

METHOD STATEMENT

TASK / WORK : Restoration work at Whitehouses .	Method No: 2:13:2
<p>Description of work to be carried out: The work of restoration of the walls and banks at Whitehouses pumping station in accordance with drawings WAT/MJB 01, 02 and 03. The work includes, excavation and building composite brick and block walls, reinstatement of existing brick structures, capping an in channel manhole, lining the canal channel local to the pumping station, paving the area above the newly constructed walls.</p>	
<p>Hazards associated with task /work :</p> <ul style="list-style-type: none"> ▪ Use of hand tools. ▪ Heavy lifting and manual handling. ▪ Hidden obstacles and masonry from buildings once occupying the site ▪ Uneven ground ▪ Hidden excavations and pits ▪ Use of plant and equipment ▪ Falls from height ▪ Hazardous materials, cementitious materials and fuel. 	
<p>Risk assessments and other method statements / documents to be referred to: WATRA 1, WATRA 2, WATRA 3, WATRA 4, WATRA 5, WATRA 6, WATRA 8, WATRA 9, WATRA 11, WATRA 13, WATRA 14, WATRA 15 WATRA S13</p>	
<p>Methods to be undertaken:</p> <p>New Block / brick walls The setting out of the new walls is to be agreed between WAT and CRT.</p> <ul style="list-style-type: none"> ▪ Using a 5 tonne excavator, excavate to formation level, battering the face of the excavation to a 1:1 profile. Spoil will be stockpiled in the canal channel for re-use as filling behind the new walls or in the channel relining. ▪ The sections of the existing walls will be inspected and cleaned back to sound brickwork. A decision on the method of tying the new and existing brickwork will be made once the extent is known. ▪ The concrete foundation for the wall will be cast using site mixed concrete to the proportions 1 part cement to 5 parts ballast. The concrete will be compacted using a poker vibrator. A393 reinforcing mesh will be placed in the foundation to give 50mm cover. The 20mm diameter dowels will be placed in the wet concrete to suit the spacing of the hollows in the concrete blocks. ▪ Once the concrete has cured the first course of hollow blocks will be laid to line and level. The blocks will be bedded in sand cement mortar mixed to the proportions 1 part cement to 5 parts builders sand. ▪ The facing brickwork will be built to the same level in sand cement mortar, as above, ensuring that the void between bricks and blocks is fully filled with mortar. ▪ The wall will be built up; blocks then bricks with stainless steel ties at 600mm centres, staggered between block courses. ▪ Once the full height wall has been constructed, reinforcing bars will be placed in the hollows of the blocks and then filled with site mixed concrete. ▪ As the wall height increases, trestles will be used to reach the higher level. ▪ Terram will be placed on the excavated surface and part way up the back of the wall. Backfill will be placed behind the wall. If excavated material is re-used it will be compacted in place. If 	

the excavated material is not suitable for backfill (too wet or too dry), the backfill will be pea shingle in order to be self compacting. When the backfill has been brought up to level it will be capped with site mixed concrete mixed to the proportion of 1 part cement to 7 parts ballast.

- The coping will be constructed by erecting timber and ply shutters on the line and level. Site mixed concrete (1:5 cement : Ballast) will be placed and compacted in the shutters.
- Once the concrete has cured the shutter will be struck and the top and face of the concrete prepared to receive the sand cement screed facing. The front shutter will be moved to the canal face of the wall. Battens will be placed in the shutter to represent joints. Site mixed sharp sand cement screed, mixed to the proportion 1 part cement to 5 parts sharp sand, with an admixture of latex bonding agent. Casting the copings will be carried out from trestles at the front of the wall.
- The line for the kerb edging will be set out in agreement with CRT. Edging kerbs will be placed on a concrete bed and haunch to line and level.
- The 50mm thick sand bedding will be placed and compacted to level. Brick on edge paving will be laid.
- When the brick walls are complete the sloping banks will be extended to the walls as described in WAT documentation for the transition between banks and bridge structures.

Making good the existing brick apron.

- Vegetation will be cleared using hand tools.
- Loose material beneath the lower section will be cleared back to sound material. The void will be enlarged to provide a minimum of 300mm thickness of concrete from the bed formation level of 117.40m. Timber props will be placed at 1m centres to support the apron.
- The section of the apron next to the new sump will be inspected and cleared back to sound brickwork. It may require that the new sump concrete base is used as a foundation for building up a section of the brick apron.
- Where there is a void beneath the existing apron, shutters will be erected with letter box openings to allow underpinning concrete to be placed.
- Site mixed concrete to the proportions 1 part cement to 5 parts ballast will be placed in the shutters and compacted using a poker vibrator.
- Once the concrete has cured the shutters will be struck and the letterbox concrete broken back to the face of the concrete.
- The brickwork to the apron will be inspected and cleaned back to sound brickwork.
- Brick repairs will be carried out using sand cement mortar mixed to the proportion 1 part cement to 5 parts builders sand.

