Formwheel Bridge

Construction & Environmental Management Plan

P&D Lydon, Gortacurra,Cross,Cong,Co.Mayo

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1.0 INTRODUCTION

1.1 Overview

This document is produced to outline the Environmental Plan for these works. For P&D Lydon Environmental Control is as an integral part of our business. P&D Lydon are committed to implementing industry good practice in our approach to the environment. We conduct our activities within the legal and statutory requirements laid down and take regard of local authority waste management plans.
We recognise that our activities have an impact on the environment, but we endeavour to minimise these impacts where possible. Though a review of the practices carried out throughout our company we have developed systems to manage our environmental objectives.
Our environmental policy and our procedures are regularly audited through our established Environmental Management System. In addition to conducting regular reviews, we regularly monitor government environmental initiatives and seek to continually improve the effectiveness of our environmental measures.

The plan discusses the arrangements for the implementation and compliance with our integrated company environmental, Health & Safety and Quality Management System. Our system is accredited to ISO 14001:2004 standards.

The Document will be revised as required to take account of the Progress of the work and any significant changes that occur.

1.2 Preamble

This Environmental Plan has been prepared for the Construction Stage of the Formwheel Bridge Improvement Works

General description of the Works
The rehabilitation works of the bridge involves the following activities:

- Demolition of existing bridge deck,
- Installation of new reinforced concrete bridge deck,
- Works to be undertaken in and around watercourses and environmentally sensitive locations.
- Construction of temporary approach roads and bailey bridge
- Traffic management planning and operation.
- Working with third party requirements such as Inland Fisheries Ireland and National Parks and Wildlife Services.

All Sub-Contractors, Self Employed or others who are engaged to carry out construction work on the Project must comply with the requirements of this Environmental Plan.
In order for that to be achieved all concerned must have easy access to it. The Environmental Plan will be available to all concerned at all the Project Site Offices and compounds.

1.3 Circulation List:

Revision:	**Date:**	**Issued to:**	**Issued by:**
Revision 1 Original Document	06/08/2015	RPS Group	P & D Lydon (PSCS)

1.4 Statement of Policy

P&D Lydon has established a Quality, Occupational Health & Safety, and Environmental Management System in order to:

- comply with legislation
- continually improve quality, occupational health & safety and environmental performance to fulfil customer needs and requirements

Management has defined, documented and demonstrated its responsibilities, involvement and commitment by:

- establishing a quality, occupational health & safety and environmental management system including policy
- ensuring the availability of necessary resources
- performing management reviews
- ensuring that concerned personnel are fully aware of their health, safety and environmental responsibilities and customer needs and requirements.

Commitment and Policy

When P&D Lydon undertakes the role of plant hire and civil engineering we have additional responsibilities for the management of the site.

The Company defines clearly the following in the Group Policy document:

- our commitment to continual improvement in both quality, occupational health & safety and environmental performance
- our commitment for the prevention of accidents and ill health
- relevant customer goals and needs
- a framework for setting quality, occupational health & safety and environmental objectives
- we promote a commitment from all levels of the organisation to the prevention of pollution, compliance with current applicable legislation and a process of continual improvement and customer satisfaction and confidence.

This Policy has been distributed to all employees and is on display at public locations throughout the facility. Employees have been made aware of their obligations.

It shall be reviewed for continued relevance at management review meetings and amended if the organisational goals, regulatory requirements or customer expectations change.

We ensure that the Policy is understood by all employees and that it is also circulated to outside agencies (such as suppliers, customers, regulatory and public bodies) where appropriate.

The intention is to continually improve quality, occupational health & safety and environmental performance through the use of a documented management system.

The Group Policy Document has been approved by the senior management team of P&D

2.0 GENERAL DESCRIPTION OF PROJECT

Client:	`Galway County Council, Prospect Hill, Galway,
Designers:	RPS Group, Mervue Galway
PSCS	**P & D Lydon Cross, Cong, Co Mayo.**
Project Manager:	Martin Joyce 086 8284063 P & D LYDON.
Main Contractor:	P & D LYDON . Cross, Co Mayo.

3 SITE LOCATION AND SURROUNDINGS

The site is located at Formwheel Bridge in Co. Galway. The site compound will be setup on the Southern on the southern side of the bridge. This area will be securely fenced off with herris fence panels. All materials will be stored in this location. A welfare unit will be located within the site compound, which will include washing up facilities and drying room. A facility to park up to 4 cars will be provided inside this area which will be stoned up with Cl.804. Warning signage will be put in place to divert traffic onto the new temporary bailey bridge when works commence on the existing bridge. All residents/occupiers in the surrounding area will be notified via letter drop prior to works of the new road layout.

4 PROTECTION OF WORKS

P&D Lydon will take all necessary precautions to safeguard all existing buildings/water ways and works from damage by construction activity, plant operation, ground water movement, ground movement and settlement and all other activities associated with the execution of the contract. P&D Lydon shall make all necessary records (photographic or otherwise) of existing structures and other properties that could be affected by execution of the works prior to the commencement of construction. P&D Lydon will carefully protect all works and material from injury by weather.

Our site engineer will monitor the works daily and keep daily records to ensure that the works are being undertaken in accordance with this Construction management plan. These records will be kept in our site office in the site file.

5 SITE EXTENT AND LIMITATIONS OF USE

Subject to the other provisions of the Contract, the extent of the Site shall include:

(i) Lands Made Available by the Employer for the Works as shown on drawing DG0201

(ii) Any further land acquired by or conveyed to the Employer (from any person, including P&D Lydon) from time to time for the purposes of the execution and completion of the Works;

(iii) Further lands designated as Public Road as per the Roads Act 1993,beyond the extent of the lands described in (i) and (ii) above which shall be required to facilitate utility diversions and to provide Traffic Signs, Road Markings and Road Studs and the like;

(iv) Lands necessary for the construction of Accommodation Works in accordance with the Contract that may not be made available by the employer.

(v) Lands owned or occupied by third parties where such lands are permitted to be accessed by such third parties to execute and complete Accommodation Works as specified in Appendix 1/15 of the Specification.

(vi) Areas required for the installation alteration and removal of plant for statutory or other bodies. The use of these areas will be limited by the terms of the way-leaves acquired by the statutory or other bodies for execution of the works.

Ground disturbance around excavations will be kept to the minimum practical area. The working areas will be clearly defined on site using marker posts. Working areas are to be defined as per the construction drawings provided and in agreement with the Site Ecologist and Employer (as appropriate and depending on pre-identified environmental sensitivities in the vicinity of the proposed working area). Access routes will be clearly marked / identified. Access during construction to any working areas will be restricted to land within the outlined works area.

5.1. Limitations On The Use Of The Site

There can be no interference with existing water supplies, drainage systems and other Utilities and supplies must be maintained at all times. The laying of the pipelines will result in crossings of gas transmission pipes, gas distribution pipes, ESB cables, Eircom cables, fibre optic cables, watermains and others. All utility companies will be contacted prior to excavation, and the Contractor will arrange for location of the pipes and cables with the assistance of each utility company. All existing utility services shall be protected. The Contractor must comply in all respects with the requirements of the utility companies for crossing of pipes and cables.

The necessity to obtain the necessary Licenses or Permits under Planning and other Statutory Regulations and the current Waste Management Acts and Regulations related to the off site disposal (temporary and permanent) of excavated materials.

The Compound area will be located within the works area and materials will be also be stored here. A portable office with welfare facilities will be located on site. Herris Fencing will be setup around the works area.

No site going vehicles shall be permitted on public roads. The Contractor shall take all reasonable steps to prevent vehicles entering and leaving the Site depositing mud or other debris on the surface of adjacent roads or footways and shall remove expeditiously any materials deposited.

Works other than the pumping out of excavations, security and emergency works shall not be undertaken outside normal working hours without the written permission of the Employer. The contractor will not commence the work until written permission is received from the Employer's Representative. Said permission may be withdrawn at any time.

P&D Lydon shall not use areas of land with a temporary right of access, for any purpose other than the execution and completion of the Works including correction of defects.

P&D Lydon shall ensure that all areas of land, which have been temporarily occupied, shall be reinstated to the satisfaction of the affected landowner, occupier and the relevant Authorities, Utilities, Service Providers and Private Utility Services and other such entities.

