



# **Preliminary Environmental Information Report**

## **Volume 4 Appendix 9.5**

River Thames Scheme Stage 2: Sunbury Weir and Teddington  
Weir Archaeological Test Pit and Auger Evaluation

**River Thames Stage 2:  
Sunbury Weir and Teddington Weir Archaeological Test Pit  
and Auger Evaluation**

**NGR: Sunbury 510803 168488  
Teddington 516719 171525  
(TQ 10803 68488  
TQ 16719 71525)**

**TPA Site Code: RTS6\_SUN \_TED**

**Report No: 083/2019**

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## **Summary**

*This report presents the results of a Stage 2 test pit and power auger survey carried out by Trent & Peak Archaeology at the site of Sunbury Weir, Berkshire and Teddington Weir, Greater London between September and October 2018. The fieldwork was commissioned by GBV on behalf of the Environment Agency as part of the River Thames Scheme.*

*The evaluation carried out at Sunbury and Teddington Weirs demonstrated an absence of deposits with Holocene archaeological and palaeoenvironmental potential. The sequence recorded a series of post-18<sup>th</sup> century made ground deposits, derived from dredged river gravels and brickmaking waste, overlying the superficial geology of Kempton Park Gravels.*

*The KPG deposit was investigated to a maximum depth of 1.54m OD at Teddington and 4.86m OD at Sunbury using a Cobra power auger. No Pleistocene organic deposits were recorded which are predicted to be located at 2.00-0.5m OD. A cable percussive rig is required in order to reach the depths where such deposits could be present.*

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Proposed plans for the weirs

## **1. INTRODUCTION**

### **1.1. Site Background**

- 1.1.1. Trent & Peak Archaeology (TPA) was commissioned by GBV and the Environment Agency (EA) to undertake a combination of archaeological test pit evaluation and power auger survey of the islands (eyots) associated with Sunbury and Teddington weirs (Figures 1 and 6). The proposed works at the Desborough Cut location were originally part of the same phase of evaluation but following consultation it was determined that archaeological monitoring will proceed during the mitigation stage of development works (Stage 3, TPA 2018).
- 1.1.2. The Sunbury Weir eyot (TQ 10803 68488) is located 0.70km north north-east of Walton-on-Thames. The eyot is approximately 7 acres in area, lying immediately downstream of Sunbury weir with the lock located to the north-east.
- 1.1.3. The Teddington Weir eyot (TQ 16719 71525) is located immediately to the east of Teddington. The eyot is 1 acre in area and is the south-easternmost of two eyots that make up the Teddington Weir complex.

### **1.2. Geology and Topography**

- 1.2.1. The British Geological Survey (BGS) mapping shows the geology at Sunbury Weir as comprised of the London Clay Formation which consists of clay and silt, with overlying superficial deposits of Kempton Park Gravel and Alluvium, including clays, silts, sands, and gravels (BGS 2019). The eyot is aligned north-east / south-west, with the northern half being at 7.80m OD, rising steeply to around 10.50m OD on the southern half.
- 1.2.2. At Teddington Weir the bedrock geology comprises the Claygate Member, consisting of sand, silt, and clay, which is overlain by superficial deposits of Kempton Park Gravel and Alluvium, including clays, silts, sands, and gravels (BGS 2019). The eyot is aligned west north-west / east south-east. The ground level is consistent throughout the western half of the eyot, at around 6.40m OD. The remaining eastern half of the eyot is more developed with access to Teddington Lock Footbridge preventing any evaluation.
- 1.2.3. The Kempton Park Gravels, where up to seven metres of sand and gravel have been recorded, contains discontinuous (organic-rich) channel fills which have yielded fossiliferous assemblages of fauna and flora indicative of both temperate and cold conditions. Radiocarbon dating of organic material within these discontinuous channels has yielded dates of between 43-53,000 BP i.e. the Middle Devensian, Marine Isotope Stage 3 (Gibbard *et al* 1982, Coope *et al* 1997). There is still some debate as to whether parts of the Kempton Park Gravel also correlate with MIS 5a, 5c (Bridgland 1994). Radiocarbon dating of any Pleistocene organic unit of the KPG, if present at the two weirs, may help to inform this discussion (i.e. MIS3 and/or MIS5a).

- 1.2.4. Post-Medieval engineering of the Thames, particularly associated with the construction of weirs initially to aid navigation and trade, has resulted in the bifurcation of the river around numerous small islands (eyots) within the study area, for example around the confluence of the Thames with the River Wey and River Bourne near Chertsey. More modern developments, for example, Penton Hook Marina near Egham Hythe, have further altered the planform of the river. The present tidal limit of the river is restricted to Teddington Lock.

### **1.3. Planning Background**

#### **Legislation and Policy**

- 1.3.1. A detailed breakdown of the relevant legislation and policies can be found in the WSI (TPA 2017). This section notes the local policies relevant to each of the areas to be targeted for geophysical survey.

#### **National Planning Policy Framework (NPPF)**

- 1.3.2. In March 2012 the Department for Communities and Local Government (DCLG) published the *National Planning Policy Framework (NPPF)*, which was subsequently updated in 2019. This replaced *PPS5: Planning for the Historic Environment*. The NPPF is supported by guidance given in the *National Planning Practice Guide (PPG)* and by specific Historic Environment Good Practice Guides issued by Historic England.

- 1.3.3. Section 16 of NPPF, paragraph 189, states that:

*Planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.*

*As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary.*

*Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and where necessary a field evaluation.*

- 1.3.4. The Historic Environment Good Practice Advice in Planning Note 2 (Managing Significance in Decision-Taking in the Historic Environment) states that:

*To accord with the NPPF, an applicant will need to undertake an assessment of significance to inform the application process to an extent necessary to understand the potential impact (positive or negative) of the proposal and to a level of thoroughness proportionate to the relative importance of the asset whose fabric or setting is affected.*

- 1.3.5. In regard to planning applications the NPPF recommends to local planning authorities that:

*Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted (para. 199).*

- 1.3.6. There are a number of local planning policies relating to the built and archaeological heritage of the sites. These include, for Surrey, the Elmbridge Local Plan (Elmbridge Borough Council 2000), and, for Greater London, The London Plan (Greater London Authority 2015), the Richmond Development Management Plan (Richmond upon Thames Borough Council, 2011), and the Kingston upon Thames Core Development Strategy (Kingston Council 2012). A number of the local plans have been discontinued and await updates, with existing policies saved.
- 1.3.7. The relevant sections of the local policies pertaining to each site are quoted below. These policies are relevant to Desborough Cut and Sunbury Weir.

**COUNTY OF SURREY:**

**Elmbridge Borough Council**

**DEVELOPMENT WITHIN AREAS OF HIGH ARCHAEOLOGICAL POTENTIAL (HEN17)**

*In considering proposals for development within areas of high archaeological potential, the council, in consultation with Surrey County Council, will: (i) require that an initial assessment of the archaeological value of the site be submitted as part of any planning application; (ii) where, as a result of the initial assessment, archaeological remains are considered to exist, require an archaeological field evaluation to be carried out prior to the determination of any planning application; (iii) determine whether the archaeology identified is important enough to warrant preservation in situ and, where remains are to be left in situ, impose conditions or seek agreement, where appropriate, to ensure that damage to the remains is minimal; (iv) where important archaeological remains are found to exist but their preservation in situ is not justified, seek a full archaeological investigation of the site in accordance with a scheme of work to be agreed in writing with the council prior to the granting of planning permission; (v) require that the results of the investigation and any excavation be published and made available for display at either the Elmbridge museum or other suitable location.*

*8.30. These sites are in addition to Scheduled Ancient Monuments and County sites of archaeological importance. They are based on information contained in the County's Sites and Monuments Record.*

*8.31. It is always necessary to take into account that unexpected discoveries can be made. This is partly because very few areas have been systematically surveyed for archaeological purposes.*

- 1.3.8. These policies are relevant to Teddington Weir:



## **GREATER LONDON**

### **The London Plan**

#### **Policy 7.8 Heritage assets and archaeology**

*A London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.*

*B Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.*

#### **Planning decisions**

*C Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.*

*D Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.*

## **Richmond upon Thames Borough Council**

### **Policy DM HD 4: Archaeological Sites**

*The Council will seek to protect, enhance and promote its archaeological heritage (both above and below ground), and will encourage its interpretation and presentation to the public. It will take the necessary measures required to safeguard the archaeological remains found, and refuse planning permission where proposals would adversely affect archaeological remains or their setting.*

## **Kingston Council**

### **Policy DM 12: Development in Conservation Areas and Affecting Heritage Assets**

*The Council will:*

*a. continue to identify, record and designate assets, and periodically review existing designated assets within the Borough that are considered to be of special historic significance in order to ensure that future development will preserve or enhance locally distinctive heritage assets. These records will be maintained in the form of a Historic Environment Record.*

*b. preserve or enhance the existing heritage assets of the Borough through the promotion of high-quality design and a focus on heritage-led regeneration*

*c. allow alterations which preserve or enhance the established character and architectural interest of a heritage asset, its fabric or its setting*

*d. ensure that development proposals affecting historic assets will use high quality materials and design features which incorporate or compliment those of the host building or the immediate area*

*e. respect features of local importance and special interest through the consideration of form, scale, layout, and detailed designs of a site, area or streetscape*

*f. seek the conservation and improvement of the natural and built historic environment which contribute to the character of the Borough's historic riverside setting*

*g. where possible, provide access for all to encourage public enjoyment of the historic environment and Kingston's heritage assets*

*6.78 As well as their historic and architectural interest, heritage assets are important and attractive features in the built environment. They attract tourists/visitors and contribute to the local economy, quality of life, health and wellbeing. There will always be a presumption in favour of development which encourages the re-use of or enhancement of heritage assets within the Borough.*

*6.79 Under national guidance, the Council is required to give special regard to the desirability of preserving all designated historic assets, their setting and any features of special architectural or historic interest which they possess. There is also a statutory duty to designate Conservation Areas and to periodically review the designation of additional areas and to ensure that any new development will preserve or enhance their character and appearance.*

*6.80 The Borough will continue to work in partnership with English Heritage and seek support and professional guidance on the protection and enhancement of its heritage assets. In addition to its statutory duties, the Council will apply similar levels of protection to its locally designated heritage assets to ensure a high standard of design for all new development affecting the character or setting of its built, natural and archaeological historic environment.*

#### **1.4. Scope of Report**

1.4.1. This report covers the methods, results, discussion, and conclusions drawn from the excavation of test pits and power auger survey at Sunbury and Teddington Weirs. The test pitting was supervised by Andy Douthwaite and Amy Joliffe (TPA Supervisors), the power auger survey was carried out by QUEST under the supervision of Tom Keyworth (TPA Geoarchaeologist). The project was managed by Kristina Krawiec (Project Manager).

## **2. ARCHAEOLOGICAL BACKGROUND**

### **2.1. Introduction**

2.1.1. Substantial archaeological background research has already been undertaken prior to the commencement of fieldwork (TPA 2015b; 2017b). This will not be reproduced in full here but a summary is provided below. More detailed

information can also be accessed in the Desk Based Assessment (TPA 2015b).

### **Pleistocene**

- 2.1.2. The sites of Sunbury and Teddington are located on the Late Pleistocene Kempton Park Gravel, a deposit where up to 7m of sand and gravel have been recorded. Discontinuous (organic-rich) channel fills within the unit have yielded fossiliferous assemblages of fauna and flora indicative of both temperate and cold conditions. Radiocarbon dating of organic material within these discontinuous channels has yielded dates of between 43-53,000 BP (i.e. the Middle Devensian, Marine Isotope Stage 3). There is still some debate as to whether parts of the Kempton Park Gravel also correlate with MIS 5a-5c (Bridgland 1994).
- 2.1.3. Studies of the organic silt deposits within the KPG deposits at South Kensington demonstrated sudden and intense climatic changes from a lower unit displaying arctic conditions to an upper unit indicative of a more temperate environment (Coope et al 1997). Only a small assemblage of animal bone was recovered representing *Bison* sp. and stickleback (*Gasterosteus aculeatus* L.). At Isleworth bones of mammoth, woolly rhinoceros, bison and reindeer were common (Kerney et al 1982).
- 2.1.4. Britain records a substantial gap in human occupation from the end of MIS-7 until MIS-3. This is due to the deterioration of climatic conditions in MIS-6 leading to depopulation and fluctuating sea levels in the following periods causing Britain to be cut-off from mainland Europe. A single *bout coupe* hand axe was recovered from the Kempton Park Gravels at Berrymead Priory, Acton (MOLA 2000, 37) which supports a MIS 3 date proposed by Coope et al (1997) for the deposit (Pettit and White 2012, 352). Other flint assemblages have been recovered from 'brickearth' deposits (Langley Silt complex) which overlie the KPG deposit although no such deposits are recorded in the vicinity of the site.

### **Holocene**

- 2.1.5. The climatic amelioration of the early Holocene saw a rapid expansion in vegetation so that by around 9,500 years before present, woodland was well-established across the river valleys of lowland Britain. Pollen analysis from Eton Dorney, a few kilometres upstream of the study reach, show a rise in *Ulmus* (elm) and *Quercus* (oak) pollen dated to 9070 ± 40 BP (Parker et al 2008). This expansion of vegetation was accompanied by the stabilisation of soils and sediments and in response, lowland river systems such as the Thames within the study area would have developed an anastomosed pattern, with multiple (but stable) channels interspersed with wider expanses of floodplain wetland. This period marks the start of a pattern of river sedimentation dominated by vertical accretion associated with overbank flooding leading to the deposition of fine-grained alluviation (silts and clays). This wetland environment would have provided abundant food resources for Mesolithic hunter-gathers who are known to have been living in equivalent environments in nearby river valleys such as the Kennet at Thatcham (Healy et al 1992).
- 2.1.6. This alluviation masks the undulating braid-plain topography of the Late glacial (braided) river, which deposited the Kempton Park Gravels and there is the

potential for this early Holocene alluvium to mask Upper Palaeolithic and early Mesolithic sites that may have occupied higher areas within the valley floor such as former gravel islands or eyots (see Section 5). Away from the main channels, organic sediments may also have been allowed to accumulate within abandoned river channels and boggy areas, preserving sediments capable of providing proxy records of climate, vegetation and land-use histories (Section 5).

- 2.1.7. An anastomosing system characterised the floodplain throughout the Mesolithic, but it seems likely that from the Neolithic period onwards, the hydrology and natural character of the Thames Valley floor was being increasingly influenced by human activity and an intensification of settlement activity (see Fulford and Nichols 1992). Clearance activity has been cited as a mechanism for changing hydrological conditions leading to rising groundwater tables and increased waterlogging of the Thames Valley floor recorded between the Late Bronze Age and Middle Iron Age.

#### **Sunbury Weir**

- 2.1.8. An early Bronze Age flat axe and a side-looped spearhead, a middle Bronze-Age rapier, and a middle Bronze Age Dirk were recovered from the Thames at Sunbury.

#### **Roman**

- 2.1.9. A possible Roman spearhead was recovered from the Thames at Sunbury.

#### **Early Medieval**

- 2.1.10. A 9th century axe and a Viking spearhead were recovered from the Thames.

#### **Post-medieval**

- 2.1.11. Domestic bone and pottery finds were discovered in Sunbury.

#### **Modern**

- 2.1.12. Whilst not recorded as a designated heritage asset, Sunbury Weir itself is of historic significance. Construction initially took place in 1812, and a lock house of this date survives. Further rebuild and extension took place in the mid-late nineteenth centuries, and again in the 1920s and 30s. Further rebuilding and repair has taken place throughout the twentieth century. The current locks date to the 1880s (with extensive repairs of 1928), and 1925 (with conversion to hydraulic operation in 1965). The weirs in their current form date to: Weir A 1930s, Weir B 1928, Weir C 1934, and Weir D 1967 (this last may have had its origins in 1776, with several rebuilds through the 19<sup>th</sup> and 20<sup>th</sup> centuries). An archaeological watching brief took place on reconstruction of Weir A in 2003.

#### **Teddington Weir**

##### **Mesolithic**

- 2.1.13. A Mesolithic flint pick is recorded from the Thames at Teddington.

