

Cuan Marine Services



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Cuan Marine
Artemis Musgrave Pontoon
Belfast Docks

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APPENDICES**A: Proposed Pontoon Layouts****B: Emergency Pollution Response Plan****1. Purpose and scope:**

The purpose of this Construction Environmental Management Plan (CEMP) is to avoid, minimise or mitigate any construction effects on the environment and the surrounding community and:

- Ensure compliance with all applicable legislation & statutory controls this includes planning conditions, Section agreements and landowner/client’s environmental requirements.
- Ensure Conformance with the Environmental Policy Statement– including all associated standards and procedures.
- Deliver best practicable environmental performance – this means preventing pollution, minimising adverse environmental impacts and securing the potential benefits associated with higher standards of environmental performance.

Cuan Marine Services Ltd:

Cuan Marine Services Ltd based in Portaferry were established in 2011. All skippers are MCA/RYA accredited boat masters.

Cuan Marine Services recognises the importance of environmentally sustainable operations and are committed to working closely with relevant stakeholders to ensure this installation does not negatively impact the environment.

- Cuan Marine Services are an ISO9001: 2015 accredited business.
- Cuan Marine Services are also Safe-T-Cert & NvirOcert accredited which verifies and validates their environmental & safety management systems and performance.

For the completion of these works, Cuan Marine Services considers it a priority to prevent pollution and to minimize the environmental impact of its activities as follows:

- Endeavour to prevent pollution
- Adopt the principles of sustainable development
- Protect biodiversity
- Systematically identify and assess environmental risks associated with our activities
- Mitigate and control identified risks in order to conduct our activities in an environmentally responsible manner.
- Set Environmental objectives and targets supported by a management programme that reviews effectiveness and evaluates compliance.
- Ensure that employees are competent to carry out their work and understand the impact their actions and behaviour may have on the environment.

Legislative Compliance:

The key pieces of environmental legislation relevant to these works are:

- Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)
- Pollution Prevention and Control Regulations (Northern Ireland) 2003
- Clean Air (Northern Ireland) Order 1981
- Controlled Waste Regulations (Northern Ireland) 2002
- Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002
- Water (Northern Ireland) Order 1999
- Groundwater Regulations (Northern Ireland) 2009

Other relevant H&S legislation:

- The Provision and Use of Work Equipment Regulations (Northern Ireland) 1999 (PUWER)
- Lifting Operations and Lifting Equipment Regulations (Northern Ireland) 1999

Shadow Habitats Regulation Assessment:

Cuan Marine have noted that the potential effects on designated sites has been screened in the shadow Habitats Regulation Assessment, prepared by RPS Ireland Ltd (NI) on behalf of Artemis Technologies in November 2021 (which will accompany the marine license application), concluded that there are no likely significant effects from the proposed pontoon installation works.

Indirect Effects:

There are possible indirect effects from the installation works giving rise to potential water quality and marine habitat deterioration which must be considered, given the nature of the site which includes waters within Belfast Harbour.

When assessing indirect effects and control measures, the following guidance was referenced:

- GPP 5 - Works and maintenance in or near water (Version 1.2 February 2018)
- PPG 6 - Working at construction and demolition sites Pollution Prevention Guidelines (2nd edition 2012)

- Best practices documents and the standing advice from DAERA Pollution prevention guidance (Published: 2015 Updated 2017)

See Table 1 below for measures aimed at mitigating indirect effects.

Description of Works

To install a 36m linear floating pontoon:

The proposed works comprise the installation of a 35.15m linear floating pontoon, comprising the following elements:

- 35.15m linear pontoon - comprising 4 nr interconnecting units of 9m x 3m each, within a steel frame and with a glass fibre reinforced concrete (GRC) decking, finished in a timber style effect. Polystyrene encased GRC floats on the underside of panels
- 1 nr gangway landing pontoon (3m x 3m) connecting the linear pontoon and the gangway, comprising a steel frame with GRC decking, finished in a timber style effect
- Seaflex mooring system (flexible reinforced rubber hawser and steel plate) connecting the pontoon to 12 nr x 8T concrete mooring blocks
- 1nr aluminium steel gangway (16m x 1.64m) with handrails and mesh side panels, connected with bolts/to an existing concrete plinth on the landside (to enable pedestrian access to the gangway pontoon).

