KAYMAC
Marine & Civil Engineering Ltd

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Together, we make a home

BARRATT
HOMES
built around you

Taylor Wimpey

Barry Graving Dock Outfall Installation Method Statement & Risk Assessment

2021

Document Control Sheet

Title	Document No.
Barry Graving Dock – Outfall Installation Method Statement & Risk Assessments	KM/JD/WCS/BARRY /28/09/2021

Originator	Client
Kaymac Marine & Civil Engineering Ltd Osprey Business Park Byng Street Landore Swansea SA1 2NR Tel: 01792 301818	PERSIMMON Together, we make a home BARRATT HOMES built around you Taylor Wimpey

Authorisation

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04/10/2019	Methodology and risk assessments covering the excavation behind the dock walls and the core drilling operations associated with the outfall installation.	Draft	Issue	1	2	3
Copy No.	**Issued to**					
1	Fadiya Ahmed - Whitehead Chartered Surveyors	✔	✔			
2	Dave Ellis – Neal Remediation	✔	✔			
3	Elton Prance & Mark Elliott - ABP	✔	✔			
4	Kaymac Marine Records	✔	✔			
5						
6						

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Section 1.0	Introduction

1.1	Description & Purpose of Project

Kaymac Marine & Civil Engineering Ltd has been commissioned by the Barry Waterfront Consortium to carry out the following works as part of the new drainage layout to the residential development of the Graving Dock at Barry Waterfront. There will be 5 new outfalls and the same methodology will be used for each location. In general, the works will include the following:

- Mobilisation of welfare unit, excavator, drilling equipment and pontoon.
- Set out line and levels each outfall (Neal Remediation's Engineer to assist)
- Excavation behind dock wall down to correct level
- Core drill suitably sized holes to accommodate new outfalls pipes through dock wall
- Install the protective Ductile Iron Steel sleeve through the dock wall
- Install new plastic pipe within the sleeve and grout anulus
- Rebate dock wall to accept flap valve.

The above works are due to commence on 04/10/2021 during suitable impounded water windows set by ABP Barry.

Section 2.0	Site Location

2.1	Project Site Location Details

Address	Cory Way, Barry Island, Barry, Vale of Glamorgan, Wales						
Post Code	CF63 4JE						
OSGB	ST 12432 67584						
Latitude	51°24'02"N	Longitude	003°15'37"W	Easting	312432	Northing	167584

2.2	Site Location Map

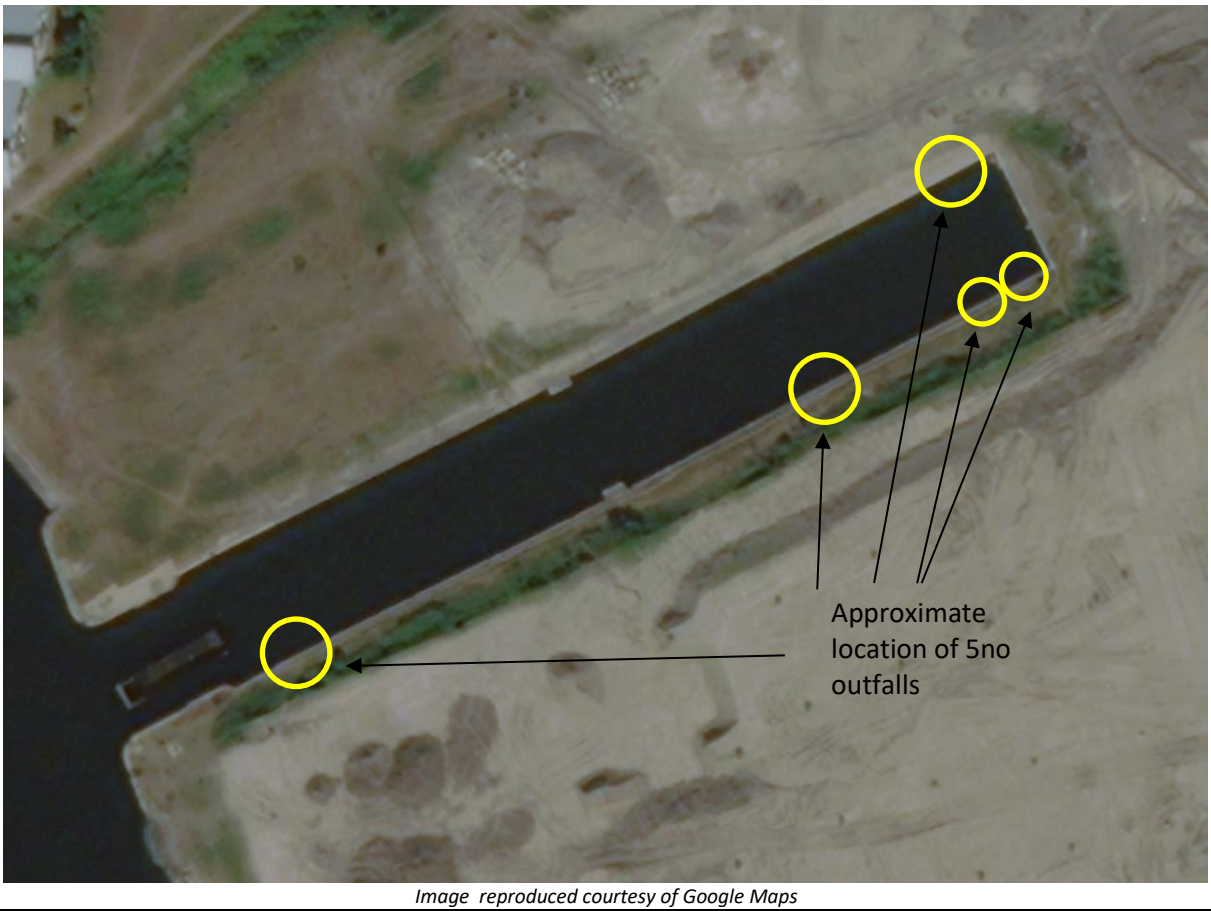
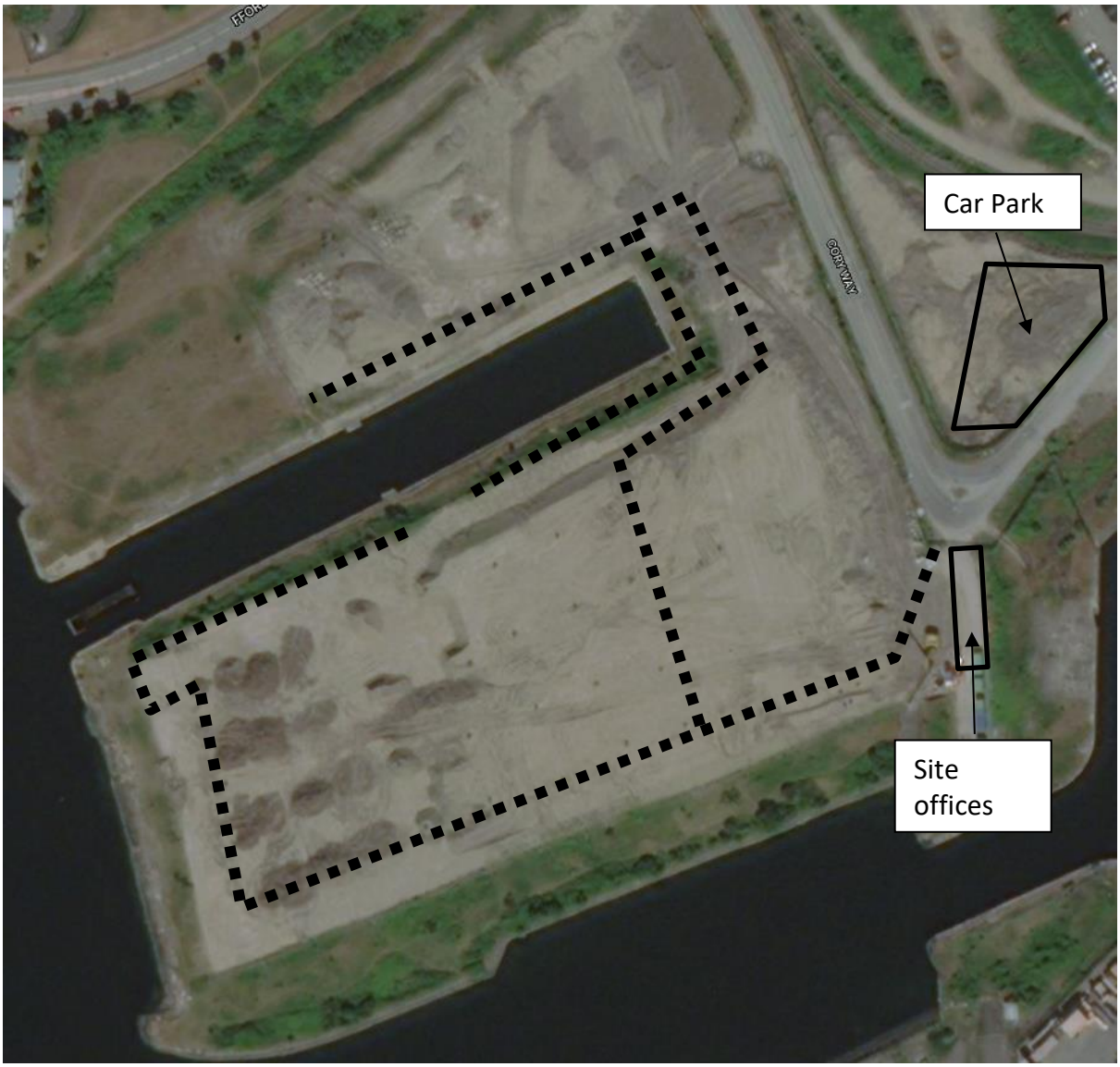