##### **Neolithic**

- 2.1.14. Isolated findspots of flint arrowheads and an axe are recorded in the area.

### **Bronze Age**

2.1.15. A Bronze Age flint arrowhead is recorded in the area.

### **Early Medieval**

2.1.16. A sunken-featured building, together with finds of pottery, loom weight and animal bone were excavated in the 1950s at Thames Gate Close on Ham Fields and are interpreted as part of a settlement site.

### **Medieval**

2.1.17. A medieval chapel is recorded on Ferry Road.

### **Post-medieval/Modern**

2.1.18. Teddington Weir and its associated boat rollers are early-nineteenth century in origin, with substantial elements from a remodelling of 1904. The complex includes locks of 1904 and 1857, a lock office and other ancillary buildings of early-twentieth century date, weirs of 1930s and 1990s date (remodellings of mid-nineteenth century weirs), and a boat-slide of late Victorian date. Initial development was carried out in 1810-1811, though this has largely been superseded by later works. Teddington Lock Island itself has been substantially modified, being both extended and shortened in various phases of lock and weir development. Additionally the Grade II\* Listed church of St Alban is listed as modern, as is an air raid shelter at Lensbury Club.

## **2.2. Project aims and objectives**

2.2.1. The aims of the project are as follows:

- To characterise the archaeological potential at Sunbury and Teddington Weirs, with an assessment of the overall extent, date and state of preservation of any archaeological remains
- To better the understanding of depositional processes at the site
- To assess options for mitigation, assessing how any deposits or archaeology will be impacted by the proposed development

2.2.2. Objectives to meet the aims:

- To conduct archaeological test pits supplemented with power augering
- To produce a complete archive, with supplementary drawings, context sheets and records
- To recover any finds that may help assess and characterise the nature of any archaeology present
- To provide recommendations for further work

2.2.3. The relevant research frameworks for the test pitting and auger survey are:

- *Surrey Archaeological Research Framework* (Bird 2006)
- *A Strategy for Researching the Historic Environment of Greater London* (Museum of London 2015)
- *A Research Framework for London Archaeology* (Museum of London 2002)

2.2.4. The Surrey Framework applies to Sunbury Weir. The Greater London Strategy and Framework apply to Teddington Weir.

2.2.5. Evaluations at Teddington Weir fall into the following Priority Subject Areas listed within *A Strategy for Researching the Historic Environment of Greater London* (Museum of London 2015):

- 7.2.2 Transport, infrastructure and industry
- 7.2.3 Sport, leisure and entertainment
- 7.2.6 Rural settlement and land use

2.2.6. And the following Research Priorities:

- RP10: Wetland, riverine and waterlogged evidence
- RP13: London's Transport Infrastructure
- RP18: London's water management structures

2.2.7. Evaluations at Molesey and Teddington Weirs fall into the following Framework Objectives (Museum of London 2002):

*London after 1500*

*L7: Recreation and Leisure*

- Establishing how archaeology can contribute to the history of leisure in London, and identifying assemblage characteristics
- Considering the links between leisure, trade and economy
- Reviewing existing archaeological data to establishing the extent to which leisure activities were a particularly metropolitan feature or pastime
- Contributing to our understanding of how leisure activities became accepted as a worthwhile type of land use, and how did their physical expression, such as theatres and pleasure gardens, fitted with the other pressures on space

2.2.8. And the following Major Themes:

*Hydrology- river systems as barriers, links and resources*

*TL2 Framework objectives:*

- Understanding London's hydrology and river systems and tributaries and, in particular, understanding the role of the River Thames (as boundary, communication route, resource, ritual focus, barrier, link, etc) in shaping London's history, and the relationships between rivers and floodplains
- Understanding the relationship between landscape, river and settlement, and the influences of the Thames in particular on communications and social interaction
- Understanding the origins of the prehistoric metalwork sequence from the Thames, and examining the links between the metalwork hoards deposited at the headwaters of river tributaries and other activities

*Cognitive landscapes*

*TL3 Framework objectives:*

- Considering the roles that landscape features may have played in human activity and settlement, looking beyond the opportunities or hindrances presented by topography and environment to what the landscape, whether natural or artificial, meant to London's inhabitants and visitors

### **3. ARCHAEOLOGICAL METHODOLOGY**

#### **3.1. Fieldwork Methodology**

- 3.1.1. Three test pits were located at Sunbury Weir (TP001-003) and two at Teddington Weir (TP004-05) and were recorded using a combination of GNSS and total station survey.
- 3.1.2. The test pits were excavated by hand to a maximum depth of 1.00m below ground level (BGL) or until the superficial sand and gravel was encountered. A representative section was hand drawn on drafting film at a scale of 1:20 and supplemented by digital and monochrome photography. Deposits were recorded on pro-forma sheets and followed the guidelines of the TPA field recording manual (TPA 2015a).
- 3.1.3. Following the excavation of the pits, three power auger boreholes were sunk at the base (BH02-03 at Sunbury, BH01 at Teddington). This was carried out by Quaternary Scientific (Quest) using a Cobra power auger to recover the deposits in 1m sleeved liners. The liners were opened and recorded on site by Dr Rob Batchelor of Quest. Once recorded, the material was placed back in the hole. Any finds were recorded by depth and location.
- 3.1.4. Following recording the test pits were then backfilled by hand.

#### **3.2. Fieldwork constraints**

- 3.2.1. Of the six proposed test pits at Sunbury, only three were able to be excavated. This was due to restrictions imposed by vegetation and ground conditions. Two test pits were relocated to the west of the proposed impact area. TP003 was moved by approximately 10.00m and TP002 by 3.00m. This was necessitated by vegetation and ground conditions. The site access was such that a drilling rig was unable to reach the area and therefore a Cobra powered hand auger was used which has a smaller sampling chamber.
- 3.2.2. Of the three proposed test pits at Teddington, only two were excavated (TP001 and TP002). This was also due to restrictions imposed by vegetation and ground conditions. Again, the site could not be accessed with a drill rig and the Cobra auger was employed to record the deeper deposits.

#### **3.3. Archive**

- 3.3.1. The site archive relating to the test pits and power auger boreholes at Sunbury and Teddington Weirs is currently held at the offices of TPA and will be deposited at an appropriate repository in due course. The contents of the archive are tabulated below (Table 1).

Borehole/test pit sheets	3
Section sheets	1
Plans sheets	0
Colour photographs	47
B&W photos	0
Digital photos	47
Sample register	0
Drawing register	1
Watching brief forms	0
Trench Record forms	5

Table 1: Quantification of site paper archive

Bulk finds	5 bags
Registered finds	19
Flots and environmental remains from bulk samples	0
Palaeoenvironmental specialist samples	2 grab samples from boreholes
Waterlogged wood	0
Wet sieved environmental remains from bulk samples	0

Table 2: Quantification of artefact and environmental samples

## 4. RESULTS

### 4.1. Sunbury Weir

#### Test Pit 001

4.1.1. TP001 was excavated from 10.08m to 9.10m OD (0.98m BGL) (Figures 2 and 3). The list of archaeological contexts is outlined in Table 3 below (Figure 3 and 4; Plate 1).

Context	Type	Description	Finds	Length (m)	Width (m)	Thickness (m)	Depth (m BGL)	m OD
001/001	Layer	Topsoil		1.00	1.00	0.20	0.00	10.08
001/002	Layer	Light yellow brown sand		1.00	1.00	0.35	0.20	9.88
001/003	Layer	Mid brown grey sand clay		1.00	1.00	0.43	0.55	9.53

Table 3: TP001 contexts

4.1.2. Following this a power auger borehole (BH02) was drilled from the trench base (9.10m OD) (Figure 3) until refusal at 6.10m OD (3.98m BGL). The lithostratigraphic descriptions are outlined in Table 4 below:



Description	Depth (m below TP base)	Depth (m BGL)	Thickness (m)	m OD
10YR 5/4; As2, Ag1, Gg1; Brown silty gravelly clay with traces of roots. Gravel of flint and generally rounded. One large fired brick recorded between 0.20 and 0.30*. Unknown contact into:	0 to 0.67	0.98	0.67	9.10
5YR 5/6; Ga2, Gg2; Yellowish red sandy gravel. Gravel sub-angular to sub-rounded and of flint; occasional chalky residue; diffuse contact into:	0.67 to 1.12	1.65	0.45	8.43
5YR 5/6; Ga2, Gg1, Ag1; Yellowish red silty gravelly sand with fragments of burnt material at 1.72m (below TP base)*. CBM recovered from 1.70m Gravel sub-angular to sub-rounded and of flint; occasional chalky residue; diffuse contact into:	1.12 to 1.86	2.10	0.74	7.98
5YR 5/6; Ga2, Gg2; Yellowish red sandy gravel. Gravel sub-angular to sub-rounded and of flint.	1.86 to 2.46	2.84	0.60	7.24
VOID	2.46 to 3.00	3.44	0.54	6.64

Table 4: Auger borehole descriptions below TP001 base. \* indicates sample.

4.1.3. The overall lithostratigraphy can be summarised as follows: The deepest deposit encountered was sand and gravel, highly likely to be related to Kempton Park Gravel from 3.98-2.84m BGL (6.10-7.24m OD) (Figures 4.1 and 5). This was overlain by sand and gravel containing CBM material dating to the post-medieval/modern period at 2.70m BGL / 7.38m OD, interpreted as made ground.

4.1.4. This was, in turn, overlain by made ground comprising mixed silts, gravel, and clay with post-medieval/modern CBM fragments from 1.65-0.55m BGL (8.43-9.53m OD), which itself was overlain by another made ground deposit comprising light yellow brown sand from 0.55-0.20m BGL (9.53-9.88m OD). This lay directly below the topsoil, c. 0.20m thick (9.88-10.08m OD).

#### Test Pit 002

4.1.5. TP002 was excavated from 10.57m to 9.57m OD (1.00m BGL). The list of archaeological contexts is outlined in Table 5 below (Figure 4.2; Plate 2). A small amount of CBM, a clay pipe stem (17<sup>th</sup>-18<sup>th</sup> century), bottle glass and a cattle mandible fragment were recovered from (002/002). The CBM was identified as post-medieval to modern and may derive from dumping from industrial activity, possibly brickmaking.

Context	Type	Description	Finds	Length (m)	Width (m)	Thickness (m)	Depth (m BGL)	m OD
002/001	Layer	Topsoil		1.00	1.00	0.25	0.00	10.57
002/002	Layer	Reworked brown orange gravels	X	1.00	1.00	0.75	0.25	10.32

Table 5: TP002 list of contexts

4.1.6. The overall lithostratigraphy can be summarised as follows: The deepest deposit encountered was a reworked alluvial sand and gravel, interpreted as made ground, from 1.00-0.25m BGL (9.57-10.32m OD), overlain by topsoil from 0.25-0.00m BGL (10.32-10.57m OD).

**Test Pit 003**

4.1.7. TP003 was excavated from 7.83m to 6.86m OD (0.97m BGL). The list of archaeological contexts is outlined below in Table 6. (Figure 4.3; Plate 3). These deposits represent made ground derived from river gravels (003/003-005). These were overlain by a thin disturbed alluvial deposit (003/002) likely to be of recent age.

Context	Type	Description	Findings	Length (m)	Width (m)	Thickness (m)	m BGL	m OD
003/001	Layer	Topsoil		1.00	1.00	0.20	0.00	7.83-7.63
003/002	Layer	Mid grey brown silt clay		1.00	1.00	0.12	0.20	7.63-7.51
003/003	Layer	Mid brown / orange sand and gravel		1.00	1.00	0.26	0.32	7.51-7.25
003/004	Layer	Mid grey silt sand		1.00	1.00	0.15	0.58	7.25-7.10
003/005	Layer	Grey sand and gravel		1.00	1.00	0.24	0.73	7.10-6.86

Table 6: TP003 list of contexts

4.1.8. Following this a power auger borehole (BH03) was drilled from the trench base (6.86m OD) until refusal at 4.86m OD (2.97m BGL). The lithostratigraphic descriptions are outlined in Table 7 below (Figure 5):

Description	Depth (m below TP base)	Depth (m BGL)	Thickness (m)	m OD
5YR 5/6; Ga2, Gg2; Yellowish red sandy gravel. Gravel sub-angular to sub-rounded and of flint.	0.00 to 1.20	0.97	1.20	6.86-5.66
10YR 5/1 to 10YR 3/1; Ga2, Gg1, As1; Grey to very dark grey clayey sandy gravel.	1.20 to 2.00	2.17	0.80	5.66-4.86

Table 7: Auger borehole descriptions below TP003 base.

4.1.9. The deepest deposit encountered was a sand and gravel of fluvial origin (likely Kempton Park Gravel) from 2.97-0.73m BGL (4.86-7.10m OD). This was overlain by made ground comprising mid grey brown silts and clays 0.32-0.20m BGL (7.51-7.63m OD), in turn overlain by topsoil 0.20-0.00m BGL (7.63-7.83m OD).

**4.2. Teddington Weir**

**Test Pit 004**

4.2.1. TP004 was excavated from 6.41m to 5.44m OD (0.97m BGL). The list of archaeological contexts is outlined below in Table 8 (Figures 6 and 7; Plate 4). These deposits comprised a series of mixed gravel made ground deposits (004/002-005) overlain by topsoil (004/001).

Context	Type	Description	Finds	Length (m)	Width (m)	Thickness (m)	m BGL	m OD
004/001	Layer	Topsoil		1.00	1.00	0.10	0.00	6.41
004/002	Layer	Grey brown gravel with sand		1.00	1.00	0.20	0.10	6.31
004/003	Layer	Mid orange brown gravel with sand		1.00	1.00	0.11	0.30	6.11
004/004	Layer	Dark brown grey gravel		1.00	1.00	0.56	0.41	6.00
004/005	Layer	Light yellow brown reworked gravels		1.00	1.00	N/A	0.97	5.44

Table 8: TP004 list of contexts (NB: 004/005 is the trench base)

4.2.2. Following this a power auger borehole (BH01) was drilled from the trench base (5.44m OD) until refusal at 0.94m OD (5.47m BGL) (Figure 9.1). The lithostratigraphic descriptions are outlined in Table 9 below.

Description	Depth (m below TP base)	Depth (m BGL)	Thickness (m)	m OD
10YR 5/4; Gg1, Ga1, As1, Ag1; Brown clayey, silty, sandy flint gravel with traces of roots and charcoal. Gravel sub-angular to sub-rounded; unknown contact into:	0.00 to 0.67	0.97	0.67	5.44
5YR 5/6; Ga3, Gg1; Yellowish red gravelly sand. Gravel sub-angular to sub-rounded and of flint; diffuse contact into:	0.67 to 1.20	1.64	0.53	4.77
10YR 5/4; As2, Gg1, Ga1; Brown gravelly sandy clay with occasional fragments of charcoal*. Gravel largely of flint with some white chalky like material; diffuse contact into:	1.20 to 1.65	2.17	0.45	4.24
5YR 5/6; As2, Ag1, Gg1; Yellowish red gravelly silty clay. Gravel sub-angular to sub-rounded and of flint; diffuse contact into:	1.65 to 2.78	2.62	1.13	3.79
10YR 5/4 with 10YR 7/1; Gg3, Ga1; Brown with white sandy gravel. Gravel largely of flint with chalk; unknown contact into:	2.78 to 3.00	3.75	0.22	2.66
10YR 5/1; Ga2, Gg2; Grey gravel. One piece of red brick/tile recorded at 3.45m (below TP base) 1cm thick and filling the gouge*; diffuse contact into:	3.00 to 3.75	3.97	0.75	2.44
10YR 5/1 to 10YR 3/1; Gg3, Ga1; Grey to very dark grey angular flint gravel with sand.	3.75 to 3.90	4.72	0.15	1.69
VOID	3.90 to 4.50	4.87	0.60	1.54

Table 9: Auger borehole descriptions below TP004 base. \*sample taken

4.2.3. The deepest deposit encountered was an alluvial sand and gravel (likely Kempton Park Gravel) from 5.47-4.72m BGL (0.94-1.69m OD). This was overlain by sand and gravel from which fragments of post-medieval/modern CBM were recovered which may derive from brick-making (observed at 3.45m BGL/ 1.99m OD; see Plate 5). This deposit is interpreted as made ground material, from 4.72-3.75m BGL (1.69-2.66m OD).