Sequence of Operations:

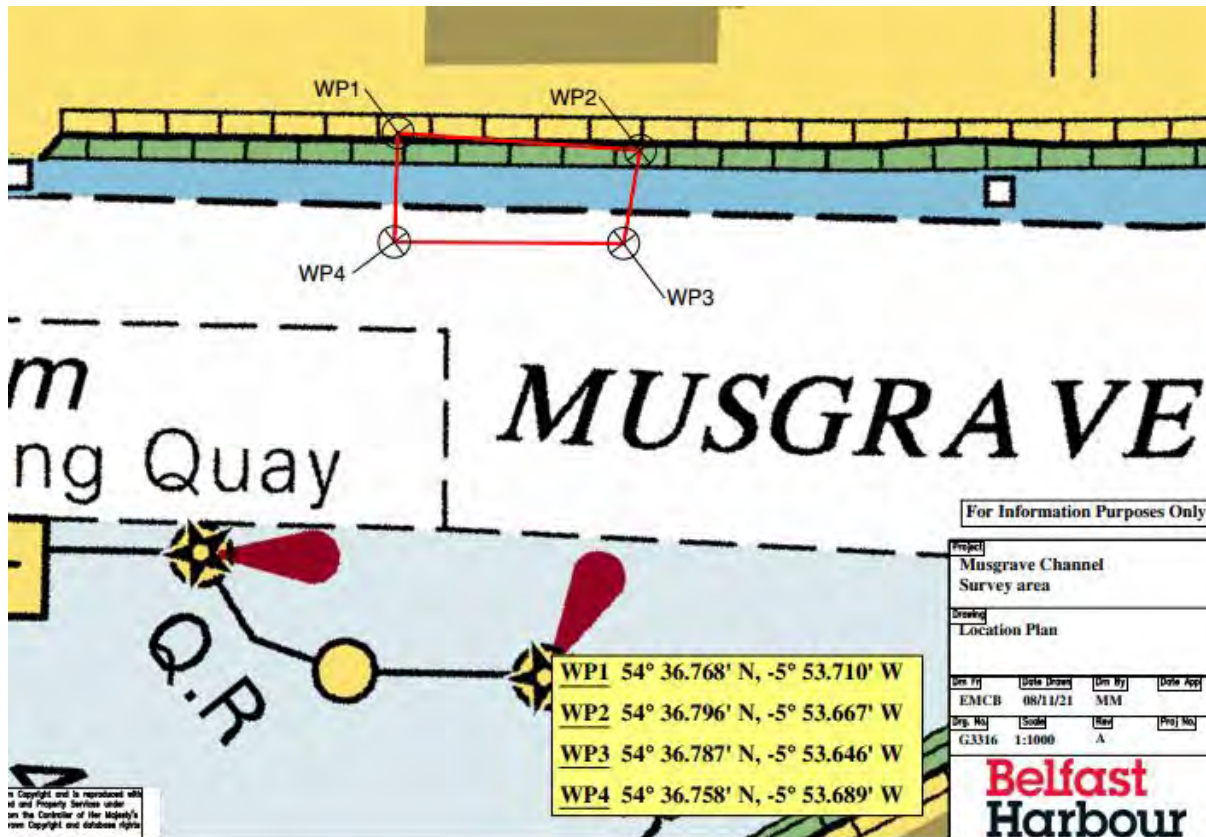
1. Receive the pontoons, the concrete anchors and mooring system from their suppliers and unload at Artemis Technologies HQ.
2. Use a mobile crane to lift and insert concrete anchors with Seaflex equipment into the water.
3. Assemble Seaflex equipment and attach onto mooring blocks on shore.
4. Use a MultiCat barge to pick up concrete anchors from craning locations and locate them to the approximate position. Leave the rope end that connects to the pontoon attached to a buoy so it's easily accessible from the surface.
5. Lift the 4x pontoon sections and gangway landing pontoon into the water with a mobile crane.
6. Connect all the pontoon sections together.
7. Connect the pontoon section to their respective mooring blocks with the help of the barge.
8. Once mooring blocks are connected to pontoons, finalize mooring block position with the barge.
9. Once pontoons are in final location, the gangway will be lifted into position on shore and connected to a fix hinge on existing concrete plinth and lowered until it's safely resting on the landing pontoon.
10. Connect water and power services.
11. Send divers under water to inspect Seaflex installation and sign off mooring system.

It is anticipated that the proposed construction sequence will be completed over a total period of nine days.

Machinery required will be limited to a Mobile crane and forklift and the use of a Cuan MultiCat barge on the water.

Location of works:

- Musgrave Channel at Belfast Harbour Belfast.



Indirect Effect.	Potential Source	Control measure
Lifting operations to install pontoon and moorings. Disturbance of the channel bed	Collapse of loads due to unsafe crane operation and faulty lifting accessories.	<ul style="list-style-type: none"> ○ Crane hire and lifting operations will be carried out in accordance with BS 7121 and the Construction Plant-hire Association (CPA) Standard terms and conditions for contract lift services apply. ○ Crane to be hired from reputable supplier and operated by qualified personnel. ○ Crane to be maintained as per manufacturers recommendations and hold current annual thorough inspection records. ○ Lifting accessories to be thoroughly inspected and identified. ○ Crane supplier will carry out a detailed method statement and risk assessment of the works to include environmental risks and implement all necessary controls.