Access for pedestrians, cyclists and vehicular traffic shall be maintained to all properties affected by the Works. Should pedestrian, cyclist and vehicular traffic be diverted then adequate signing shall be in place.

The disposal of unacceptable/surplus material must be to properly licensed tips in accordance with Planning, Waste and all other relevant legislation.

6 Reduction and Prevention of Suspended Solids Pollution

The Formwheel Bridge is located within ecological sensitive areas designated for nature conservation, therefore measures will be put in place to ensure that no significant impact on these areas is caused through the release of suspended solids.

The proposed bridge works will require mitigation measures to prevent contamination of the underlying watercourses with debris, suspended solids and other pollutants. This will require that all demolition material is prevented from entering the river through the use of the crash deck as outlined above.

The key factors in erosion and sediment control for land based works are to intercept and manage runoff. This limits the potential for soils to be eroded and enter watercourses in runoff. Runoff and surface erosion control is more effective and less expensive than sediment control with sediment

control ponds only. The following general guidelines for erosion and sediment control will be carried out;

- Construction shall be halted during periods of rainfall triggers and run-off to minimise soil disturbance. Weather information system will be obtained from at least three sources including Met Éireann, Yr.no, and AccuWeather.com. The most adverse weather forecast will be used the start, until an image of which forecast is most suited for the area is established. Works will cease of measures will be put in place if the following rainfall amounts are forecasted:
    a) 6 hour rainfall exceeding 3mm
    b) 12 hour rainfall exceeding 4mm
    c) 24 hour rainfall exceeding 5mm
    d) No overland flow or pathway for water movement
    e) Conditions of the ground match the weather forecast
- Vehicular and equipment access for construction will be restricted to the existing local road and the temporary road and bridge once it is completed.
- Bog mats will be used to the eastern side of the temporary access road within the proposed 2.5m buffer area where it is likely that there will be some impact arising from the placing of the temporary road and bridge,
- Where excavation is required at the bank, it will be carried out with machinery operating from the bank/road.
- Retain existing vegetation and physically mark clearing boundaries on the construction site,
- Retain eroded sediments on site with erosion and sediment control structures such using silt fences and sediment control ponds,
- The temporary access road shall be constructed and topped with a Cl.6f2 material/nonwoven geotextile.
- Unavoidable instream work shall be kept to a minimum and as far as possible natural stream conditions and structure shall be protected to promote stability of bank and bed structures and retain riparian vegetation.
- Where instream works are required for the proposed scour works, the works area shall be isolated from watercourse by damming with sand bags as outlined above. Water within the contained area contaminated with suspended solids or other potential pollutants shall never be released directly to the river, but shall be pumped to prepared sedimentation pond for attenuation before it re-enters the river,
- Machinery should never cross a watercourse by entering it
- Monitoring for suspended solids concentration within the Shannapheasteen Stream will be commenced before construction work starts to establish baseline suspended solid levels,
- Routine water quality monitoring of the watercourse during the construction phase will be carried out to gauge the efficacy of suspended solid pollution prevention measures in place,
- In the case of increased suspended solid levels, inspections will be carried out on the all pollution control measures to ensure that the increase in suspended solids concentration is not as a result of contributions from the site works. The results will be recorded and forwarded to the SE for their records.

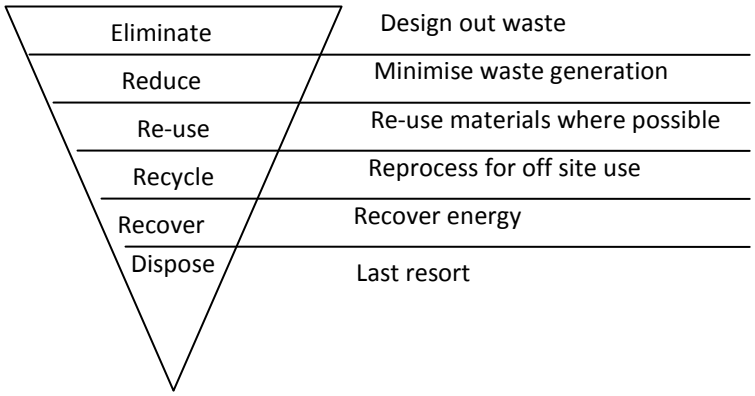
7 Fuel Control

All machines will be fueled with the site compound. The management of fuel on site will have regard to the following elements:

- Prior to commencing works machines will be checked that they are mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.
- There will be a bunded mobile bowser which will be within the site compound.
- Fuel tanks will be stored in secondary containment, where by hoses will be stored within a bunded area.
- Lock systems will be in place on nozzles.
- The bowser and all fuel containers will be checked for leaks and damage and will be replaced immediately.
- Machine operators are only to fill machines.
- An emergency spill kit will be kept on site and a trained operator of the same on site at all times.
- Inspection of pumps, machinery, fuel lines for leaks shall be carried out on a daily basis.

8 WASTE MANAGEMENT

1. P&D Lydon in all projects aim to have as little waste as possible. To do this we abide to the following hierarchy:



2. As regards recycling, where possible stone and soil taken out during the course of the construction works will where possible be reused on site. This helps reduce the chance of invasive species entering the area i.e. (The Management of Noxious Weeds and Non-native Invasive Plant Species). P&D Lydon have their own fleet of crushing and screening equipment for sizing the stone and soils to the requirements of the client. Lorries will not be overfilled to ensure that there is no spillage or deposit of clay, rubble or other debris on the public road network.
3. P&D Lydon will prevent litter or lightweight material from blowing off site or into watercourses by covering skips and waste containers. We will ensure waste is segregated. General waste includes materials that are unsuitable for recycling, (some plastics, packaging, floor sweepings etc). This waste is placed into black bin bags and stored in the wheelie bins prior to collection by the approved recycler. Recyclables are stored in the appropriate segregated areas prior to collection by the approved waste collection contractor.

All canteen waste is placed in the domestic bin and stored for collection by a refuse waste contractor.
Hazardous waste must be stored correctly and disposed of by an approved waste contractor.
All waste contractors must supply waste collection permits for any waste collected.
Waste collection permits must show the EWC codes and the vehicles allowed to collect.

For waste that does need to be removed from site we only use reputable contractors and vet their waste collection permit and facility licences prior to engaging their services. Records for proof will kept of all loads leaving site.

P&D Lydon have an All-Ireland waste collection permit for removal of most waste types from site in compliance with the current Waste Management Acts and Regulations related to the off site disposal (temporary and permanent) of excavated materials.

9 Control of Dust

The following control measures will be put in place to control dust caused by construction traffic if required;

- Wetting of haul road and storage areas (while adhering to the Reduction and Prevention of Suspended solids pollution outlined in Section 6);
- Covering or dousing of any dry, imported or excavated material;
- Reducing the duration for stockpiling in fill materials;
- Introduction of a wheel wash for construction traffic.
- Batching of Concrete will only take place off site at a Concrete Plant

10 Reduction or Elimination of Pollution with other Substances Associated with Construction Process

- Raw or uncured concrete waste will be disposed of by the removal from the site to a licensed facility which will be agreed in advance with Site Ecologist.
- Washout from concrete lorries, with the exception of the chute, will not be permitted on site and will only take place at the batching plant at designated washout area which will be situated within the site compound.
- Chute washout will be carried out at designated locations only. These locations will be signposted. The Concrete Plant and all Delivery Drivers will be informed of their location with the order information and on arrival on site.
- Chute washout locations will be provided with appropriate designated, contained impermeable area and treatment facilities including adequately sized settlement tanks.
- Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks will be trapped on-site and retained at the site compound during the course of the works, and will be disposed of by removal from the site to a licenced facility which will be agreed in advance with the Site Ecologist (SE)
- Fuels, lubricants and hydraulic fluids for equipment used on the construction site will be retained in the site compound and will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided

with spill containment according to current best practice (Enterprise IrelandBPGCS005)

- Fuelling and lubrication of equipment will be carried out within the site compound only.
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the site and properly disposed of at a licenced facility,
- Oil booms and oil soakage pads will be kept on site to deal with any accidental spillage.
- Waste oils and hydraulic fluids shall be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- Prior to any works ensure all construction equipment will be mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.
- All pumps using fuel or containing oil will be locally and securely bunded.
- Any pollution incident on site will be immediately notified to the SE who will be present on site as soon as practicably possible to monitor and report on impacts of the incident and how mitigation measures have been installed.

