



Y Boblen, 24 Bryn Road, Cwmllyfell

CONSTRUCTION PHASE SURFACE WATER MANAGEMENT PLAN

JANUARY 2022

	CLIENT	Mr Nasser	Sheet No.	1	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

Client Name: Mr M H Nasser
Document Reference: AVO21088-220124-R-CPSWMP
Project Number: AVO21088

Quality Assurance - Approval Status

Issue	Date	Prepared by	Checked by	Approved by
A01	January 2022	Joel Wall	Victoria Walker	James Mahoney

Comments

A01	First Issue
-----	-------------

	CLIENT	Mr Nasser	Sheet No.	2	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

Contents

1.	Introduction	5
1.1	Existing Site	5
1.2	Development Proposals	6
1.2.1	Regulations	7
1.2.2	Methods	7
1.3	Sources of Surface Water Entering the Site	7
2.	Construction Dewatering of Excavations	8
2.1	Discharges	8
2.1.1	Suspended Solids	8
2.1.2	Hydrocarbons	8
2.1.3	Phosphorus & Nitrate	8
3.	Pollution Control Measures	9
3.1	Reducing Sediment Generation from Exposed Soils	9
3.2	Reducing Sediment Generation from Dewatering of Excavated Areas	9
3.3	Reducing Sediment Generation from Stockpile Areas	9
3.4	Reducing Sediment Generation from Construction Plant Movements	9
3.5	General Good Housekeeping on Site	10
4.	Water Management Zones	11
4.1	Concrete Wash Water	12
4.2	Temporary Site Offices etc.	12
4.3	Wheel Wash	12
5.	Inspections	13
5.1	Temporary Drainage Ditches	13

	CLIENT	Mr Nasser	Sheet No.	3	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

5.2	Sumps	13
5.3	Pipes & Culverts	13
5.4	Settlement Lagoons	13
5.5	Silt Fencing, Silt Mats and Gully Guards	13
5.6	Siltbusters.....	13
5.7	Settlement Tanks	14
5.8	Dirtbags.....	14
6.	Environmental Incidents and Accidents	15
7.	Summary	16

	CLIENT	Mr Nasser	Sheet No.	4	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

Appendices

Appendix A - Topographical Survey

Appendix B - Overland Flow Routes

Appendix C - Examples of Manufacturers Products

	CLIENT	Mr Nasser	Sheet No.	5	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

1. Introduction

Avocet Group Ltd (“Avocet”) has been instructed by Mr Mohammad H Nasser(the “Developer”), to undertake a Drainage Strategy Report to support the planning application for the redevelopment of Y Boblen, 24 Bryn Road, Cwmllynfell, Swansea, SA9 2FJ.

The aim of this report is to demonstrate that a robust surface and foul water drainage strategy can be implemented to facilitate the proposed development.

1.1 Existing Site

The site (0.129 ha) is located at the former public house “Y Boblen”, 24 Bryn Road, Cwmllynfell, Swansea, SA9 2FJ. The existing public house is a detached 2-storey property with vehicular access and parking to the side and rear of the property. The building has been left vacant for a number of years and was severely damaged by a fire in 2020.

The site is bound to the south by Bryn Road; to the east by a public footpath and Cwmllynfell Primary School; 24 Bryn Road to the west and further residential dwellings to the north. The site location and existing site layout/topographical survey is contained in Appendix A.

Figure 1 below shows the aerial image of the site.

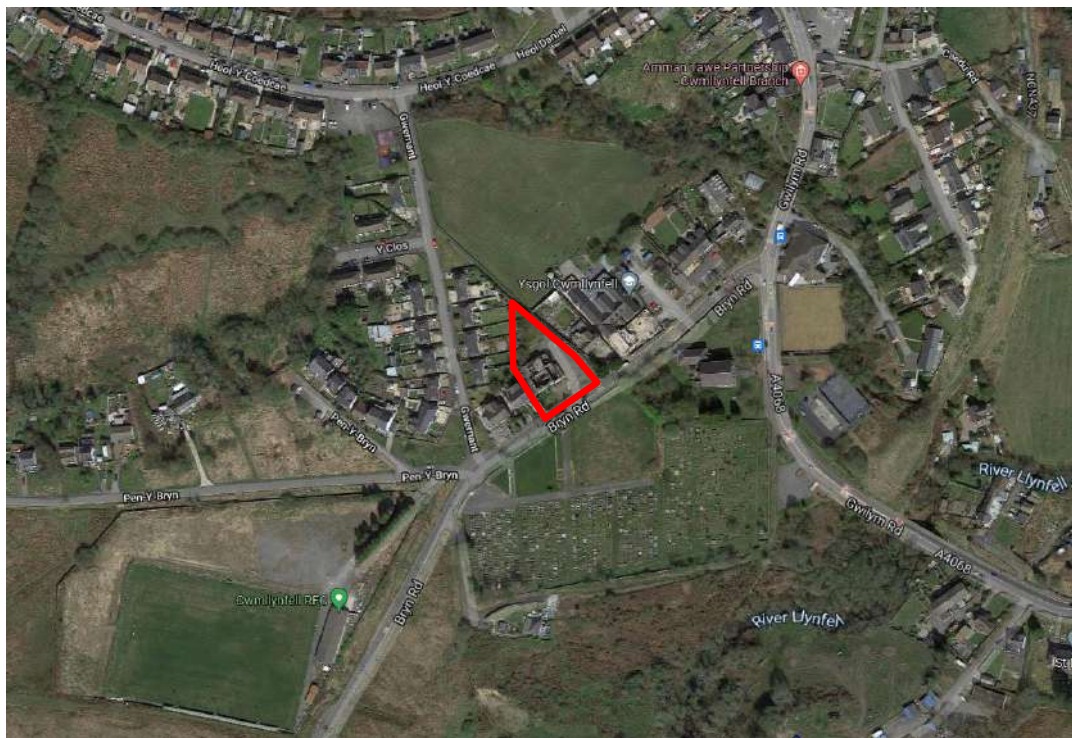


Figure 1 - Aerial image of the Site Location

	CLIENT	Mr Nasser	Sheet No.	6	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

1.2 Development Proposals

The proposed development comprises the demolition of the existing building and construction of 5 no. 3-bedroom, 3storey residential dwellings. Four of the 5 units will be semi-detached, with the remaining property being detached. Parking bays will be located off Bryn Road to the front of the properties.