		<ul style="list-style-type: none"> ○ Professional diving company to be deployed. ○ Competent management team permanently on site.
Silt.	The movement of plant on site can generate silt and oil contaminated water, Sources of silt e.g. plant and wheel washing, site roads carry a high risk of causing pollution.	<ul style="list-style-type: none"> ○ Plant (delivery lorries carrying pontoon elements & mobile cranes) will arrive to site via roads. ○ Wheels will not be washed on site.
Water and sediment quality	<ol style="list-style-type: none"> 1. Vehicle refuelling 2. Spillage / leaks of oils, chemicals and other pollutants. 	<ol style="list-style-type: none"> 1: Vehicles to be refuelled off site. 2: <ul style="list-style-type: none"> ○ All plant, cranes and MultiCat Barge to be serviced as per manufacturers recommendations. ○ No fuel to be stored on site. ○ Effective spill response, spill kits held on site. ○ Pre use inspections to include for spillages / leaks. ○ Competent management team permanently on site. ○ Staff have been trained in the use of spill kits and in emergency procedures.
Waste creation / disposal.	General waste creation, packaging etc.	<ul style="list-style-type: none"> ○ All waste, packing etc. to be disposed in designated skips and if not available, waste to be removed off site and disposed at Cuan Marines yard skips. (It is not envisaged that hazardous waste will be produced during this installation) ○ Professional diving company to be deployed and no waste to be left under water as part of the Seaflex installation. ○ The burning of any waste on site is strictly prohibited. ○ Cuan Marines Waste Carriers Licence Registration Number: ROC UT 6947. Expires 27/04/2023 <p>Everyone on site to comply with the waste 'duty of care':</p> <ul style="list-style-type: none"> ○ Store waste safely and securely on site e.g. prevent wind-blown materials such as plastics leaving site. ○ Prevent any liquid wastes leaching from bins or skips through exposure to rain. ○ Only pass waste to authorised persons and companies. ○ Have appropriate duty of care documentation, i.e. completed waste transfer notes for any waste removed from the site.

<p>Nuisance:</p> <ul style="list-style-type: none"> • Noise • Dust • Air quality / Engine exhaust fumes 	<p>1. Operation of machinery / equipment / vehicles. Poorly maintained plant</p> <p>2. Work hours</p>	<p>1:</p> <ul style="list-style-type: none"> ○ All plant, cranes and MultiCat Barge to be serviced as per manufacturers recommendations to minimise emissions and noise. ○ Vehicles will not idle as far as reasonably practicable. ○ MultiCat Barge uses low sulphur fuel and is fitted with an exhaust cleaning system. <p>2:</p> <ul style="list-style-type: none"> ○ Monday to Friday TBC. ○ Saturdays TBC. ○ Sundays and Public Holidays - no working
<p>invasive non-native species</p>	<p>MultiCat Vessel movements / location prior to works and site vehicles plant etc. can introduce non-native species from other sites.</p>	<ul style="list-style-type: none"> ○ Cuan Marine’s MultiCat vessel is permanently at use in Northern Ireland waters either on Strangford lough or Belfast waters. ○ It is not envisaged that any plant items vehicles etc. will carry any non-native species from other sites on their wheels.
<p>Visual Impact</p>	<p>Unightly visual impact due to work activities during and post work activities.</p>	<ul style="list-style-type: none"> ○ Unnecessary vegetation removal will be avoided. ○ Materials and machinery will be stored tidily during the works in order to minimise impacts on views. ○ Public roads providing access to the site will be maintained free of dust and mud. ○ On completion of the project, remove all structures, equipment and materials, waste, notice boards and temporary fences used during the construction with minimum damage to the surrounding area.

Table 1.

The Seaflex Mooring System

Seabed’s are classified as our most valuable bottoms with high ecological value, belongs to the concept of sea grass beds and are dominant habitats in coastal areas worldwide, and are internationally and nationally, a marine resource that is declared worthy of protection.

Activities such as pontoon, dock and buoy moorings have potential to cause negative environmental impact. Depending on which mooring system being used, it can be devastating to the seabed.

- Seaflex – The environmentally friendly mooring solution, constitute minimal environmental impact and is designed to incorporate with the forces of nature – wind and water, without leaving any marks.
- Seaflex manages all water level variations and therefore never drags along the seabed creating dead spots nor excretion of carbon dioxide.
- Seaflex does not release rust or other pollutants into the marine ecosystems.
- Seaflex effectively suppresses waves and the surge effects to the pontoon.
- Seaflex will not damage the local environment.

- Seaflex is unrivalled in its ability to safely and securely adjust with tides and wave motion.
- Seaflex has high age propensity and therefore requires less maintenance than other mooring systems.

See figure 2 below.



Figure 2: Pontoon anchored with the Seaflex Mooring System.

5. Contractor Details

Information regarding the contractor Cuan Marine Services Ltd. and relevant contacts.

Name	Position	Contact Number/s	Email
██████████	MD	██████████	cuanmarineservicesltd@gmail.com
██████████	Director	██████████	cuanmarineservicesltd@gmail.com
██████████	HSEQ Consultant	██████████	██████████

6. Environment Policy

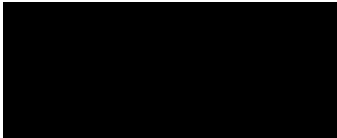
Cuan Marine Services Ltd. makes the following commitments to environmental improvements:

- We will comply with all relevant environmental legislation at our own premises and on construction sites which we are working on.
- We will continually improve our environmental performance through setting objectives and targets.
- We will aim to prevent and minimise pollution from all our operations.
- We will aim to minimise waste and reduce the amount of waste sent to landfill.
- We will aim to reduce energy and water usage from our operations.
- We will protect the natural and built environment and enhance this where possible.

