SUPPLEMENTING INFORMATION

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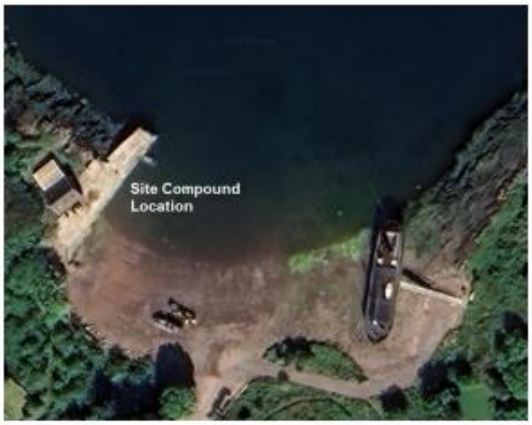
2 Construction Methodology

2.1 General Information

1. All staff/operatives will be briefed on the extent and nature of the works and any special safety requirements identified within the body of this document upon arrival on site by the ICMS Project Manager and Subcontractor Site Supervisor

2. Each Operative/Supervisor will have read and signed this method statement. All workers will be made aware of the issues involved in this project.

3. ICMS Subcontractor will take control of a section of the area to complete the works. The works compound and other working areas will be cordoned off/manned to ensure that there will be no interference from the public. All operatives to wear life jackets while working over or next to water.

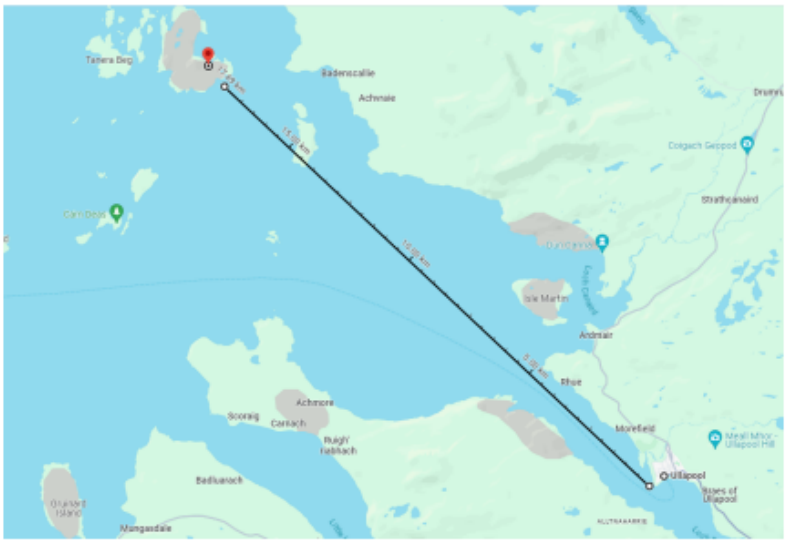


4. The works compound operated from will be agreed in advance with the local interested parties. It will incorporate a self-contained welfare facilities unit (canteen, toilet, lockable storage and drying room) and a general storage area within the fenced off boundary.

5. Signage informing the general public and passers-by as to the nature and extent of the works will be erected on the fencing, including contact details for the Site Supervisor.

2.2 Access Requirements

1. The working areas proposed for the project will include:
2. The pier at Tanera Mor
3. Works compound area at Tanera Mor
4. The water space around Tanera Mor Pier
5. The public pier at Tanera Mor (for access to the shore & installation of gangway)



6. The access to Tanera Mor is by sea. It is envisaged that apart from breakwaters all other items will be delivered to Ullapool on road and offloaded there into water for further towage using a barge or a work boat.

7. The working area in Ullapool will be cordoned off for the duration of the lifting operations but it is not anticipated to require access to this area outside of the lifting times so fencing and any other works materials will be cleared away and removed when not in use.

2.3 Working Areas Setup

1. The area on the land where the works are being undertaken is to be cordoned off and an exclusion zone set up. Signage is to be strategically posted warning of dangers associated with unauthorised persons entering the area.

2. The area on the waterside where the installation work is being undertaken is to be cordoned off with buoys and an exclusion zone set up.

3. Each operative, supervisor, or manager shall be fully site inducted in strict accordance with agreed site-specific induction procedures prior to commencement of any works or role on site.

4. Welfare facilities delivery will be within the load limits on the bridge so will be delivered to site in that manner and offloaded by the delivery driver

2.4 Craneage

1. A crane barge will be used to install the breakwaters and gangway etc. The area where the installation work is being undertaken is to be cordoned off and an exclusion zone set up.