All the properties will have a side access leading to rear landscaped gardens.

The existing site entrance will be stopped-up, with two new vehicular accesses provided along Bryn Road.

	CLIENT	Mr Nasser	Sheet No.	7	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

1.2.1 Regulations

The Water Environment (England and Wales) regulation 2009.

Land Drainage Act 1991.

1.2.2 Methods

Control of Water Pollution from Construction Sites - Guide to Good Practice (SP156).

Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors (C532).

Control of Water Pollution from Linear Construction Projects - Technical Guidance (C648).

Control of Water Pollution from Linear Construction Projects - Site Guide (C649).

Environmental Good Practice - Site Guide (C650) The SUDS Manual (C753).

BS 8582:2013 Code of practice for surface water management for development sites.

1.3 Sources of Surface Water Entering the Site

It is understood that any surface water run-off from the surrounding land is prevented from flowing onto the site, especially during and after heavy rainfall, by a series of ditches or will be intercepted by hedgerows restricting surface water flows entering the site. Surface water runoff will principally originate from the site itself.

	CLIENT	Mr Nasser	Sheet No.	8	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

2. Construction Dewatering of Excavations

2.1 Discharges

2.1.1 Suspended Solids

The main potential components of discharges to surface waters from the site preparation and construction phase activities will be suspended solids. Increased sediment concentrations may have a negative impact on water quality in the receiving watercourse, which is typically related to either: Physical disturbance, increases in turbidity and mobilisation of sediments that may be contaminated, organically or nutrient rich.

2.1.2 Hydrocarbons

There is potential for hydrocarbon contamination of surface water to occur during site preparation and construction phases. The source of hydrocarbons results from the use of vehicles, parking and both planned and emergency maintenance in areas and around refuelling facilities and across the site. Hydrocarbon contamination entering the watercourses may arise from wash-off or leakage from plant, spillages at parking areas/ designated refuelling areas etc.

2.1.3 Phosphorus & Nitrate

There is the potential for nutrient mobilisation via disturbed sediment to occur during the site preparation and construction phase works. Elevated nutrient concentration may have an adverse impact on water quality. Phosphorous is a key limiting nutrient in freshwater systems, which in elevated concentrations can cause nutrient enrichment and eutrophication.

	CLIENT	Mr Nasser	Sheet No.	9	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

3. Pollution Control Measures

3.1 Reducing Sediment Generation from Exposed Soils

A range of techniques will need to be employed to reduce erosion and generation of sediment-laden surface water runoff from newly excavated areas. These techniques could include:

- The placement of sediment fencing or tubes at intervals along the face of the slope. These will trap the sediment behind the barrier and help reduce the speed of flows onto the construction area. A temporary ditch / drain at the foot of the construction area to collect flows and direct them to the Water Management Zone (WMZ).
- Gully protection to be situated in all gullies during the construction phase, to be inspected and cleaned/repaired where necessary. Washing out near any drains/gullies is to be avoided.

3.2 Reducing Sediment Generation from Dewatering of Excavated Areas

During the dewatering of excavated areas, a temporary area for collection of water will be allocated within the excavated zone. A sump will be installed in the lowest part of the excavation into which temporary ditches flow from around the excavation area. Water will then either be allowed to flow at higher level from the sump to the WMZ or pumped for attenuation and settlement of solids within WMZ (or similar).

3.3 Reducing Sediment Generation from Stockpile Areas

Stockpiled soils and materials will be sited away from the existing moat, ditches, drains and gullies to prevent entry into watercourses of sediment laden flows. Techniques such as silt fencing may be required at the base of the stockpiles to control / reduce the generation of sediment laden water from stockpiled areas.

3.4 Reducing Sediment Generation from Construction Plant Movements

Haul roads will be constructed for areas and routes of frequent plant movement. Restrictions on traffic movements will be enforced so that there is no unnecessary access for vehicles or plant to areas of soft soils. Where plant access is required across soft soils, movement will be restricted and pre-defined corridors with perimeter drainage ditches used to collect surface water runoff for conveyance. Regular sweeping and scraping of the roads on the site. When deemed necessary this shall be increased, such as during inclement weather and during bulk earth movement.

	CLIENT	Mr Nasser	Sheet No.	10	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

3.5 General Good Housekeeping on Site

- Easily accessible silt fencing, matting, straw bales, sandbags and submersible pumps to be made readily available and able to be deployed at short notice such as, during storm events.
- Exposed ground and materials stockpiled on site, such as soils, hardcore and sand, can pollute water and air with silt and dust. Stockpiles can cause dust pollution from windblown dry material. When managing stockpiles and exposed ground, measures are to be taken to prevent pollution.
- Stockpiles and exposed ground must be prevented from generating pollution such as water run-off or dust. If stockpiles are going to remain for long periods, consideration should be given to seeding, vegetation will bind the material together preventing both dust and surface water run-off. Commercially available stabilisation products can be applied to bind exposed ground and prevent dust and surface water run-off.
- The placement of any stockpiles shall be a designated area as far as practical from any drains and drainage ditches etc. The use of a silt fence may be required at the base of the stockpiles to control any potential runoff.
- A silt fence or bund to be located along the western ditch running along Stowmarket Road and the ditch traversing the centre of the site north-south.
- Silt protection measures are to be employed to any works adjacent to the ditches.
- The drainage within highways may be used as temporary storage prior to connection / treatment, all highway gullies to have gully protection. The stored water is to be either pumped in a controlled manner to a well vegetated area of the site, well away from the site boundaries or the drainage ditches or is disposed of / tankered off site to a suitable disposal point.
- Any dewatering of excavations to be undertaken in a controlled manner to a well vegetated area of the site, well away from the boundary of the drainage ditches.
- The provision for a road sweeper on site and the surrounding highways used to access the site (to be assessed regularly by the contractor / site manager).