We will ensure that all our staff and sub-contractors working on our behalf are aware of and comply with this policy.

This policy will be displayed at our premises and on construction sites where we operate as main contractor. It is available on request from our office.

Signed:



Director with Environmental Responsibility

Date: 19/11/2021

200A Shore Rd, Portaferry, Newtownards BT22 1LA

Phone:

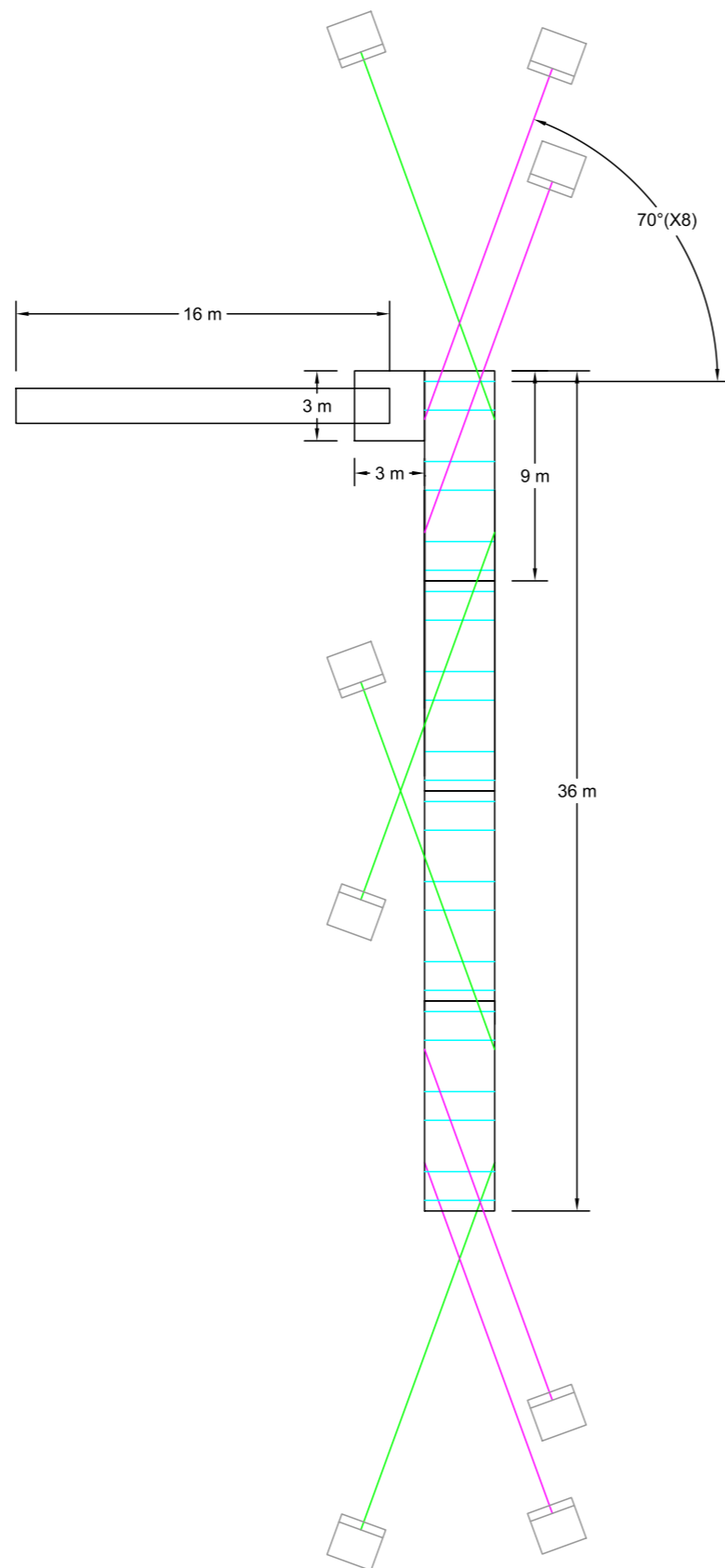


References:

- GPP 5 - Works and maintenance in or near water (Version 1.2 February 2018)
- PPG 6 - Working at construction and demolition sites Pollution Prevention Guidelines (2nd edition 2012)
- Best practices documents and the standing advice from DAERA Pollution prevention guidance (Published: 2015 Updated 2017)

Appendix A

Type of Seaflex:
— Seaflex 8040TTBPTH (Scope 2,25:1)
— Seaflex 8030TTBPTH (Scope 3,25:1)



OWNERSHIP

The use of this document is granted upon payment to Seaflex for the services Seaflex has rendered. Seaflex has the authority to forbid document use for all parties upon non-payment. This drawing and its specifications are and shall remain the property of Seaflex. Under no circumstances can said documents be used in any other project, by any other parties than those authorized by Seaflex with a specific written agreement.