Construction of the sump in front of the penstock

- Vegetation will be cleared using hand tools.
- Excavation to formation level will be carried out using hand tools. In the event that the apron walls do not have a foundation at the level of the sump, the sump excavation will be extended 300mm beyond the face of the apron wall in order to provide a foundation.
- A timber shutter will be erected to the channel face of the new sump.
- Site mixed concrete to the proportions 1 part cement to 5 parts ballast will be cast into the sump base. A393 mesh will be placed to provide 50mm cover.
- 20mm diameter steel dowels will be placed along the front edge at a spacing suitable for hollow concrete blocks.
- Once the concrete has cured, the shutter will be struck and the canal bed backfilled with compacted selected excavated material.
- If required the apron facing wall will be built to the apron. A single course of hollow concrete blocks will be set in sand cement mortar site mixed to the proportions 1 part cement to 5 parts builders sand. The blocks will be filled with site mixed concrete to the proportions above.
- When the mortar to the blocks has cured, a granolithic benching, site mixed to the proportions 1 part cement to 5 parts granolithic sand, will be placed using hand tools to the sump.

Extension to pipe capping, including abandonment of manhole

The extent of the existing pipe capping and manhole chamber will be surveyed and any extension will be set out.

- Excavation to formation level will be carried out using the excavator and hand tools to the

required profile.

- Timber side and end shutters will be erected. The shutter will incorporate a 50mm upstand on both sides to provide a lateral restraint for the floor beams.
- Site mixed concrete to the above proportions will be used to cast the pipe capping and will be compacted using a poker vibrator. A 393 mesh will be placed in the concrete to give a 50mm cover.
- Once the concrete has cured the shutters will be struck.
- 2 No 100mm square holes will be broken out of the manhole, on each of two sides, at a level below the formation level. Scaffold tubes will inserted through the holes to span the manhole chamber.
- The existing manhole cover will be lifted off and a ply cover inserted inside the chamber supported off the scaffold tubes.
- The brickwork of the manhole will be broken down to the required level. Hydro cell packing will be placed on the top of the walls.
- A temporary barrier will be placed around the manhole and the ply cover and scaffold tubes removed. The manhole will be allowed to vent and the atmosphere checked for hazard gas. Access into the chamber will be gained using the step irons set in the sides of the chamber. Granolithic benching will be placed by hand into the invert of the chamber and the pipe to Bridge 4 will be capped as approved with CRT.
- Precast concrete floor beams will be placed on a sand cement mortar bed, to the mix proportions above, using the excavator.
- Infill concrete blocks will be placed by hand to the floor beams.

Relining the bed of the canal

- The bed of the canal will be excavated to formation level over the full width and length of the work.
- The existing Bentomat at the ends will be rolled out. The laps in the Bentomat will be prepared using Bentonite dust.
- Bentomat lining will be rolled out over the length of the work. The area of Bentomat over the manhole cover will be trimmed out of the lining and will be fixed to the beam and block flooring. A separate section of Bentomat lining will be cut and placed over the beam and block flooring and lapped to the other section of Bentomat.
- Bedding concrete, nominally 100mm thick will be placed over the Bentomat. The concrete will be site mixed to the proportions above.
- A course of hollow blocks will be laid at either end of the lining on a bed of site mixed sand and cement mortar, mixed to the proportions above.
- Dense concrete blocks, laid on edge will be bed and pointed with sand cement mortar.
- Site mixed concrete to the proportions above will be placed over the beam and block flooring to bed level.
- The hollow blocks and the edges of the bedding will be filled with site mixed concrete to the proportions above.

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PPE:	Hard hats and high visibility jackets to be worn at all times. Gloves and other appropriate clothing including suitable safety footwear should be worn. When mixing concrete / mortar; long clothing, dust masks, ear protection.
PLANT AND EQUIPMENT:	Suitable Excavators and Dumpers will be used as and when required. Cement mixers will be required
WELFARE FACILITIES:	Portaloos on site. Shelter erected during working party weeks.
FIRST AID:	First aid cover will be supplied by the WAT first aiders First aid kit and defibrillator are located in the green cabin.

EMERGENCY CONTACTS:	IN ANY EMERGENCY DIAL 999
FIRE:	999
AMBULANCE SERVICE:	01908 262422
STOKE MADEVILLE HOSPITAL:	01296 315000
HEMEL HEMPSTEAD HOSPITAL:	01442 213141
LOCAL POLICE:	
TRING:	01442 827272
HEMEL HEMPSTEAD:	01442 271000
AYLESBURY:	01296 396000
	<p>Note: If asked for location by emergency services it is important that the exact location of the nearest ROAD ACCESS or BRIDGE is provided. Refer to EMERGENCY CALL OUT INFORMATION sheet</p>

Prepared by : R.A.ORTH	Date : May 2012 Latest revision: 11/05/2012	Authorized by :	Date :
Revised by: M. Bradley	Date : October 2019	Authorized by :	Date :