	CLIENT	Mr Nasser	Sheet No.	11	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

4. Water Management Zones

Run off from the construction site and dewatering of excavations will be diverted to a Water Management Zone (WMZ).

It is envisaged that runoff and dewatering will be generated from the following construction operations.

- Groundwork preparation of the site infrastructure.
- Construction of the plots and foundations.
- Construction of drainage system.

The water will be processed by settlement lagoons before discharge to watercourse.

It is proposed that the discharge quality is equal to the existing run-off quality throughout the construction period.

The configuration of the WMZs may change during the Site preparation and construction phases to ensure that changing surface water drainage volumes and water quality conditions are managed effectively. Factors to be taken into account when designing these facilities are as follows:

- Sizing to achieve settlement of solids;
- Provision for emptying and desilting;
- Monitoring flow rate;
- Sampling Chambers, including safe access;
- Provision to allow dosing for sediment deposition, chemical reaction and deposition and control of PH, if required;
- Shut off valves to stop water discharging from the WMZs in case of emergency.
- The sizing of the WMZs will be determined by the contractor's detailed design.

	CLIENT	Mr Nasser	Sheet No.	12	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

4.1 Concrete Wash Water

Treatment of any concrete wash water will be treated in two stages:

- Solid / liquid separation
- PH level adjustment

Treated wash water will be sampled prior to discharge. Should the water not meet standards it will be taken off site via tankers, to a suitable disposal facility.

4.2 Temporary Site Offices etc.

Surface water drainage from the temporary site offices, Contractor's office, canteen and car park will pass through the WMZ before discharge to watercourse until construction of the permanent surface water drainage system is in place.

4.3 Wheel Wash

The wheel wash will be a self-contained unit.

	CLIENT	Mr Nasser	Sheet No.	13	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

5. Inspections

Routine inspection is required to ensure all temporary drainage ditches, sumps, pipes / culverts, oil interceptors, settlement lagoons and ditches / watercourses are problem free.

5.1 Temporary Drainage Ditches

Any temporary drainage ditches, excavated around construction areas, will be inspected in order to ascertain that runoff is being intercepted. Regular inspections will be undertaken to determine the depth of silt deposits and water depths in relation to the top of temporary drainage ditch.

Any contaminated silts will be removed from site and disposed of in a suitably licensed facility.

5.2 Sumps

Any sumps created within excavations for the collection of surface water will be inspected on a daily basis to ensure the sump is efficiently collecting and pumps are conveying the flows to the WMZ. Any generators will be checked to ensure they are located correctly and being refuelled in an appropriate manner.

5.3 Pipes & Culverts

All pipes and culverts will be subject to routine inspection to ensure the conveyance of flows is maintained. Inspections shall be made for accumulations of sediments and debris. Any Manhole inspections or interior culvert inspections will require a confined space entry.

5.4 Settlement Lagoons

Settlement lagoons will be inspected in order to ascertain that discharge conditions are being met. Regular inspections will be undertaken to determine the depth of silt deposits and water depths in relation to the design criteria.

Any contaminated silts will be removed from site and disposed of in a suitably licensed facility.

5.5 Silt Fencing, Silt Mats and Gully Guards

Must be installed, inspected, and maintained as per the manufacturer's guidelines.

5.6 Siltbusters

Siltbusters will be inspected as per the manufacturer's specification.

	CLIENT	Mr Nasser	Sheet No.	14	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

5.7 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.

5.8 Dirtbags

Must be installed, inspected, and maintained as per the manufacturer's guidelines.

	CLIENT	Mr Nasser	Sheet No.	15	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

6. Environmental Incidents and Accidents

An emergency-operating plan shall be established to deal with incidents or accidents during construction that may give rise to pollution within any watercourse. This shall include means of containment in the event of accidental spillage of hydrocarbons or other pollutants (including oil booms, soakage pads, etc.).

Throughout the construction phase of the project the contractor shall ensure that good housekeeping is maintained at all times and that all site personnel are made aware of the importance of the environment and the requirement to avoid pollution of all types.

All hazardous materials on site will be stored within secondary containment designed to retain at least 110% of the storage contents.

Temporary bunds for oil/diesel storage tanks will be used on the site during the construction phase of the project as appropriate.

Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the project and an emergency response plan shall be in place, in case of accidental spillage.

Raw or uncured waste concrete will be disposed of by removal from the site.

Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of, and There shall be no discharge of un-attenuated / untreated water to the ditch network.

	CLIENT	Mr Nasser	Sheet No.	16	Rev	A01
			Job No.	AVO21088		
	PROJECT	Y Boblen, 24 Bryn Road	Date	January 2022		
			Prepared	J. Wall		
			Chkd	V.Walker		