ENGINEER'S SEAL

FINAL DESIGN

PROJECT:
Artemis Technologies Belfast

CLIENT:
Artemis Technologies Ltd

Seaflex Project Number: 8936	Date: 20211119
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Drawn By: FLN	Checked By: THY
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Drawing Name:
8936_Artemis Technologies Belfast_Artemis Technologies Ltd_Seaflex_20211119

Design parameters

Vertical Datum (CD)	CD=N/A
Lowest Water Level	2,7 m
Water Level Variation	4 m
Average Depth at LWL	3 m
Max Wind Velocity <small>(30s gust @ 10 m)</small>	20,58 m/s
Max Wave Height	0,6 m
Significant Wave Height	N/A m
Current	0,77 m/s

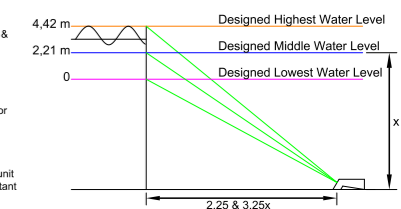
SEAFLEX		
SEGMENT	NO. OF SEAFLEX	TYPE OF SEAFLEX
Dock	4	8030TTBPTH
Dock	4	8040TTBPTH

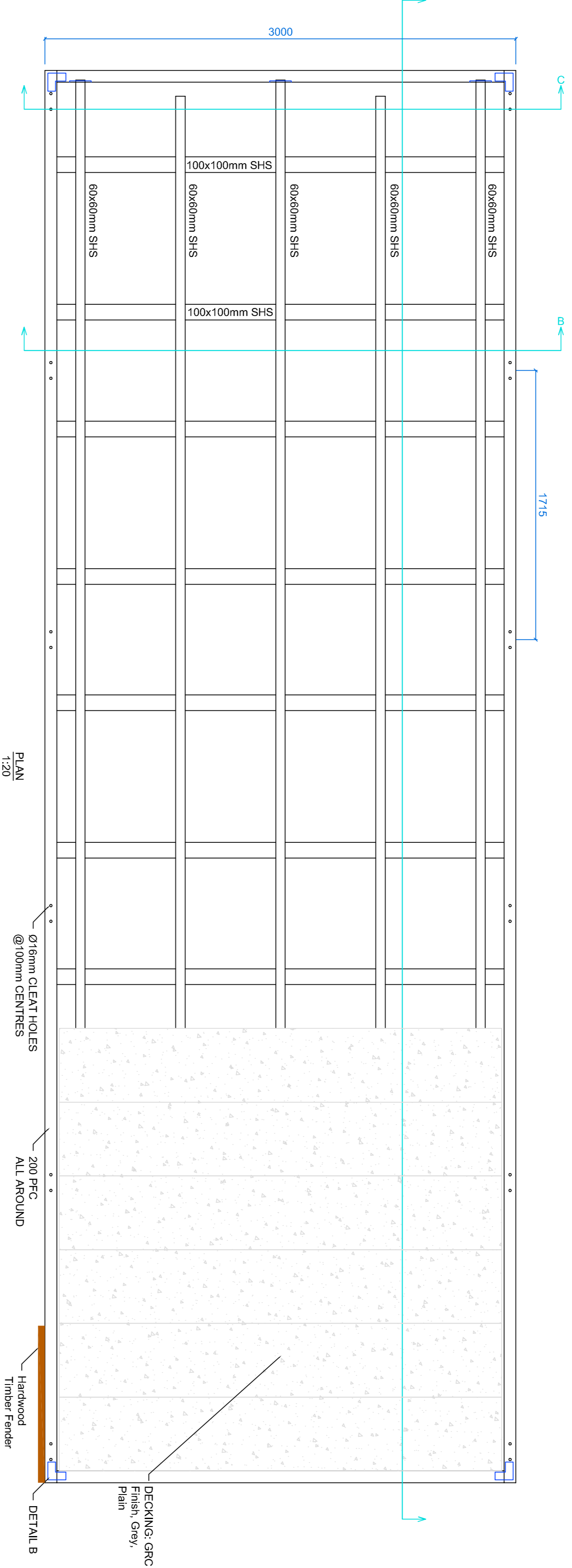
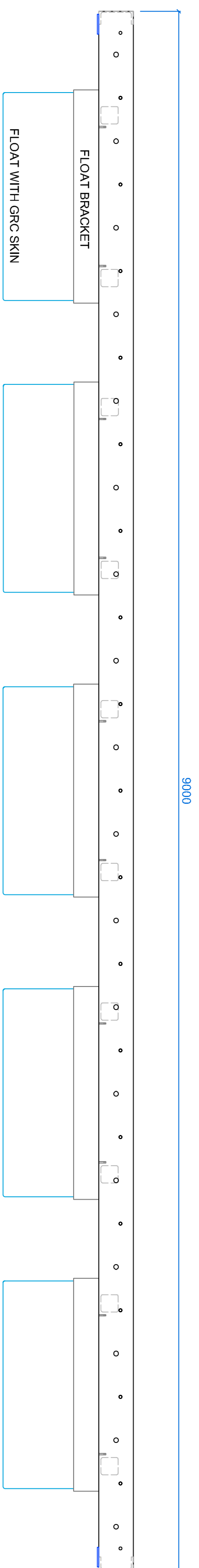
This drawing is submitted to complete the quote and is not meant for installation. Seaflex responsibility is limited to the mooring system's functionality in relation to the environmental forces and any other event that it was dimensioned for. Seaflex will always provide the max pull-down forces of the Seaflex units on request. How the floating structure functionate with these pull-down forces is not the responsibility of Seaflex by default. However, the forces can be altered by Seaflex upon request.