Image reproduced courtesy of Google Maps

Section 2.0	Site Location (Continued)
2.3	Access to the Site

Access to the site by vehicle will be from Cory Way and across the main site access roads as directed by Neal Remediation .



The dotted line on the map above denotes the approximate access roads into the site

Section 3.0	Legislative and Site Specific Compliance

3.1	Statutory Legislation

This document has been prepared to comply with, as far as reasonably practicable, the following current relevant legislation:

- The Health & Safety at Work etc. Act 1974
- The Management of Health & Safety at Work Regulations 1999
- The Health & Safety (First Aid) Regulations 1981
- The Lifting Operations and Lifting Equipment Regulations 1998
- The Work At Height Regulations 2005
- The Personal Protective Equipment at Work Regulations 1992
- The Manual Handling Regulations 2002
- The Control of Substances Hazardous to Health Regulations 2002
- The Reporting of Injuries, Diseases & Dangerous Occurrences (RIDDOR) Regulations 2013
- The Environmental Protection Act 1990

3.2	Additional Site Specific Compliance

A permit will be required from Marine Control prior to works commencing (an example of this document is at the rear of this document)
Life jackets must include a crotch strap
All personnel will be required to attend a Neal Remediation site induction prior to the commencement of any works on site.
All personnel will be required to sign in and out of the site attendance register on a daily basis.
Any permits, e.g., General Permit to Work, Permit to Dig, Confined Entry Permit etc, required as part of the Neal Remediation safe systems of work will be issued to the Kaymac site supervisor as appropriate.
The water level within the dock must be maintained at a suitable level of 4.5m AOD during the core drilling operations.

Section 4.0	Project Resources

4.1	Kaymac Site Personnel

Site Supervisor (SSSTS)
Kaymac General operatives (CSCS)
Sub Contract drilling personnel (CSCS)

4.2	Site Welfare & Storage

Welfare and messing facilities will be provided by the client.

4.3	Site Plant & Equipment

<u>General Site Plant & Equipment</u>

- 3m x 6m floating pontoon

- Core drilling equipment
- Small hand tools
- A suitable excavator
- Plant nappies
- Spill kits
- Small inflatable safety boat with outboard engine

4.4	Materials

- 3 x Althon 150mm diameter cast iron flap valve
- 2 x Althon 600mm diameter cast iron flap valve
- 5 x suitable diameter Ductile Iron Steel sleeve
- Flexcrete repair mortar (for making good around flap valve)
- Grout/Concrete to fill anulus of pipe
- Timber shuttering
- Steel blanking plates

4.5	Personal Protective Equipment (PPE)

The minimum PPE requirements for the site will be:

- Safety Helmet to BS EN397:2012;
- Safety Boots (or Wellington Boots) to ISO 20345:2011;
- High Visibility Jacket/waistcoat to EN471:2003;
- Safety Glasses to EN166.
- Life Jackets (must include a crotch strap)

Additional appropriate task based PPE will be required as a result of risk assessment (See section 8.0)

Section 5.0	Project Directory	
5.1	General Contact Numbers	
Neal Remediation Project Manager- Dave Ellis		TBC
Kaymac Site Supervisor-Dean Munkley		07557 921044
Kaymac Marine & Civil Engineering Ltd-Swansea Office		01792 301818
Kaymac Project Coordinator-Jon Dean		07976 122883
Kaymac Operations Manager-Jeff Lippiett		07971 880029
ABP Project Manager- Mark Elliott		07730 059613
ABP Elton Prance – Marine Operations Supervisor		07725 639184
Barry Marine Control (during tide shifts)		07957 422576 01446 701641 VHF 11
Cardiff LPS (off tide shifts)		02920 835023 VHF 68
5.2	Emergency Contact Numbers	
University Hospital of Wales		02920 747747
HSE Incident Contact Centre		0845 3009923
HSE Infoline		08701 545500
Kaymac Health & Safety Manager-Gareth Crees		07971 880028
Ambulance, Police or Fire & Rescue Service		999

Section 6.0	Method Statement

Mobilisation

Kaymac site personnel will mobilise to the Barry Docks and Liaise with Neal Remediation (NR) representative Dave Ellis; they will then attend the client's site induction and sign in on the site attendance record.