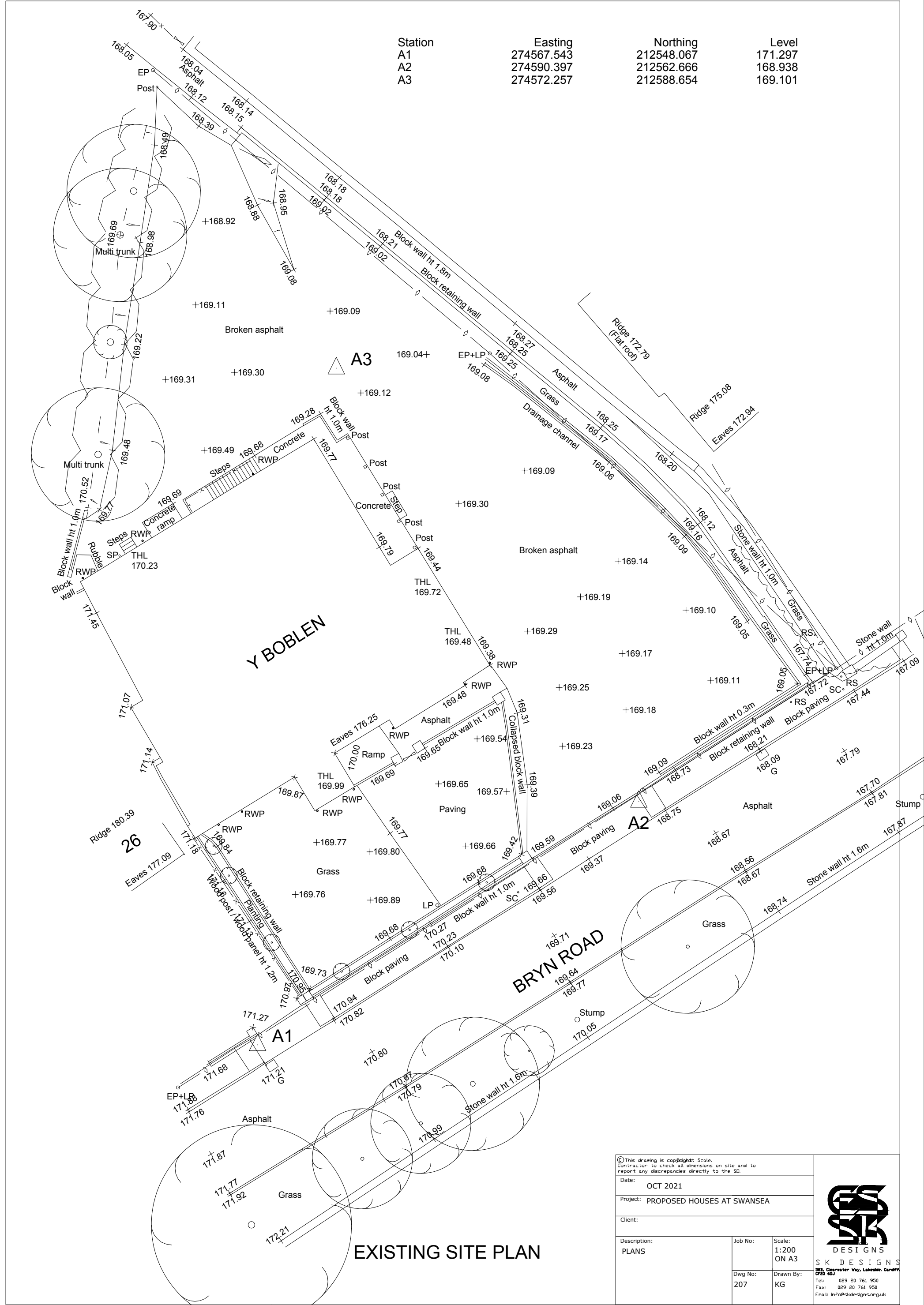
7. Summary

The water from the dewatering of excavations will be pumped to a Water management Zone (WMZ) and treated to acceptable standards before it is discharged to watercourse.

During the construction of the works excavations may require dewatering. Procedures will be used to control the quality of water discharged from the site that arises from the dewatering operations and surface water runoff. In particular:

- To ensure that the water arising from the dewatering of excavations is collected and controlled.
- To ensure the function of the watercourses continue to operate and are not affected by discharging the processed water from the dewatering of excavations into it.
- To ensure that the water from dewatering of excavations does not become contaminated by the effects of construction operations or materials used during construction.
- To periodically sample water prior to discharge to ensure that standards are maintained.
- To ensure there are contingency plans in place to respond to any pollution incident that does occur.

APPENDIX A - Topographical Survey



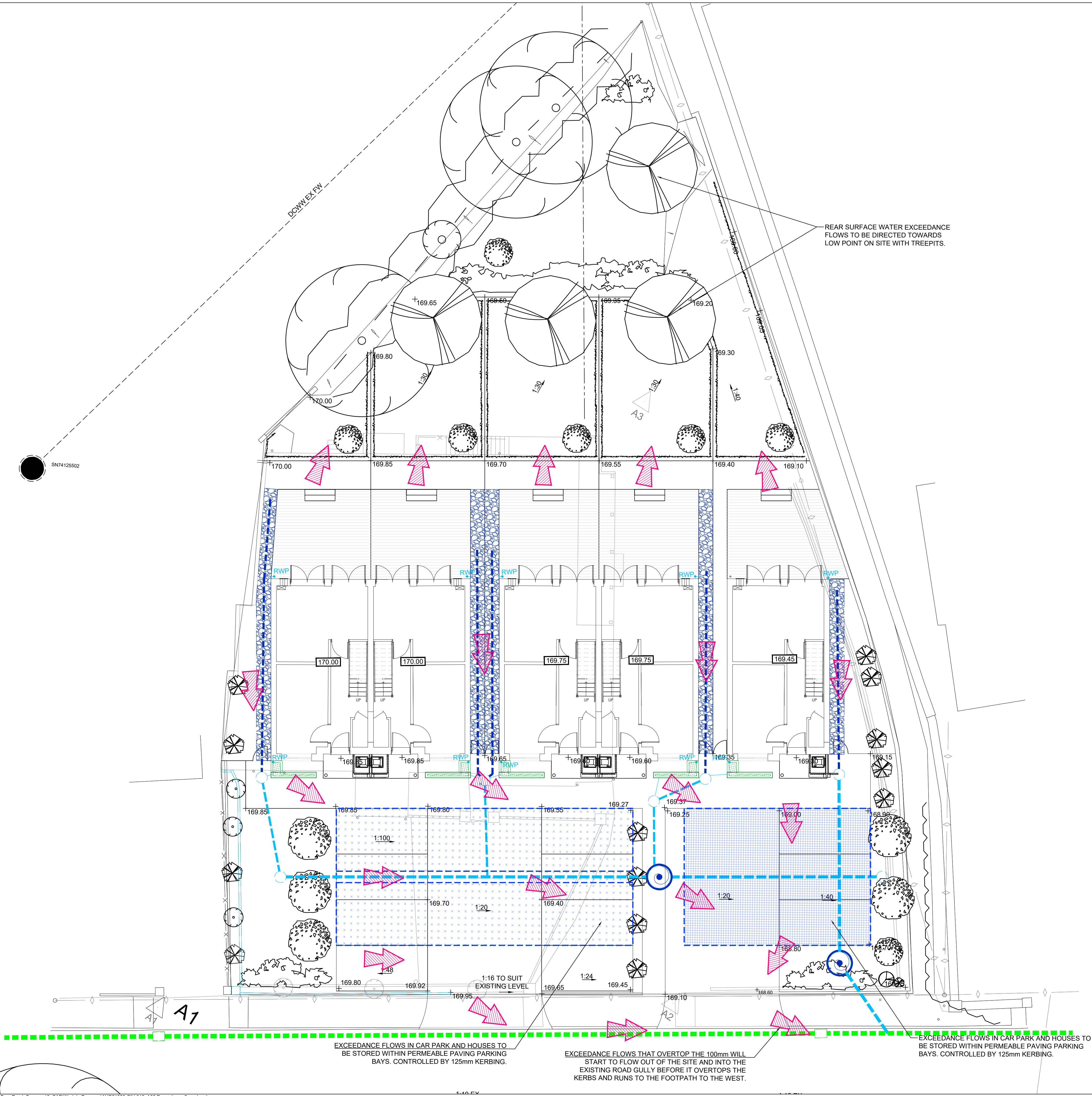
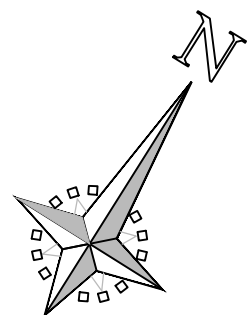
Station	Easting	Northing	Level
A1	274567.543	212548.067	171.297
A2	274590.397	212562.666	168.938
A3	274572.257	212588.654	169.101