11 The Management of Noxious Weeds and Non-native Invasive Plant Species

Precautions will be taken in relation to non-native invasive species during the construction phase. Control of both noxious weeds and non-native invasive species can be broken into either physical methods or chemical treatment. Physical methods include cutting, digging or excavating, hoeing and pulling by hand. Chemical treatment may involve the application of herbicide either by targeted spraying or direct application to the individual plant by wiping or direct injection. The method used on site will be agreed with the NPWS and IFI prior to any works commencing on site.

APPENDIX A

Construction Works Method Statement

Formwheel Bridge

Method Statement

P&D Lydon, Gortacurra, Cross, Cong, Co.Mayo

	Site Specific Method Statement	*Revision* **00**	*Date* **22/06/2015**
Client: **Galway County Council**	Formwheel Bridge		

Contractor	**Name:** P & D Lydon	**Address:** Cross, Cong, Co Mayo.	**Tel:** 094 9546099 **E-mail:** info@lydon.eu
Project Name	Formwheel Bridge		**Job no:**
Description of the Task/Activity	Repairs to existing bridge		
Site Address/Location:	Formwheel, Co. Galway	**Start Date/Time:**	TBC
		Finish Date/Time	TBC
Personnel Involved	**Name**	**Role/Trade**	**Contact Details**
	Site Foreman	Brian Holleran	087 9888500
	Martin Joyce	Contracts Manager. (MSIC)	086 8284063
	Megan Lydon	Health and Safety Admin. (MSIC)	094 9546099
	Adrain Haire	Signing Lighting and Guarding (3 day cardholder CSCS)	
	Adrain Haire	Location of Underground Services (2 day CSCS)	
	TBC	Mini digger operators (CSCS Trained)	
	TBC	Forward Tipping Dumper Operators (CSCS Trained)	
	TBC	Slinger Banksman (CSCS Trained)	
	TBC	Pipelayers.	
Safety Advisor	Clive Kelly Safety Ltd. (Kilmurry McMahon, Co Clare.)		**Tel:** 087 2196988
Key Plant & Tools	13tn Excavator, 6tn Dumper, Low-loader		
Key Materials	Bailey Bridge, Precast Concrete Units, Rebar, Concrete		
Site Specific Hazards: (or refer to the task specific risk assessment(s)	List of Applicable Risk Assessments. See checklist for list of applicable Risk Assessments Risk Assessments available in company Safety Statement which is available with the site agent.		
Specific Staff Training	Company Induction, Site Specific Induction, Safe Pass, CSCS/QSCS machinery training, Manual handling, Abrasive wheel training, Roller training, Confined Spaces Awareness, First Aid, Fire training, Location of Underground Services, Signing Lighting and Guarding at Roadworks, PTS (Personal Track Safety), MEWP, Fall Arrest/harness, Fire Safety Awareness, Managing Safely in Construction,		

The following is to be in place for all works:

- All P & D Lydon employees will be inducted prior to commencement of work on site by the Project Supervisor Construction Stage (P.S.C.S.).
- All P & D Lydon Employees will have current Safe Pass Cards and C.S.C.S. where necessary.
- All P & D Lydon Employees will wear necessary P.P.E.
- Flashing Beacons will be activated on all mobile plant.
- Quick hitch pins will be in place as necessary.
- Keys shall be removed from all plant whilst not in use.
- Fire Extinguishers will be located in all P & D Lydon Company Transport.
- All excavations will be barriered off at all times with appropriate fencing panels to protect pedestrians from open excavations
- Signage and traffic management system is to be in place as per Chapter 8 of The Temporary Traffic Measures and signs for Roadwork's.(2007) Ref.
- Overhead cables and no-tip zones are to be highlighted as outlined in the ESB Code of Practice for avoidance of dangers from overhead services.
- All work will be carried out in accordance with the P&D Lydon EMP which is certified to ISO 14001.
- Waste will be stored in a designated location until removal from site by a licensed waste hauler to a suitable facility. All waste licenses and waste collection licenses will be available for inspection
- All hazardous materials will be stored in bunded chemical stores as per environmental requirements and dust will be minimized using water, noise and vibration will be kept to a minimum.
- During refueling operations of Plant, a spill kit will be located in this area in case any fuel is spilled. Any soil contaminated by fuel spillage will be excavated and removed off site to a licensed facility and treated as per environmental requirements. Fuel storage on site will be kept to a minimum. Spill Kits will be available at the refueling area and in the site stores in case of any fuel spills.
- A safety filing system is available for inspection by the PSCS/Client on all P & D Lydon sites through the P& D Lydon site agent. This will be available either on soft or hard copy.

Vehicles Entering and Exiting Site

- Delivery vehicles with plant and materials will enter and exit the site from approved routes only. Site vehicles will enter and exit through accesses provided.
- Delivery vehicles will enter the site with aid of banksman where necessary.
- Drivers of the delivery vehicles will be told where to park and how to get to the place of work, which will depend on site requirements.
- Once vehicle has unloaded the driver will then be directed to leave the site.

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The contractor shall carry out the works in accordance with all applicable statutory acts and regulations including:

- The Safety, Health and Welfare at Work Act, 2005
- The Safety, Health and Welfare at Work (General Application) Regulations 2007
- The Safety, Health and Welfare at Work (Construction) Regulations, 2006 - 2010
- P&D Lydon Safety Management System
- P&D Lydon Environmental Management system

Sequence of Operations: (include sketches if required)	• P & D Lydon and client supervisors will walk the works area to review any potential or known risk sources. • All involved will be inducted by the PSCS and will have current safe pass and other training as appropriate. • Full PPE will be worn including Goggles and Hearing protection using the consaw. • Signage will be in place and an exclusion zone/fencing will be set up for the operation. • Lifting certs will be in place for the excavators and accessories. **Sequence of Works** • Liaise with the inland fisheries and NPWS before any works commence. • Mobilise on site and CAT scan area. Setup traffic management as per traffic management plan. • Site clearance will be completed. The existing ESB pole will be taken down and set aside for reuse after disconnection by the ESB. • Construction of the temporary access road will commence each side of the river in order to divert traffic. This will be done by grading & levelling Cl.804 material over geotextile terram. • Six Kelly blocks will be installed at either end of the river to act as support for the bailey bridge to span across the river. The bailey bridge consisting of 6No. I Beams spanning across the river with a wooden floor in between will be lifted into place in three sections. Each section will be clamped together and handrails will be erected at each side. • Once the traffic has been diverted around the existing bridge, works will commence on the reconstruction works. A crash deck will be setup underneath the existing bridge before the demolition of the existing deck slab commences. This will prevent any material from entering the water course. • A 200mm deep RC pad stone capping to the existing abutments and pier will be shuttered and poured. 8mm dowels will be drilled into the existing abutments and pier and tied into

	new deck slab. • The new deck slab will be shuttered, reinforcement placed as per spec and poured. A 150mm high kicker will be constructed to tie into the parapet walls. These will then be poured. • The four masonry parapet walls will be constructed to NRA RCD/2400/4 using NHL lime mortar. The engraving stone will be built into this wall. • The construction of the new road surface will be made up of 300mm of capping, 150mm of Cl.804, 96mm of base course along bridge deck only, and 2 coats of Surface Dressing. • To carry out the concrete skirt at the base of the piers and abutments a line of sand bags will be placed around the works area to divert water. The shutters will then be erected and concrete poured. • All waterproofing will be applied as per spec. • All temporary works will be removed including the crash deck. Once the new bridge has been approved the bailey bridge and temporary access road will be removed. • The area will be snagged, tidied up and handed over to Galway County Council.

Hazardous Substances: (Attach MSDS if required)	 Very Toxic	 Harmful/ Irritant	 Corrosive	 Dangerous For the environment	 Oxidising	 Highly flammable	 Explosives
Applicable:	No	No	No	No	No	No	No

Storage Arrangements:	Within fencing area.
Details of Permits to Work:	As per PSCS Management System.
SWL's:	(Detail any limits on the loadings applicable to temporary plant/equipment or fixed elements of the structure where the work is taking place) All equipment will be certified.. Certs available with Site Agent.