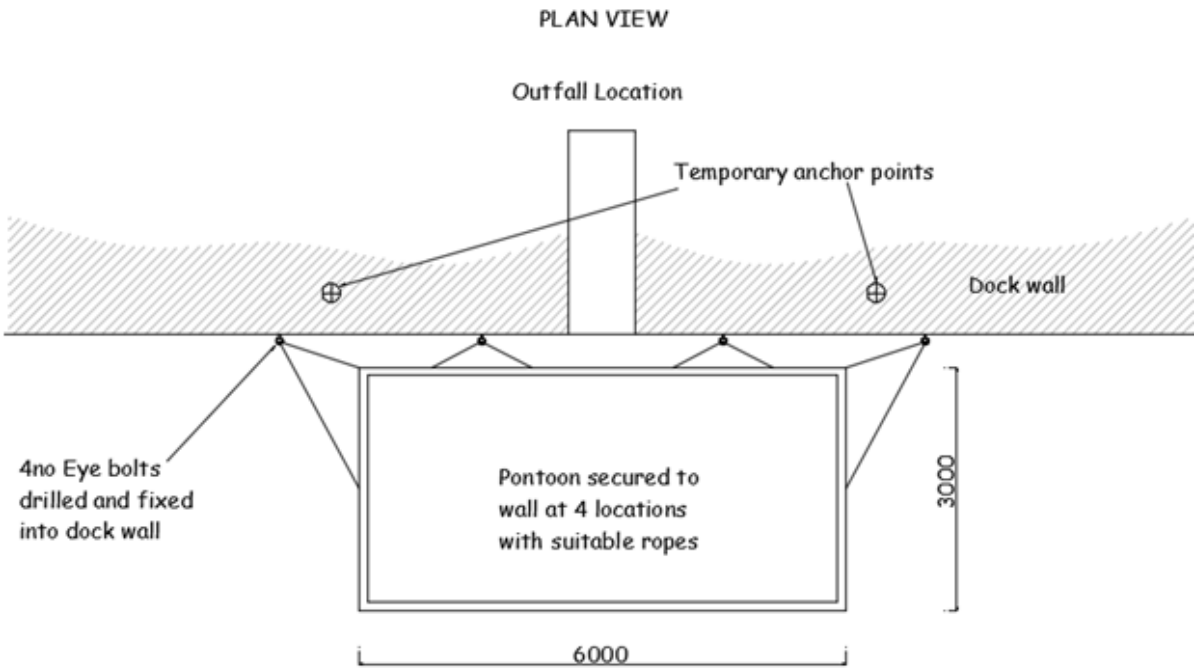
The Kaymac Site Manager will carry out a safety briefing informing the site team of each individual's roles and responsibilities, emergency procedures in the event of an on-site incident, and the hazards and control measures relevant to the tasks required. All personnel in attendance will be required to sign the Briefing Attendance Record in section 9.0 of this document.

The pontoon will be delivered to site on a 7.5m Hiab Lorry. The Lorry will be located in a suitable position adjacent to the dock wall and the pontoon at will be offloaded directly into the water with the Hiab. If sufficient access to the Dock wall has not been provided by Neal Remediation, the pontoon and workboat will be offloaded on the access road near the outfall location and lowered into the water with an excavator (supplied by NR). A small inflatable safety boat will remain tied up to the pontoon but will only be used in an emergency situation to recover a 'man overboard'

In order to secure the pontoon to the dock wall, temporary anchor points will be established at coping stone level prior to lifting the pontoon and work boat into the water. Mooring ropes will be pre-tied on the pontoon and workboat which will act as tag lines during lifting operations.

The mooring ropes will be tied off to the temporary anchor points and operatives will access the pontoon via a ladder which will be secured to the top of the dock wall and the pontoon deck.

Eye bolts will be drilled and fixed into the dock wall below the outfall location as per the General Arrangement sketch below and the pontoon will be secured with suitable ropes to these eye bolts during the works.



At the end of each shift all equipment will be removed from the pontoon to prevent theft or vandalism.
All mooring operations will be carried out in accordance with the "ABP mooring operations manual October 2019"
The pontoon will also be removed from the water after every shift.

Excavation of ground behind the Dock Wall

The position of the outfall and pipe will be marked out on the ground by the Neal Remediation Site engineer. A full CAT scan survey will be undertaken in the vicinity of the proposed dig.

A permit to dig will then be signed and issued to the specified excavation area. All operatives involved in this operation will be briefed on the known location of any services within the area.

An area to stockpile the excavated material will be agreed with the Client and appropriate barriers and signage will be erected to cordon off that area.

Depending on the site conditions the following 2 options will be used.

OPTION A – OPEN CUT

Under the guidance of a banksman, the machine operator will position the machine on a level surface and in a suitable location taking into consideration any obstructions including fencing or other features that may interfere with the slewing radius.

The operator will commence to excavate the area in a methodical manner removing the top soil first to mark out the extents of the excavation then reducing the level in stages ensuring to batter the sides to a suitable angle as he progresses.

Pedestrian barriers and timber stop blocks will be positioned where required around the excavation to act as edge protection and to prevent the dumper from encroaching too near the edge.

The spoil will be loaded into a wheeled dumper which will transport the material to the stockpile site under the control of a banksman where it will be tipped.

Pedestrian access into the excavation on completion will be via ramp.

OPTION B – TRENCH BOXES

The width of the trench will then be clearly marked by the engineer. A CPCS trained operative will proceed to strip the competent top soil with the 360° excavator and load into the dumper.

The ground will be reduced by 1.2m. The trench box will then be lifted and placed into the excavation by the excavator on site, utilising certified chains.

The trench boxes will then be progressively installed using the 'cut and lower' technique.

The internal area of the trench boxes will then be excavated with the 360 excavator. When the excavation is underway the corners of the trench box will be pushed uniformly to failure into the ground. This process will be completed until the desired formation level has been achieved. No operative is to be within the trench whilst the excavation is being progressed.

If required the top extension will be placed onto the trench box and secured with pins and clips. Then the 'cut and lower' technique will be utilised again until correct depth is achieved.

When the excavation is at formation level, pipe bedding, pipes and surround will be laid to the design specification and level. The level of the pipes will be controlled by the site engineer.

Access will be via a tied certified ladder. The pipe will be lowered into the excavation using a 360 excavator controlled by a banksman/slinger/signaller or small items will be lowered by hand.

Another trench box will be used for another section of pipeline or the excavation will be backfilled to utilise the trench box that has been installed.

The trench boxes will remain in position until the dock wall has been cored out and the pipe has been pushed through the wall.

When the flap valve has been installed, the trench boxes will be removed and the excavation will be backfilled. The end of the pipe is to be left exposed for Neal Remediation to connect into their concrete pipe at a later date.

Core Drilling Dock Wall

The pontoon will be manoeuvred into position under the outfall location with ropes and secured to the wall using eye bolts and ropes to prevent movement during the drilling operations.

The exact position of each outfall will be confirmed and marked on the dock wall by the Neal Remediation Engineer prior to drilling.

The drilling equipment will then be set up on the wall and polythene sheeting will be secured between the pontoon and the wall to catch any falling debris and prevent it from entering the watercourse. Suitable plant nappies and spill kits shall be made available at all times in case of a leak or spill.