EXISTING SITE PLAN

© This drawing is copyright Scale. Contractor to check all dimensions on site and to report any discrepancies directly to the SD.		
Date: OCT 2021		
Project: PROPOSED HOUSES AT SWANSEA		
Client:		
Description: PLANS	Job No:	Scale: 1:200 ON A3
	Dwg No: 207	Drawn By: KG

SK DESIGNS
289, Gower Street, Vay, Llanelli, Carmarthenshire, SA31 3BJ
Tel: 029 20 761 950
Fax: 029 20 761 950
Email: info@skdesigns.org.uk

APPENDIX B - Overland Flow Routes



DO NOT SCALE this drawing. Use figured dimensions only.
The Contractor must check & verify all dimensions on site.
Any discrepancies must be reported immediately to the Engineer for clarification before proceeding.
This drawing is copyright and owned by Avocet Civil Engineering Consultancy.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
Refer to the relevant Construction (Design and Management) documentation where applicable.
It is assumed that all works on this drawing will be carried out by a competent contractor, working where appropriate to an approved method statement.

- LEGEND**
- SURFACE WATER SEWER
 - GEOCELLULAR ATTENUATION TANK
 - GRANULAR ATTENUATION BLANKET
 - FILTER DRAIN
 - EXISTING PRIVATE COMBINED SEWER
 - EXISTING DCWW COMBINED DRAIN
 - EXISTING HIGHWAY SEWER (TBC)
 - SW HYDROBRAKE CHAMBER
 - RAISED RAIN GARDEN
 - EXCEEDANCE FLOW ARROW

SAB APPROVAL ISSUE

A02	26/01/22	UPDATED TO SUIT SAB COMMENTS	JW
A01	09/11/21	ISSUED FOR SAB APPROVAL	JW
Rev	Date	Description	By

Client
MR MOHAMMAD HUMAYUN NASSER

Project
24 BRYN ROAD, CWNLLYNFELL

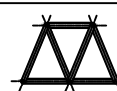
Title
EXCEEDANCE FLOW PLAN

Drawing Status SAB APPROVAL				
Drawn	Checked	Approved	Date	Scale @ A1
JW	VW	JM	NOV 21	1:100
Project No.	Drawing No.	Revision		
AVO-21088	CIV-012	A02		



www.avocetcivils.co.uk | enquiries@avocetcivils.co.uk
Company Registered in England and Wales No. 10819923

IN PARTNERSHIP WITH
MORGAN STRUCTURAL LIMITED



APPENDIX C - Examples of Manufacturers Products

Example of Silt Fencing



Example of Silt Matting



Example of Dirtbag



Cleaner Waterways



A high performance, versatile solution part of our water course protection systems.



In 2016, almost four million pounds* in fines were paid by companies in the UK for polluting rivers and smaller watercourses.

Gully Guard™ is the market leader in Gully Pot drainage protection. This system is an environmentally friendly, inexpensive, and reusable engineering solution that assists in the prevention of surface flooding and watercourse contamination.



Gully Guard™ is quick and easy to install into gully pots and other water transport systems. It works by trapping the debris and contaminants from surface water run off, such as construction, operational and processing waste, silt, hydrocarbons and heavy metals – reducing clogged drains (which is the main cause for ground flooding and damage).

The filtered surface water is able to effectively drain away into watercourses leaving the debris and contaminants in the Gully Guard™ and not the environment.



* The fines excluding court costs amounted to £3,748,984 and did not include companies that were in the process of being brought to court or, were under investigation by the governing agencies.

Market Applications

Infrastructure Planning

Construction

Remedial Solution

Food & Drink Processing

Agriculture

Industrial Plants

Gully Guard™

UK Market Leader

Patented Gully Innovation

Supports EU Directive

Environment Agency Recognised

Favoured by Industry

Damage control for cleaner watercourses

Saves time and fines

Features

Easy to install & reusable

98% filtration of silt, debris & toxins

Supports Gully Pot water flow

Aids prevention of surface flooding

Significantly less time on maintenance and cost

Just hose down and reinstate

Kind to nature – no chemicals

So simple, it works



Our customers find Gully Guard™ so quick and easy to install and require less inspection and cleaning times – compared to historic methods of filtering waste from gullies, which is prone to frequent clogging.

