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METHOD STATEMENT FOR Building the Narrows

www.wendoverarmtrust.co.uk

Registered Charity No. 801190

Document Location

The editable version of this document is held by the Wendover Canal Trust Operations Director. It is available to all members of the Wendover Canal Trust and the public via the Wendover Canal Trust's website:

www.wendovercanaltrust.org.uk

Printed copies may be out-of-date. The latest version is held on the Wendover Arm Trust's website.

Revision History

| Issue | Date | Author | Summary of changes |
|---------|------------|-------------|---|
| Draft 2 | Nov 2021 | A. Bardwell | Deletion of concrete coping blocks. Addition of "fendering". Drawing now issue "b". |
| Draft 3 | April 2022 | M Bradley | Hazards added. Latest revision drawing. Detail added to the excavation. Shutter for base in bricks/blocks. Method of backfill to walls amended. |
| Draft 4 | May 2022 | M Bradley | Inclusion of the use of sponges to prevent mortar spills into block hollows, use of brick ties between blocks and bricks, plate compactor added to the list of equipment. |
| Draft 5 | July 2022 | M Bradley | Use of Terram deleted. Concrete surface to the Narrows deleted. |

Description of work to be carried out:

The work of building a “Narrows” structure in accordance with drawings WAT/MJB 09 Rev d. The work includes excavation and building composite brick and block walls, lining the canal channel local to the new structure, and paving the area above the newly constructed walls.

Hazards associated with task /work:

- Use of hand tools.
- Heavy lifting and manual handling.
- Hidden obstacles and ash from the former domestic waste tip
- Uneven ground
- Hidden excavations and pits
- Use of plant and equipment
- Falls from height
- Hazardous materials, cementitious materials, and fuel.
- Working near water
- Working at height

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, WATRA 17 (all available on www.wendovercanaltrust.org.uk)

Methods to be undertaken:

- The canal banks will be battered back, using the 5-tonne excavator and dumper, to a safe angle to allow working room at the place of the concrete raft foundation. On the towpath side, bulk excavation has been carried out to eliminate the badger setts. On the offside additional excavation of the full height of the bank will be carried out. In the past it has been found that the chalk can stand at a near vertical profile. Access to the narrow strip of bank above the excavation will not be allowed. The farmer will be advised of the location of the excavation and his boundary fence used as edge protection.
- The canal bed will be excavated, using the 5-tonne excavator and dumper, to formation depth to allow for 50mm blinding concrete.

- **Work to stop at this stage to allow a site inspection of the foundation level by Canal and River Trust Engineers.**

- Blinding concrete will be ready-mixed delivered to the car park then transported to the Narrows by dumper and placed using wheelbarrows, rakes and shovels.
- The lines for the new walls and upstand for the stop plank cill will be marked on the blinding.
- Steel reinforcement will be fixed in position in accordance with the details on the drawing, by hand. This includes vertical reinforcement rods to tie in the hollow block wall structure. The vertical legs will be held in position above the concrete level with temporary lacer bars, which will be removed once the concrete has been cast.
- Permanent shutters will be built using bricks and solid concrete blocks bedded in sand cement mortar mixed to the proportions 1 part cement to 5 parts builder's sand. Backfill will be placed behind the walls to provide support. A timber former will be used to form the cill at the stop plank channel.
- Level pins will be installed to mark to top surface of the concrete raft.
- Temporary boards will be placed on top of the top layer of mesh reinforcement to allow access to all areas of the raft.

- **Work to stop at this point to allow inspection of the reinforcing by Canal and River Trust engineers.**

- Construction of the raft foundation will be carried out in one stage with a single concrete pour.
- Concrete for the raft will be supplied by ready-mix and loaded into dumpers at the car park and transported to the work area.
- Concrete will be tipped into barrows and wheeled to the far end of the raft, if needed.
- The concrete will be compacted using the petrol poker vibrator.
- The temporary boards will be lifted and removed from the top mesh as the pour proceeds.
- The top surface of the concrete will be provided with a tamped finish.
- Once the concrete has cured the lines for the walls will be marked on the concrete slab. 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 builder's sand. In order to prevent mortar dropping into the hollows of the blocks, a sponge will be inserted into the hollow while the mortar and block is being laid. Once the block has been laid the sponge will be moved to the next block.
- Brick ties will be built into the block walls at 600mm centres and will alternate between adjacent courses.
- The brickwork will be laid in cement mortar in an English wall bond.
- The location of the stop plank channels will be marked on the blockwork and the blocks broken out at the position where the ties to the stop plank need to be fixed. The prefabricated stainless steel stop plank channels will be fixed in place with temporary supports.

- **Work to stop at this point to allow inspection of the stop plank channels by Canal and River Trust Engineers.**

- 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 brickwork adjacent to the stop plank channels will be arranged appropriately to fully support and bond in the channels. Note that the channels will be taller than the brick work to allow trimming to suit the brick work after the mortar has cured.
- The wall will be built up; blocks then brick, 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. The concrete will be compacted by use of the petrol-powered poker vibrator.
- As the wall height increases, trestles will be used to reach the higher level.
- The back face of the blockwork will be sealed with two coats of a painted waterproof membrane
- Spoil from the canal channel excavation will be used to backfill behind the wall. The backfill will be placed in layer 200mm thick, compacted with 4 passes of a plate compactor.
- 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.
- Fendering. Offer up the timbers to mark the hole positions. Drill holes and fix timbers with Hilti anchors.
- **During the build process, progress photographs must be taken to provide a record for CRT.**

Location of the “Narrows” structure





Position of narrows

Existing bund

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| <p>PPE:</p> | <p>Hard hats and high visibility jackets to be worn at all times. Gloves and other appropriate clothing including suitable safety footwear should be worn.</p> <p>When mixing concrete / mortar; long clothing, dust masks, ear protection.</p> <p>When placing concrete wellington boots.</p> |
| <p>PLANT AND EQUIPMENT:</p> | <p>Suitable Excavators and Dumpers will be used as and when required.</p> <p>Cement mixers will be required</p> <p>A plate compactor will be used to compact the backfill.</p> |
| <p>WELFARE FACILITIES:</p> | <p>Portaloo on site. Shelter erected during working party weeks.</p> |
| <p>FIRST AID:</p> | <p>First aid cover will be supplied by the WAT first aiders</p> <p>First aid kit and defibrillator are located in the portable tripod stand.</p> |
| <p>EMERGENCY CONTACTS:</p> <p>FIRE:</p> <p>AMBULANCE SERVICE:</p> <p>STOKE MADEVILLE HOSPITAL:</p> <p>HEMEL HEMPSTEAD HOSPITAL:</p> <p>LOCAL POLICE:</p> <p>TRING:</p> <p>HEMEL HEMPSTEAD:</p> <p>AYLESBURY:</p> | <p>IN ANY EMERGENCY DIAL 999</p> <p>999</p> <p>01908 262422</p> <p>01296 315000</p> <p>01442 213141</p> <p>01442 827272</p> <p>01442 271000</p> <p>01296 396000 Note:</p> <p>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> |