Works Proposals – Option 3
Part 1 Site Specific Method Statements – MS07 - 3
Floating Breakwater Pontoon Method Statement

Introduction

Prior to any works commencing on site a Site Specific Method Statements will be prepared for all the major elements of the work. These method statements will outline precisely how Bam will approach and carry out the works associated with the Bantry Inner Harbour Development – Phase 1 Contract. These method statements will be submitted to the Employers Representative for approval, work will not commence prior to the relevant method statements being approved.

The method statements will be prepared by the Project Manager Collins Connolly and the Site Engineer Seamus O’Sullivan, however the various other members of the site management team will be asked to contribute to the relevant sections of the method statements as required. The method statements will be prepared in line with the Works Requirements, Specifications, Guidance Documents and Consultations meetings with various other stakeholders.

While the more specific in-depth method statements will be prepared once we get to site, below are the overall method statements which will outline our general approach and methodology to the Bantry Inner Harbour Development – Phase 1 Contract.

Floating Breakwater Pontoon Method Statement

Introduction

This method statement incorporates Bam overall approach to the project and will serve to outline our methodology for carrying out the various elements of the Floating Breakwater Pontoon Works. Prior to any works commencing on site more comprehensive and detailed, task specific method statements will be prepared by Bam for each element of the works.

Scope of Works

The works will consist of the following:

- Proposed Plant.
- Setting out.
- Fabrication of Gangway and Pontoon Elements.
- Anchoring System.
- Railway Pier Bankseat and connection.
- Gangway Installation
Location of the Works

Location Map
Bantry Inner Harbour Development: Phase 1

Site Layout Map

Proposed Floating Breakwater Pontoons

Picture: Looking North from N71 towards Proposed Floating Breakwater Pontoon Location
Proposed Plant

The following resources will be utilized for the works described in this method statement:

<table>
<thead>
<tr>
<th>Item</th>
<th>Activity/ Roles</th>
<th>Quantity [nos.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>50t mobile crane</td>
<td>Place the pontoons in water</td>
<td>1</td>
</tr>
<tr>
<td>Workboat</td>
<td>Place the gangway in position</td>
<td></td>
</tr>
<tr>
<td>Aoibheann Spud Leg Dredger with 65t excavator</td>
<td>Move material, connecting units</td>
<td>1</td>
</tr>
<tr>
<td>Safety boat</td>
<td>For transporting &amp; placing concrete anchors</td>
<td>1</td>
</tr>
<tr>
<td>Lighting Tower</td>
<td>Works over water</td>
<td>1</td>
</tr>
<tr>
<td>Heras Fence</td>
<td>Site Lighting</td>
<td>1</td>
</tr>
<tr>
<td>Handrailing</td>
<td>Fall protection at water edge</td>
<td></td>
</tr>
<tr>
<td>Survey equipment</td>
<td>Survey</td>
<td>1</td>
</tr>
</tbody>
</table>

Further equipment is also available from our subcontractors and sister companies in the BAM group.

All mechanical plant will be in good working order and subject to a regular maintenance regime. Only suitably qualified and experienced personnel will be allowed to operate plant and equipment.

All Vehicles will be fitted with reversing beacons and a flashing light and will be directed by a banksman. All plant certification will be checked by the BAM Civil Safety Officer prior to commencing works on site. A register of all plant and equipment checks will be kept on site for the duration of the project.

All marine plant on the project will be fitted with VHF radios which will allow them to be contacted at all times. All marine plant will be fitted with the internationally recognised display lights and signals as required by International Collision Regulations as per Appendix 1/19.

Setting Out

A BAM site engineer will be responsible for the setting out of all SOP’s needed for the correct installation of all relevant members.

Surveyors will establish control stations where temporary bench marks and coordinates will be taken for construction activities at the start of the project.

The breakwater pontoon anchors that are to be buried will have their respective locations excavated during the dredging operation. These locations will be identified by the “Dig Master” system - a global positioning system – which will be fitted to the excavator.
Fabrication of Gangway and Pontoon Elements

Fabrication drawings for all the elements will be provided by our specialist subcontractors and submitted to the Engineer for comment and approval. No components will be manufactured or brought to site until it has been approved.

Drawing 16341-1030 shows the indicative arrangement for the layout and quantity of ancillary items as well as the anchor arrangements. However, if during the detailed design process it becomes apparent that the quantity or location differs, this will be discussed with and approval sought from the Engineer to make adjustments.

There will be a pivot for the quay connection to the breakwater gangway and an aluminium landing plate on the pontoon to allow the gangway to move vertically and horizontally.

The design performance as well as the design loads and other specified criteria will be as specified in Appendix 26/6, 26/10 & 26/11 of the Works Requirements.

Some samples of the fabrication drawing details which will be provided

Sample Details of:
- Gangway
- Landing plate on pontoon
Anchoring System

The anchor blocks and chains used to secure the breakwater are a contractors design, and as such will be confirmed during design phase, but in principal will follow the tender drawing 1030. The size and exact locations along with the chain size will be submitted along with the fabrication drawings to the Engineer for approval prior to any fabrication.

As the anchor blocks are to be placed in position (buried), the excavation will be done during the dredging operation. The locations will be determined using the “Dig Master” system which will be fitted to the excavator.