A length of plastic guttering will be drilled and fixed to the dock wall below the drilling location and a container will be positioned on the pontoon. The slurry run off from the drilling operations will run into the guttering and will be collected in the container for later disposal off site. An example of the guttering arrangement is shown below on a similar core drilling project (also in Barry Docks).

The core drill rig will be set up at required level on the front of dock wall by drilling and fixing rig into masonry with mechanical fixings.

Core drilling will commence through the front of the masonry wall; water will be used to lubricate the drill, any contaminated water from this process will be collected in a container via the plastic guttering for disposal off site (see example of previous works carried out by Kaymac above and below)

When punch-out has occurred, the small cores will be recovered onto the pontoon and recovered to the surface in buckets as required. The remaining large central core will be pulled through the wall from the other side using chains and an excavator (as below).

After the central core has been removed, a rectangle will be marked out on the dock wall which will show the recessed area. (please see drawing 10225-S104-05-01 for recess location from top of wall, however the exact position of the recess should be checked against the hole on site)

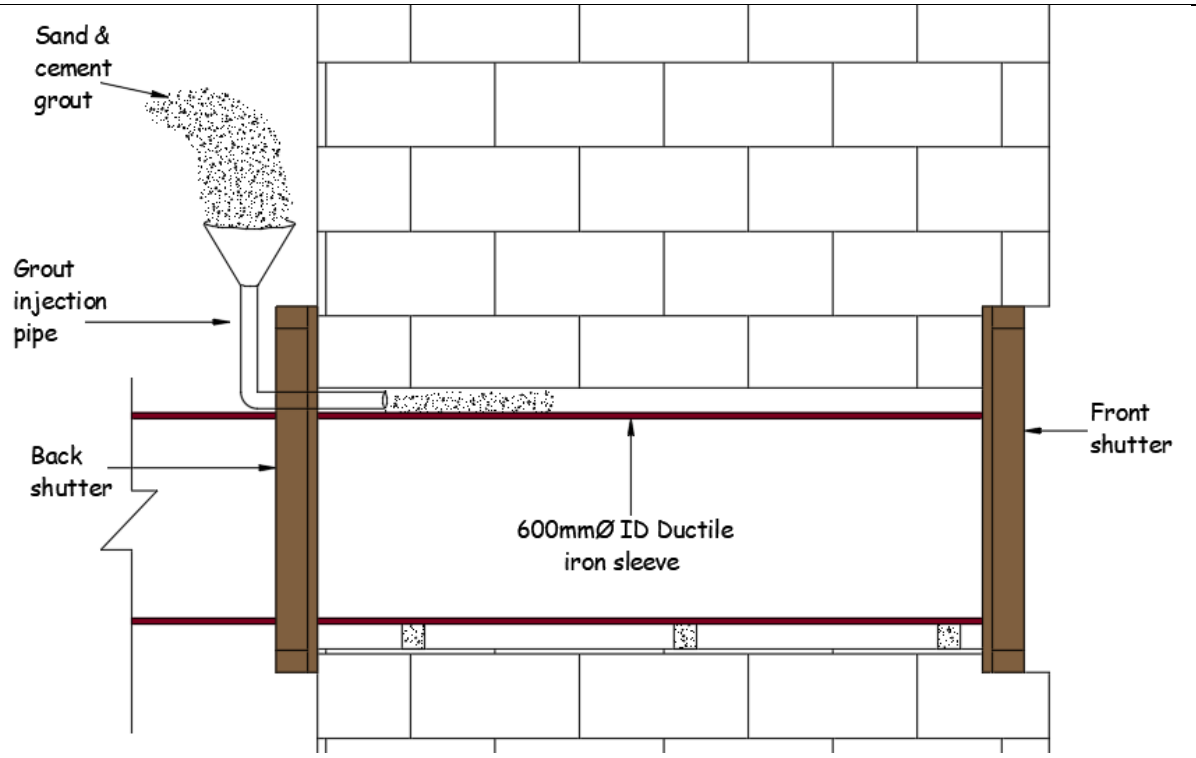
Using a hydraulic masonry saw or disc cutter, the square will be cut out to a depth of 200mm to accommodate the thickness of the flap valve. The spoil will be placed in the buckets and removed for disposal off site. If required small hydraulic breaker will be used to trim back the masonry to a flush finish.

The Ductile Iron Sleeve will be lowered into position and will be manoeuvred through the dock wall by the excavator until it reaches approx. 200mm from the recessed surface. Concrete spacer blocks (or similar) will be used to level the pipe.

A temporary plywood timber shutter over within the rebated square and will be drilled and fixed into position using suitable mechanical fixings.

A similar shutter will be cut and placed around the other end of the pipe behind the dock wall and a sand and cement grout will be mixed and poured into the annulus around the sleeve (see drawing below).

The anulus will be filled until the grout comes back up the injection tube and settles out to level above the soffit of the void. This will indicate that the void is filled due to the hydrostatic properties of the grout.



Following the installation of the grout, the front and back shutter will be removed and the plastic pipe will be inserted through the sleeve. The 'manhole end' of the plastic pipe will be left exposed to allow Neal Remediation to connect into their concrete pipe at a later date.

Working from the pontoon, the recessed area of the dock wall will be made good and rendered to form a flat sealing face for the flap valve (see photograph below).

Once cured, the flap valve will be offered up to the face and the holes marked.

The holes will be drilled with a rotary percussive drill and the flap valve will be installed as per the photograph below:

Sealing up of outfall over high water periods

In the event that the dock level is raised and the outfall needs to be sealed up for a period of time, a steel sealing plate will be drilled and fixed over the opening and sealed with a suitable mastic or mortar (see photo below):

When the dock level has been lowered below the level of the outfall, the steel plate will be removed and work can recommence.

Demobilisation

The pontoon will be lifted out of the water with the excavator and loaded onto a Hiab for transportation back to the Kaymac Yard. All items of non-mechanical plant will be removed from site.

Any excess materials will either be disposed of off-site to a licensed waste facility, or returned to head office for re-use or recycling.

Finally, all small tools and equipment will be demobilised, any outstanding permits signed off, and following a housekeeping exercise, site personnel will leave the site in a clean and tidy condition.