Seaflex design

- Scope of installation is 2,25 & 3,25:1 (Horizontal distance = Anchor depth at design Middle Water Level x 2,25 & 3,25:1)
- Water level variation (tide) is 4 m +0,42 m for 0,6 m waves
- Designed total water level variation (tide + storm surge + wave height) is 4,42 m
- Pre-tension of Seaflex unit is 30% of the original length at Design Lowest Water Level. For pre-tension of Seaflex use pre-tension diagram specific for the project.

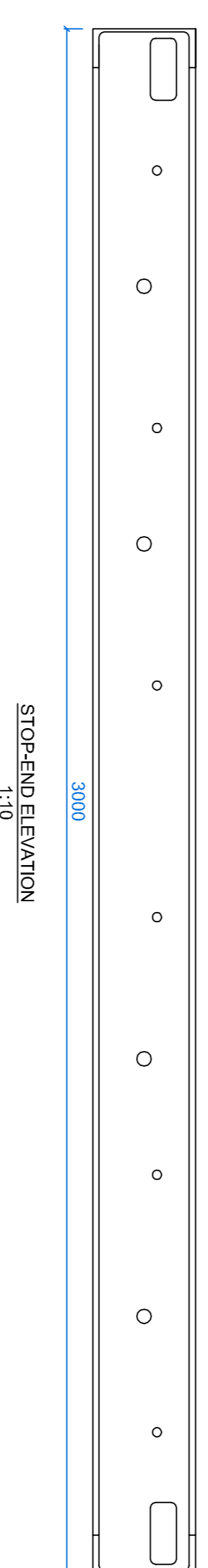
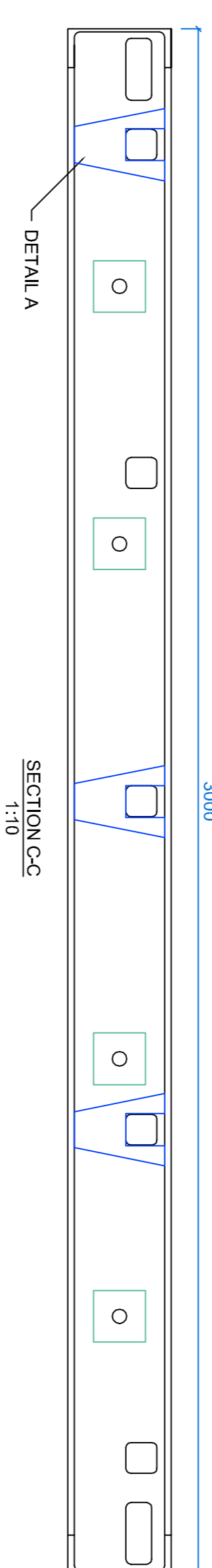