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Required Personnel Protective Equip.:	 Safety Boots	 Hard Hats	 Safety Gloves	 Hearing Protection	 Eye Protection	 Respiratory Protection	Other: 1. Hi-Viz 2. Coveralls 3.

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Client: **Galway County Council**	Formwheel Bridge		

Emergency Procedures:		
 **First Aid Facilities:**	**Name of On-Site First Aider:**	**P & D Lydon Site Supervisor**
	First Aid Box Location:	Site office and/or Site Supervisor company van.
	Location of Nearest Hospital:	Galway University Hospital, (091)580580

EMERGENCY PLANS

In the event of an emergency P&D Lydon will follow the Site Emergency Plan

EMERGENCY ASSISTANCE

The phone numbers below will be displayed on the site notice board.

The Site Agent will contact the following in the event of any emergency on site:

- Fire Brigade/Gardaí/Ambulance: 999
- Local Garda Station: (Site Specific) 999
  Local Hospital: 999
- ESB Central: 01 7027257 / 1850372999
- Bórd Gáis: 1850 42 77 47
- Health & Safety Authority: 01 - 6147000

SITE EMERGENCY PLAN

ALL EMERGENCIES

For serious accidents Management must ensure that all personnel not immediately affected with the accident should be removed from the accident scene and sent to the assembly point.

P&D Site First Aider: As Above
First Aid Box Location: Site Office/Company Vehicles
Fire Extinguisher Location: Site Office/Company Vehicles/Excavator
Dial 999/112 and ask for (a) Ambulance Service,(b) Fire Brigade,(c) Gardai
Give clear instructions: *Name of Company:* P&D Lydon
Address of site and your contact number.
Give indication of:(a) Type of injury,(b) Number of People injured,(c) Brief description of accident
Send a suitable person to wait at site entrance to indicate site location to Emergency Rescue Services.
Provide an escort for the Emergency Rescue Services at the site entrance guiding them to the injured.

Provide First Aid to the injured – if it is safe to do so!
Make an office/secure area available to Emergency Rescue Services

Specific type emergencies in this industry:

EMERGENCY PLAN FOR A VEHICLE/MACHINE OVERTURNING

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. If there is a danger of the vehicle exploding/catching fire, the driver should be removed immediately by trained first aiders.
3. If there is no danger of the vehicle exploding/catching fire the driver should be left in the vehicle until the fire brigade or ambulance arrives.
4. First aid will be administered by trained first aiders ONLY.
5. The immediate area of the incident must be kept clear until an investigation has been completed.
6. Site Foreman will co-ordinate the making safe/upturning of the vehicle.
7. If hired in, the vehicle will be collected by its owner or if owned by P&D Lydon, will be collected by the plant department.
8. Once the injured person has been treated and is being looked after a full accident report will be compiled by the Safety Department of P & D Lydon.

EMERGENCY PLAN FOR A PERSON FALLING FROM A HEIGHT/INTO WATER

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. A floatable boom will be tied across the river so if someone should fall into water that the boom will be there for the person to catch hold of.
3. Carefully take the person out of the water and wrap a blanket around them.
4. First aid will be administered by trained first aiders ONLY.
5. Cordon off the area to stop people from gathering and preventing access and egress for the emergency services.
6. When the ambulance arrives assist the ambulance service if required, such as lifting out from excavation on stretcher.
7. No attempt will be made to move an injured person until an ambulance arrives unless the persons life is in immediate danger due to the circumstances of the location.
8. The site of the incident must be kept clear until an investigation has been completed.
9. Once the injured person has been treated and is being looked after a full accident report will be complied by the Safety Department of P & D Lydon.

RESCUE OF A PERSON TRAPPED AFTER COLLAPSE OF MASONRY DUE TO THE REMOVAL/RESETTING/REPLACEMENT OF MASONRY UNITS

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. The Site Agent to co-ordinate the drainage workers to hand dig for the trapped person once any immediate risk has been cleared.
3. The first part of the body to be uncovered is the mouth and nose so the person can get air or CPR can be administered.
4. If the casualty is breathing continue with the dig until the person is fully exposed.
5. If the casualty is not breathing a first aid trained person will carry out CPR on the casualty when the chest area has been exposed and will continue to do so until the emergency services take over.
6. The emergency team will assist the emergency services when asked to do so to remove the casualty from the scene.

EMERGENCY PLAN FOR A FIRE/SITE EVACUATION

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. The site agent will designate a person to act as sweeper and make sure the work area is evacuated pending on where fire is located.
3. All personnel required to leave the site are to assemble at the designated assembly point. (safe distance from fire)
4. Do not stop to collect personal belongings.
5. Turn off generators; compressors and other powered equipment unless these provide power for Emergency Services.
6. Turn off all heat producing equipment and shut cylinder valves.
7. The emergency team members will attack the fire if safe to do so using the correct extinguisher.
8. If somebody has caught fire they should:
9. STOP where you are. Moving or running feeds air to the flames and worsens the fire.
   DROP to the floor. If you stand up, the fire can burn your face. Fold your arms high on your chest to protect your face.
   ROLL slowly on the floor or ground, or in a rug or blanket, if you can. COOL off as soon as possible with water for first and second degree burns and the burns unit of the fire brigade should be contacted.
10. Site Foreman will do a roll call with the assistance of each sub-contractor supervisor assigned to conduct a head count of their employees. They will then report back to P&D Lydon supervisor.
11. Site Engineer will provide details of any known fire hydrants in the area.
12. The Safety Department will co-ordinate the investigation.
13. Contracts Manager to review the situation and organise items such as demolition, remedial works etc.

EMERGENCY PLAN FOR FALL ARREST HARNESS

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. Site Management is to be alerted.
3. Site Supervisors and First Aiders to go to the area of the accident and assess the situation to see if the area is safe. First Aiders to administer First Aid.
4. Site Foreman is to appoint a general operative to cordon off the area to stop people from gathering and preventing access and egress for the emergency services.
5. Time is of the essence when a person has fallen while wearing a body harness therefore it is imperative that they be rescued from the harness in a short a time as possible.
6. Whatever means is available is to be used as a rescue platform, which is to be pushed under the person to take their weight, i.e. MEWP, ladder, etc.
7. A maximum of 2 persons should be employed to cut the person down from the harness. Ensure the rescue persons are not in danger of falling while under taking this operation.
8. One person should take the weight of the victim while the other cuts the lanyard.
9. Rescue of a person from a harness after a fall will differ from situation to situation but the important factor is to take the weight of the person as soon as possible until they can be cut down. This helps prevent the victims' circulation from being cut off.
10. Site Agent will escort the emergency services from the site and will appoint a person to accompany the casualty to hospital.
11. Site Agent is to cordon off the site of the incident until the investigation has been completed.

EMERGENCY PLAN FOR A MEDICAL EMERGENCY

The First Aiders will decide on the medical treatment to be provided until the emergency services arrive.
The site agent will deal with:

- Providing assistance as required to the injured.
- Crowd control / Restricting the area
- Ensuring access is kept clear for the emergency services to access the site.
- Ensuring trained first aiders are available to assist the emergency.
- Where there are multiple casualties / emergencies, the site foreman and site agent in conjunction with site engineer and other site management shall decide on where the casualties can be treated until the arrival of the emergency services.

EMERGENCY PLAN FOR PERSON COMING INTO CONTACT WITH OVERHEAD SERVICES/ENTRAPMENT OR ELECTROCUTION.