4.2.4. This was overlain by silt clay with gravels, interpreted as made ground material, from 3.75-2.17m BGL (2.66-4.24m OD). This was in turn overlain by further made ground material, comprising reworked sand and gravel, from 2.17-0.41m BGL (4.24-6.00m OD). Sealing this was made ground consisting of sand with occasional gravels 0.41-0.10m BGL (6.00-6.31m OD), in turn sealed by topsoil from 0.41-0.00m BGL (6.31-6.41m OD).

**Test Pit 005**

4.2.5. TP005 was excavated from 6.38m to 5.35m OD (1.03m BGL). The list of archaeological contexts is outlined below in Table 10 (Figure 9.2; Plate 6). These comprised a series of sand and gravel-dominated made ground deposits (005/002-004) overlain by topsoil (005/001).

Context	Type	Description	Finds	Length (m)	Width (m)	Thickness (m)	m BGL	m OD
005/001	Layer	Topsoil		1.00	1.00	0.10	0.00	6.38
005/002	Layer	Grey brown sand and gravel	x	1.00	1.00	0.22	0.10	6.28
005/003	Layer	Mid orange brown sand and gravel	x	1.00	1.00	0.24	0.32	6.06
005/004	Layer	Dark brown grey compact gravel		1.00	1.00	0.47	0.56	5.82

Table 10: TP005 list of contexts

4.2.6. The overall lithostratigraphy can be summarised as follows: the deepest deposits encountered was a series of sand and gravel deposits (005/002-005), interpreted as made ground, present from 1.03-0.10m BGL (5.35-6.28m OD). A small assemblage of modern bottle glass, mussel shell and mammal bone was recovered (005/002). A single sherd of Surrey ware (1050-1150 AD) and a single clay pipe stem (18<sup>th</sup>-19<sup>th</sup> century) were also recovered from (005/003).

4.2.7. This was overlain by topsoil from 0.10-0.00m BGL (6.28-6.38m OD).

## 5. THE FINDS

### 5.1. Sunbury Weir

5.1.1. The finds from Sunbury Weir are outlined in the table below:

Material	Description	Quantity	Weight (g)
Clay tobacco pipe	Partial stem	1	4g
Shell	Mussel	1 + fragments	11g
Glass	Bottle fragments	4	37g
Pottery	Body	1	40g
Bone	Animal fragment	1	45g
Ceramic Building Material	Tile fragments	3	225g

Table 11: Finds quantification for Sunbury

### 5.2. Pottery by Alison Wilson

5.2.1. A single body sherd of 18<sup>th</sup>-19<sup>th</sup> century hand-painted white bodied earthenware pottery was recovered from (002/002).

### 5.3. Clay Tobacco Pipe by Alison Wilson

5.3.1. A single unmarked fragment of clay tobacco pipe stem was recovered from (002/002). In the absence of any identifying features such as maker's stamps or decoration, the stem has been dated using bore hole diameter (early clay pipes have a bore diameter of 3mm, decreasing over time until stems by the middle of the 18th century had a bore of less than 2mm). The stem fragment recovered had a bore hole diameter of 2mm which would indicate a 17<sup>th</sup> – 18<sup>th</sup> century date of manufacture.

### 5.4. Glass by Alison Wilson

5.4.1. A single fragment of modern green bottle glass weighing 24g was recovered from TP002 (002/002).

### 5.5. Shell by Alison Wilson

5.5.1. A total of two complete mussel shells (*Mytilus edulis*) weighing 11g were recovered from TP002 (002/002).

### 5.6. Animal Bone by Dr Kris Poole

5.6.1. A single fragment of animal bone weighing 45g was recovered from TP002 (002/002). It has been identified as a cattle mandible fragment, which was well preserved.

### 5.7. Ceramic Building Material by Phil Mills

5.7.1. A total of three fragments of post-medieval/modern roofing tile were recovered from TP002 (002/002) and five fragments of burnt ceramic building material were recovered from BH02 (TP003). The eight fragments in total weighed 307g. There were two fragments (1g) of a glassy/ vitrified industrial residue and the rest of the material was ceramic building material.

5.7.2. The material was examined by context and recorded following the fabric series already used in earlier RTS6 sites. The catalogue is summarised in the table below:

SF No	Context	Fabric Code	Function	NoSh	Wt	Thickness	Period	Comments
SUN	002/002	tz120	Tile	1	73	14	Modern	
SUN	002/002	tz120	Tile	1	94	14	Modern	nail hole reused with mortar over breaks
SUN	002/002	TZ21	Tile	1	63	20	Post Med	
SUN	BH02 0.20-0.30m (below TP base)	TZ31	Brick	3	76	0	Post Med?	very burnt brick - waster?
SUN	BH02 1.70m (below TP base)	V00	industrial waster	2	1	0		glassy/ vitrified industrial residue

Table 12: Catalogue of CBM material from Sunbury Weir.

5.7.3. This is a small group of post-medieval or modern material. Fabrics are in the same range as other material found from RTS6. The presence of burnt brick and industrial residue from the bore hole suggest that there is dumping from industrial activity, possibly brick making.

## 5.8. Teddington Weir

5.8.1. The finds from Teddington Weir are outlined in the table below:

Material	Description	Quantity	Weight (g)
Clay tobacco pipe	Partial stem	1	3g
Shell	Mussel	1 + fragments	11g
Glass	Bottle fragments	4	37g
Pottery	Rim sherd (Medieval?)	1	16g
Bone	Animal fragment	1	9g

Table 13: Finds quantification from Teddington Weir

## 5.9. Pottery by Alison Wilson

5.9.1. A single rim sherd of c.1050-1150 AD Surrey Ware pottery was recovered from TP005 (005/003).

### 5.10. Clay Tobacco Pipe *by Alison Wilson*

5.10.1. A single unmarked fragment of clay tobacco pipe stem was recovered from TP005 (005/003). In the absence of any identifying features such as maker's stamps or decoration, the stem has been dated using bore hole diameter (early clay pipes have a bore diameter of 3mm, decreasing over time until stems by the middle of the 18th century had a bore of less than 2mm). The stem fragment recovered had a bore hole diameter of 1.5mm which would indicate an 18th – 19th century date of manufacture.

### 5.11. Glass *by Alison Wilson*

5.11.1. A total of three fragments of modern green bottle glass and a single fragment of modern pale blue bottle glass weighing 37g were found during the evaluation, all from TP005 (005/002).

### 5.12. Shell *by Alison Wilson*

5.12.1. A single complete mussel (*Mytilus edulis*) shell and small fragments of mussel shell weighing 11g were recovered from TP005 (005/002).

### 5.13. Animal Bone *by Dr Kris Poole*

5.13.1. A single fragment of animal vertebrae, from a large-sized mammal, weighing 8g was recovered from TP005 (005/002) in a good state of preservation.

### 5.14. Ceramic Building Material *by Phil Mills*

5.14.1. Two fragments of ceramic building material were recovered from BH01 (3.45m below TP base / 1.99m OD). The details are outlined in the table below:

SF No	Context	Fabric Code	Function	NoSh	Wt	Thickness	Period
TED	BH01 3.45m (below TP base)	TZ21	Tile	2	31	0	Post Med

Table 14: Catalogue of CBM material from Teddington Weir

5.14.2. As with the finds from Sunbury, the fabrics are in the same range as other material found from other RTS6 sites. The presence of burnt brick and industrial residue from the finds relating to the bore hole suggest that there is dumping from industrial activity, possibly brick making.

### 5.15. Charcoal

5.15.1. A small number of unidentifiable charcoal fragments were recorded in BH01 (1.72m below TP base / 3.72m OD).

## **6. DISCUSSION AND CONCLUSIONS**

### **6.1. Overview of deposits**

- 6.1.1. The test pit and auger survey carried out at Sunbury and Teddington Weirs has demonstrated a lack of extensive fine-grained alluvial deposits at both locations. The deposits encountered at these sites were characterised by disturbed sand and gravel deposits which contained small amounts of industrial waste probably derived from brick-making.
- 6.1.2. The locations investigated have demonstrated a lack of early deposits although a single sherd of early medieval pottery was recovered from the upper made ground deposit at Teddington. Only one test pit recorded a thin veneer of fine-grained alluvium which is likely to be of recent age.

### **6.2. Deposit survival, existing impacts, and potential impacts**

#### **Sunbury Weir**

- 6.2.1. The evaluation, in the form of three test pits (TP001-003) and two power auger boreholes (BH02-03), has successfully characterised the underlying deposits present at Sunbury Weir.
- 6.2.2. The evaluation did not record any features of archaeological significance in any of the test pits. The same can be said of the material observed in the power auger boreholes. There were no existing impacts, such as services, upon the underlying deposits that can be considered significant. The proposed maximum impact depth (c.2.76m OD with concrete slab, without taking into account pile toe levels), will truncate the underlying Kempton Park Sand and Gravel, but the site is considered to be of low archaeological potential. The organic deposits recorded within the Kempton Park Sand and Gravel are recorded at much lower altitudes in other reached of the Thames, c. 2.0 to 0.50m OD, 0.76m below the proposed impact depth.

#### **Teddington Weir**

- 6.2.3. The evaluation, in the form of two test pits (TP004-005) and one power auger borehole (BH01), has successfully characterised the underlying deposits present at Teddington Weir.
- 6.2.4. The evaluation did not record any features of archaeological significance in any of the test pits. The same can be said of the material observed in the power auger boreholes. There were no existing impacts upon the underlying deposits that can be considered significant. The proposed maximum impact depth (c.-1.24m OD with concrete slab, without taking into account pile toe levels), will truncate the underlying Kempton Park Sand and Gravel, but the site is considered to of low archaeological potential. The organic deposits recorded within the Kempton Park Sand and Gravel are recorded at altitudes of c. 2.0 to 0.50m OD. The power auger reached deposits to a depth of 1.54m OD before refusal and no organic deposits were recorded.



### **6.3. Discussion of deposits**

#### **Sunbury Weir**

- 6.3.1. The deposits at Sunbury comprised Kempton Park Gravel encountered at depths of 2.84m BGL/7.24m OD (TP001-BH002) and 0.32m BGL/7.51m OD (TP003-BH003). These deposits have been shown in other reaches of the Thames (Isleworth, c.2m OD and Kensington between 0.5 and 2.0m OD, Coope et al 1997) to preserve organic material within channel deposits dating to the Middle Devensian (Gibbard et al 1982). No such deposits were recorded during this survey but may be preserved at lower depths as has been shown at sites such as Isleworth to the north and east of Sunbury. The Kempton Park Gravels have a low potential for the preservation of Palaeolithic material, representing a cold climate phase. The altitude of the gravel is within the expected range for the Kempton Park Gravel at this location (c.7m OD).
- 6.3.2. Overlying these gravels was a made ground deposit comprising sand and gravel, deriving from Kempton Park Gravel, likely dredged from the River Thames and used to build up the ground level of the eyot (island). The made ground was observed in TP001-BH02 as well as in TP002 and TP003. This was observed from 2.84m to 0.55m BGL (7.24-9.88m OD) in TP001-BH02, from 1.00m to 0.25m BGL (9.57-10.32m OD) in TP002 and in TP003 from 0.73-0.32m BGL (7.10m OD -7.51m OD).
- 6.3.3. The small assemblage of material recovered from these deposits demonstrates the presence of industrial waste derived from brickmaking, likely to date from the late post-medieval to modern periods. This may also have been dredged from the Thames and redeposited at the site.
- 6.3.4. In TP003 a thin alluvial deposit, deriving from overbank flooding from the River Thames, was recorded overlying the made ground (reworked sand and gravel from 0.73-0.32m BGL (7.10m OD -7.51m OD). This is likely to be of recent age and was entirely minerogenic. All test pits were sealed by topsoil.

#### **Teddington Weir**

- 6.3.5. The deposits at Teddington were of similar character to those recorded at Sunbury and comprised Kempton Park Gravel, encountered at depths of 4.72m (1.69m OD) in TP004-BH01. The altitude of the gravel recorded here is within the expected range of the Kempton Park Gravel from the surrounding area (c1.34 to -4.57m OD). Overlying the superficial sand and gravel was redeposited sand and gravel, deriving from river gravels. As with Sunbury, this material was likely to have been dredged from the River Thames and used to increase the ground level of the eyot. This was observed from 4.72m to 0.10m BGL / 1.69m to 6.31m OD) in TP004-BH001 and from 1.03m to 0.10m BGL / 5.35-6.28m OD in TP005. As with Sunbury, both test pits were sealed by 0.10m of topsoil.
- 6.3.6. The investigations reached a maximum depth of 1.54m OD within the Kempton Park Gravels
- 6.3.7. The eyots (islands) that represent the Sunbury and Teddington sites did not record Holocene archaeological deposits or deposits with paleoenvironmental potential beneath the made ground. Within the wider Thames valley these

features have been demonstrated to be foci for human activity throughout prehistory (Powell and Leivers 2012; Historic England 2014). The areas evaluated here represent a small section of the eyots which have demonstrated a low potential to preserve archaeological remains.

#### **6.4. Consideration of research aims**

- 6.4.1. The Stage 2 investigations have addressed the initial aims of the project as set out in section 2.2. The principle aim of the project was to understand the Holocene use of the eyots and to determine the presence of archaeological remains and deposits dating to this period. The sites of Sunbury and Teddington have been shown to have a low potential for the preservation of Holocene archaeological and palaeoenvironmental remains. The deposits are characterised as recent (post 18<sup>th</sup> century) made ground deposits overlying the Kempton Park Gravels. It is unlikely that the proposed works will encounter in situ Holocene archaeological remains including those from the Late Glacial-early post-Glacial. The absence of 'brickearth deposits at the site would also support this.
- 6.4.2. As the character of the eyots was unknown the survey has also gone some way to understanding the potential of the site to preserve remains dating to the Pleistocene despite the access restrictions for a mechanical rig. The potentially MIS 3 organic deposits which have been recorded within the Kempton Park Gravels in West London are located between 2.0 and 0.5m OD. This lies currently 0.76m below the proposed impact depth of the scheme at Sunbury and therefore the works are unlikely to encounter these deposits if they are a consistent horizon within the gravels.
- 6.4.3. The impact depth at Teddington is 0.06m OD which is within the expected depth for the organic unit within the Kempton Park Gravel. However, the power auger recorded deposits up to 1.54m OD and no organic units were encountered. There is a possibility that any such deposits if present will be below this depth and within the impact zone but the power auger was unable to penetrate to these depths.
- 6.4.4. The two sites were unable to be accessed by more high-powered drilling machinery and therefore it was not possible to further investigate the underlying gravels beyond that discussed above. The survey has demonstrated that such deposits will only be able to be further investigated once enabling works for access by machinery have been undertaken. A revised set of research aims, including radiocarbon dating, can now be proposed in order to provide the framework for further investigation.

#### **6.5. Conclusions and recommendations**

- 6.5.1. Following the evaluation at both Sunbury Weir and Teddington Weirs, it can be stated that there may be a low potential for the survival of Holocene archaeological deposits or deposits with palaeoenvironmental potential.
- 6.5.2. The eyots (islands) that represent both sites are comprised of post-18<sup>th</sup> century made ground in the form of reworked sand and gravel derived from dredged river gravels overlying the Kempton Park Gravels. Other areas of the eyots

may be of different composition but a lack of borehole data from the area as a whole prevents further comment. It is possible that the Kempton Park Gravels have the potential to preserve Devensian age organic deposits at Teddington, however none were identified during this survey due to the limitations presented by the access issues to the site.

- 6.5.3. Despite the substantial impact depths of the main scheme of works, any organic deposits within the gravels are likely to be encountered at 0.76m lower than the maximum impact depth of the stilling basin concrete slabs at 2.76m OD at Sunbury. There is a possibility that such deposits could be encountered within the impact zone of the stilling basin concrete slabs at 0.06m OD at Teddington. If purposive cable percussive boreholes prior to construction are proposed then these should be monitored for the presence of these deposits and samples can then be retrieved for analysis. A revised set of research aims should also be devised to frame this work.