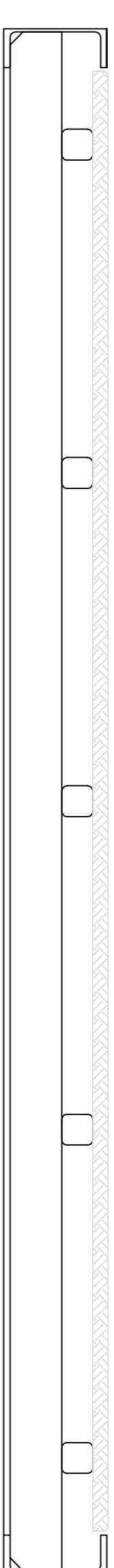
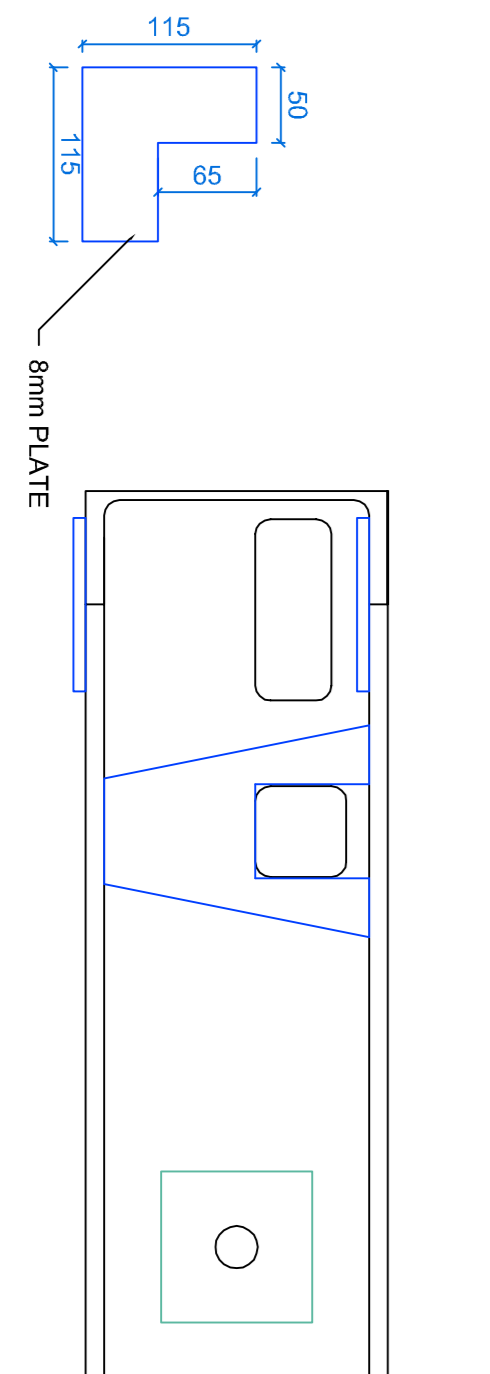
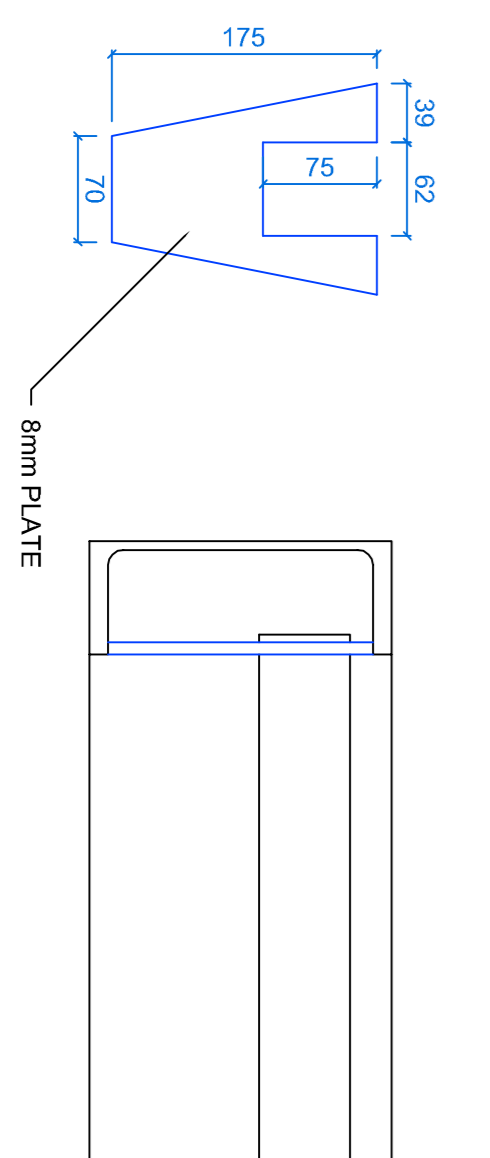
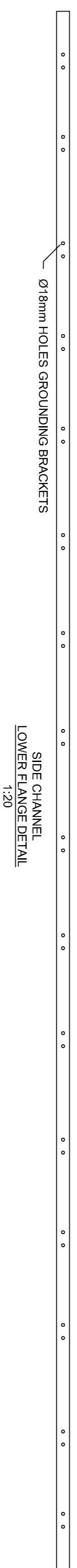
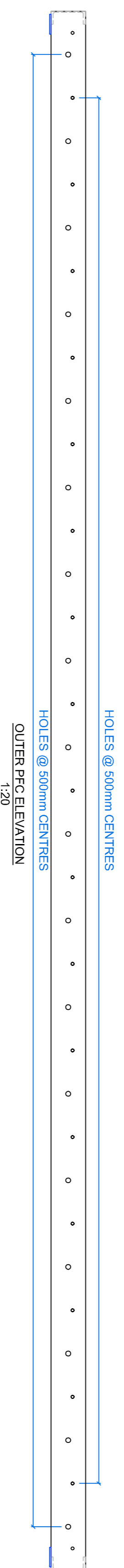
Anchor
 Gravity or technical anchor can be used. The rule of thumb is 1 ton gravity anchor per Seaflex strand on the unit. For example, a 8-stranded Seaflex unit will then need a 8 ton anchor. However, it is well recommended and important to do a load test at site because of different type of bottom structures.