Gully Guard™ is ideal for all drainage and water transport systems, and are available for standard gully pots and to our customer's specification. Market industries include; Construction, Transport, Agriculture, Food and Drink Processing and Operational Factory waste.

With Gully Guard™ our customers reported no Gully pot clogging issues!

And the cleaning process is simple - just hose down and reinstate!

Gully Guard™ will save you time and fines.



Water sits on the surface if drains are blocked.



Gully Guard™ traps debris for easy collection and removal.



Prevents pollutants entering a watercourse e.g., silt, heavy metals, hydrocarbons and suspended solids.

Flooding Risks of Watercourses with Contamination

Gully Pots are prone to the build up of sediment and can become blocked and inactive through operational and processing waste and, building developments that generate building silt and debris. This leads to flash flooding and build-up of standing water on sites when it is unable to drain away.

This urban storm water is known to comprise toxins of hydrocarbons, heavy metals, nutrients and de-icing agents all of which can potentially cause contamination of the existing water course. Companies who do not take adequate precautions to prevent severe contamination of the watercourses, face prosecution and large fines by environmental authorities and governing bodies across England, Ireland, Scotland and Wales.

European Water Framework



Under the “**European Water Framework Directive**” we are now obliged to implement measures to protect watercourses from pollution. In the UK, the Environment Agency, DEFRA and other governing bodies can now enforce financial penalties if companies do not take adequate precautions to prevent watercourse contamination.

Over 2000 Gully Guards are sold every month!

When should I use Gully Guard™?

Infrastructure Planning

- Ideal for agricultural sites, food and drink processing and industrial plants
- Transport and utilities maintenance
- Supports health and safety requirements
- Quick to install and easy to maintain
- Reusable - reduces gully maintenance costs
- Prevents build-up of toxins and debris in the gully
- No restriction to water flow into water transport drainage systems
- Standard gully pot and bespoke sizes available



Food processing



Infrastructure maintenance



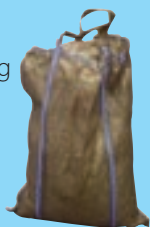
Agriculture management



Phosphate pollution - surge in algae over production

Construction

- Reduces labour and mechanical costs involved in emptying the gullies
- Protects gullies during site construction
- Prevents gullies from being blocked by silt and debris
- Visible silt and debris management system



Remedial Solutions

- Aids in containment of contaminated silt and suspended solids
- Assists in protecting the water course from pollutants found in run-off storm water. E.g. hydrocarbons, heavy metals
- Environmentally friendly

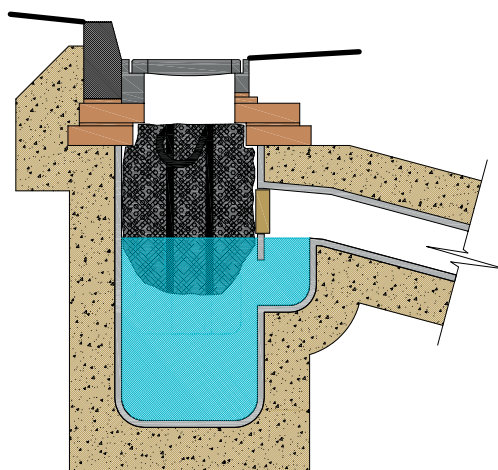
Gully Guard™ Installation Takes minutes!

Our customers reported no Gully pot clogging issues! And the cleaning process is simple - just hose down and reinstate!

1. Lever open gully grid. Gully Guard™ can fit a range of gully pot sizes.
2. Hold handles at top of the Gully Guard, work beads to top and insert base into gully pot.
3. Lower the Gully Guard into the pot. The beads will fall freely into the size void within the pot.
4. Tuck the holding handles to the side of the Gully Guard™.
5. Close and secure gully grid.

How much does Gully Guard™ filter out?

- 97.91% is trapped in the Gully Guard
- 1.92% is trapped in the Gully Pot base
- 0.17% passes through the Gully pot



	Gully Grating and Frame		Stopper
	Kerb Stone		Water
	Brickwork		Gully Guard
	Gully Wall		Gully Guard Straps
	Concrete Surround		



Speak to our friendly sales team to find out more:
Tel - **01531 828 960** | Email: **info@forestgroupuk.co.uk**

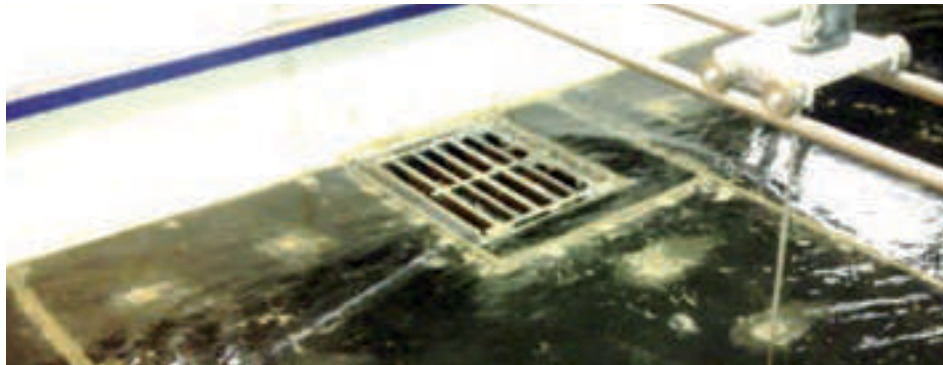
Independent Performance Testing

The Department of Civil and Structural Engineering at the University of Sheffield carried out a programme of tests to quantify the effect of Gully Guard™.



Significant Results

Sheffield University summarised that an installed Gully Guard™ will capture the majority of the sediment and associated pollutants entering a gully pot. This makes it easier to service and maintain whilst significantly reducing the amount of contaminated sediment passing through the gully pot into the drainage system, and therefore entering the water course. Visit our website for the full report.



“We have no hesitation in recommending Gully Guard™”

Taylor Wimpey.