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## **ACKNOWLEDGEMENTS**

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The fieldwork was directed by Tom Keyworth with Amy Joliffe and Andy Douthwaite providing secondary supervisory cover. Sam Whittaker, Hannah White, Ella Tarbuck, Abigail Ford and Owen Jones worked on the trenches, while Marius Ilie and Norma Oldfield produced the figures for this report. The project was managed on behalf of Trent & Peak Archaeology by Kristina Krawiec.

## OASIS Form

### Project details

Project name	Sunbury Weir Archaeological Test Pit and Auger Evaluation
Short description of the project	This report presents the results of a Stage 2 test pit and power auger survey carried out by Trent and Peak Archaeology at the site of Sunbury Weir, Berkshire and Teddington Weir, Greater London between September and October 2018. The fieldwork was commissioned by GBV on behalf of the Environment Agency as part of the River Thames Scheme. The evaluation carried out at Sunbury and Teddington Weirs demonstrated an absence of deposits with archaeological and palaeoenvironmental potential. The sequence recorded a series of post-18th century made ground deposits, derived from dredged river gravels and brickmaking waste, overlying the superficial geology of Kempton Park Gravels.
Project dates	Start: 01-09-2018 End: 31-10-2018
Previous/future work	No / No
Any associated project reference codes	RTS6-SUN - Sitecode
Any associated project reference codes	IMSE500260-GBV-ZZ-2WS-RP-I-00001 - Contracting Unit No.
Type of project	Field evaluation
Site status	None
Current Land use	Wetlands
Current Land use	Transport and Utilities 2 - Other transport infrastructure
Current Land use	Open Fresh Water 1 - Running water
Monument type	NONE None
Significant Finds	CERAMIC Early Medieval
Significant Finds	CERAMIC Medieval
Significant Finds	CLAY PIPE Post Medieval
Significant Finds	CERAMIC Post Medieval
Significant Finds	CBM Post Medieval
Significant Finds	GLASS Modern
Significant Finds	CBM Modern
Methods & techniques	"Augering", "Test Pits"
Development type	Pipelines/cables (e.g. gas, electric, telephone, TV cable, water, sewage, drainage etc.)
Development type	Flood alleviation

Prompt National Planning Policy Framework - NPPF  
 Position in the planning process After full determination (eg. As a condition)

**Project location**

Country England  
 Site location SURREY ELMBRIDGE WALTON ON THAMES Sunbury Weir  
 Postcode KT122JD  
 Study area 7 Hectares  
 Site coordinates SK 510779 168443 52.746465205795 -1.243243387123 52 44 47  
 N 001 14 35 W Point  
 Height OD / Depth Min: 10.08m Max: 10.57m

**Project creators**

Name of Organisation Trent and Peak Archaeology  
 Project brief originator Environment Agency  
 Project design originator Trent and Peak Archaeology  
 Project director/manager Kristina Krawiec  
 Project supervisor Tom Keyworth  
 Type of sponsor/funding body Environment Agency

**Project archives**

Physical Contents "Ceramics", "Environmental", "other"  
 Digital Media available "Database", "GIS", "Images raster / digital photography", "Images vector", "Spreadsheets", "Survey", "Text"  
 Paper Media available "Context sheet", "Correspondence", "Diary", "Drawing", "Map", "Miscellaneous Material", "Notebook - Excavation", "Research", "General Notes", "Photograph", "Plan", "Report", "Section", "Survey", "Unpublished Text", "Unspecified Archive"

**Project bibliography 1**

Publication type Grey literature (unpublished document/manuscript)  
 Title River Thames Stage 2: Sunbury Weir and Teddington Weir Archaeological Test Pit and Auger Evaluation  
 Author(s)/Editor(s) Keyworth, T.  
 Author(s)/Editor(s) Batchelor, R.  
 Author(s)/Editor(s) Mills, P.

Author(s)/Editor(s) Poole, K.  
Author(s)/Editor(s) Wilson, A.  
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Place of issue or publication Trent and Peak Archaeology  
Description PDF document with appendices

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Entered by Emily Dingler (edingler@yorkat.co.uk)  
Entered on 18 September 2019

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## OASIS Form

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### Project details

Project name Teddington Weir Archaeological Test Pit and Auger Evaluation

Short description of the project This report presents the results of a Stage 2 test pit and power auger survey carried out by Trent and Peak Archaeology at the site of Sunbury Weir, Berkshire and Teddington Weir, Greater London between September and October 2018. The fieldwork was commissioned by GBV on behalf of the Environment Agency as part of the River Thames Scheme. The evaluation carried out at Sunbury and Teddington Weirs demonstrated an absence of deposits with archaeological and palaeoenvironmental potential. The sequence recorded a series of post-18th century made ground deposits, derived from dredged river gravels and brickmaking waste, overlying the superficial geology of Kempton Park Gravels.

Project dates Start: 01-09-2018 End: 31-10-2018

Previous/future work No / No

Any associated project reference codes RTS6-TED - Sitecode

Any associated project reference codes IMSE500260-GBV-ZZ-2WS-RP-I-00001 - Contracting Unit No.

Type of project Field evaluation

Site status None

Current Land use Wetlands

Current Land use Transport and Utilities 2 - Other transport infrastructure



Current Land use	Open Fresh Water 1 - Running water
Monument type	NONE None
Significant Finds	CERAMIC Early Medieval
Significant Finds	CERAMIC Medieval
Significant Finds	CERAMIC Post Medieval
Significant Finds	CLAY PIPE Post Medieval
Significant Finds	CBM Post Medieval
Significant Finds	CBM Modern
Significant Finds	GLASS Modern
Methods & techniques	"Augering", "Environmental Sampling", "Test Pits"
Development type	Pipelines/cables (e.g. gas, electric, telephone, TV cable, water, sewage, drainage etc.)
Development type	Flood alleviation
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	After full determination (eg. As a condition)

### Project location

Country	England
Site location	GREATER LONDON RICHMOND UPON THAMES TEDDINGTON AND HAMPTON Teddington Weir
Postcode	TW119NG
Study area	1 Hectares
Site coordinates	SK 516717 171530 52.74918388755 -1.234398010346 52 44 57 N 001 14 03 W Point
Height OD / Depth	Min: 6.38m Max: 6.41m

### Project creators

Name of Organisation	Trent and Peak Archaeology
Project brief originator	Environment Agency
Project design originator	Trent and Peak Archaeology
Project director/manager	Kristina Krawiec
Project supervisor	Tom Keyworth
Type of sponsor/funding body	Environment Agency

### Project archives

Physical Contents	"Environmental","Ceramics"
Digital Media available	"Database","GIS","Geophysics","Images raster / digital photography","Images vector","Spreadsheets","Survey","Text"
Paper Media available	"Context sheet","Correspondence","Diary","Drawing","Map","Miscellaneous Material","Notebook - Excavation',' Research',' General Notes","Photograph","Plan","Report","Section","Survey","Unpublished Text","Unspecified Archive"

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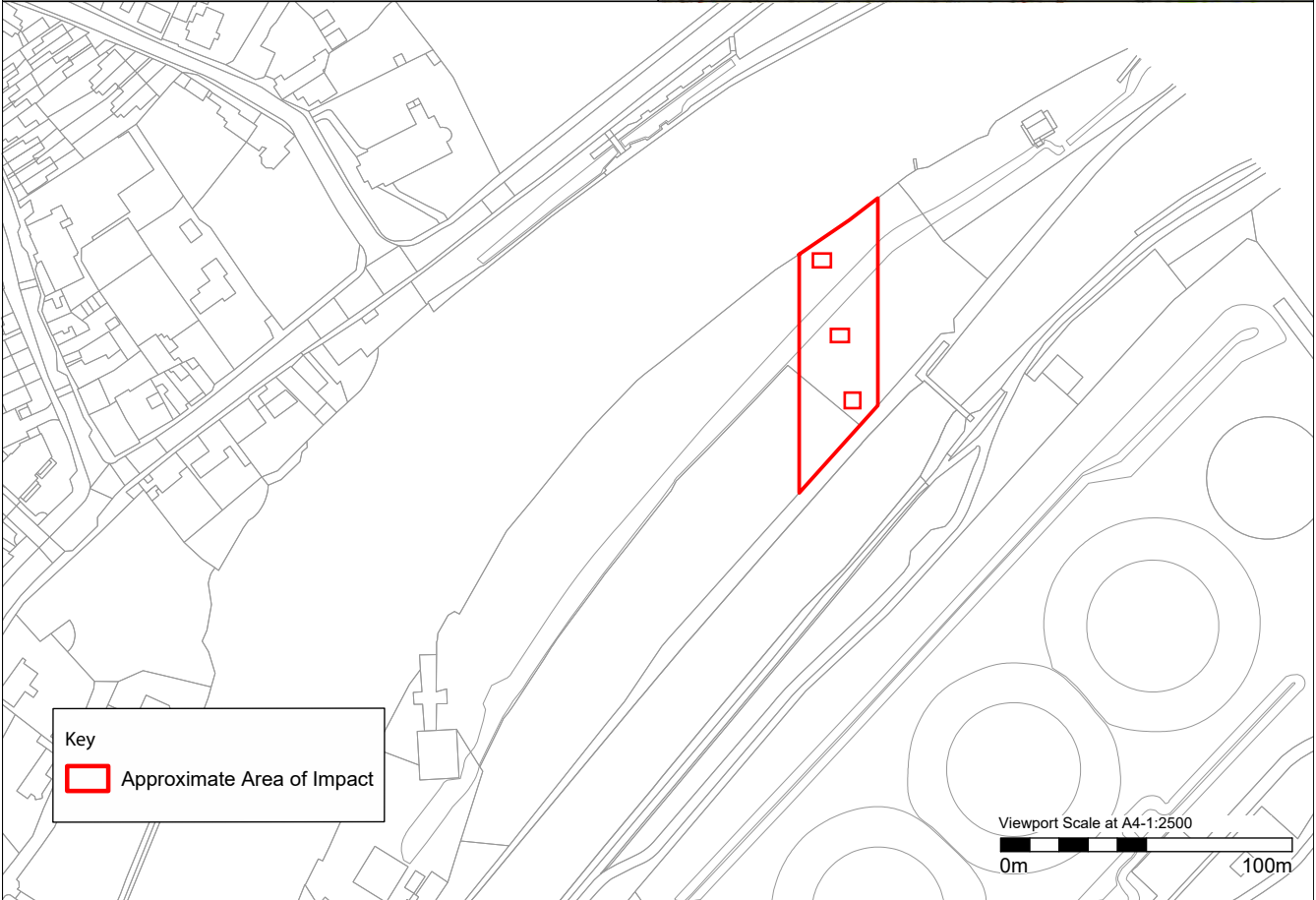
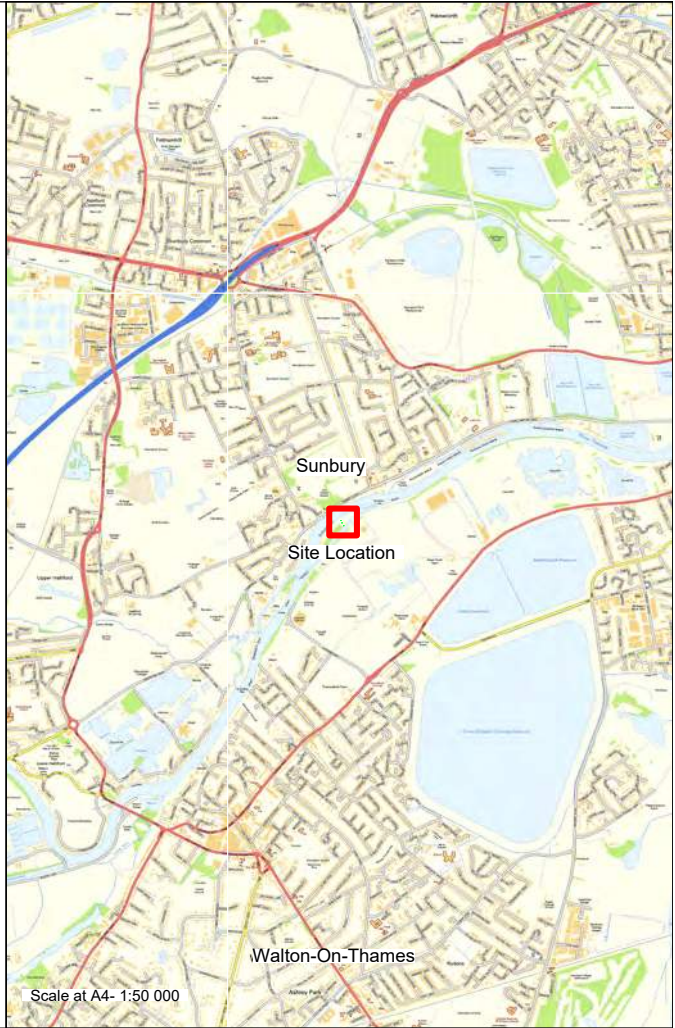
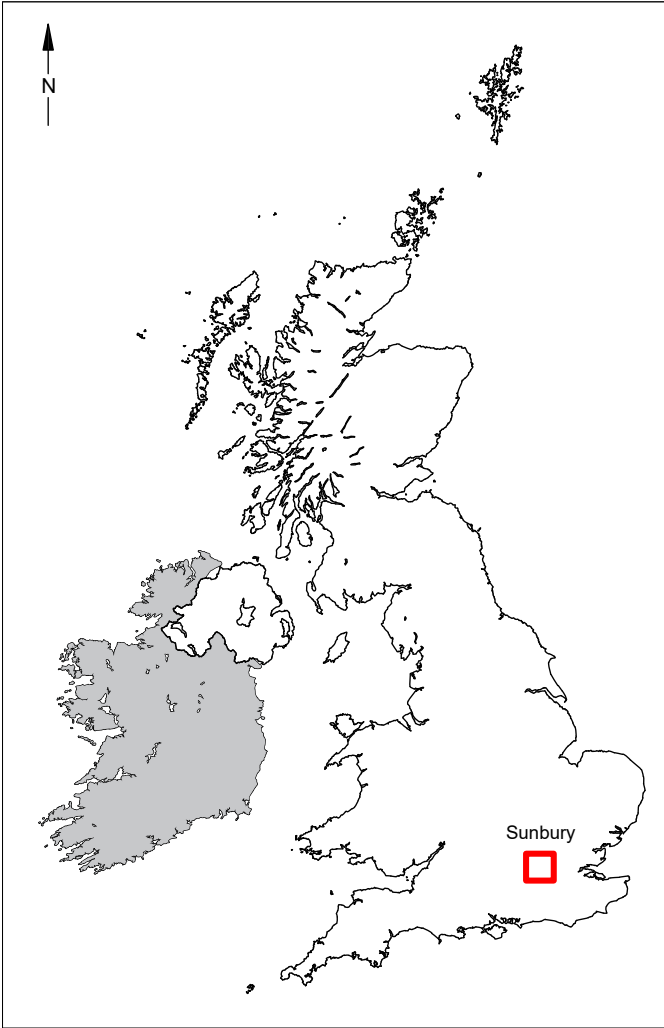
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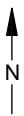
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Author(s)/Editor(s)	Mills, P.
Author(s)/Editor(s)	Poole, K.
Author(s)/Editor(s)	Wilson, A.
Author(s)/Editor(s)	Ilie, M.
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Date	2019
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Place of issue or publication	Trent and Peak Archaeology
Description	PDF document with appendices.