1. First responder to raise the alarm to a member of P&D Lydon management immediately. Inform P&D Lydon Site Agent immediately.
2. The site agent will contact the emergency services as appropriate.
3. Ensure help is also obtained from the First-Aiders on site.
4. High voltage electricity can be instantaneously fatal. If the victim is still in contact with an electricity source, be extremely careful that you don't become the next casualty, as high voltage electricity can 'arc' several metres through the air.
5. In the event of electrocution do NOT rush to assist the casualty until you are certain that he is no longer in contact with electricity, otherwise the current will pass through the casualty directly to you.
6. If possible remove the casualty from contact with electrical source, using a non-conductive article such as a dry brush handle. Water is an extremely good conductor, so beware of wet hands or using anything damp.
7. Keep away and keep others away from the vehicle as it may still be live.
8. As soon as the power has been disconnected or the casualty has been separated from the power supply, check for breathing and pulse.
9. If breathing and heartbeat have stopped, begin the A-B-C of resuscitation immediately and continue until the emergency services arrive or the casualty's vital signs return.
10. If the casualty is breathing, but unconscious, place him in the recovery position.
11. Treat any areas of the casualty's body that may have sustained burns.
12. If the casualty is responsive and does not appear seriously injured but looks pale or faint, he may be at risk of going into shock. Gently lay him down with his head slightly lower than his chest and his feet elevated

EMERGENCY PLAN FOR AN ENVIRONMENTAL INCIDENT

Consider Personnel Safety First

1. Immediately alert area occupants to evacuate area if necessary and report the spill to the Site Agent.
2. Site Management will attend if there is a fire, or if any people require medical attention or have been exposed to hazardous substances.
3. If a volatile, flammable material has been spilled, switch off or remove any sources of ignition close to the spill. Ventilate the area if indoors.
4. Put on personnel protective equipment, as appropriate to the substance spilled. As a minimum gloves must be worn (refer to the Safety Data Sheet if in doubt or consult the safety department.
5. Consider the need for respiratory protection. Never enter a contaminated atmosphere without training or use a respirator without training. If respiratory protection is needed and no trained personnel are available do no not approach spill and keep up wind.

Spill Control and Clean Up

1. Try to identify the source of the pollutant and, if possible and safe to do so, stop the flow.
2. Get a spill kit(s) and apply absorbent materials appropriate to the spill type. Ensure that waste containers are available in which to place used absorbents.

3. Prevent the spill from spreading and contain it in as small an area as possible, using absorbent sausages, sand, earth or polythene to dam the flow. Divert any flow away from drains, sewers or watercourses or prevent pollutants from entering drains by placing sausages and/or polythene around or over the opening.

Risk Assessment;

Before assessing the risks the 9 principles of prevention are assessed including;

1. Avoid risks.
2. Evaluate unavoidable risks.
3. Combat risks at source.
4. Adapt work to the individual, especially the design of places of work
5. Adapt the place of work to technical progress.
6. Replace dangerous articles, substances, or systems of work by non-dangerous or less dangerous articles, substances, or systems
7. Use collective protective measures over individual measures
8. Develop an adequate prevention policy
9. Give appropriate training and instruction to employees

Below is the risk assessment matrix for risks identified for the works for this method statement.

Risk Assessment Number	Activity Covered	
1	***Plant & Equipment/Day-to-Day Activities***	
RA 1.1	Plant and Equipment	X
RA 1.2	Site Dumpers	X
RA 1.3	Excavators	X
RA 1.4	Rollers	X
RA 1.5	180 Degree Backhoe Loaders	
RA 1.6	Tractors and Bowsers	
RA 1.7	Tractors and Trailers	
RA 1.8	Bulldozer	
RA 1.9	Rockbreakers	X
RA 1.10	Tipper Lorry	X
RA 1.11	Loading Shovel	
RA 1.12	Screener	
RA 1.13	Crusher	
RA 1.14	Mobile Cranes	
RA 1.15	Fork Lift Trucks and Telescopic Handlers	

RA 1.16	Road Sweeping	
RA 1.17	Road Planing	
RA 1.18	Rotary Hedgecutter	
RA 1.19	Truck Salting/Griting	
RA 1.20	Tractor Lawnmower	
RA 1.21	Loading and Off Loading of Plant	X
RA 1.22	Transporting of Plant by Low Loader	X
RA 1.23	Company Vehicles	X
RA 1.24	Cement Mixer	
RA 1.25	MEWP	
RA 1.26	Block Grabs	
RA 1.27	Pneumatic Tools –Jackhammers, Rock Drills, Air Grinders	
RA 1.28	Roadsaw	
RA 1.29	Lifting of Loads	X
RA 1.30	Lifting Gear	X
RA 1.31	Excavations	X
RA 1.32	Overhead/Underground Electricity Cables	X
RA 1.33	Working Adjacent to Live Traffic	X
RA 1.34	Pipelaying	
RA 1.35	Diesel, Oils and Waste Oil	
RA 1.36	Waste – Storage, Handling, Solid Waste, Hazardous Waste	
2	***Site Activities***	
RA 2.1	Working at Heights	X
RA 2.2	Working Close to the Public/Pedestrians	X
RA 2.3	Unauthorised Persons Onsite	
RA 2.4	Set up and demobilisation of Site offices	
RA 2.5	Use of straight ladder	X
RA 2.6	Use of A-Framed Ladders	
RA 2.7	Scaffolding	X
RA 2.8	Trespassers	
3	***Maintenance and Associated Equipment***	
RA 3.1	Bench Grinder	
RA 3.2	Bench Drill	
RA 3.3	Bandsaw	
RA 3.4	Welding	
RA 3.5	Lathe	
RA 3.6	Fire	

RA 3.7	Gas Cylinders	
RA 3.8	Management of Electrical Safety at Work (Temporary Electrics)	
RA 3.9	Portable Electric Tools	
RA 3.10	Portable Handtools	
RA 3.11	Compressor	
RA 3.12	Stanley Knives	
RA 3.13	Generators	
RA 3.14	De-Energising Electricity Supply	
RA 3.15	Pit in the workshop	
RA 3.16	General Workshop Activities	
4	***Manual Activities***	
RA 4.1	Working with Wet Concrete	X
RA 4.2	Confined Space	
RA 4.3	Leptospirosis (Weils Disease)	
RA 4.4	Housekeeping	X
RA 4.5	Eye Injury / Strain	
RA 4.6	Abrasive Wheels	X
RA 4.7	Manual Handling	X
RA 4.8	Use of Linemarker Paint (All Colours)	
RA 4.9	Dust (N.B. This does not include asbestos dust, dust from lead or fumes from welding	
RA 4.10	Vibration	
RA 4.11	Legionnaires Disease	
RA 4.12	Noise	
RA 4.13	Theft and Vandalism	
RA 4.14	Pressure Testing	
RA 4.15	Needlestick Injuries	
RA 4.16	Health Hazards Present in Waste Processes	
5	***Specialised Activities***	
RA 5.1	Fusion Welding	
RA 5.2	Shredding of twigs and small timber material from hedging	
RA 5.3	Air Testing	
RA 5.4	Trimming Sub-Formation and Formation as part of Earthwork Operations	
RA 5.5	Pouring Concrete Using Concrete Skips	
RA 5.6	De-Energising Electricity Supply	
RA 5.7	Works on or adjacent to water	X
RA 5.8	Demolition Works	
RA 5.9	Laying Black Top	X

RA 5.10	Tree Felling	
RA 5.11	Using Chemicals/Hazardous Substances	
RA 5.12	Chainsaws and Heavy Equipment	
RA 5.13	Working at Night	
RA 5.14	Lone Work	
RA 5.15	Pole Saw	
RA 5.16	Working Adjacent to Iarnrod Eireann Property	
6	***Traffic Management***	
RA 6.1	Temporary Traffic Management – Junction Control	
RA 6.2	Temporary Traffic Management – Street Lighting	
RA 6.3	Temporary Traffic Management – Road Cleanliness	X
RA 6.4	Temporary Traffic Management – Site Access	X
7	***Agricultural Work***	
RA 7.1	Vacuum Tanker and Agitator	
RA 7.2	Mower	
RA 7.3	Livestock	
RA 7.4	Baler	
RA 7.5	Power Take Off (PTO)	
8	***Office Equipment***	
RA 8.1	Visual Display Units	
RA 8.2	Fixed Objects	
RA 8.3	Microwave Ovens	
RA 8.4	Photocopier/Printer	
RA 8.5	Paper Shredder	

All work will be undertaken by qualified competent persons with experience of the type of work described above, and in all cases in full accordance with safety procedures specified in the companies Health and Safety Policy.

Prepared by: James Murphy

Position: Engineer Date: 12/03/2015

Method Statement Briefing Record

Briefing delivered by: Position: Date:

We (the undersigned) have read and understood the attached method statement and will comply with the specified requirements and control measures. If the work activity changes or deviates from that originally envisaged, we will seek further advice and request an amended method statement.

