

## 01533 Hoveton Great Broad Fish Barrier Outline Construction Methodology.

### Works Location.

- The Fish Barrier Works are located within Hoveton Great Broad, Norfolk.
- The Barriers are to be installed in 3 separate locations as follows:
  1. Foxborrow Barrier. Grid TG32068. 15797
  2. Hoveton Marsh Barrier. Grid TG31885. 16506
  3. The Dam Barrier. Grid TG32428. 16139

### Works Scope.

- Mobilisation to site and establish welfare.
- Procure barriers and recycled timber piles.
- Mobilise & launch floating vessels including a pontoon (approx. 8m x 12m)(sectional) c/w on board Telescopic crane/tracked excavator, vibrating piling hammer and support safety boat.
- Piling gate and associated equipment.

### Access

- Vehicle Access will be via Haugh End Road leading onto an unmade trackway to the north face of the broad.
- Vessel Access to the Hoveton Broad and the works areas will be gained via Wroxham Marina, River Bure and Dam channel into the Broad.

### Compound Location

- Welfare and compound will be located at the hardstanding area at the Haugh End Lane and trackway on the existing established concrete slab.
- Materials for use within the Fish barriers will be conveyed to the works areas via the works pontoon and support vessels. Minimal materials will be stored within the site compound area.

### Plant items.

- Floating works Pontoon fitted spud legs, Hiab Type crane/Tracked excavator
- Vibrating piling hammer and power pack.
- Support Vessel.
- Piling gate/guide
- Lifting tackle
- Self-contained welfare unit.
- Life rings.
- Safety throw lines
- Double bunded fuel storage tanks and spill kits
- Pedestrian barriers and Heras fencing.
- Warning signage.

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### Methodology/Works Sequence.

- All permissions and confirmations will be received prior to mobilisation.
- The works will be identified directly on site.
- The waterborne craft will be launched using the requisite lifting tackle at nearby Wroxham Marina.
- Once afloat the piling equipment will also be loaded including piling equipment.
- A secondary pontoon will be mobilised to convey the Fish barrier materials to the works areas.
- A work boat/tug will convey the works pontoon to the first Barrier location (Foxborrow).
- The barrier location will be determined and over hanging vegetation cleared using telescopic hand tools with access being gained via the pontoon deck. Only sufficient vegetation will be cleared to allow the installation of the vertical timber piles as indicated within Fishtek Drawing 003. All arising's will be removed from site and recycled or reworked for reuse.
- The excavator aboard the pontoon will be used to regulate the broad bed to ensure cill board contact with the bed material. Control of the regulation will be via staff entering the watercourse wearing dry suits or divers.
- The Works pontoon will be positioned to commence the pile installation.
- A pile guide pre-fixed to the pontoon will be used to pitch and drive the timber piles ensuring accuracy of the installation. A temporary timber guide gate will be fixed to the installed pile above water to ensure and consistent line for the remainder of the piles.
- Single piles will be pitched into the pile gate and driven to depth with the vibrating hammer suspended on the Hiab crane/excavator which will be the primary lifting appliance for all lifting duties.
- The piles will continue to be installed to completion of the fish barrier following fixture of the vertical guide channels.
- The installed piles will be surveyed and "spacer" timbers planed and sized to suit the installed piles. The spacers will be fixed to the installed piles to completion using suitable fixings.
- The fabricated panel frames will be positioned and secured as required to the installed piles.
- Mesh panels will now be inserted into the guide frames to completion.
- Pre-fabricated gates will be installed onto hinges fixed to the pile/gate posts following the installation of the gate support brackets.
- This operation will continue to the remaining 2 fish barrier locations at The DAM and Hoveton Marsh locations.

### Fish Barrier Removal

- On removal of the 3no barriers a similar procedure will be adopted to remove the barriers.
- The barriers will be removed in sections and recovered to the pontoon deck.
- A pile extractor will be used to remove the driven piles to completion.
- No excavation or regulation of the existing bed profile will be undertaken.