Taylor Wimpey take their health, safety and environmental responsibilities very seriously, and to see why they now use Gully Guard™ on all their developments, visit our website –

www.forestgroupuk.co.uk

Taylor Wimpey



Valued customers include:



BLOOR HOMES



miller homes

Gully Guard™ is part of Forest Drainage Products Ltd - a division of:

fg The Forest Group
High performance, versatile solutions



3 Steps Assess, Inspect & Maintenance

- 1** We advise that an environmental risk assessment is conducted on an individual case-by-case basis to fully evaluate the nature of site debris and contaminants. In order to determine the appropriate method of disposal we would recommend that you follow your organisation's environmental waste disposal policy.
- 2** Forest Drainage Products recommends an inspection procedure be put in place for Gully Guard™ product on a 3–4 months basis depending on site conditions from the assessment above.
- 3** Maintenance simply involves the removal of the Gully Guard™ and power wash off in a bund to contain and manage silt and any contaminants prior to reinsertion back into the gully pot.



ON-DEMAND, ON-SITE, ON-TIME.

SETTLEMENT TANKS

A HISTORY OF INNOVATION



MIN 1 WEEK HIRE

STANDARD SPECIFICATIONS:

Dims (L x W)	Capacity	Weight	P/C
5.5 x 3.9ft / 1.7 x 1.2m	2273L / 500gal.	300Kg	250500
8.2 x 3.2ft / 2.5 x 1.5m	4546L / 1000gal.	550Kg	251000
10.7 x 5.9ft / 3.1 x 1.8m	6819L / 1500gal.	706Kg	251500
13 x 5.9ft / 4 x 1.8m	9092L / 2000gal.	828Kg	252000

With many authorities and environment agencies now insisting that settlement tanks are used for certain specific applications, it's crucial that you can find a robust and reliable tank which maintains full pumping capacity whilst avoiding blocked drains.

Each Garic tank is constructed from robust steel with a series of integral weir walls which aid effective settlementation and house a multiple Bauer quick release coupling to suit pipe inlet and outlet diameters of 2", 3", 4" or 6".

Our versatile design, which includes heavy duty lifting eyes and drain bungs, can also be linked together for multi-stage settlementation if required. The range is available in a variety of sizes: 500; 1,000; 2,000; 4,000; 7,000 and 10,000 gallon.

KEY FEATURES:

- Steel construction and steel weir wall
- Heavy duty lifting eyes and lashing points

OPTIONAL EXTRAS AVAILABLE

- Waste Removal
- Site gauge viewing eyes

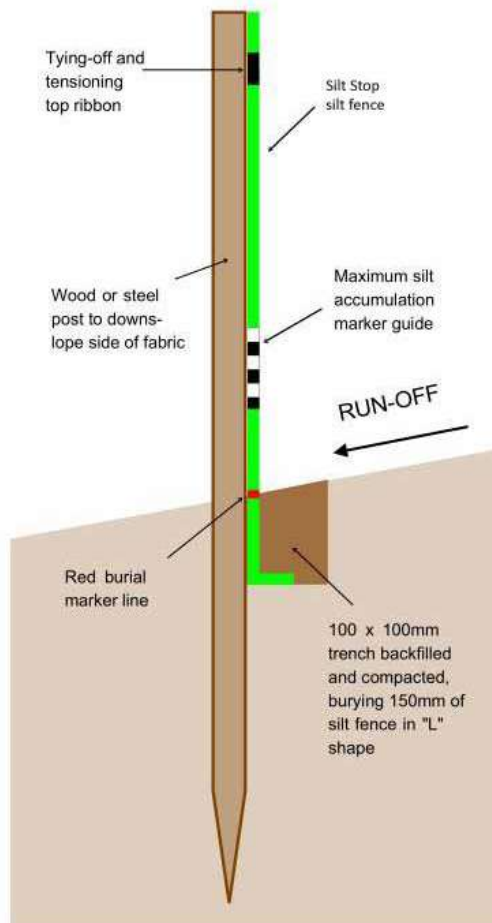


0330 094 8064 | www.garic.co.uk | info@garic.co.uk

*All data is based on Garic product specifications. If unavailable at the time of hire, an alternative specification model may be supplied.

Silt Stop - Installation Guide

Figure 1: Silt stop premium



1 - Silt fences sections should be continuous and transverse to the expected flow. The silt fences should follow the contours of the site as closely as possible. Place the fence such that the water cannot runoff around the end of the fence, extending the ends upslope enough to allow the water to pond behind the fence (See figure 2).

2 - A trench shall be excavated approximately 100mm wide and 100mm deep on the upslope side of the proposed silt fence location.

3 - Bury bottom 150mm of the silt fence to the red burial marker in a "L" configuration in the trench so that no flow can pass under the silt fence. Backfill the trench and compact soil over the geotextile so that the compacted soil fills the trench.

4 - Compaction prior to installing posts is generally recommended. Compact the back-fill soil immediately next to the silt fence geotextile. Compact the upslope side first, and then the downslope side. The soil adjacent to the buried silt fence geotextile shall be compacted to achieve no less than 50% of its original insitu strength, unless otherwise specified.

[Note 1] Poor compaction is one of the main causes of silt fence failure. Installed posts may interfere with compaction by large equipment adjacent to the silt fence. Compaction is commonly accomplished with the front wheel of the tractor, skid steer, roller

or other device, as well as with manual tamping or other manual means, taking care not to damage the silt fence.

5 - When joints are unavoidable, the fabric shall be spliced together only at a support post, with a min. 300mm overlap, and securely sealed so that there are no gaps, voids or other loss of integrity of the barrier, ideally by wrapping the overlap around the post.

6 - Place the posts tight to the downslope side of the silt fence at 1.50m spacing. Drive posts a minimum of 500mm into the ground. Increase depth to 600mm if fence is placed on a slope of 3:1 or greater.

[Note 2] Where 500mm depth is impossible to attain, posts should be adequately secured/braced to stop overturning of the fence due to sediment loading.