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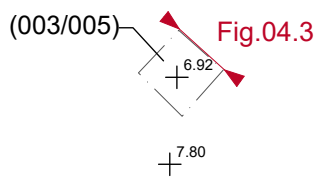
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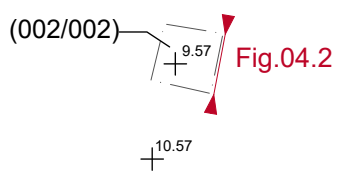




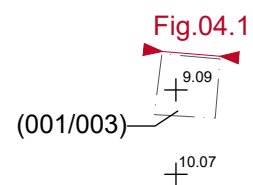
Test Pit 03



Test Pit 02



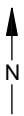
Test Pit 01



Key:

 Test Pit





Test Pit 03



Test Pit 02



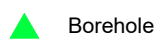
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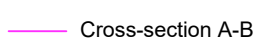
Key:



Test Pit



Borehole



Cross-section A-B



Fig.04.1  
South Facing Section Of Test Pit 01

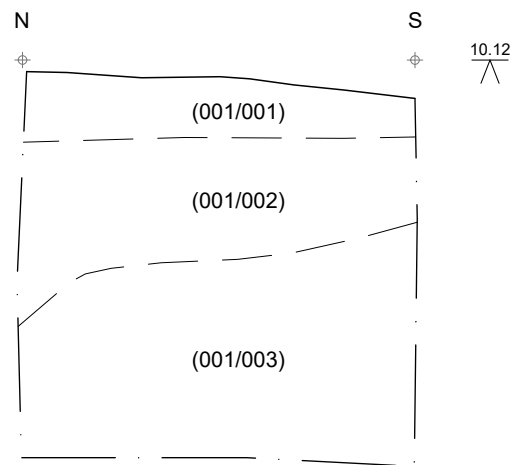


Fig04.2  
West Facing Section Of Test Pit 02

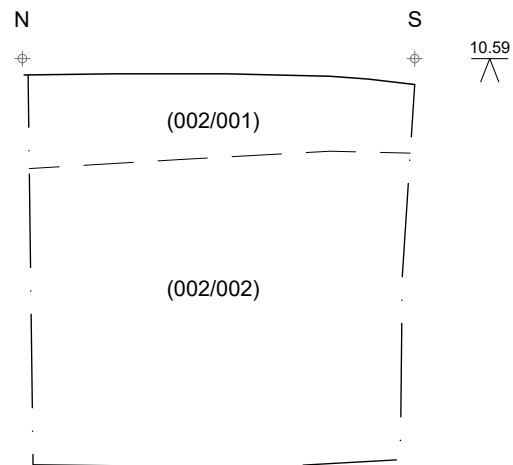
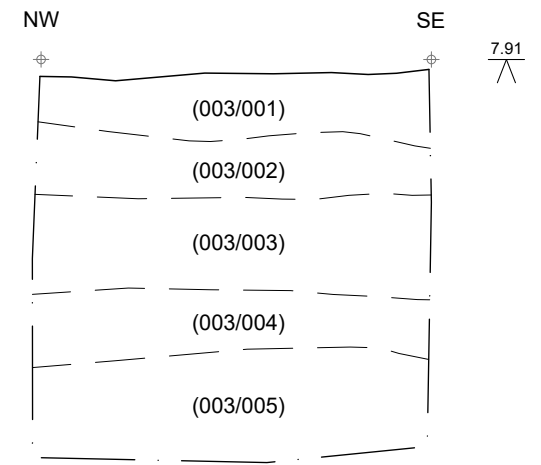
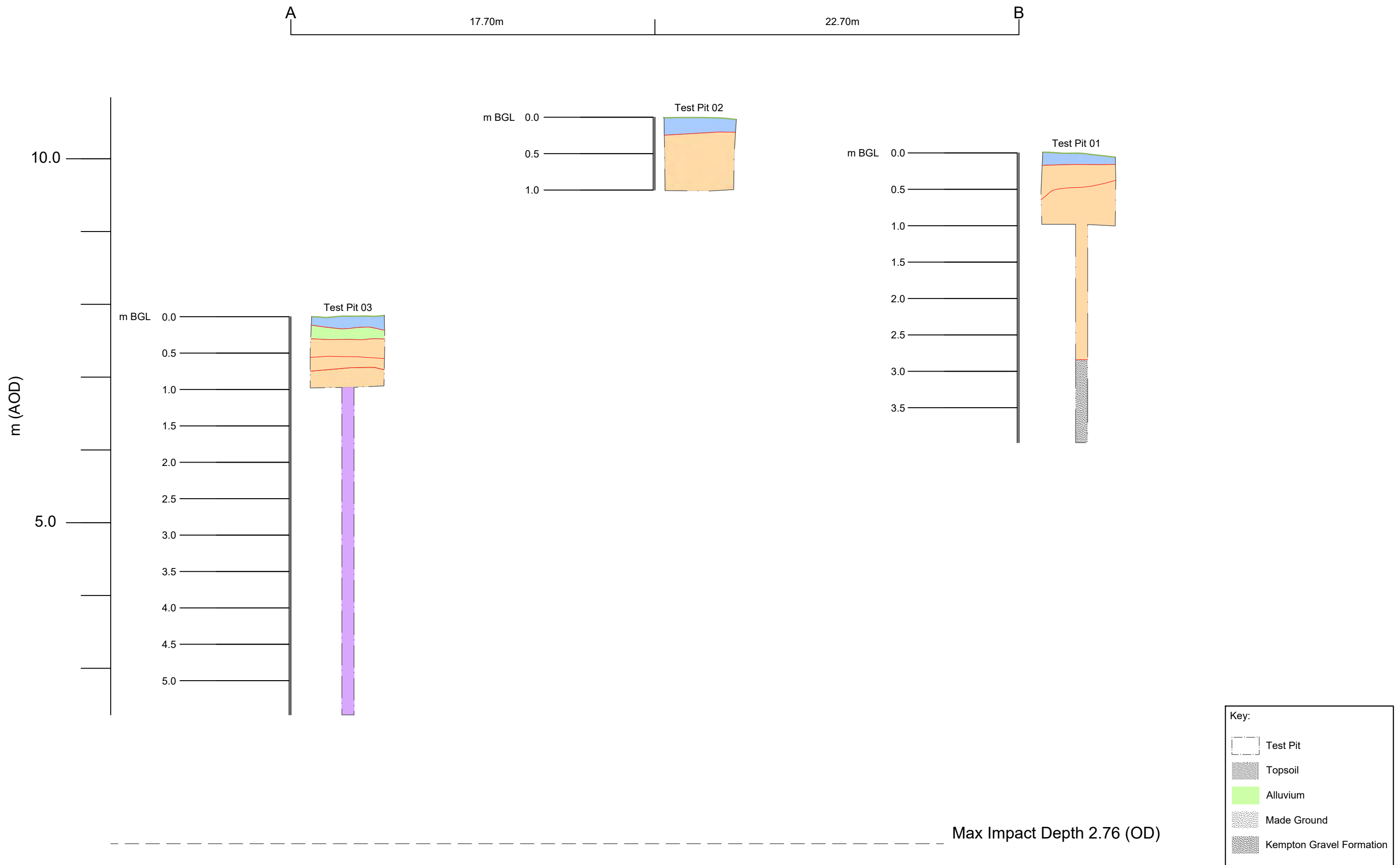


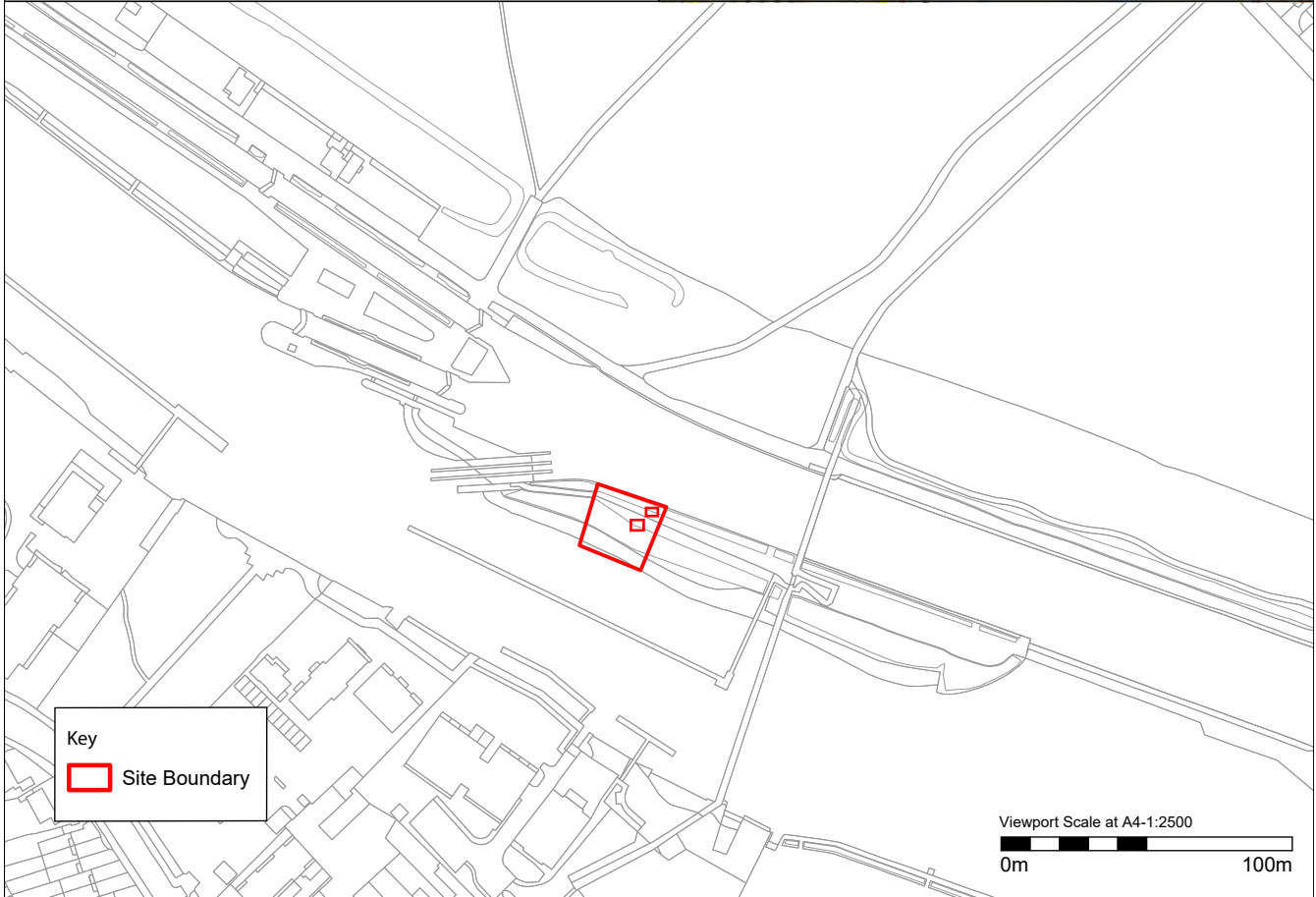
Fig.04.3  
South West Facing Section Of Test Pit 03




### Cross-Section A-B

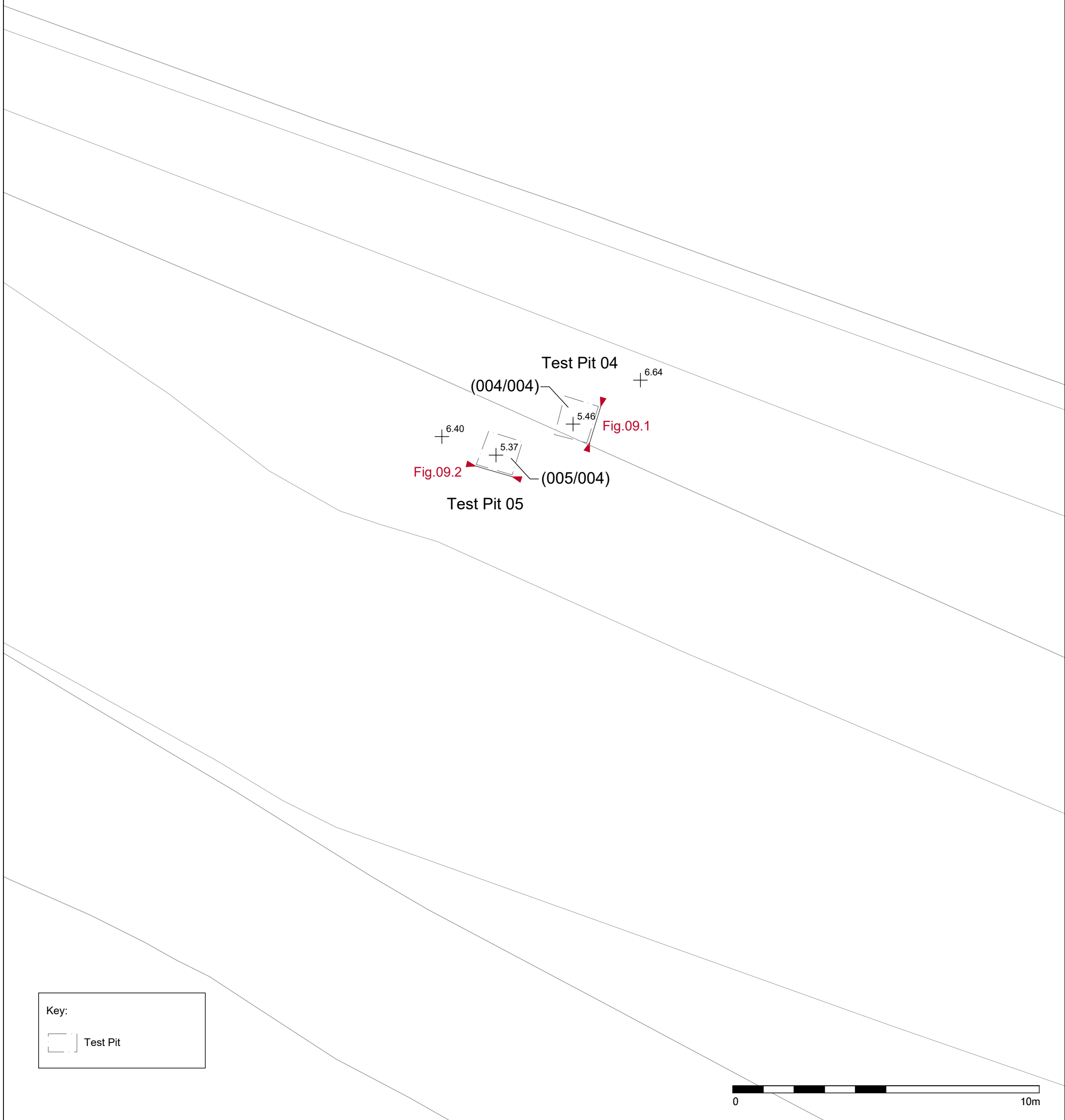
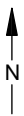







**Figure 01 - Location Plan**  
**RTS6 - River Thames Stage 2 Evaluations (Teddington Weir)**
Scale at A4 - varies  
 Drawn by NO