	Site Specific Method Statement	*Revision* **00**	*Date* **22/06/2015**
Client: **Galway County Council**	Formwheel Bridge		

Name (Print)	**Signature**	**Date**
		/ / 2015
		/ / 2015
		/ / 2015
		/ / 2015
		/ / 2015
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		/ / 2015
		/ / 2015

APPENDIX B

Environmental Method Statement

Formwheel Bridge

Environmental Method Statement

P&D Lydon, Gortacurra, Cross, Cong, Co.Mayo

	Environmental Method Statement	*Revision* 00	*Date* 10/07/2015
Client: Galway County Council	Galway Bridge Repairs 2015		

Contractor	**Name:** P & D Lydon	**Address:** Cross, Cong, Co Mayo.	**Tel:** 094 9546099 **E-mail:** info@lydon.eu
Project Name	Formwheel Bridge		**Job no:**
Description of the Task/Activity	Repairs to existing bridge		
Site Address/Location:	Formwheel, Co. Galway	**Start Date/Time:**	TBC
		Finish Date/Time	TBC
Personnel Involved	**Name**	**Role/Trade**	**Contact Details**
	Site Foreman	Brian Holleran	087 9888500
	Martin Joyce	Contracts Manager. (MSIC)	086 8284063
	Megan Lydon	Health and Safety Admin. (MSIC)	094 9546099

Scope

This document describes the procedures and method of work for carrying out the repairs to existing bridge at Formwheel Bridge, Formwheel, Co Galway. Due to the nature of the surroundings, this document will be geared towards the protection of the water courses. It has been prepared as part of the Construction Management Plan.

Crash Deck

Before any works begin on the existing deck, a temporary scaffold deck supported from the abutments will be decked out and placed on the underside of the bridge. This arrangement will contain a crash deck preventing any debris from entering the watercourse and will include the following measures:

- The working platform will be protected from wind, to remove the risk of any 'blow through' carrying debris from the platform.
- Personnel will access the working platform using a ladder access tower from the bridge deck above or the river banks,
- All material removed from the existing deck will be entirely contained within the crash deck and removed to a licensed Waste Facility,
- The crash deck will be made from plywood and will have toe boards fitted to prevent material from entering the water. Any visual gaps are to be sealed with plywood. The deck is to be maintained and kept clean.
- The scaffold and crash deck set up shall be inspected by the Site Ecologist (SE) prior to any works commencing on the existing deck and shall be inspected by the SE for compliance with pollution control measures on a weekly basis.

- The fixings or supporting access staging or any other temporary works to the bridge or structure shall not impair the strength or in any way damage the bridges or structures.

Monitoring & Audit

- All environmental monitoring and checklists shall be recorded and added to the MS on a daily basis.
- Toolbox talks will be carried out on the MS for all site staff immediately before works commence on site. The subject shall be the measures that have been put in place to protect the environment and the procedures, monitoring and recording that is to be undertaken in accordance with the MS. Site personnel will also be made aware of the ecological sensitivity of the site and its surrounds.
- All mitigation/control measures shall be inspected daily by site management and the appointed site ecologist with maintenance and repairs carried out immediately. Preparation of environmental checklists will be carried out for each operation. We will liaise with all matters with the Site Ecologist and the Environmental Scientists.

Silt Fencing

- The proposed location of silt fencing is shown on the drawings in MGT0201DG0301. A silt fence will be erected 2m on both banks along the entirety of the Shannapheasteen Stream upstream of Formwheel Bridge for 5m upstream on the bailey bridge side and for 10m downstream both sides of the river. See attached drawing MGT0201DG0301. Silt fencing shall remain in place until ground vegetation has recovered. Any accumulated silt will then be removed and disposed of at an appropriate location to be agreed in advance with the SE. Silt fences will also be provided immediately before the outfalll to any existing watercourses as a precaution and to allow a response time in the event of an emergency. Daily inspection of silt fences will be carried out by site management with photographic records maintained

Scour Protection Works

A concrete skirt is to be constructed at the base of the piers and abutments. The method of works will include the following measures to be put in place;

- NPWS and IFI will be informed at least 2 weeks prior to works commencement.
- As per the attached sketch water will be diverted around one of the arch barrels by creating damn using sand bags to block water entering the side that the works are to take place. Sand bags shall be double bagged and use washed sand only. Each bag shall be marked with a reference number and a record of placing and removal shall be maintained.
- Contact shall be made with IFI to electrofish inside the dammed area. Advance notice shall be given in this respect.
- Install a 6" pump to remove water from around the area where the works are to be completed. The water will be pumped into a silt trap (made of straw and terram) on the river bank. This will be utilized prior to allowing water to discharge back into the water course. The Silt Trap will be made available for the IFI and NPWS to inspect and will be in place prior to works commencing.

- There will be no machinery working in-stream. Where excavation is required, it will be carried out with machinery operating from the bank.
- Shutters would then be placed in position around the base of the piers / abutments, and will be made as watertight as possible and sand bags placed on the outside of the shutter to prevent concrete from entering the water course.
- Concrete will then be placed and vibrated in position. The pump will be left running until the concrete sets.
- A silt trap and a double sedimat shall be placed immediately downstream of the works. The sedimats shall be replaced as per the manufacturer's recommendations with that mat closest to the works being removed first.
- When cured the shutters will then be removed along with the pump and sandbags.
- Hydrophilic grout and quick-setting mixes or rapid hardener additives shall be used to promote the early set of concrete surfaces exposed to water.

Concrete Washout

- Any plant operating close to the water will require special consideration on the transport of concrete from the point of discharge from the mixer to final discharge into the delivery pipe (tremie). Care will be exercised when slewing concrete skips or mobile concrete pumps over or near surface waters.
- Washout from concrete lorries, with the exception of the chute, will not be permitted on site and will only take place at the batching plant
- Chute washout will be carried out at designated washout area which will be situated within the site. These locations will be signposted. The Concrete Plant and all Delivery Drivers will be informed of their location with the order information and on arrival on site.
- Chute washout locations will be provided with appropriate designated, contained impermeable area and treatment facilities including adequately sized settlement tanks.
- The clear water from the settlement tanks shall be pH corrected prior to discharge (which shall be by means of one of the construction stage settlement facilities) or alternatively disposed of as waste to a licensed facility.

Control of Dust

The following control measures will be put in place to control dust caused by construction traffic if required;

- Wetting of haul road and storage areas;
- Covering or dousing of any dry, imported or excavated material;
- Reducing the duration for stockpiling in fill materials;
- Introduction of a wheelwash for construction traffic.
- Batching of Concrete will only take place off site at a Concrete Plant

The Management of Noxious Weeds and Non-native Invasive Plant Species

Precautions will be taken in relation to non-native invasive species during the construction phase. Control of both noxious weeds and non-native invasive species can be broken into either physical methods or chemical treatment. Physical methods include cutting, digging or excavating, hoeing and pulling by hand. Chemical treatment may involve the application of herbicide either by targeted spraying or direct application to the individual plant by wiping or direct injection. The method used on site will be agreed with the NPWS and IFI prior to any works commencing on site.

Working Areas

Ground disturbance around excavations will be kept to the minimum practical area. The working areas will be clearly defined on site using marker posts. Working areas are to be defined as per the construction drawings provided and in agreement with the Site Ecologist and Employer (as appropriate and depending on pre-identified environmental sensitivities in the vicinity of the proposed working area). Access routes will be clearly marked / identified. Access during construction to any working areas will be restricted to land within the outlined works area.

Fuel Control

All machines will be fueled within the site compound. They shall be fueled outside the site boundary. The management of fuel on site will have regard to the following elements:

- Prior to commencing works machines will be checked that they are mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.
- There will be a bunded mobile bowser which will be within the site compound.
- Fuel tanks will be stored in secondary containment, where by hoses will be stored within a bunded area.
- Lock systems will be in place on nozzles.
- The bowser and all fuel containers will be checked for leaks and damage and will be replaced immediately.
- Machine operators are only to fill machines.
- An emergency spill kit will be kept on site and a trained operator of the same on site at all times.
- Inspection of pumps, machinery, fuel lines for leaks shall be carried out on a daily basis.