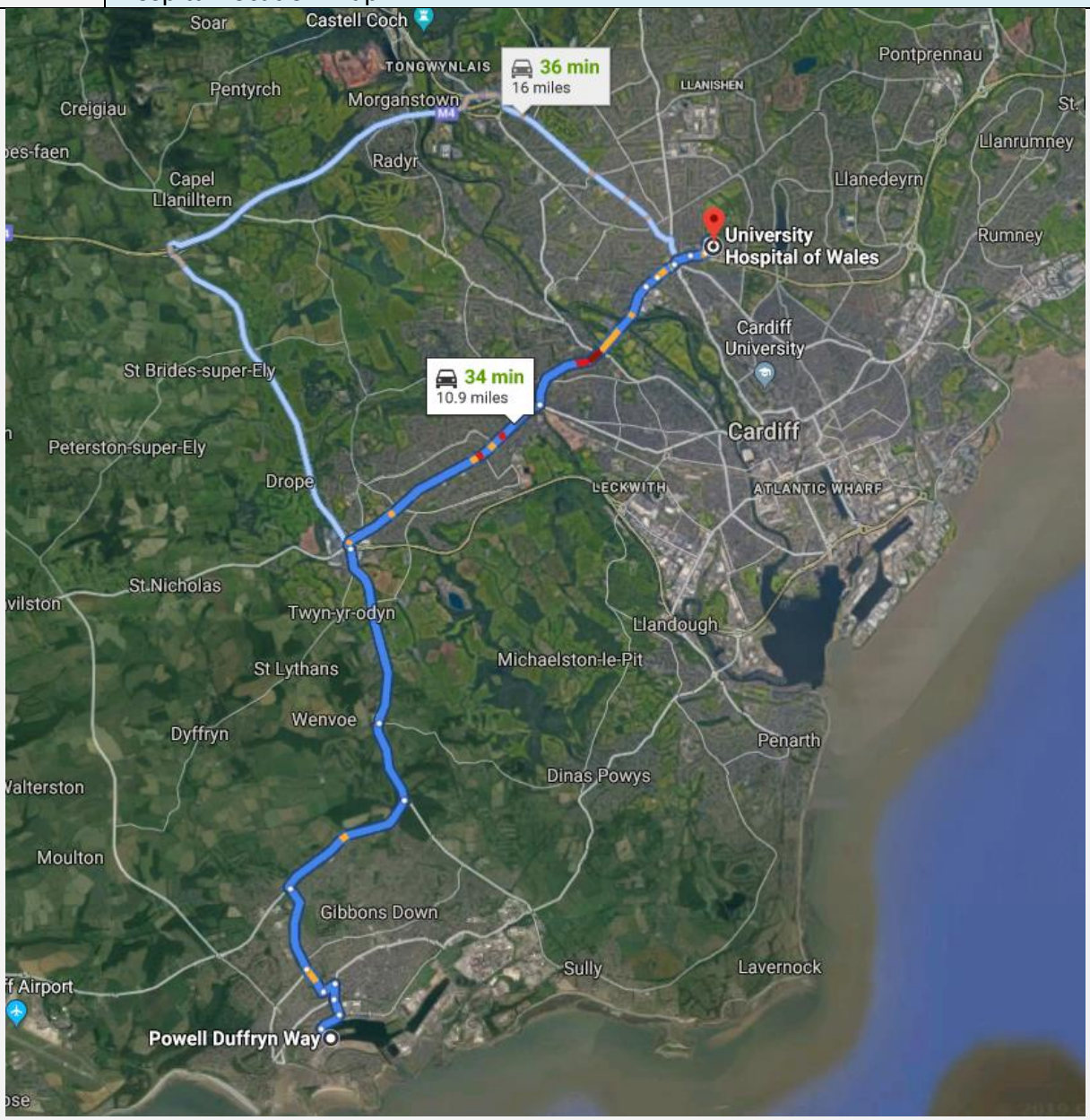
Section 7.0	Emergency Procedure

7.1	Local Hospital

The nearest hospital with a 24 hour accident and emergency unit has been identified as the University Hospital of Wales, Heath Park, Cardiff CF14 4XW. Transfer time by road; 28 minutes (distance: 9.7 miles).

In the event of an incident, ABP Marine must be contacted on the numbers stated in section 5 Project Directory and VHF radio. When working "on tide" they are to be contacted locally and if "off tide" contact Cardiff LPS.

7.2	Hospital Location Map



Section 7.0	Emergency Procedure (Continued)

7.3	Action on Minor Injuries

Depending on the injury, the First Aider will administer First Aid on Site as appropriate before contacting the nearest hospital if required: -

Bleeding – It is important to stop the flow of blood as quickly as possible.

Small Cuts – Small cuts in the vein stop bleeding and clot within a few minutes. The area should then be washed, and a plaster placed gently on top.

Deeper Cuts – Deeper cuts in the veins produce dark blood that seeps out slowly and steadily. It can be stopped by gentle pressure on the wound with a sterile or clean cloth, followed by the application of a clean or sterile bandage.

Arterial Bleeding – **ARTERIAL BLEEDING MUST ALWAYS BE TREATED BY A DOCTOR** – Bleeding from an artery can cause death within a few minutes, so urgent first aid is essential. This type of bleeding pulsates and squirts blood, as the pulse beats. To stop the bleeding from an artery:

- Apply hard pressure on the wound, and keep this up until the patient receives medical treatment;
- Press with a sterile cloth or just use your hand, if nothing else is available;
- Put a bandage on the wound if possible. If blood soaks through the bandages, press harder until the bleeding stops;
- Do not remove the soaked bandages, but place another on top if necessary;
- Do not attempt to clean the wound;
- The person must be made to lie down, preferably with their head lower than the rest of the body. This will ensure that enough oxygen gets to the brain.
- If possible, position the wounded area higher than the rest of their body - so that the bleeding will be reduced.

Nosebleeds – Occur when small blood vessels in the mucous membranes of the nose burst. Blood may also run into the stomach and then be vomited up.

Do not bend the head backwards or lie down, because this increases blood pressure in the head and so increases the bleeding.

To limit the bleeding:

- Pinch the nostrils shut with the index and middle finger for 10 minutes. This way, the vein is compressed, which is often enough to stem the flow;
- While the nostrils are shut, the person must breathe through their mouth;
- If the bleeding continues, it is important to contact a doctor.
- If the person frequently suffers sudden, intense nosebleeds - they should also consult a doctor.

Chocking – Chocking happens when the passage through the windpipe is blocked. This usually occurs when food that hasn't been thoroughly been chewed gets stuck.
If someone looks like they are chocking, ask them if they're able to talk.

A person who is genuinely chocking can usually only communicate with hand movements, and may place their hand against their throat. In such a case they will definitely need help, so summon assistance for them.

Provided the person is conscious and talking, you should not interfere. Encourage them to cough. However, be prepared to do so, if the obstruction appears to become complete or markedly worse.

If the person is conscious, but struggling to breath, stand behind them and lean their head slightly forward.

Using a flat palm, strike them forcefully between the shoulder blades, in the hope they will cough up (and out) the item causing choking. Repeat up to five times. If unsuccessful, proceed to the Heimlich manoeuvre.

The Heimlich Manoeuvre

- Stand behind the person, who is choking;
- Place your arms around their waist, and bend them well forward;
- Clench your fist, and place it right above the person's navel (belly button);
- Place your other hand on top, then thrust both hands backwards onto the stomach with a hard, upward movement;
- Repeat this until the object stuck in the throat is expelled through their mouth.
- If you need to carry out this manoeuvre on yourself, place a clenched hand above your naval (belly button) and your other hand on top. Then thrust your fist hand hard into your stomach.

Repeat this until the object stuck in the throat is expelled through the mouth.

Shock – Shock occurs when too little blood circulates to the brain.

This means that the brain is not receiving enough oxygen, which leads to a feeling of faintness, disorientation and dizziness.

Shock may occur: -

- After an accident involving loss of blood;
- After a serious infection, with loss of fluid;
- After a serious burn;
- After other accidents that cause loss of fluids or blood;
- As part of an allergic reaction (anaphylaxis).