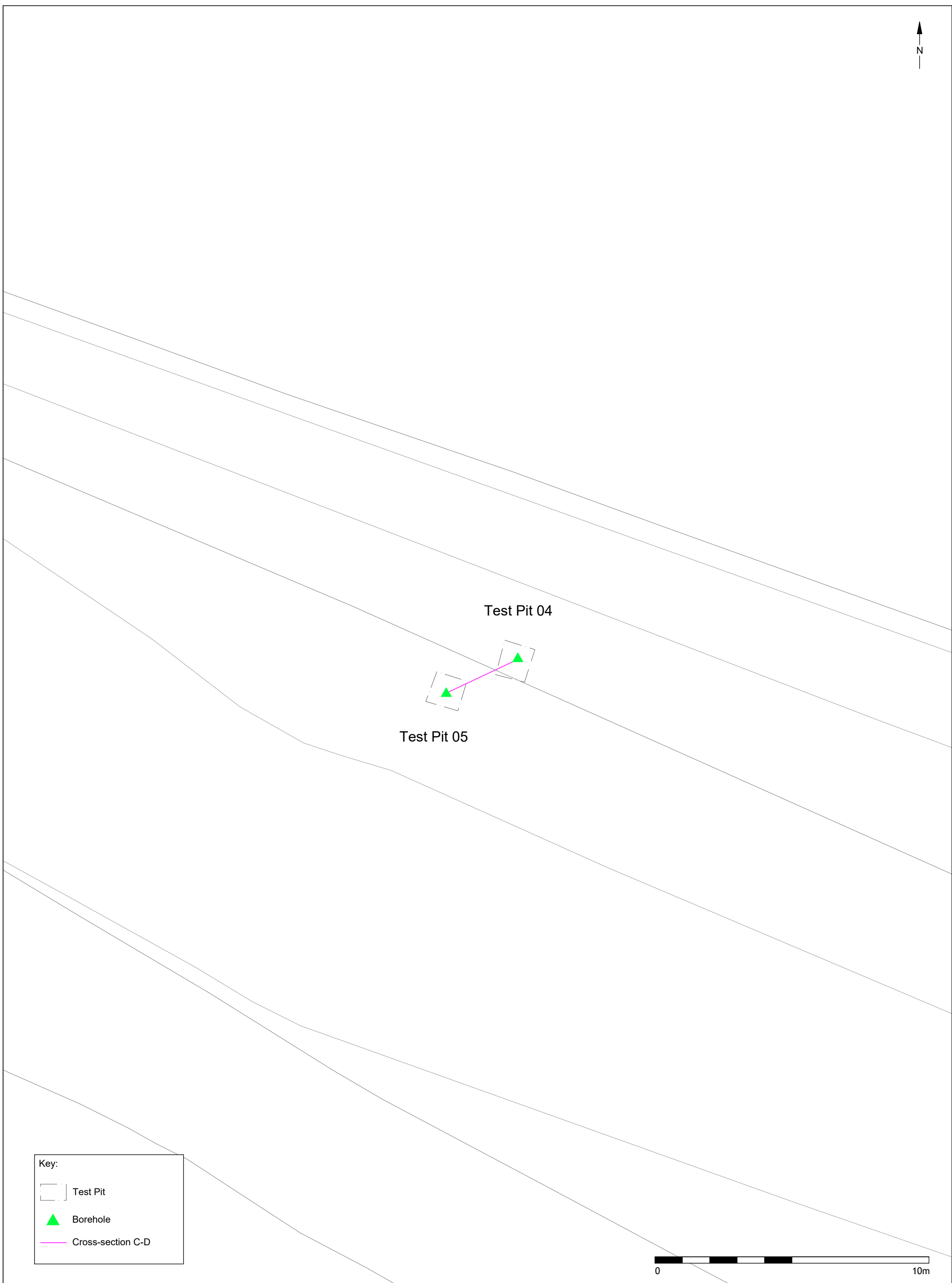
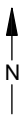
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Key:

 Test Pit








Test Pit 04

Test Pit 05

Key:

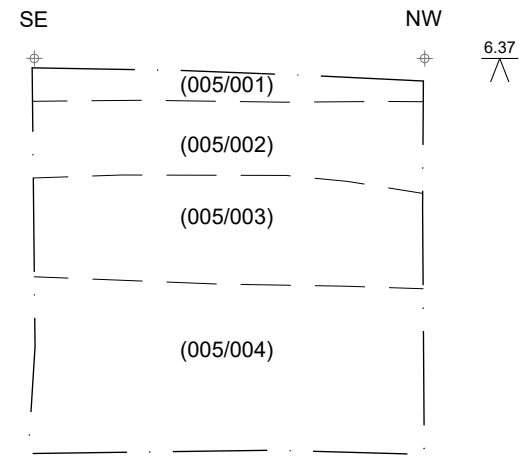
-  Test Pit
-  Borehole
-  Cross-section C-D

0 10m

Fig.09.1  
West North West Facing Section Of Test Pit 04

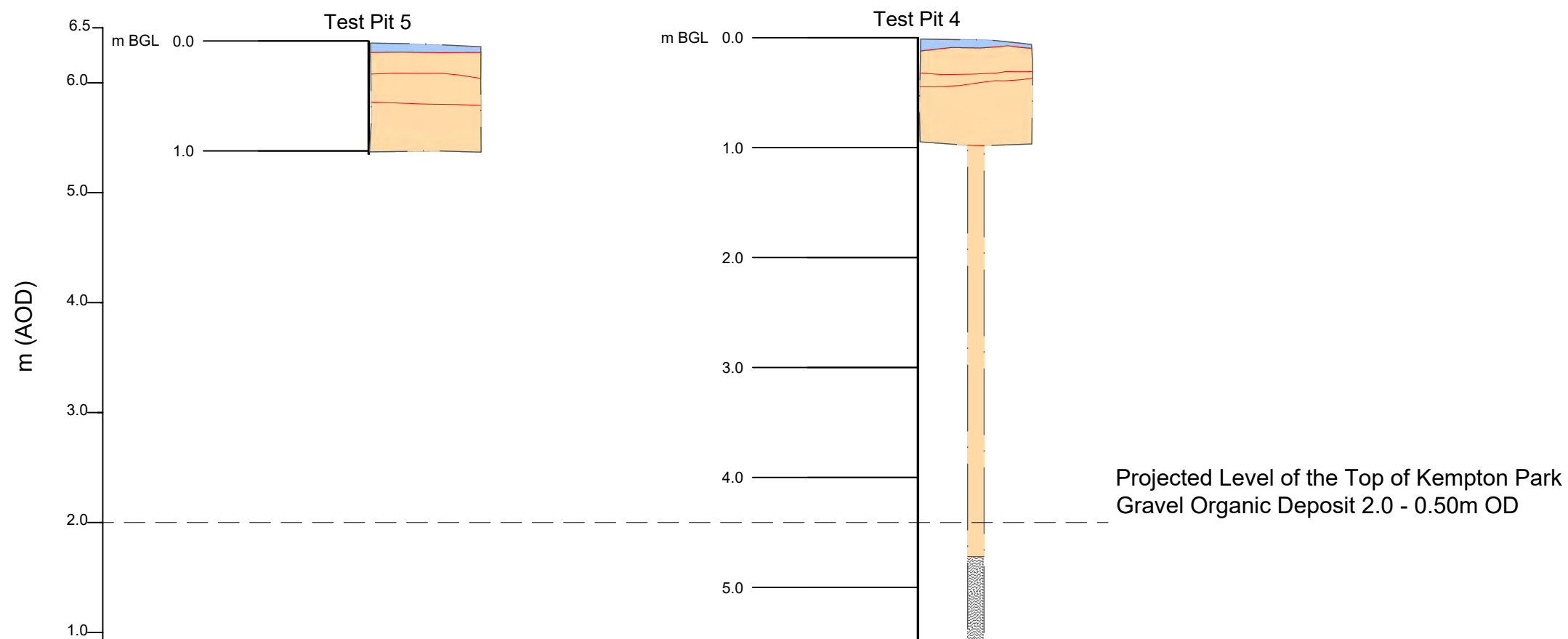


Fig.09.2  
North East Facing Section Of Test Pit 05







Cross-Section C-D

C 2.25m D



Key:

-  Test Pit
-  Topsoil
-  Made Ground
-  Kempton Gravel Formation

## **Plates**





Plate 1: Facing north, Sunbury TP001 post-excavation.



Plate 2: Facing east, Sunbury TP002 post-excavation





Plate 3: Facing north-east, Sunbury TP003 post-excavation.



Plate 4: Facing east, Teddington TP004 post-excavation.





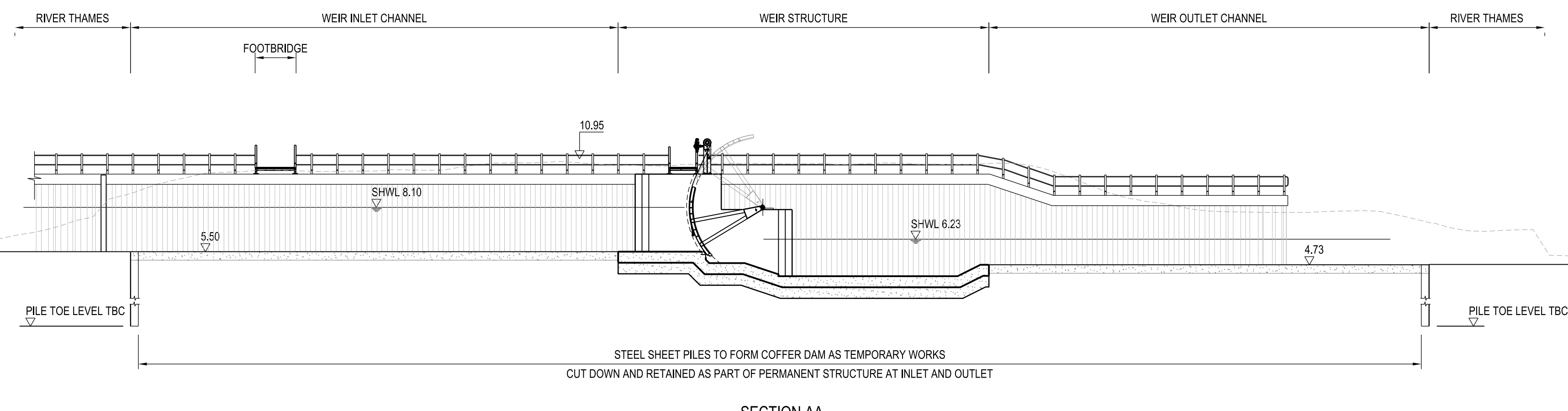
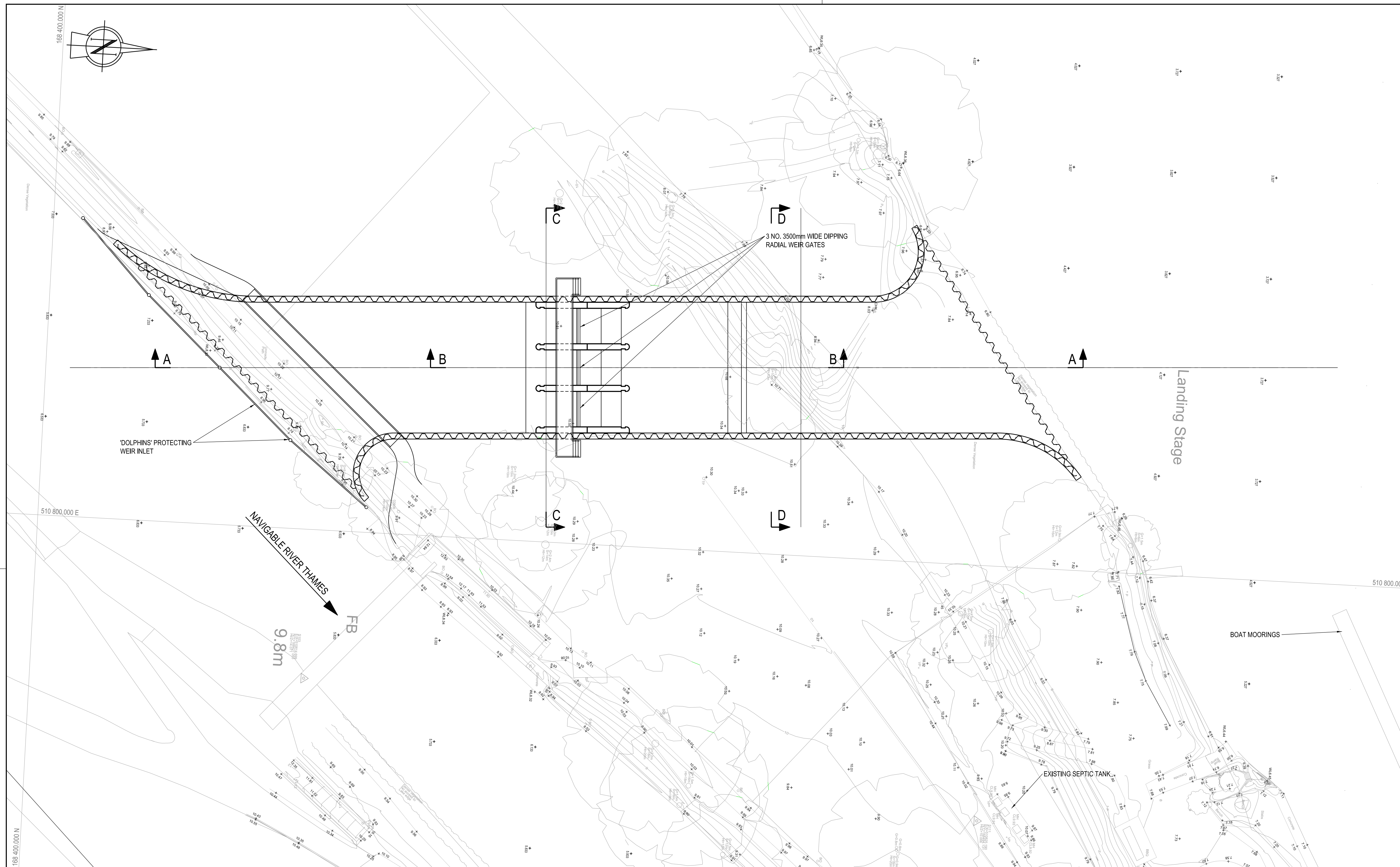
Plate 5: showing post-medieval/modern CBM from BH01 (TP004) at Teddington (3.45m BGL / 1.99m AOD).



Plate 6: Facing south, Teddington TP005 post-excavation.

## APPENDIX





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  6. ALL EXPOSED CONCRETE EDGES HAVE 25x25mm CHAMFERS.
  7. STRUCTURE FOOTPRINT APPROXIMATELY 15.5m WIDE x 21.8m LONG WITH HIGHEST POINT AT 12.05m AOD (IF WALKWAY IS UNCOVERED).
  8. A FISH PASSAGE STRUCTURE IS BEING CONSIDERED AS PART OF THE WORKS AT SUNBURY WEIR. LOCATION AND TYPE OF FISH PASSAGE STRUCTURE TO BE CONFIRMED.
  9. RIVER BED LEVELS ARE ACCURATE TO 100mm.
  10. THIS DRAWING READ IN CONJUNCTION WITH DRG. NO. 1022368-BVL-Z0-WS-DR-C-00011.
  11. A DRAUGHT OF 1.5m IS REQUIRED FOR CRANE BARGE.

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER

<b>CONSTRUCTION :</b>
S.1 WORKING WITHIN COFFERDAM. S.2 MATERIALS MOVEMENT BY RIVER. S.3 DEEP EXCAVATION. S.4 WORKING OVER AND NEAR WATER. S.5 WORKING AT HEIGHT. S.6 FLOODING OF SITE.
<b>MAINTENANCE, CLEANING AND OPERATION :</b>
S.6 FLOODING OF SITE.
<b>DECOMMISSIONING OR DEMOLITION :</b>
S.1 WORKING WITHIN COFFERDAM. S.2 MATERIALS MOVEMENT BY RIVER. S.4 WORKING OVER AND NEAR WATER. S.5 WORKING AT HEIGHT. S.6 FLOODING OF SITE.

P01	TJM	SM	JH	JH	27/01/17	Suitable for client review, comment and/or approval
P02	TJM	BS	JH	JH	28/07/17	Suitable for client review, comment and/or approval
Rev	Drawn	Chkd	Rvwd	Apprd	Date	Description

Designed by: **B.S.** Date: **21.04.16**



Client Drawing No. \_\_\_\_\_ Revision \_\_\_\_\_



Registered office: Cowley Business Park, Cowley, Uxbridge, Middlesex, UB8 2AL, UK  
Registered in England and Wales: Company no. 08584398

Project: **RIVER THAMES SCHEME (DATCHET TO TEDDINGTON) (RTS) CAPACITY IMPROVEMENTS AND FLOOD CHANNEL (CI&FC)**

Drawing title: **SUNBURY WEIR OUTLINE DESIGN PLAN**

Drawing scale: 1:200 Sheet size: A1  
Drawing no. 122368-BVL-Z0-WS-DR-C-00010 Revision P02



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6. ALL EXPOSED CONCRETE EDGES HAVE 25x25mm CHAMFERS.
7. STRUCTURE FOOTPRINT APPROXIMATELY 13.0m WIDE x 21.8m LONG WITH HIGHEST POINT AT 12.15m AOD (IF WALKWAY IS UNCOVERED).
8. HIGHEST RECORDED RIVER LEVEL = 9.02m AOD (EA).
9. HIGHEST RECORDED RIVER LEVEL = 9.02m AOD (EA).
10. 100 YEAR FLOOD LEVEL PREDICTION (FROM GBV MODEL) U/S = 9.45m AOD, D/S = 9.25m AOD.
11. 20 YEAR FLOOD LEVEL PREDICTION (FROM GBV MODEL) U/S = 8.84m AOD, D/S = 8.68m AOD.
12. THIS DRAWING READ IN CONJUNCTION WITH DRG. NO. 122368-BVL-Z0-WS-DR-C-00010.
13. A DRAUGHT OF 1.5m IS REQUIRED FOR CRANE BARGE.
14. A CONCRETE CHANNEL LINING HAS BEEN SHOWN TO ACT AS A STRUT FOR THE SHEET PILE CHANNEL WALLS. IF NOT REQUIRED FOR THIS PURPOSE GABION MATTRESS OR RIP-RAP ARE ACCEPTABLE.

