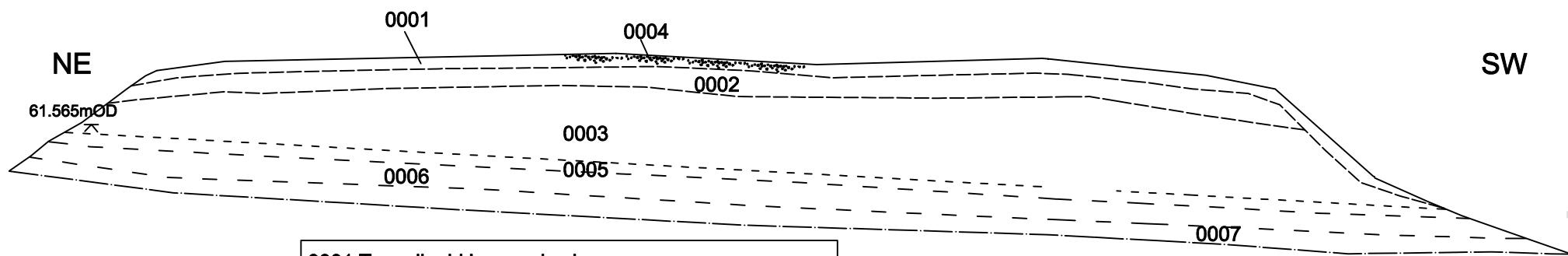
Culvert

Step cut into excavation to expose the culvert

Section of excavation Figure 3.

Embankment





- 0001 Topsoil mid brown clay loam.
- 0002 Dark grey/black ash, clinker with elements of 0001.
- 0003 Yellow/orange fine grained sand.
- 0004 Angular stones white/light grey.
- 0005 Brown clay loam subsoil
- 0006 Light to mid brown clay
- 0007 Grey clay

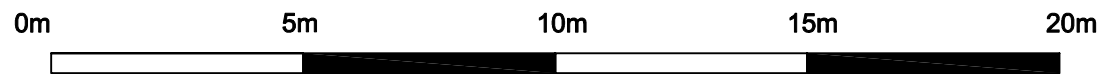




Plate 1. Excavating the section through the embankment. Looking north east.



Plate 2. The section the embankment during excavation. Looking north.



Plate 3. Excavated section through the embankment showing the sand which comprises the main element of the structure. Looking south west.



Plate 4. The partially demolished culvert with exposed sections of the embankment to either side after the sections had been battered and stabilised. looking north east.



Plate 5. South West facing end of the culvert prior to the start of the demolition. Looking north east.



Plate 6. North East facing end of the culvert with part of the retaining wall intact. Looking south west



Plate 7. The culvert during demolition. Looking north east.



Plate 8. The culvert during demolition showing the removed overburden and stabilised bank. Looking north



Plate 9. Blocks of masonry following their extraction. These were subsequently used to reinforce the newly created bank of the Dawley Brook. Looking south west.



Plate 10. South west end of culvert.
Looking north-north east



Plate 11. South west end of culvert.
Looking north-north east



Plate 12. South west end of culvert.
Looking north-north east.



Plate 13. Culvert during demolition from the south west. Looking north east



Plate 14. Culvert during demolition from the south west. Looking north east



Plate 15. Culvert during demolition. Looking north



Plate 16. Culvert during demolition Looking north east



Plate 17. Culvert during demolition. Looking north



Plate 18. North east end of culvert during demolition.
Looking west south west



Plate 19. North east end of culvert during demolition.
Looking south west