ELEVATION
1:20

PLAN
1:20



		CLIENT ICOMS	
CONSTRUCTION DRAWING		PROJECT Standard Drawings	
DRAWING TITLE 9 x 3m HEAVY DUTY PONTOON	DATE 03/12/2020	Drawn By: FC	Rev: E
DRAWING NUMBER ICOMS/1000/02/10	SCALE As Shown @ A1	Eng. Check: BC	Standard Review: E
COMMENTS		DATE 03/12/2020	
ICOMS/1000/02/10		FC	

Emergency Preparedness Response Plan

EMERGENCY PREPAREDNESS RESPONSE PLAN FOR:

Facility Name: Artemis Musgrave Pontoon Installation.

Site Address: Musgrave Channel at Belfast Harbour Belfast.

Date Prepared: 10/12/2021

Purpose:

- This project specific Emergency Preparedness & Response Plan will ensure quick and effective action is implemented in the event of an emergency.
- It will help in easing the severity of the situation and limit the consequences.
- It will provide strategies to combat specific situations, and assigns and responsibilities for implementation employees must follow during an emergency.

Potential emergencies that could potentially arise include:

- Medical Injuries
- Traffic / plant accidents
- Accidental Release of potential contaminants to Watercourses
- Oil Spills
- Muddying of road surfaces

Basic Emergency Requirements:

DO:

- **Make it Safe, Stop, Contain, Notify!**
- Identify the cause of the emergency or incident and act immediately to prevent it from getting worse.
- Make sure that appropriate PPE is available to use where necessary.
- Report any emergency or incident to the Emergency Response Leads immediately, detailing the nature, cause and location so that appropriate action can be taken.
- Contact the Local Authority, NIEA as relevant to the incident.

DO NOT:

- **Ignore an incident as this could lead to a rapid escalation of the consequences – always take action and respond to the incident.**

Prior to commencement of Works:

- Emergency Response Lead to communicate this plan to all workers on site.
- Details and location of spill kits and first aid kits to be communicated.
- Site & Emergency contact details to be communicated.
- This Emergency Preparedness Response Plan to be posted in prominent location for the duration of the works.

Emergency Response Roles:

Cuan Marine Services Roles:		
Name/Title	Emergency Response Role	Responsibilities
<i>Jeremy Rogers Director</i>	<i>Emergency Response Lead</i>	<i>Responsible for all incident response activities, including developing strategies and tactics and ordering and releasing resources. Responsible for contacting emergency services when required.</i>
<i>Simon Rogers Director</i>	<i>Alternate Emergency Response Lead</i>	<i>Perform duties as assigned by ER Lead; assumes duties listed above when ER Lead is not available. Will provide incident security as needed once notified by ER Lead. Directing emergency services to incident location.</i>
Other	Other	Other

Communication:

Communication during an incident is critical to relay information to employees, response partners and emergency services about potential risks to health, infrastructure, and the environment.

Internal Communication:

Contact List		
Name	Role/Title	Phone
██████████	<i>Emergency Response Lead</i>	██████████
██████████	<i>Alternate Emergency Response Lead</i>	██████████

External Communication:

NIEA have a 24 hour Pollution Prevention Hotline number (0800 807060). Any observed incident of pollution should be reported to the Pollution Hotline number as soon as possible, to enable the matter to be fully resolved and investigated in a timely manner.

Emergency contact information:

CONTACT	NUMBER
FIRE, POLICE AND AMBULANCE	999

If calling external emergency services, provide the following information:

- Nature of emergency.
- Address & location of the emergency
- Your name and phone number from which you are calling.

Emergency Spills and Pollution Incidents:**Do:**

- Make sure you have the appropriate PPE before taking action.
- Contain a pollution incident immediately using absorbent materials and booms, or by digging containment facilities or bunds.
- Report incident to site manager.
- Check all nearby water bodies and watercourses to ensure if any spills or pollution has spread beyond the immediate area and take action as required in liaison with NIEA.

DO NOT:

- Dig ditches to drain polluted matter to watercourses.
- Remove booms and bales used to hold polluting materials.

Oil Spills:**Do:**

- Stop the action/event which is causing pollution immediately.
- Take immediate remedial actions – block spill; place booms and absorbent materials to help soak up the spill and use the advice in the oil spill response kit.
- Inform the site manager to identify more detailed required actions.
- Inform any landowners/occupiers if the spill has not been contained and dealt with.
- Monitor effects of spill.
- Remove oil spill response materials and dispose of in accordance with the site waste plan.
- Learn from the experience and plan site works to avoid pollution happening.

Do Not:

- Think that an oil spill is not important.
- Ignore the accident/incident.
- Cover up the incident.
- Repeat the action which caused the incident.

After an Incident:

- Ensure that any lessons from the incident are communicated to all relevant staff and appropriate action taken elsewhere on site if necessary.
- Update all relevant Company policies, Method Statements, training etc. and ensure new information is communicated to site staff.

All waste generated by clean-up activities should be disposed of in accordance with current legislative requirements and the site waste management plan and copies of all transfer notes retained.