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

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**CONSTRUCTION :**

- S.1 WORKING WITHIN COFFERDAM.
- S.2 MATERIALS MOVEMENT BY RIVER.
- S.3 DEEP EXCAVATION.
- S.4 WORKING OVER AND NEAR WATER.
- S.5 WORKING AT HEIGHT.
- S.6 FLOODING OF SITE.

**MAINTENANCE, CLEANING AND OPERATION :**

- S.6 FLOODING OF SITE.

**DECOMMISSIONING OR DEMOLITION :**

- S.1 WORKING WITHIN COFFERDAM.
- S.2 MATERIALS MOVEMENT BY RIVER.
- S.4 WORKING OVER AND NEAR WATER.
- S.5 WORKING AT HEIGHT.
- S.6 FLOODING OF SITE.

Rev	Drawn	Chkd	Rwd	Apprd	Date	Description
P01	TJM	SM	JH	JH	18/10/16	Suitable for client review, comment and/or approval
P02	TJM	BS	JH	JH	28/07/17	Suitable for client review, comment and/or approval

Designed by: **B.S.** Date: **21.04.16**



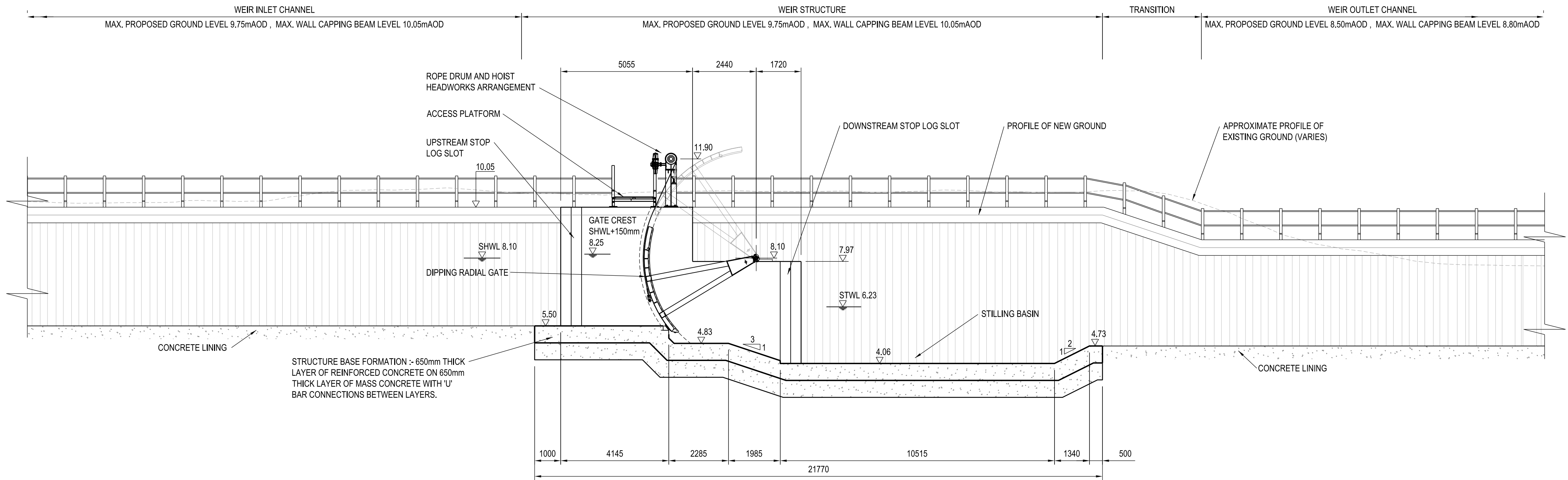
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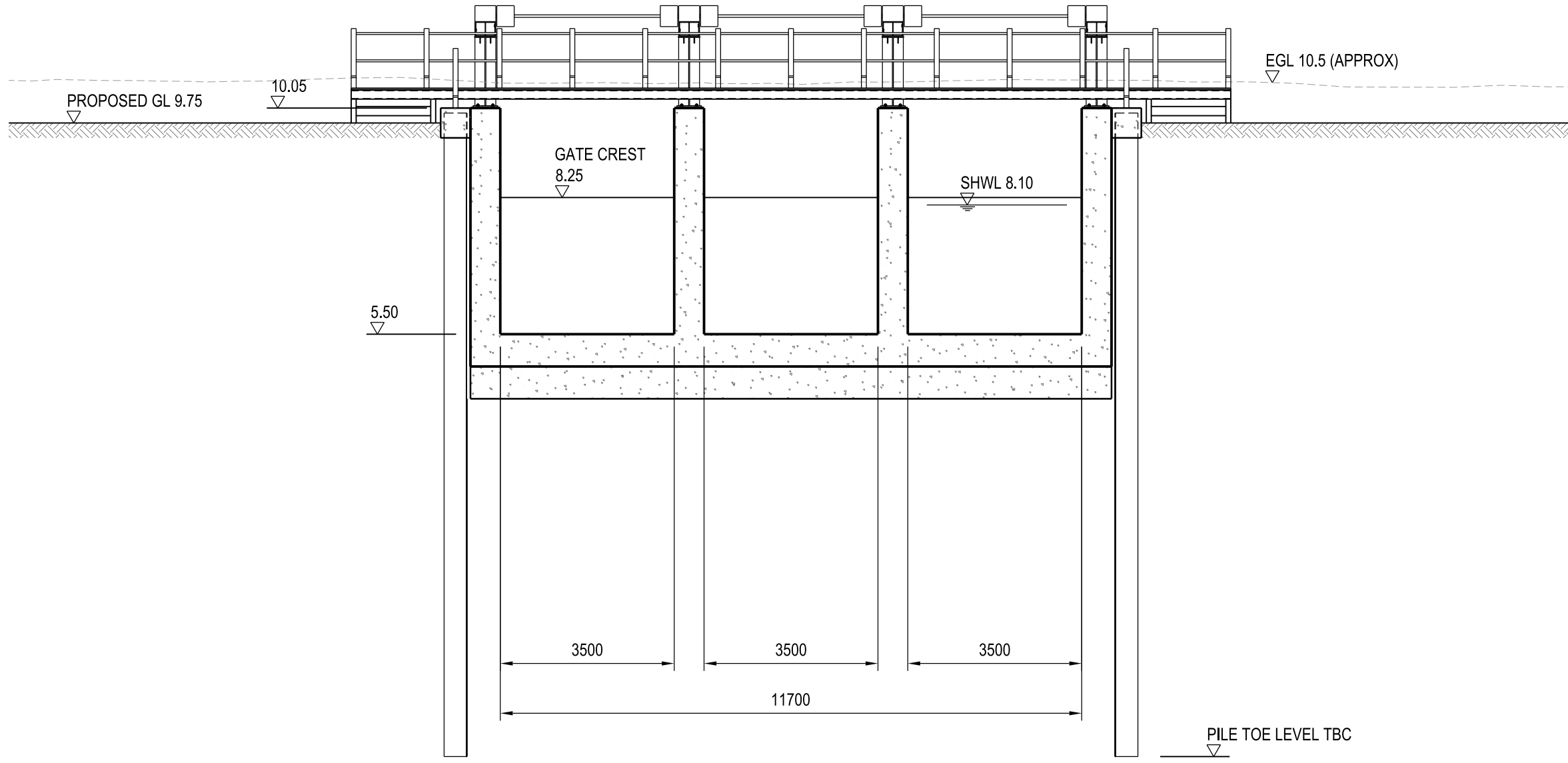
Project: **RIVER THAMES SCHEME (DATCHET TO TEDDINGTON) (RTS) CAPACITY IMPROVEMENTS AND FLOOD CHANNEL (CI&FC)**

**SUNBURY WEIR  
OUTLINE DESIGN  
SECTIONS**

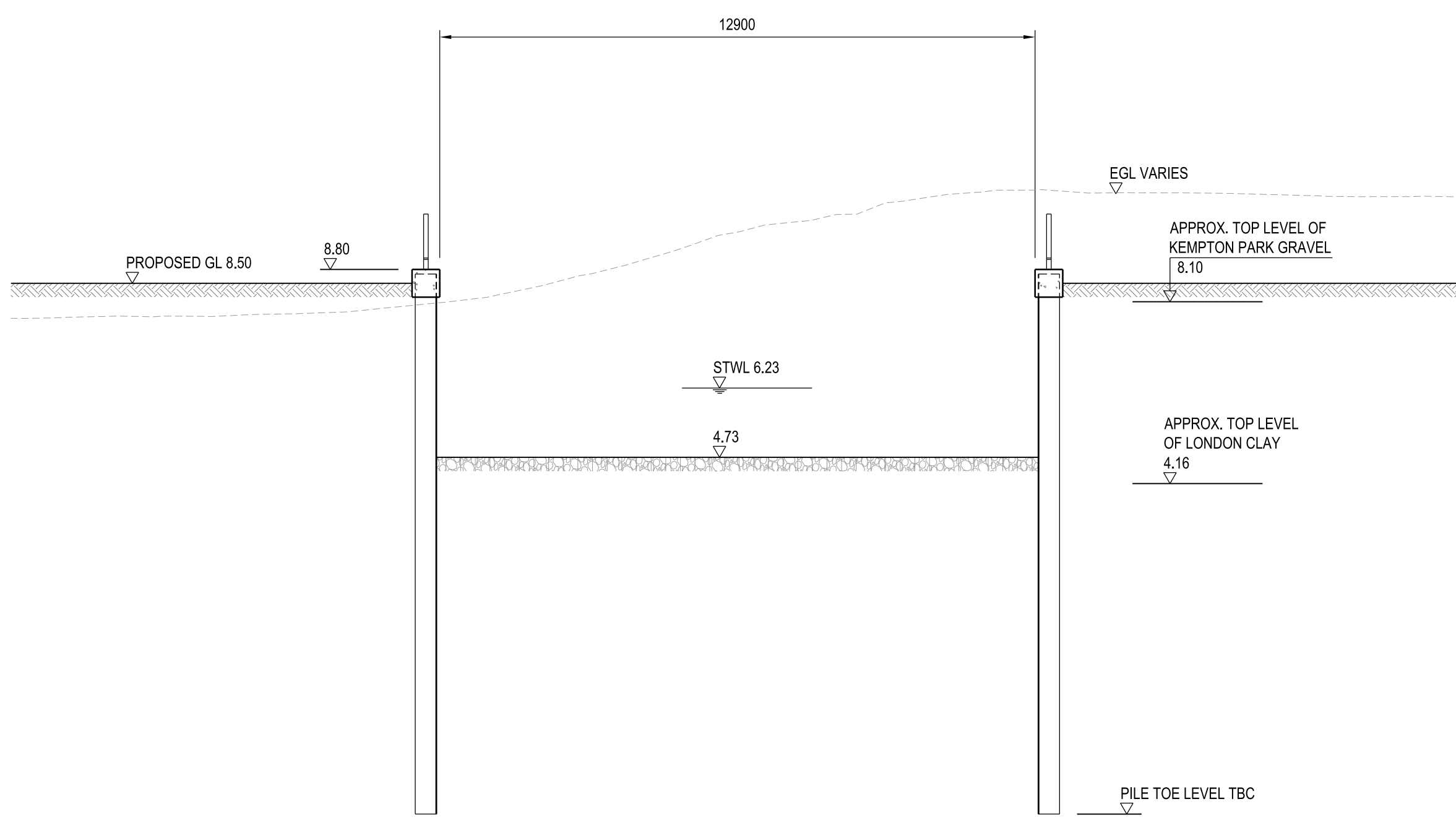
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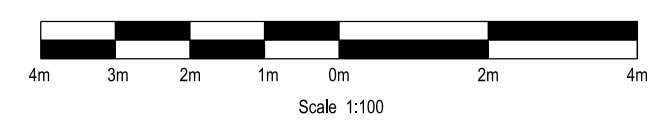
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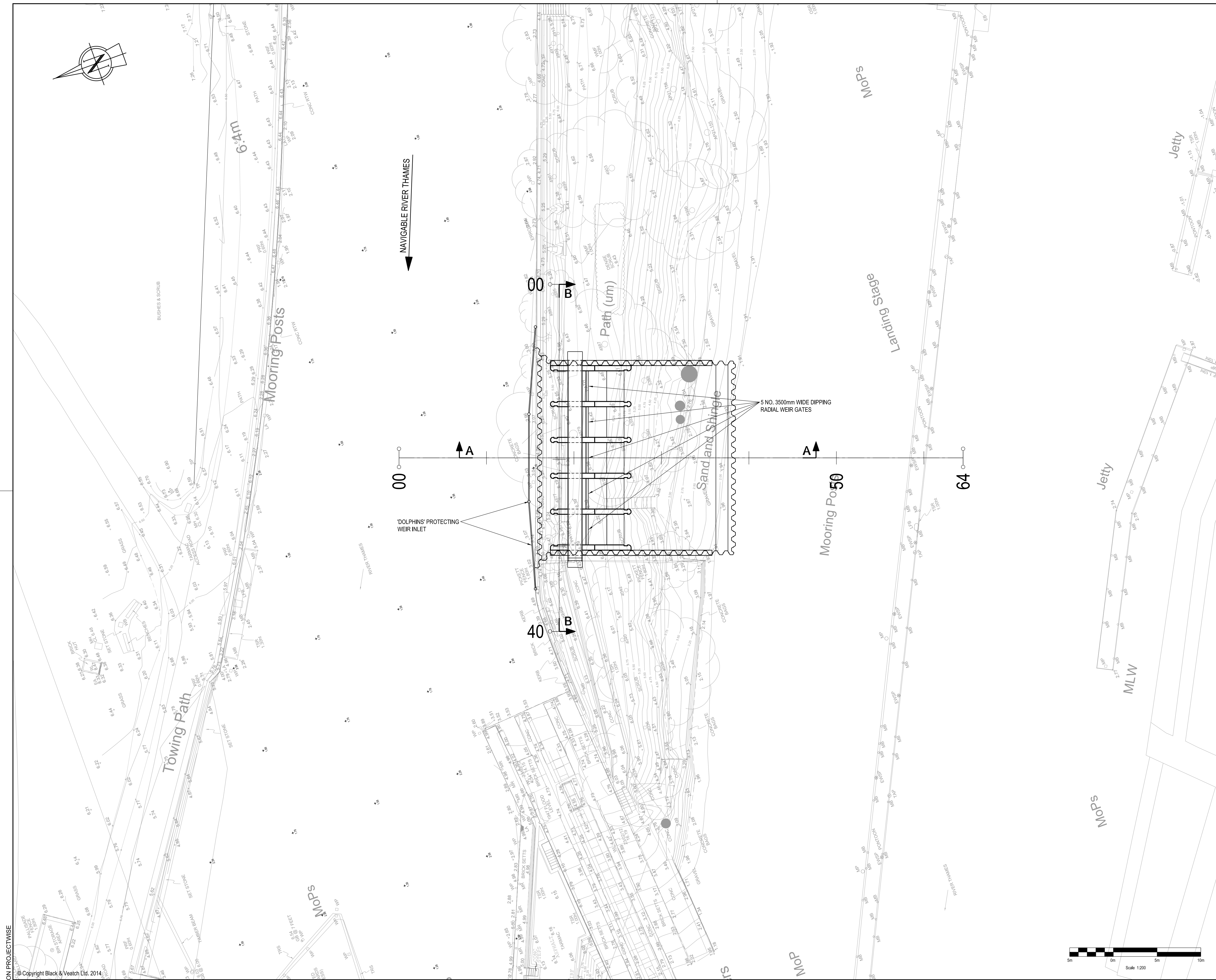
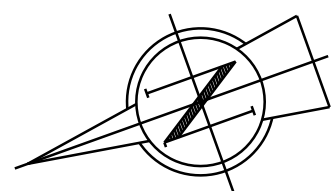
**SECTION CC**



**SECTION DD**







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1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
  2. ALL LEVELS IN METRES ABOVE ORDNANCE DATUM (NEWLYN).
  3. ALL STRUCTURAL CONCRETE GRADE C35A (TBC).
  4. ALL BLINDING CONCRETE GRADE C20 (TBC).
  5. ONLY PRINCIPAL UTILITIES AND FEATURES HAVE BEEN INDICATED WITH APPROXIMATE LOCATIONS. ACTUAL POSITIONS MUST BE ESTABLISHED AND VERIFIED ON SITE.
  6. ALL EXPOSED CONCRETE EDGES HAVE 25x25mm CHAMFERS.
  7. STRUCTURE FOOTPRINT APPROXIMATELY 22.2m WIDE x 22.7m LONG WITH HIGHEST POINT AT 0.05m AOD (IF WALKWAY IS UNCOVERED).
  8. RIVER BED LEVELS ARE ACCURATE TO 100mm.
  9. THIS DRAWING READ IN CONJUNCTION WITH DRG. NO. 122368-BVL-Z0-WT-DR-C-00011.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER	
<b>CONSTRUCTION :</b>	
S.1 INTERACTION WITH MOORED BOATS. S.2 WORKING WITHIN COFFERDAM. S.3 DEEP EXCAVATION. S.4 WORKING OVER AND NEAR WATER. S.5 WORKING AT HEIGHT. S.6 MODERATE RISK OF UXO. S.7 FLOODING OF SITE.	
<b>MAINTENANCE, CLEANING AND OPERATION :</b>	
S.1 INTERACTION WITH MOORED BOATS. S.7 FLOODING OF SITE.	
<b>DECOMMISSIONING OR DEMOLITION :</b>	
S.1 INTERACTION WITH MOORED BOATS. S.2 WORKING WITHIN COFFERDAM. S.4 WORKING OVER AND NEAR WATER. S.5 WORKING AT HEIGHT. S.7 FLOODING OF SITE.	