2. A mobile crane in Ullapool might be needed in case a crane barge cannot reach the loads on the pier.

2.5 Deliveries to Site

1. Other than the Breakwaters, it is anticipated that all materials will be delivered by road to the pier at Ullapool for offloading in to the water by barge or a mobile crane.
2. The driver is responsible for the safety of the load until it arrives to site.
3. Prior to departure from ICMS yard the driver must check the load and report any non-conformity to the loading supervisor.
4. The driver has the authority to refuse to move the load if not satisfied the load is safe.
5. It is the responsibility of the driver to fix securing chains or straps and ensure they are properly tensioned.
6. When securing the load, the driver must ensure that the units are adequately protected to prevent damage. Chain Guards may be used.
7. It will be the responsibility of the Subcontractor Supervisor to direct the loads to the appropriate location on the site.
8. On arrival to site, it is responsibility of the driver to ensure safe access is available and to position the load in accordance with the Installation crew supervisor's direction.
9. The driver has the authority to refuse to position his vehicle in any location, which he deems to be unsafe. When in position the driver will remove the security chains or straps and responsibility for the load passes at that time to the ICMS/ Subcontractor Crew Foreman.

2.6 Delivery of Works Barge to Site

10. The works barge will go to site under its own steam and so will not require any lifting procedures at site.

2.7 Offloading of Delivery Vehicles (in Ullapool)

1. A visual inspection will be carried out by ICMS / Subcontractor Foreman to check for any defects before unloading each unit.
2. Offloading is carried out under the supervision of the Subcontractor's Site Foreman.
3. The area will be barriered off/manned where the units are being offloaded.
4. While on the ground the slinger/signaller will attach an inertia reel to the crane hook and to his harness. This will provide fall protection while accessing the units on the trailer.
5. A Subcontractor slinger/signaller will access the trailer by a secured ladder. He will guide the crane directly over the breakwater unit that needs to be lifted into place.
6. Units may be offloaded only by certified chains and lifting equipment.
7. The slinger/signaller must ensure that the safety clip is closed on the hook before any lifting takes place.
8. The slinger/ signaller attaching the lifting attachment must signal to the mobile crane driver to proceed with the lift when the lifting attachment has been securely attached. Where the mobile crane driver has restricted view banking will be by two-way radio.

9. The slinger/ signaller must ensure that nobody is walking or working underneath the path of the unit during the lift.
10. No one must ride on the units during the lift.
11. The slinger/signaller must be safely down from the trailer before the load can be lifted.
12. Tag lines are to be used to guide/control the loads while off-loading.

2.8 Bringing Materials to Site (from Ullapool to Tanera Mor)

1. Chains and the gangway will be delivered to site on articulated lorries with 40ft trailers, and will be sorted, bundled and labelled prior to leaving ICMS yard for ease of sorting on site.
2. Concrete sinkers (anchor blocks) are to be casted on site in Ullapool.
3. Breakwaters are to be towed to the site from Foyle Port and are therefore already connected together in Foyle port prior to towage towards Ullapool.
4. Therefore, breakwaters are already joined end to end by 2nrsets of 36mm stainless steel with unpressed section at exit of wire rope terminal to allow for increased movement and keyhole.
5. When the breakwaters are connected in the water, the breakwaters are towed to their final location and connected to the mooring system
6. Chains, gangway and the blocks are to be dry towed to site on working boats and barges.
7. Equipment for installing rock anchors will be lifted on to the works barge at Ullapool.

2.9 Installation of Mooring System

The mooring system comprises of rock pin anchors and concrete blocks with mooring chains. Diving works will be required for all of these operations, risk assessments and standard operating procedures for diving will be outlaid later in this document.

1. The procedure for drilling in the rock pins will be as following:
- 28 mm core drill bits shall be used in the core drill and drill stand. Each pad-eye shall be attached using 4 no M24 bolts.
- Drill stand to be attached to the bedrock using hilti hit drill bits.
- Drill stand to be removed from area.
- Test fitting of pad eye and bolts to ensure fitment.
- Should any issues arise then these shall be identified and corrected.
- Resin/Grout to be applied to the holes as per the manufactures guidelines.
- Pad eye to be fitted and bolts to be hand tightened.
- The mooring chain for each corresponding anchor will be lowered to position by the works barge. The chain will be connected to the pad eye by the diver using stainless steel shackle and moused off when correctly connected.
- The free end of the chain will be drawn out to the breakwater location by the works barge and laid on the bed, with the free end dropped with a marker buoy at the location of the breakwater for later retrieval

2. The procedure for installing anchor blocks will be as following:

- Crane barge moves to Ullapool and collects a number of anchors using the crane on the barge with pre-assembled mooring chains.
- Heavier 50mm Chains will be shackled to the anchors on Ullapool pier.
- Crane barge tows the blocks and chains to site (dry tow)
- Temporary moorings are dropped to keep breakwaters in position while moorings installed.
- Light 38mm chains will be connected to the breakwaters with a buoy on the other end.
- Workboat travels to position of the first anchor and drops the anchor (with the mooring chain pre-shackled to the anchor) as per exact location shown on the drawing.
- Anchors are lowered to bed and pulled so that they embed themselves in the bed.
- Chains already connected to the anchors will be laid out along bed to breakwaters.
- The workboat moves toward the breakwater and stretches the 50mm chain towards the breakwaters.
- The 50mm chain will be shackled to the light 38mm one securing the breakwaters in place.
- The last steps will be repeated until all sinkers are in position.
- Chains are tensioned and fully secured.
- Units are monitored on several tides to ensure mooring lines are correctly tensioned and system operating correctly.