Reduction and Prevention of Suspended Solids Pollution

The Formwheel Bridge is located within ecological sensitive areas designated for nature conservation, therefore measures will be put in place to ensure that no significant impact on these areas is caused through the release of suspended solids.

The proposed bridge works will require mitigation measures to prevent contamination of the underlying watercourses with debris, suspended solids and other pollutants. This will require that all demolition material is prevented from entering the river through the use of the crash deck as outlined above.

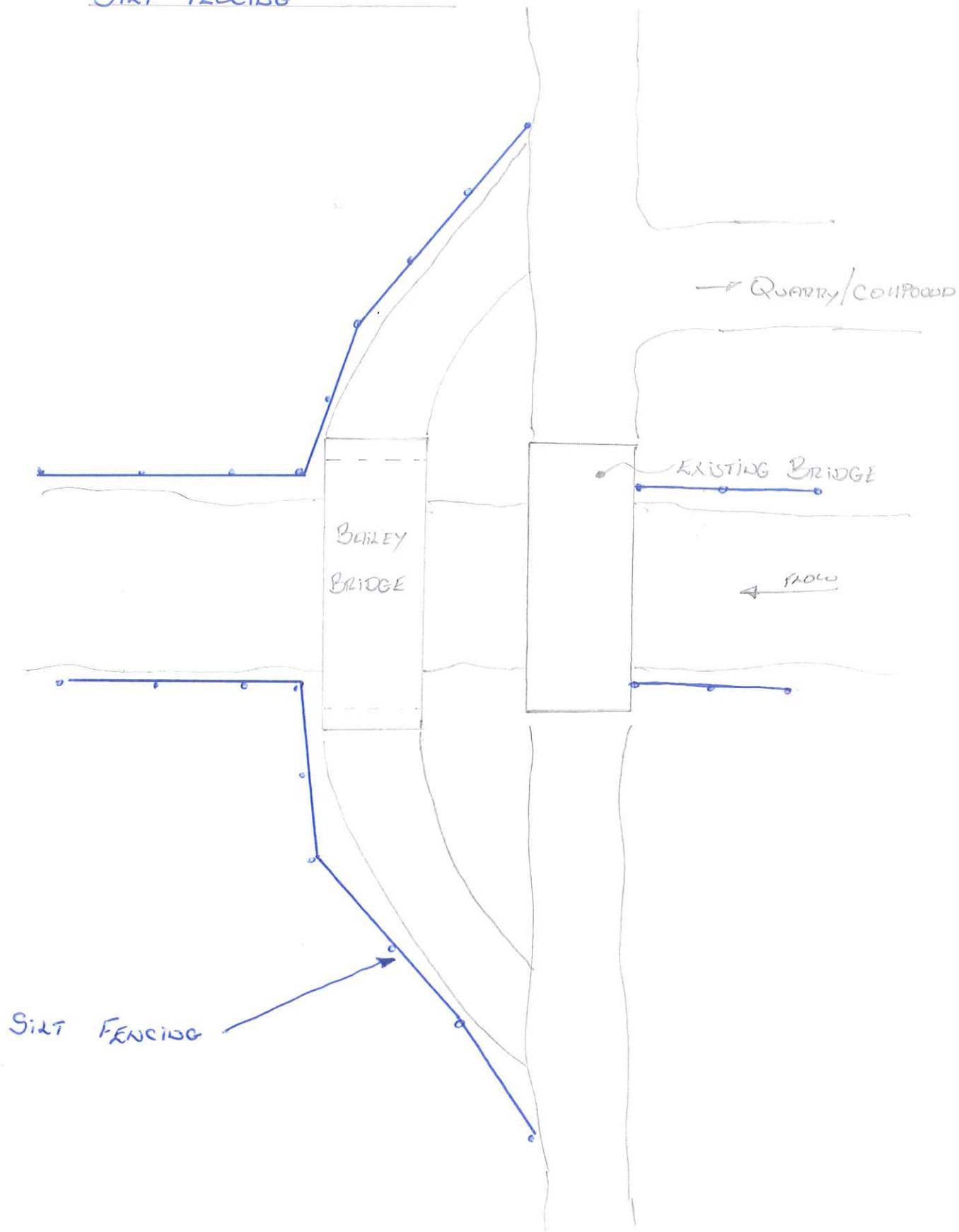
The key factors in erosion and sediment control for land based works are to intercept and manage runoff. This limits the potential for soils to be eroded and enter watercourses in runoff. Runoff and surface erosion control is more effective and less expensive than sediment control with sediment control ponds only. The following general guidelines for erosion and sediment control will be carried out;

- Construction shall be halted during periods of rainfall triggers and run-off to minimise soil disturbance. Weather information system will be obtained from at least three sources including Met Éireann, Yr.no, and AccuWeather.com. The most adverse weather forecast will be used the start, until an image of which forecast is most suited for the area is established. Works will cease of measures will be put in place if the following rainfall amounts are forecasted:
    a) 6 hour rainfall exceeding 3mm
    b) 12 hour rainfall exceeding 4mm
    c) 24 hour rainfall exceeding 5mm
    d) No overland flow or pathway for water movement
    e) Conditions of the ground match the weather forecast
- Vehicular and equipment access for construction will be restricted to the existing local road and the temporary road and bridge once it is completed.
- Bog mats will be used to the eastern side of the temporary access road within the proposed 2.5m buffer area where it is likely that there will be some impact arising from the placing of the temporary road and bridge,
- Where excavation is required at the bank, it will be carried out with machinery operating from the bank/road.
- Retain existing vegetation and physically mark clearing boundaries on the construction site,
- Retain eroded sediments on site with erosion and sediment control structures such using silt fences and sediment control ponds,
- The temporary access road shall be constructed and topped with a Cl.6f2 material/nonwoven geotextile.
- Unavoidable instream work shall be kept to a minimum and as far as possible natural stream conditions and structure shall be protected to promote stability of bank and bed structures and retain riparian vegetation.
- Where instream works are required for the proposed scour works, the works area shall be isolated from watercourse by damming with sand bags as outlined above. Water within the contained area contaminated with suspended solids or other potential pollutants shall never be released directly to the river, but shall be pumped to prepared sedimentation pond for attenuation before it re-enters the river,
- Machinery should never cross a watercourse by entering it
- Monitoring for suspended solids concentration within the Shannapheasteen Stream will be commenced before construction work starts to establish baseline suspended solid levels,
- Routine water quality monitoring of the watercourse during the construction phase will be carried out to gauge the efficacy of suspended solid pollution prevention measures in place,
- In the case of increased suspended solid levels, inspections will be carried out on the all pollution control measures to ensure that the increase in suspended solids concentration is not as a result of contributions from the site works. The results will be recorded and forwarded to the SE for their records.

Reduction or Elimination of Pollution with other Substances Associated with Construction Process

- Raw or uncured concrete waste will be disposed of by the removal from the site to a licensed facility which will be agreed in advance with Site Ecologist.
- Washout from concrete lorries, with the exception of the chute, will not be permitted on site and will only take place at the batching plant at designated washout area which will be situated within the site compound.