The anchor blocks will be loaded onto a barge (with excavator) floated out to the correct location and placed with the excavator.

Railway Pier Bankseat and Connection

There will be a new concrete bankseat constructed at the end of the railway pier, which will have a connection for the gangway. This concrete will be set into the existing pier to give a clean, strong seat for the connection. The connection at the pier will be hinged with a pivot connection to allow the gangway movement vertically and horizontally.

The new concrete footing will be marked out on the existing pier and then excavated to give the required depth. Reinforcement will be fixed in place and concrete poured and finished to the required specification, with provision made for the pivot detail.
Once the concrete has set sufficiently the aluminium (pivot) plate will be fixed to the concrete. This plate (which will have a Nylon gasket to allow free movement), will then be ready to accept the hinged connection for the gangway.

**Gangway Installation**

Prior to any installation the following safety procedures will be completed.

- A lift plan for the lift will be completed by the crane coordinator, who will choose the set up locations taking into account the loads and the crane lifting charts.
- An exclusion zone will be cordoned off in the area of the works which will fully restrict any unnecessary access by non-essential personnel during the lifting operation.
- A safe work plan will be done with the full crew, prior to work starting.
- When the Crane Coordinator is satisfied that the crane driver and Banksman Slinger have undertaken all the pre-lift checks and signed off all relevant crane co-ordination check lists, the lifting operation can proceed.

**Sketch: Gangway Installation with Crane**

The sequence of installation will be as follows:

1. Sculpture and benches will be removed and stored as per the Resident Engineer.
2. All setting out of for the gangway and pontoons will have been completed and also checked prior to installation.
3. The breakwater pontoons will have already been placed and secured with anchors.
4. The gangway will be delivered in two sections and joined on site.
5. The aluminium landing plates are attached to the pontoon, and the aluminium plate with pivot will be installed onto the new concrete bankseat at edge of railway pier.
6. A mobile crane will be set up on the pier. See above sketch Gangway Installation with Crane.
7. Suitable sling point will be identified by the fabrication drawings and these will then be used to lift the gangway with 4way chains and shackles which will be connected by a trained slinger.
8. The gangway itself is then slowly lifted into positioned and guided by tag lines in order to align it correctly.
9. The gangway is then slowly lowered, taking care to align the pivot into the opening at the pier, and the rollers on to the landing plates on the pontoon.
10. Once it is connected and resting on the pontoon the crane will be unhooked and released.
11. The security gates to the access platform will then be installed.
Safety

- Risk assessments have been carried out and are included in the Health and Safety Plan. The Health and Safety Plan is included in Part 3 of this submission.
- All work will be carried out in accordance with the Health and Safety Plan for the site.
- The site operates an induction procedure for personnel prior to commencing work on site.
- P.P.E. will be worn by everyone involved on this project at all times to include a minimum of high visibility vest, hard hat, safety glasses and safety boots.
- All plant will be in good working order and equipped with yellow flashing beacons
- there will be a manned safety boat in attendance and all operatives will wear life vest when working near/over water

Programme of Works

Refer to construction program as included in Part 2 of this submission

Quality an Environmental management

The project Quality Plan will be implemented after being approved by the ER and the inspection and test plan will be adhered to rigidly. A copy of the Quality Management Plan will be kept on site. Seamus O’Sullivan will be the person with responsibility for quality control. Site audits will be carried out to ensure compliance with the Quality Plan. Periodic company audits will be carried out to ensure QA standards are being maintained on the project.

All works will be undertaken in accordance with the Site Specific Environmental Management Plan and the Waste Management Plan. These plans have been included in Part 5 of this submission. The main environmental impacts and considerations associated with the works are as follows:

- Waste Management: Waste management will be as specified in the site WMP
- Water Pollution: No contaminated water to be discharged into the harbour.
- Noise: All plant and machinery used on site will be serviced regularly to avoid excessive noise. Noise levels on site are not expected to exceed the legal but where necessary, mandatory warnings signs shall be erected informing all when ear protection is required to be worn.
- Protection of Watercourse: The water course shall be protected from pollution, by ensuring that generators, pumps etc are placed in drip trays. Spill kits shall be located adjacent to the watercourse and clearly identified. Spill kits shall also be placed in all machines. Details of procedure for dealing with oil spillages and procedure for protecting water courses are contained in BAM Environmental Management Plan
- Hazardous Substances: All hazardous substance will be stored in the hazardous store and all generators will be placed on a drip tray at all times.
- Washing of concrete trucks to take place at a designated concrete wash out area.
Plant Equipment and Certification Required

The following resources will be utilized for the works described in this method statement:

- Excavators
- Barges
- Roller
- Mobile crane
- Concrete pump
- Teleporter/35 ton crane

All mechanical plant will be in good working order and subject to a regular maintenance regime. Only suitably qualified and experienced personnel will be allowed to operate plant and equipment.

All Vehicles will be fitted with reversing beacons and a flashing light and will be directed by a banksman. All plant certification will be checked by the BAM Civil Safety Officer prior to commencing works on site. A register of all plant and equipment checks will be kept on site for the duration of the project.

All cranes will be fully certified, and all lifting gear will also be fully certified.