When there is not enough blood in the blood vessels, the blood pressure drops and too little oxygen is circulated to the brain.
When this occurs a person may: -

- Go pale;
- Turn sweaty, clammy and cold;
- Become dizzy;
- Become anxious or restless;
- Have a weak, fast pulse;
- Have low blood pressure;
- Have slow, weak breathing;
- Lose consciousness.

What to do if someone is in shock?

- The person must lie on their back – preferably with their feet raised – to ensure enough blood gets to the brain;
- Make sure the person is warm, comfortable and covered by a blanket if possible;
- Do not give them anything to drink because they could run a risk of chocking;
- If the person vomits or bleeds from the mouth, he or she must be placed on their side to prevent choking;
- Call for an Ambulance. A person in shock must always be treated by a doctor.

Burns – The first thing to do is to limit the extent of the damage, and prevent the burn from becoming worse.

- Taking care that you do not put yourself at risk from the cause of the burns, move the person away from the danger area. Smoother flames with a blanket or douse the person with water but beware of electricity or caustic chemicals;
- Remove clothing or jewellery from the burned area but do not try to peel back any clothing that is stuck to the skin;
- The burnt area must been cooled by being placed under tepid running water. The water should not be unpleasantly cold;
- Keep the damaged area under running water for at least one hour or longer if the pain has not stopped. Up to four hours of this treatment can be beneficial. However, in severe burns it is more important to get the person to hospital for treatment, so do not let this delay calling the Ambulance;
- Meanwhile keep the person warm; a lot of heat can be lost from large burns so put a blanket or clothing around the non-injured areas;
- First-degree burns e.g. mild sunburn, may not require this treatment although it may help to soothe discomfort;
- Put cling film or a plastic bag over the burn before moving the person to hospital, but do not wrap the cling film tightly around the limb;
- Do not put any creams on the burn at this stage, but you can give the person simple pain relief such as paracetamol.

Which burns need to be treated by health professionals?

- Burns that are bigger than the palm of the hand;
- Burns on the face, neck, hands and in the groin;
- All chemical and electrical burns (electrical burns can look surprisingly minor while causing a lot of damage, and chemical burns may need specific treatment for the chemical that caused them);
- All third-degree burns;
- Most second-degree burns.

Remember that it can be difficult to distinguish between second and third-degree burns, so always have a doctor or nurse check all but the most minor burns.

For Minor Injuries the company vehicle will transport the injured person to the local casualty department at the *above H*ospital if required.

From here the company vehicle will transport the injured person to the local casualty department at the University Hospital of Wales.
A record of the accident is to be entered with all details in the Company Accident Book, and notify the Centregreat responsible person.

7.4	Action on Major Injuries

Administer First Aid on site, and then contact the emergency services requesting an ambulance to the site post code **CF63 4JE**. A record of the accident is to be entered with all details in the Company Accident Book, and notify the Client's responsible person. Kaymac Site Manager or his deputy will record on the accident on Kaymac Accident & Incident Report form QPF11 and pass on Kaymac Health and Safety manager who will ensure H.S.E. is informed by way of form F2508.

In the event of an incident, ABP Marine must be contacted on the numbers stated in section 5 Project Directory and VHF radio. When working "on tide" they are to be contacted locally and if "off tide" contact Cardiff LPS.

7.5	Emergency Evacuation Plan

Man overboard scenario
In the unlikely event that an operative falls off the pontoon, A competent boat operator and one of the Kaymac operatives will board the inflatable safety boat immediately, recover the casualty and take him to the nearest recovery point at any of the low level quay walls. From there, the casualty will be given first aid (if required) and then taken to the local casualty department at the University Hospital of Wales.

Injured man on pontoon scenario
In the unlikely event that an operative becomes injured while working on the pontoon, the casualty will assisted onto one of the low level quay walls. From there, the casualty will be given first aid (if required) and then taken to the local casualty department at the University Hospital of Wales.

Section 7.0	Emergency Procedure (Continued)
7.6	Reporting Accidents, Work Related Diseases and Dangerous Occurrences

<u>Reporting procedures</u>

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) require that certain accidents that happen on site must be reported to the Health and Safety Executive. Any of the following types of accidents that occur on site have to be reported in the first instance to the company Safety Officer or Safety Manager who will then notify H. S. E.

Serious or fatal accidents must be notified without delay to HSE, by calling the Incident Contact Centre (ICC) during normal office hours on 0845 300 9923.

Outside these hours, the local HSE office must be contacted. For details of the nearest HSE office, telephone the HSE Infoline on 08701 545500.

This must be followed up with a completed accident report form (F2508) within 10 days. For less serious injuries, where the injured person is unfit (or unable) to do their normal working job for seven consecutive days, excluding the day of the accident, a completed accident report form F2508 must be sent to HSE within ten days.

If a dangerous occurrence happens on site, for example, a building, scaffold or false work collapse, failure of a crane or lifting device or contact with overhead lines, it must be reported immediately, normally by telephone, by calling the Incident Contact Centre (ICC) during normal office hours on 0845 300 9923 or the nearest HSE office. The details must be confirmed within ten days on a completed accident form (F2508).

If a worker suffers from a specified disease associated with their current job, it must be reported to the HSE on a completed disease report form (F2508A).

Keeping records

A record must be kept of any reportable injury, disease or dangerous occurrence. This must include the date and method of reporting; the date, time and place of the event, personal details of those involved and a brief description of the nature of the event or disease. The record can be kept in any form preferred, but each site is supplied with a copy of the Accident Book BI 510 issued by the HSE, and this is the company's preferred method of keeping such records.

Section 8.0	Risk Assessment Record	

LIKELYHOOD	SEVERITY	RISK LEVEL
1. Highly improbable	**1. Minor injuries**	**1-4 Minimal**
2. Improbable	**2. Multiple injuries x 1**	**4-9 Acceptable**
3. Probable	**3. Multiple injuries 2 +**	**10-14 Moderate**
4. Likely	**4. Fatality**	**15-19 Substantial**
5. Highly likely	**5. Multiple fatalities**	**20-25 Intolerable**

No	Potential Hazard And Associated Risks	Persons At Risk	Risk Rating Before			Control Measures In Place	Risk Rating After		
			L	S	R		L	S	R
1	Working with vibrating tools – Circulatory illness due to exposure to hand arm vibration	Kaymac operatives	3	4	**M**	Reduce periods of use in accordance with HAVS calculator and manufacturer's recommendations. Staff to report any symptoms of HAVS. All have exposure to be recorded to ensure exposure limits are not exceeded	2	4	**L**
2	Slips trips and falls resulting in sprains, strains, broken limbs.	Kaymac operatives	3	4	**M**	Good housekeeping to be maintained throughout the works in all areas. Suitable footwear to be worn at all times.	1	4	**L**
3	Manual handling of heavy loads, irregular shapes. Resulting in back injuries, strains, sprains and permanent injuries.	Kaymac operatives	5	3	**H**	Avoid manual handling where possible. Use mechanical lifting aids where possible Ensure all manual handling is performed using kinetic lifting techniques, all lifts/work are suitably assessed prior to commencement. Training in safe manual handling techniques. Break loads down into smaller more manageable sizes where possible	2	3	**L**
4	COSHH substances. Incorrect usage / disposal. Serious injury/harm, Burns, Poisoning, pollution.	Kaymac operatives and others working in the vicinity	3	3	**M**	Tool box talks (COSHH). Use of correct PPE (rubber gloves, adequate face masks & goggles for substance being	1	3	**L**

