

TECHNICAL NOTE

Job Name: Abingdon Hydropower
Job No: 27754-001
Note No: TN1
Date: 30/05/13
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Subject: **Construction Method Statement**

1. Introduction

This Technical Note has been prepared to set out the extent and order of the construction activities that are envisaged will be required to construct the proposed hydropower installation on the west side of Abingdon Weir on the Abbey Mill Stream. The purpose of this Note is to provide sufficient information on the impact of the works to support the planning application and allow the impact of the works to be assessed.

The proposed hydropower works consist of a two 3m diameter Archimedes Screw turbines located in concrete 'troughs' with a gearbox and generator housing at the upstream end. The generator housing also contains the flow control penstocks and electrical and control equipment. A trash screen will be located just upstream of the inlet to the turbines to prevent large floating debris entering the turbines.

The existing public right of way that runs alongside the Abbey Mill Stream and links to Abingdon Weir will cross the turbine inlet channel on a new footbridge.

A new fish pass will be constructed to the west of the turbines. The public right of way will cross the inlet to the fish pass on a new footbridge.

N.B. This Note is prepared to inform the planning process to illustrate the overall approach to construction and is not a definitive construction method statement. The final methodology will be drawn up by the successful Contractor.

2. Sequence of Works

The sequence of the works is envisaged as follows:

1. Initial works to form temporary access route to the working area from the public highway at Abbey Mill Close to the site of the works across public open space.
2. Site clearance including tree works and temporary security fencing to demarcate working area and temporary compound.
3. Installation of land based temporary site cabins and material stores
4. Any floating plant proposed to be used are to be bought to site on River Thames and initially moored on upstream side of the works
5. Temporary closure of public footpath running alongside the Abbey Mill Stream from the existing footbridge to the weir to allow the sheet piling works at the upstream side (including any temporary cofferdam)
6. Sheet piling works using floating plant if required.
7. Construction of temporary floating footpath diversion on Abbey Mill Stream to allow the public footpath to be re-opened
8. Excavation, groundworks and reinforced concrete work for turbines and fish pass inlet and outlets



9. Delivery of turbines by road or possibly by river and all mechanical and electrical work including grid connection to north
10. Fish pass construction including new area of gravel bed at the downstream end of the works
11. Completion of works including generator housing, commissioning and performance testing
12. Remove floating footpath diversion
13. Remove temporary compound and re-instatement etc.
14. Remove temporary haul road and reinstate public open space.

3. Site Establishment

Haul Road/Access

It is envisaged that the main construction access to the working area for construction of the turbines and fish pass will be from Abbey Mill Close crossing the Abbey Mill Stream using the existing Mullard Bridge. Abbey Mill Close is public highway and the bridge is owned by Vale of White Horse (VWH).

The bridge is narrow and has a weight limit of 15T and therefore may not be suitable for the largest and heaviest deliveries of materials. The turbines are the heaviest single item and these are estimated to weigh approximately 9T.

The Contractor will confirm his approach to this as part of his detailed Method Statement, i.e. whether to temporarily reinforce the bridge or use the river to transport the heavier items that exceed the weight limit.

From this point a temporary 'haul road' will be formed across the public open space from the Mullard Bridge heading south and then turning to run parallel to the River Thames, avoiding major trees.

The haul road will be formed from granular material laid onto a geotextile separation material laid directly onto the existing topsoil. The route will be fenced off from public access using 1.8m high 'Heras' or similar metal security fencing.

The track will be wide enough for one way running with passing bays provided at points where line of sight is available so that on-coming traffic can be seen.

The track will be removed on completion of the works and the ground re-instated.

The alternative of material delivery by river is a possible option, although the potential locations for transshipment of materials from road to barge on the River Thames are limited to points where facilities are available for vehicles to access the riverside and suitable craneage is available. There are EA facilities at Osney in Oxford and Caversham near Reading and also private marinas where river access is possible, including at Abingdon. The contractor would be expected to negotiate the use of these facilities to suit his preferred methodology.

Site Compound

The construction area will require a secure site compound for plant, materials and accommodation as close to the permanent works as possible. Small plant and non-bulk materials will be store in lockable shipping containers. An area of approximately 1500m² has been identified for this compound (see drawing 27754/011 in Appendix B).

There is a narrow belt of trees around the drainage channel running at the outlet of

TECHNICAL NOTE

the drainage system to the north of the Abbey Mill Stream that passes below the Stream, located to the west of the works. The compound will not be adjacent to the permanent works area and therefore a short access alongside the Abbey Mill Stream will be required parallel to the public footpath.

To supplement the land based area of the compound it would be possible to locate a limited part of the compound on pontoons floating on the Abbey Mill Stream on the upstream side of the works. It is envisaged that a mobile crane may need to be used for some of the works positioned on a pontoon at the upstream end of the works. This would sit on the site side of temporary footpath diversion pontoons.

4. Public Footpath Closure and Diversion

The public footpath runs alongside the Abbey Mill Stream to the weir and thence to Abingdon Lock on the far side (left bank) of the River Thames. There is also a footpath branch off to the north across the Abbey Mill Stream via a footbridge. It is intended to keep these paths open for public use for the maximum time possible compatible with public safety and security of the works.

As the main footpath crosses the upstream inlet section of the works it is proposed to divert the path onto pontoons at the footbridge end to the west and back onto Abingdon Weir structure at the eastern end to allow the Contractor free use of the river at the upstream end in the area between these points.

The footpath will have to be closed temporarily during the establishment of the diversion, during the sheet piling works at the upstream end and also at the end of the works when the new, permanent path is complete.

5. Construction Sequence

The main activities required to construct the permanent works are Items 6-11 set out in Section 2. The detailed construction programme will be drawn up by the successful contractor to suit his method of working.

6. Timescale

To allow the successful contractor the maximum possible flexibility the contract duration will not be proscribed within the tender documents and will be subject to negotiation.

It is anticipated that the works can be completed within 6-9 months.



APPENDIX A – Site Location Plan and Route of Temporary Access

(PBA Drawing 27754 /010)

TECHNICAL NOTE

APPENDIX B – Working Area and Temporary Footpath Diversion

(PBA Drawing 27754/011)