7 - Fasten the filter fabric securely and taut to the upslope side of the posts using top ribbon (see figure 3), wire/cable ties threaded through the silt fence, or 30mm long extra wide head galvanised clout nails (the fabric shall not be stapled to existing tress). Where required, tighten top edge of fabric by looping top ribbon over posts, and stain/brace posts to maintain fence tension and stability (See figure 1)

[Note 4]: If a silt fence is to be constructed across a ditch line or swale, the fence length must be sufficient to eliminate end flow, the plan configuration shall resemble an arc or horseshow with the ends orientated upslope and post spacing a maximum of 1.00M.

Silt Stop - Installation Guide

Maintenance

- 1 The contractor shall inspect all temporary silt fences immediately after each rainfall, and at least daily during prolonged rainfall. The contractor shall immediately correct any deficiencies.
- 2 The contractor shall also make a daily review of the location of silt fences in areas where construction activities have altered the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, as determined by the engineer, additional silt fence shall be installed as directed by the engineer.
- 3 Repair damaged or otherwise ineffective silt fences or replace promptly.
- 4 Either remove sediment deposits when the accumulation reaches one third the height of the exposed fence, or install a second silt fence as directed by the engineer.
- 5 The silt fence shall remain in place until the engineer directs in to be removed. Upon removal, the contractor shall remove and dispose of any excess sediment accumulations, dress the area to give it a pleasing appearance, and vegetate all bare areas in accordance with contract requirements.
- 6 Removed silt fence may be used at other locations provided the geotextile and other material requirements continue to be met to the satisfaction of the engineer.

Figure 2: Silt fence placement

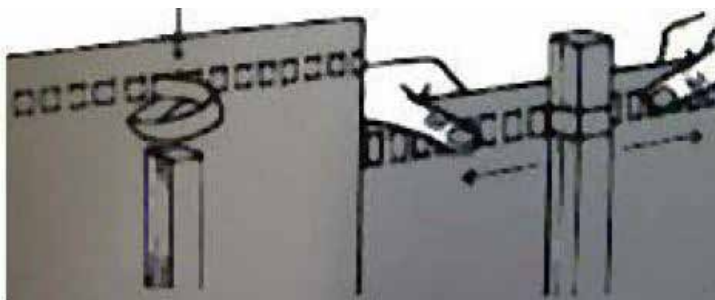
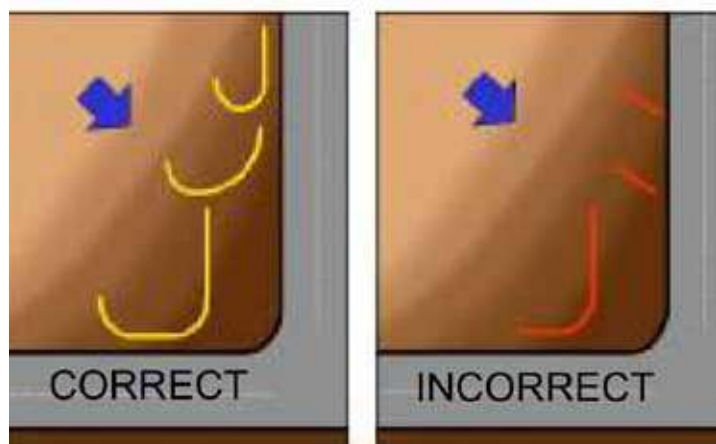


Figure 3: Ribbon attachment to post

Alignments called 'U' or 'J' hooks ensure water & sediment pond behind each fence.



Product Data Sheet: SiltMat

SiltMat captures over 40kg of sediment per mat



Proven in the field to reduce downstream levels of suspended solids

4 easy steps to using SiltMat

Use our reference table (overleaf) to judge optimal placement. As a rule of thumb, SiltMat is best placed in areas where stream energy is reduced and natural deposition takes place.



SiltMat is unfolded and orientated to cover the width of the channel. The edges of silt mat can be overlaid without gaps. Mats are staked in place or weighted with local material.



SiltMat will trap large amounts of sediment. Stakes or weights are removed and the mats rolled up ready for disposal.



With correct permission SiltMat can be seeded and left on site, creating an environmental enhancement and avoiding disposal costs.

SiltMat is a fully biodegradable mat that captures and prevents sediment resuspension.

The mats can be placed in natural or artificial channels, ditches or directly on land to trap suspended sediments.

SiltMat can be orientated sideways or lengthways and fits into all channel types.

SiltMats are mainly used to manage sediment release to watercourses from construction sites.

Applications

1. Drainage from construction sites
2. River restoration and maintenance operations
3. Used in artificial dispersion fields
4. Forestry and agricultural operations
5. Runoff attenuation features
6. Can be used as a planned or reactive sediment control measure

Technical information

Product Name: SiltMat

Dimensions: 2 x 1 x 0.12 metres

Dry Weight: 10kg per mat

Application: trapping suspended solids, improving water clarity and preventing resuspension of sediment

Material used: coir (80%) jute (20%) all sustainably sourced natural materials

Delivery: mats are delivered in bundles of 5 covering 10 square metres

Disposal: SiltMat is fully biodegradable, with correct permissions used mats can be disposed of to land.

Deployment: The table below offers a guide to settlement distances for different particle sizes. Select locations where stream energy is reduced and natural deposition takes place.

Effectiveness: SiltMat collected over 20kg of sediment per m² in a series of independently designed and monitored field tests during 2016

Reference table showing the distance that different particle sizes travel at differing water velocities

Particle Size	Water Speed (m/s)				
	0.2	0.4	0.6	0.8	1
Fine Gravel	20 cm	40 cm	60 cm	80 cm	1 m
Sand	70 cm	1.4 m	2.1 m	2.8 m	3.5 m
Fine Sand	8 m	17 m	25 m	33 m	40 m
Silt	228 m	456 m	683 m	911 m	1139 m



Each SiltMat can capture 40kg of sediment



10 SiltMats are delivered per pallet (20m²)



frog
environmental

Contact us:

0845 057 4040

info@frogenvironmental.co.uk

www.frogenvironmental.co.uk

@frogenv