						used etc). Disposal to designated COSHH skips. Training as required. Do not use materials until fully aware of the associated risks of use – COSHH COSHH RA and MDS available on site, op to be briefed on RA Use less harmful materials wherever possible			
5	Liquid leakages or spills from poorly maintained plant or damaged containers.	Kaymac operatives and others working in the vicinity	4	3	**M**	Re-fuelling of plant to take place in designated bunded areas. PPM scheme on all plant Spill response kits available at various locations around the site including at the site compound and at working area.	1	3	**L**
6	Non Kaymac employees gaining access to the site causing injury to themselves.	All other contractors	3	5	**H**	Erect perimeter fence to ensure that access cannot be gained to the work area. Employ pedestrian marshals if necessary Kaymac operatives to remain vigilant and report any unauthorised access by others to the Supervisor Erect suitable warning signs	1	5	**L**
7	Plant movements: - Collision with non Kaymac employees, operatives and other plant. Serious injury, crushing possible fatality. Damage to plant and equipment.	Kaymac operatives and others working in the vicinity	4	5	**H**	PPE – High visibility clothing. Use of trained banks man/signallers to supervise all vehicle movements around site. CPCS trained plant operatives. (or similar approved). Erect fencing around working areas. Never approach operational plant unless you have gained acknowledgement from the driver and they are aware of your presence	1	5	**L**

8	Collision with site plant/personnel during slewing. Fatality or Major injury.	Kaymac operatives and others working in the vicinity	3	5	**H**	Segregation of plant and operative with barrier wherever necessary. Operatives to wear appropriate PPE (orange/yellow) hi-viz vest and hard hat, gloves, eye protection and safety boots. Banksman to be present for plant movements in and around the working area Tool box talks regarding people plant interfaces	1	5	**L**
9	Excessive levels of noise leading to Deafness, hearing loss and environmental nuisance.	Kaymac operatives and others working in the vicinity	3	3	**M**	Use of noise suppressed plant & equipment only. Use of PPE – Carry out noise assessment and where necessary wear ear defenders appropriate to the levels recorded Regular breaks for noisy environments. Hearing protection to be worn by all personnel when working within noise exclusion zones.	1	3	**L**
10	Hand tools and small plant use.	Kaymac operatives	4	2	**M**	Ensure tools are checked prior to use for suitability and condition. Sharp tools to have edges protected that are to be stored or carried i.e. retractable blades. Correct P.P.E to be worn included gloves that are appropriate for use. HAVS trigger times to be recorded and usage times not exceeded.	1	2	**L**
11	Trapped/Crushed by: Plant overturned	Kaymac operatives and others working in the vicinity	3	4	**H**	• All plant access routes to be inspected for suitability of use and maintained regularly • Competent Banksman to control plant movements • Clear signals between Banksman and plant operator Do not lift load if on uneven ground	1	4	**L**

12	Contact with flying particles: Injury from cutting/grinding operations	Kaymac operatives and others working in the vicinity	4	3	**M**	• Use dust suppression as required • Wear safety spectacles/goggles suitable for the task being carried out • Ensure the manufacturer's recommended/provided guards are present and set correctly on all tools • Ensure a clear area around operation before commencing • Only trained/competent operatives to use equipment When using disc cutters always cut away from other operatives and inform anybody in the immediate area that cutting will soon commence	1	3	**L**
13	Contact with services • Injury from faulty power tools • Over head cables • Buried Services	Kaymac operatives and others working in the vicinity	4	4	**H**	• Use of intrinsically safe electrical equipment within confined space locations • Size of excavators appropriate to the task to be completed • Follow industry recommended standards/procedures for excavating close to buried services • Set out designated passing places beneath overhead cables (if applicable) • Site specific induction - warning of the over head cables (if applicable) • Obtain service drawings • Carry out a CAT/Genny survey using information provided • Use visual aids to assist in determination of service locations i.e. covers, track marks in red etc.	1	4	**L**

						• Locations of buried services to be clearly marked by visual aids, i.e. marker posts, traffic cones, spray paint etc. • All excavations are to be carried out only when a permit to dig has been issued and signed by the appropriate persons • Excavate trial holes by hand as required to prove services • Only hand tools to be used when working within close proximity of known services • Always adopt safe methods of excavation where there is any doubt about the presence of any services • Always treat services as live unless told otherwise by your supervisor or other competent person. • Seek advice from plant owners and work in accordance with their recommendations			
14	Environmental threat: • Contamination • Spill	Kaymac operatives and others working in the vicinity	3	2	**M**	• COSHH assessments for all coshh items • Dispose of all waste materials to designated skips etc • If weather conditions are poor the spoil heaps are to be covered to prevent waste being washed into river • Emergency spill kits are to be maintained at every work location or be easily accessible at all times from a centralised location • Equipment to be stored on designated drip trays/ bundied areas Specific concrete wash out areas.	1	3	**L**

15	Use of abrasive wheels: Injury to user and other personnel from flying debris or incorrect use of wheel.	Kaymac operatives and others working in the vicinity	3	3	**M**	• Use of goggles (to BS2092) • Wear Mandatory PPE inclusive of Ear defenders • Tool Box Talks • Ensure all necessary guards are in place • PPM scheme • Competent person only to change blade ensuring speed match. • Do not use side of blade for any use • Ensure operatives have received abrasive wheel training • Match speed of blade to speed of power tool	1	3	**L**
16	Falling from height into water Drowning	Kaymac operatives	3	5	**H**	• All personnel to wear life jackets when working close to the water's edge-stay behind hand rails where erected • Safety floatation rings (minimum of 2) are to be stationed on the pontoon.	1	5	**L**
17	Working at height Falls into open excavation/chambers/leading edges, falls off platforms resulting in broken limbs, paralysis, possible fatality	Kaymac operatives and others working in the vicinity	4	3	**H**	• Ensure working platforms have suitable hand rails. Provision of edge protection of minimum height 950mm at all times. Provision of fall restraint systems (as last resort under hierarchy of control).	2	3	**M**
18	Confined spaces: • Work to be carried out in confined spaces • Exposure to CO from plant. Suffocation caused by inhalation and absorption into the blood stream. Symptoms often unnoticeable until loss of consciousness and death.	Kaymac operatives and others working in the vicinity	4	4	**H**	• Access into confined spaces will require confined space training to NVQ level 2 or City & Guilds. • Rescue equipment to be in good working order, certified and checked before use. • Static plant and Machinery to be located a min 6m away from excavation • Top man to be present at all times	2	4	**M**