- Chute washout will be carried out at designated locations only. These locations will be signposted. The Concrete Plant and all Delivery Drivers will be informed of their location with the order information and on arrival on site.
- Chute washout locations will be provided with appropriate designated, contained impermeable area and treatment facilities including adequately sized settlement tanks.
- Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks will be trapped on-site and retained at the site compound during the course of the works, and will be disposed of by removal from the site to a licenced facility which will be agreed in advance with the Site Ecologist (SE)
- Fuels, lubricants and hydraulic fluids for equipment used on the construction site will be retained in the site compound and will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to current best practice (Enterprise IrelandBPGCS005)
- Fuelling and lubrication of equipment will be carried out within the site compound only.
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the site and properly disposed of at a licenced facility,
- Oil booms and oil soakage pads will be kept on site to deal with any accidental spillage.
- Waste oils and hydraulic fluids shall be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- Prior to any works ensure all construction equipment will be mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.
- All pumps using fuel or containing oil will be locally and securely bunded.
- Any pollution incident on site will be immediately notified to the SE who will be present on site as soon as practicably possible to monitor and report on impacts of the incident and how mitigation measures have been installed.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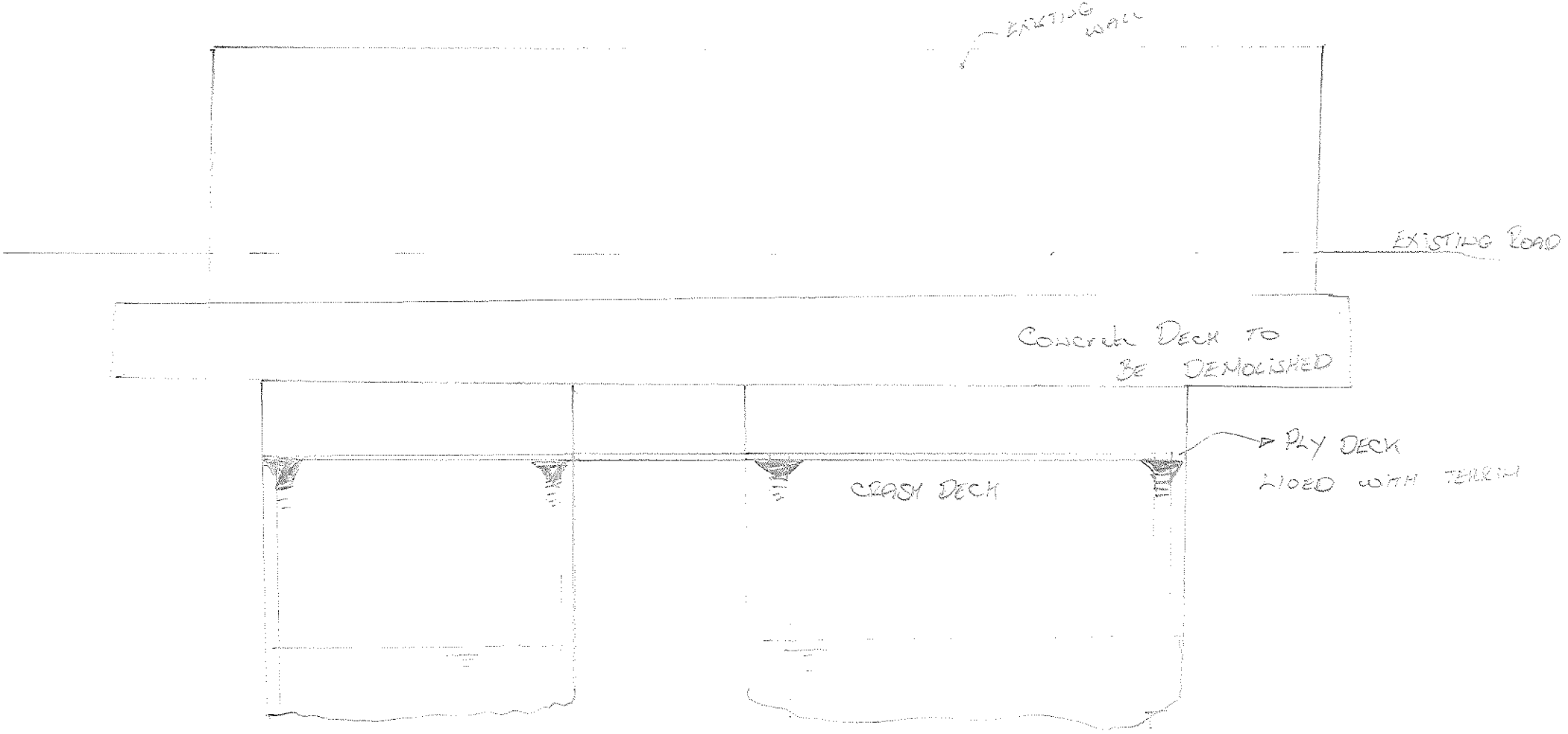
QUARRY/COMPOUND
EXISTING BRIDGE
BAILEY BRIDGE
FLOW
SILT FENCING

CRASH DECK.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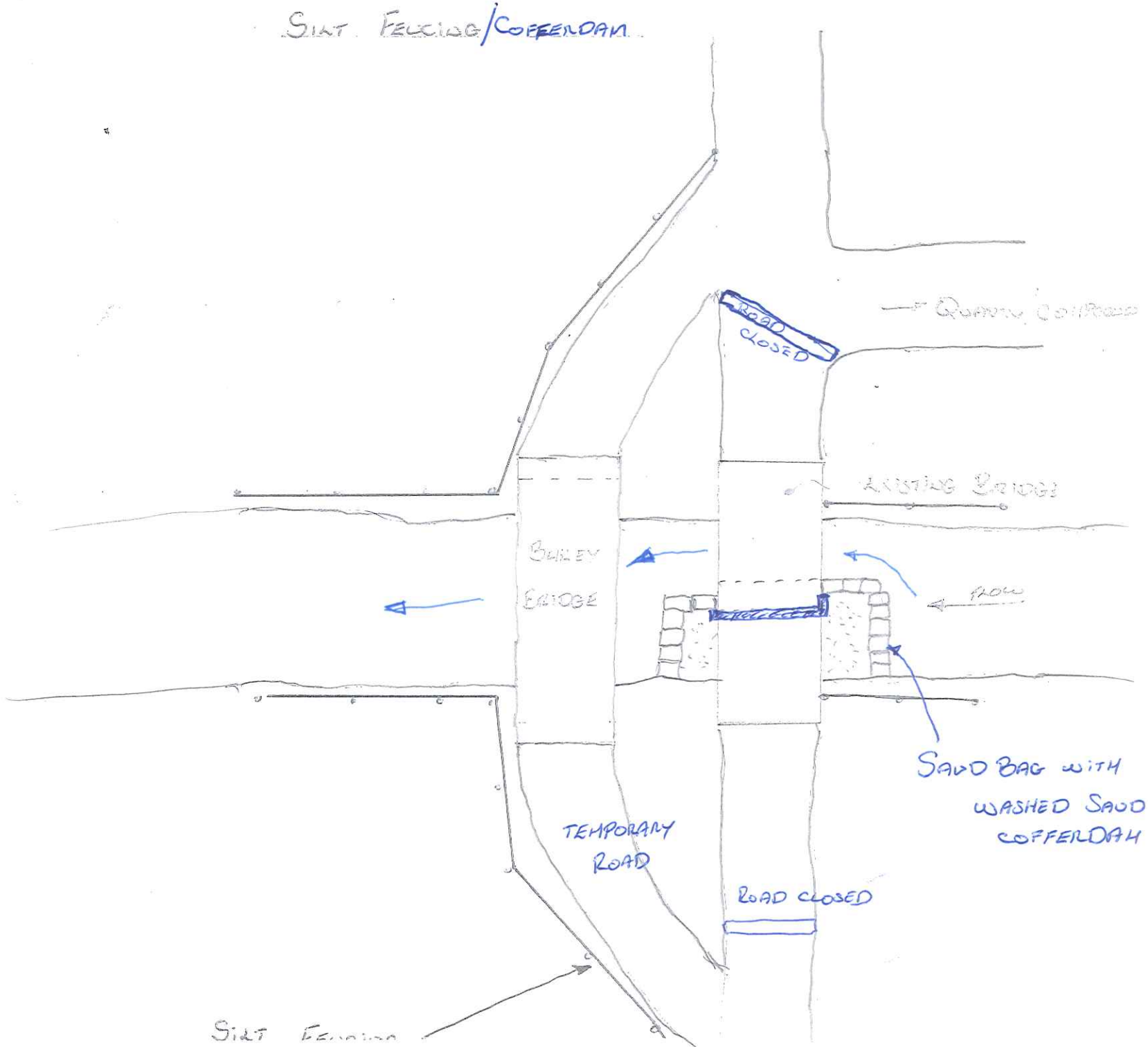
EXISTING ROAD
CONCRETE DECK TO BE DEMOLISHED
PLY DECK
LINED WITH TEFLON
CRASH DECK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ROAD CLOSED
QUARRY COMPOUND
EXISTING BRIDGE
BAILEY BRIDGE
FLOW
SAND BAG WITH WASHED SAND COFFERDAM
TEMPORARY ROAD
ROAD CLOSED
SILT FENCING