P01	TJM	SM	JH	JH	27/01/17	Suitable for client review, comment and/or approval
P02	TJM	BS	JH	JH	28/07/17	Suitable for client review, comment and/or approval
Rev	Drawn	Chkd	Rwd	Apprd	Date	Description

Designed by: **B.S.** Date: **12.05.16**

Client **River Thames Scheme**

Client Drawing No. \_\_\_\_\_ Revision \_\_\_\_\_

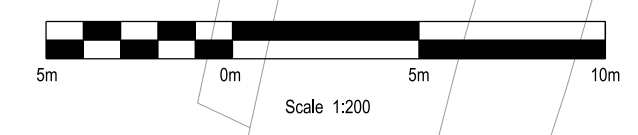
**gbv** A GALLIFORD TRY, BLACK & VEATCH JOINT VENTURE

Registered office: Cowley Business Park, Cowley, Uxbridge, Middlesex, UB8 2AL, UK  
 Registered in England and Wales: Company no. 08584398

Project **RIVER THAMES SCHEME (DATCHET TO TEDDINGTON) (RTS) CAPACITY IMPROVEMENTS AND FLOOD CHANNEL (CI&FC)**

Drawing title **TEDDINGTON WEIR OUTLINE DESIGN PLAN**

Drawing scale: <b>1:200</b>	Sheet size: <b>A1</b>
Drawing no. <b>122368-BVL-Z0-WT-DR-C-00010</b>	Revision <b>P02</b>

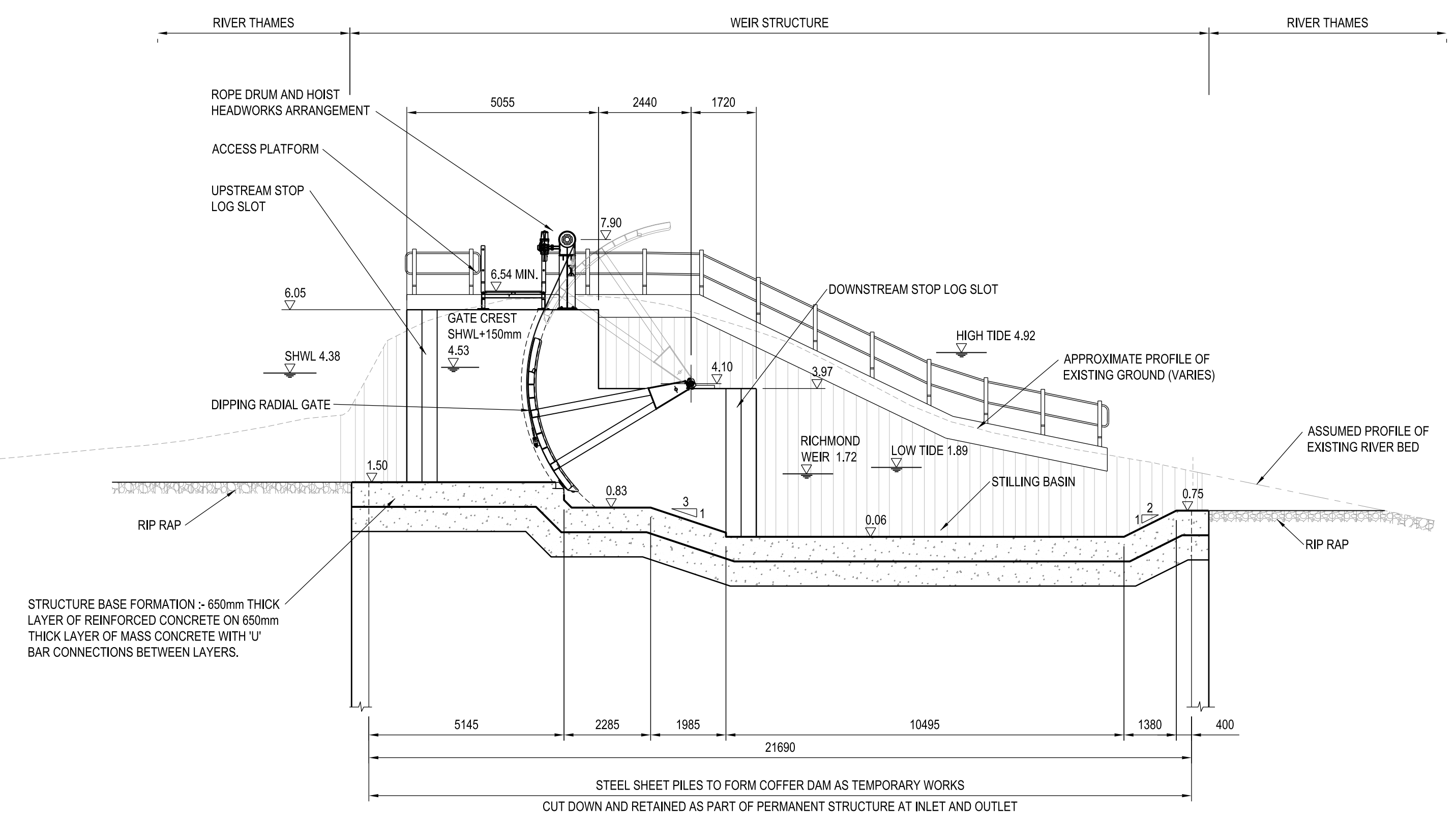




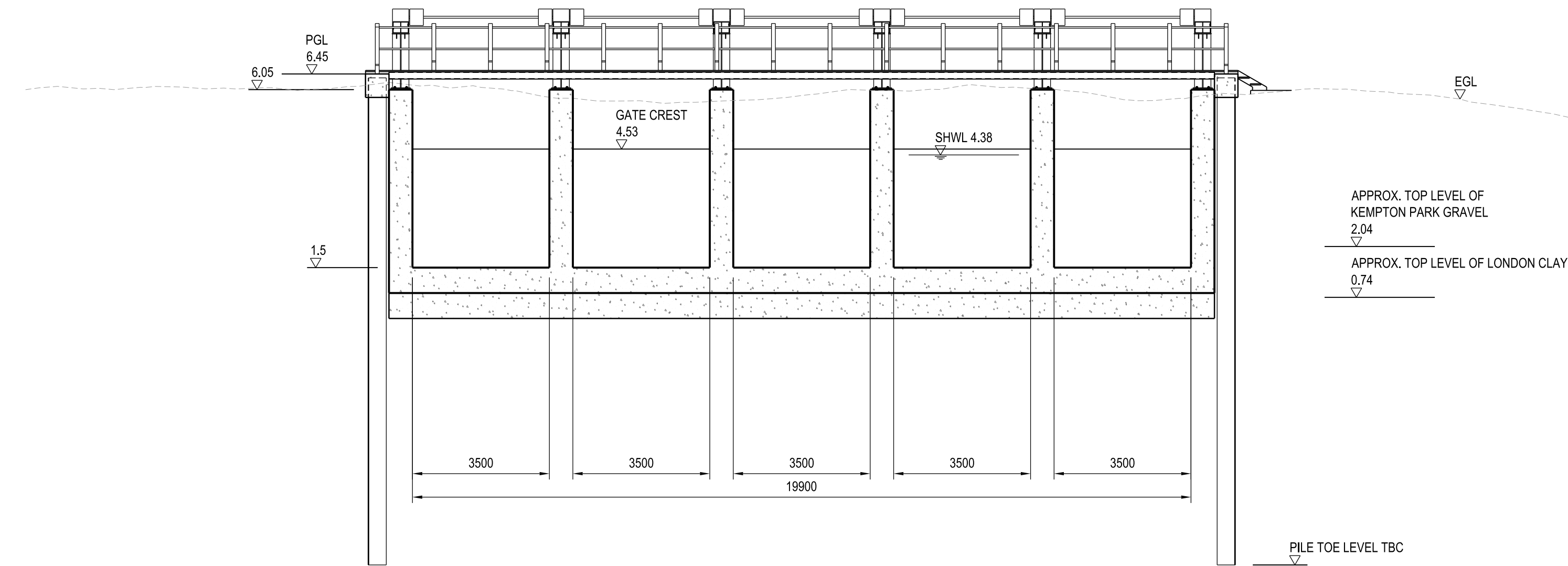
Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

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- NOTES**
1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
  2. ALL LEVELS IN METRES ABOVE ORDNANCE DATUM (NEWLYN).
  3. ALL STRUCTURAL CONCRETE GRADE C35A (TBC).
  4. ALL BLINDING CONCRETE GRADE C20 (TBC).
  5. ONLY PRINCIPAL UTILITIES AND FEATURES HAVE BEEN INDICATED WITH APPROXIMATE LOCATIONS. ACTUAL POSITIONS MUST BE ESTABLISHED AND VERIFIED ON SITE.
  6. ALL EXPOSED CONCRETE EDGES HAVE 25x25mm CHAMFERS.
  7. HIGHEST RECORDED RIVER LEVEL = 5.58m AOD (EA).
  8. 100 YEAR FLOOD LEVEL PREDICTION (FROM GBV MODEL) U/S = 6.39m AOD, D/S = 6.33m AOD.
  9. 20 YEAR FLOOD LEVEL PREDICTION (FROM GBV MODEL) U/S = 5.83m AOD, D/S = 5.80m AOD.
  10. THIS DRAWING READ IN CONJUNCTION WITH DRG. NO. 122368-BVL-Z0-WT-DR-C-00010.



**SECTION AA**  
**SILL LEVEL 1.50m AOD**



**SECTION BB**

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER

- CONSTRUCTION :**
- S.1 INTERACTION WITH MOORED BOATS.
  - S.2 WORKING WITHIN COFFERDAM.
  - S.3 DEEP EXCAVATION.
  - S.4 WORKING OVER AND NEAR WATER.
  - S.5 WORKING AT HEIGHT.
  - S.6 MODERATE RISK OF UXO.
  - S.7 FLOODING OF SITE.

- MAINTENANCE, CLEANING AND OPERATION :**
- S.1 INTERACTION WITH MOORED BOATS.
  - S.7 FLOODING OF SITE.

- DECOMMISSIONING OR DEMOLITION :**
- S.1 INTERACTION WITH MOORED BOATS.
  - S.2 WORKING WITHIN COFFERDAM.
  - S.4 WORKING OVER AND NEAR WATER.
  - S.5 WORKING AT HEIGHT.
  - S.7 FLOODING OF SITE.

Rev	Drawn	Chkd	Rwrd	Apprd	Date	Description
P01	TJM	SM	JH	JH	18/10/16	Suitable for client review, comment and/or approval
P02	TJM	BS	JH	JH	28/07/17	Suitable for client review, comment and/or approval

Designed by: **B.S.** Date: **21.04.16**

Client **River Thames Scheme**

Client Drawing No. \_\_\_\_\_ Revision \_\_\_\_\_

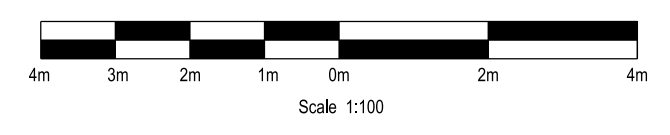
**gbv** A GALLIFORD TRY, BLACK & VEATCH JOINT VENTURE

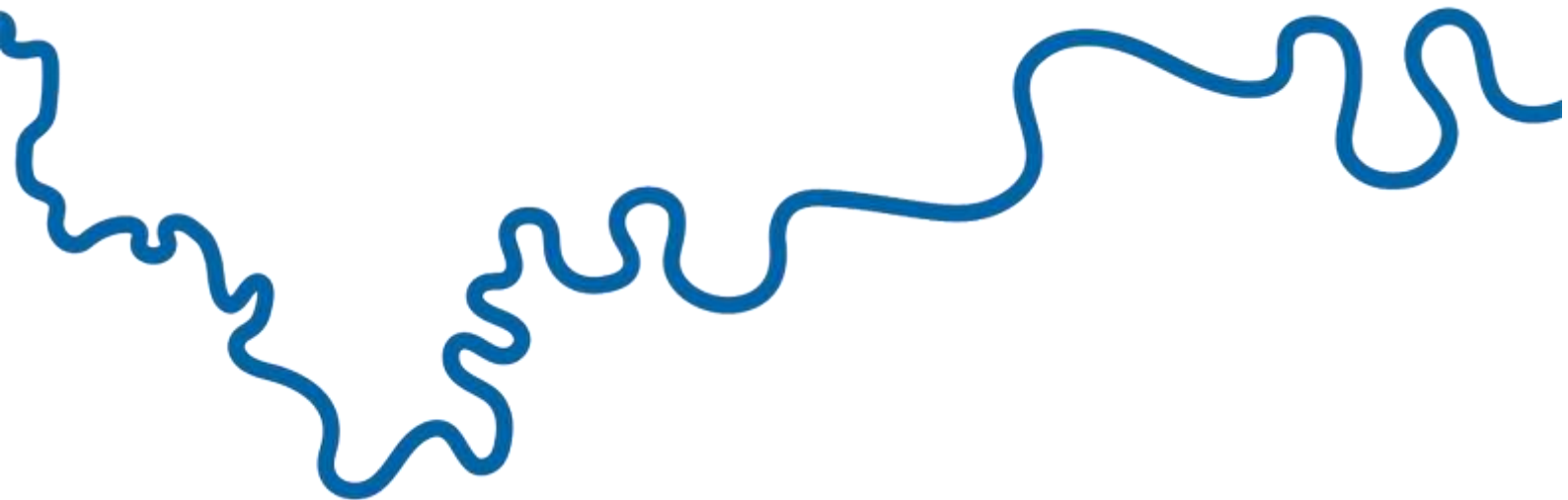
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Registered in England and Wales: Company no. 08584398

Project **RIVER THAMES SCHEME (DATCHET TO TEDDINGTON) (RTS) CAPACITY IMPROVEMENTS AND FLOOD CHANNEL (CI&FC)**

Drawing title **TEDDINGTON WEIR OUTLINE DESIGN SECTIONS**

Drawing scale: 1:100	Sheet size: A1
Drawing no. 122368-BVL-Z0-WT-DR-C-00011	Revision P02





The River Thames Scheme represents a new landscape-based approach to creating healthier, more resilient and more sustainable communities by reducing the risk of flooding and creating high quality natural environments.