						• Gas monitor to be present at all times – personal and work space			
19	Contact with/exposure to hazardous substances: • Injury/poisoning/ingestion of COSHH items • Weils Disease/infection caused by contact with sewage • Concrete Burns	Kaymac operatives and others working in the vicinity	3	3	**M**	• Use alternative less harmful substances • Complete COSHH assessment and brief operatives accordingly • Training as required • Wear appropriate PPE • Only authorised personnel to use substances • Tool box talks (COSHH) • Disposal to designated COSHH skips and further disposal to licensed tip ensuring a completed waste transfer note has been completed • Do not use materials until fully aware of the associated risks • Wash off any concrete splashes as soon as possible • Report any burns to your supervisor – do not ignore burning "sensations" check them out • Good hygiene – wash any area that came into contact with substance thoroughly	1	3	**L**
20	Lifting operations Failure of lifting equipment, struck by falling object. Ground collapse. Collision with site plant/personnel during slewing. Fatality or Major injury.	Kaymac operatives and others working in the vicinity	3	4	**H**	• Site to check all certificates prior to lifting ops proceeding. All plant used for lifting is have a valid 12 monthly certificate. All lifting accessories to be 6 monthly certified and fit for use. • Plant operators to be CPCS trained and competent in lifting operations. • Operatives to wear appropriate PPE (orange/yellow hi-viz vest and hard hat, gloves, eye protection and safety boots. Any items to be lifted shall be slung by a CPCS	1	4	**L**

						trained slinger/signaller, and will only be lowered into the excavation, once all operatives are away from the lift area. No object to be lifted overhead. • Excavator bucket shall be removed prior to carrying out any lifting operations.			
21	Working below ground level Poor ground conditions Adverse weather conditions causing ground rotation Ingress of ground water causing undermining Crushing and /or burial of operatives at the work face. Possible ingress of plant and other operatives due to the surface effect. Usual effect of collapse is multiple fatalities.	Kaymac operatives	3	4	**H**	• Use of suitable temporary works as detailed by the Temporary Works Designer. • Regular inspection of temporary works. • Excavation area to be isolated with barrier fencing. • Permit to load procedure to be adhered to at all times	1	4	**L**
22	Excavation works Poor ground conditions Adverse weather conditions causing ground rotation Ingress of ground water causing undermining Crushing and /or burial of operatives at the work face. Possible ingress of plant and other operatives due to the surface effect. Usual effect of collapse is multiple fatalities. Damage to properties due to poor ground conditions.	Kaymac operatives	3	4	**H**	• Regular inspection of temporary works and ground conditions • Appropriate warning signage to be erected to warn people of the shallow excavation. • Prior to any excavation, services drawings will be checked as will the surrounding area for any evidence of services. • A full ECAT4+ & signal generator scan will be carried out by a trained operative and any services found will be marked clearly on site and found by hand dig only. A permit to excavate will be issued by the Client's Engineer prior to breaking ground. • Only hand tools to be used when working within close proximity of known services	1	4	**L**

						• Always adopt safe methods of excavation where there is any doubt about the presence of any services • Always treat services as live unless told otherwise by your supervisor or other competent person. • Excavation to be made as per HSG47 guidelines which includes 75mm scrape as a maximum. Personnel to wear flash retardant overalls if directly involved with the excavation works. • ECAT4+ & signal generator to be used throughout the excavation works. Toothless buckets are only to be used.			
23	Use of ladders. Fall from height resulting in fatality or major injury.	Kaymac operatives	3	3	**M**	• Ladders are to be in good condition and display a safety tag marked with in date inspection carried out by a competent person. • They are to be tied at the top and should protrude 1m above the top of the access point. • They are to be used for access and egress only-no working from the ladders. • No carrying materials when using ladder • If ladder is found damaged, remove it from the site • 3 points of contact when using the ladder at all times	1	3	**L**
24	Collapse of Dock Wall during excavations/core drilling/breaking out for outlet pipe	Kaymac operatives	2	5	**H**	• Diving survey will have been carried out prior to excavations to determine condition of outer face of wall on harbour side; rear of	1	5	**L**

						wall to be constantly monitored for leaks or signs of movement.			
25	Contamination of the water course	Fish and other living organisms	3	4	**H**	• Ensure environmental mitigations are in place at all times as detailed in the method statement i.e. guttering. • Polythene sheeting or plywood sheets will be laid on the pontoon to catch any falling material.	1	4	**L**

Section 9.0 Briefing Attendance Record					
Time / Date And Subject Items Of Briefing					
Project Title:				Doc. Ref. No:	
Date:		Job No:		Time:	
Subject Of Briefing:					
Name Of Person Giving Briefing:			Signature:		
SIGNATURE CONFIRMS ATTENDANCE AT ABOVE BRIEFINGS.					

Briefing Record		
Name	Signature	Representing

One copy to be held by ABP - one copy to be held by person requesting pemission.

ASSOCIATED BRITISH PORTS - SOUTH WALES

PERMISSION TO WORK WITHIN THE FENCED LIMITS OF THE SEA LOCK AND/OR ON THE APPROACH JETTIES

1. TO BE COMPLETED BY THE PERSON WISHING TO UNDERTAKE WORK

To Harbour Master

I (name).....of ABP/(other).....

request to carry out work at the Lock Entrance of: ☐ Lock (name).....

☐ Jetty (name).....

Date...../...../ 20.... From .....Hrs To.....Hrs. *NOT MORE THAN 24 HOURS*

Details of Work/Equipment affected

☐ Lockgate ☐ Lockgate Machinery Pit

☐ Sluice Chambers ☐ Impounding Pumps/Intakes

☐ Lock Caissons ☐ Other. Please state.....

Brief Description of work:.....

.....

I undertake to ensure that the work stated above will be carried out in accordance with all appropriate Safety Regulations.

I confirm that, where required, the machinery stated above is isolated.

Reference number of the Isolation Certificate(s) issued (as applicable).			
Contact information (Mobile phone number) of the manager/supervisor in charge.			

Date:..... Time..... Signature: .....

2. TO BE COMPLETED BY THE HARBOUR MASTER/VTSO/LOCK CONTROLLER/ASSISTANT LOCK CONTROLLER

PERMISSION ☐ GRANTED , ☐ DENIED Tick the applicable box

Conditions: .....

For Harbour Master

Name:..... Signature: .....

3.TO BE COMPLETED BY THE HARBOUR MASTER/VTSO/LOCK CONTROLLER/ASSISTANT LOCK CONTROLLER IF WORK IS SUSPENDED

If it is necessary to suspend the work defined within this permission the Harbour Master/VTSO/Lock Controller/Assistant Lock Controller will notify the person requesting permission and note below, and initial, the full extent of the stoppage period.

FROM (Time&Date)	TO (Time&Date)	INITIALS	REASON

4. TO BE COMPLETED BY THE PERSON REQUESTING PERMISSION WHEN THE WORK IS COMPLETE

I confirm that the work described above is complete, isolation certificates (as applicable) have been cancelled and all personnel are off site.

Time: ..... Name..... Signature.....

PIERHEAD CONTACT DETAILS

Barry	Tel	01446 701641	Fax	01446 701641	Email	Bryhm@abports.co.uk
Cardiff	Tel	02920 835023	Fax	02920 835006	Email	Cathm@abports.co.uk
Newport	Tel	01633 294451	Fax	01633 253697	Email	glynedin-newport@abports.co.uk
Port Talbot	Tel	01639 885171	Fax	01639 885172	Email	ptmaroon@abports.co.uk
Swansea	Tel	01792 332282	Fax	01792 332299	Email	swahm@abports.co.uk