2.10 Installation of Breakwaters

1. Breakwaters are brought to site by the towing contractor and handed over to the installation contractor.

2. End to end connections are put in to join the breakwater together and make them as a single 60m long continues unit.

3. The two Breakwaters are pulled in to their correct position.

4. Temporary moorings are dropped to keep BW in position while moorings installed.

5. Light 38mm chains will be connected to the breakwaters with a buoy on the other end.

6. Heavier 50mm Chains will be shackled to the anchors on pier.

7. Crane barge moves to pier and collects an anchor using the crane on the barge with pre-assembled mooring chains.

8. Workboat travels to position of the first anchor and drops the anchor (with the mooring chain pre-shackled to the anchor) as per exact location shown on the drawing.

9. Anchors are lowered to bed and pulled so that they embed themselves in the bed.

10. Chains already connected to the anchors will be laid out along bed to breakwaters.
11. The workboat moves toward the breakwater and stretches the 50mm chain towards the breakwaters.

12. The breakwaters are located at the exact location using another workboat and joined end to end by 2nrsets of 36mm stainless steel with unpressed section at exit of wire rope terminal to allow for increased movement and keyhole buffer.

13. The 50mm chain will be shackled to the light 38mm one securing the breakwaters in place.

14. The last steps will be repeated until all sinkers are in position.

15. Chains are pulled through pontoon tubes.

2.11 Access Gangway

1. The 24m x 1.5m Access Gangway is delivered to site in separate sections. The unit will arrive to site in four sections.

2. The gangway will be lifted from the delivery vehicles by the mobile crane using previously outlined procedures and placed on the quayside at Breasclete for assembly.

3. The sections will be bolted together using M24 galvanised bolts and locknuts. Once fully assembled, the gangway is then lifted on to the deck of the works barge using the mobile crane and subsequently towed to site.

4. When at site, the gangway will be lifted by the barge mounted crane and connected to the in-situ concrete block. The connection detail at this point will be a swivel hinge connection

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Construction within Scotland's National Marine Plan area can have several potential impacts, particularly on designated conservation and shellfish harvesting areas. These impacts include habitat destruction, water pollution, noise pollution, and disturbance to marine life. Specific areas of concern include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Marine Protected Areas (MPAs), and designated shellfish waters. Below are the potential impacts and proposed mitigation measures:

Potential Impacts

1. **Habitat Destruction:**
    - **Areas of Concern:** SACs, SPAs, and MPAs.
    - **Impact:** Physical damage to seabed habitats, which can affect the breeding and feeding grounds of protected species.
2. **Water Pollution:**
    - **Areas of Concern:** Shellfish harvesting areas and MPAs.
    - **Impact:** Increased sedimentation and contaminants (e.g., oil, chemicals) can degrade water quality, affecting marine life and human health through the food chain.
3. **Noise Pollution:**
    - **Areas of Concern:** MPAs and SPAs.
    - **Impact:** Construction noise can disturb marine mammals and birds, leading to behavioural changes and displacement from critical habitats.
4. **Disturbance to Marine Life:**
    - **Areas of Concern:** All designated areas.
    - **Impact:** General disturbance from construction activities can affect the normal behaviour and health of marine species.

Proposed Mitigation Measures

1. **Habitat Destruction Mitigation:**
    - **EIA and Monitoring:** Conduct thorough Environmental Impact Assessments (EIAs) to identify sensitive habitats and monitor impacts throughout the construction period.
    - **Construction Timing:** Schedule construction activities outside of breeding and spawning seasons to minimize disruption.
    - **Restoration Projects:** Implement habitat restoration projects post-construction to rehabilitate damaged areas.

2. **Water Pollution Mitigation:**
    - **Sediment Control:** Use silt curtains and sediment traps to prevent the spread of suspended solids.
    - **Spill Prevention:** Develop and enforce stringent spill prevention and response plans to handle potential chemical and oil spills.
    - **Water Quality Monitoring:** Regularly monitor water quality in and around the construction site to detect and address any contamination quickly.
3. **Noise Pollution Mitigation:**
    - **Quiet Technology:** Utilize construction techniques and equipment that minimize noise output.
    - **Exclusion Zones:** Establish exclusion zones to keep sensitive species away from noisy activities.
    - **Time-of-Day Restrictions:** Restrict noisy activities to times of day when they are least likely to affect sensitive species.
4. **Disturbance Mitigation:**
    - **Buffer Zones:** Create buffer zones around critical habitats to limit access and disturbance from construction activities.
    - **Awareness Training:** Train construction personnel on environmental best practices and the importance of minimizing impacts on marine life.
    - **Adaptive Management:** Employ adaptive management strategies that allow for modifications in construction practices based on real-time monitoring data.

All the construction activities carried out can be managed to minimize their adverse effects on Scotland's marine environment, thereby aligning with the objectives of the National Marine Plan and General Policy 7. We do not believe all these impacts will be necessary to implement due to the scope of works and the area in which it is carried out.