
DWELLINGS AT RIDGEWAY HILL, NEWPORT

SUSTAINABLE DRAINAGE APPROVING BODY (SAB) PRE-APPLICATION REPORT

CLIENT

RIVERSEE LTD
21 CASTLE RISE
LLANVACHES
NEWPORT
NP26 3BS

AUTHOR

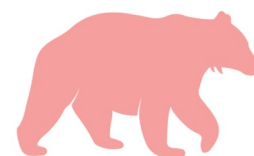
BEAR CONSULTING LTD
35 STOW PARK CIRCLE
NEWPORT
NP20 4HF

TELEPHONE: 07507 793 037
EMAIL: Walter@bear-consult.com

DATE: MARCH 2026

BEAR CONSULTING DOCUMENT REFERENCE: P0616w0003a





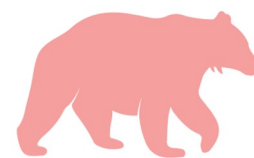
CONTENTS

1.0	INTRODUCTION	3
2.0	EXISTING SITE	4
3.0	PROPOSED DEVELOPMENT	5
4.0	SURFACE WATER STRATEGY	5
4.1	Statutory National Standards for Sustainable Drainage Systems	5
4.2	Flood Risk Overview	5
4.3	Standard S1 - Surface Water Destination	6
4.4	Standard S2 - Hydraulic Control	8
4.5	Standard S3 - Water Quality	10
4.6	Standard S4 – Amenity	14
4.7	Standard S5 – Biodiversity	15
4.8	Standard S6 - Construction & Maintenance	16
5.0	FOUL WATER STRATEGY	16
6.0	SURFACE WATER EXCEEDANCE/BLOCKAGE EVENT	17
7.0	CONCLUSION	18

APPENDICES

- Appendix A** – Existing Site Information
- Appendix B** – Proposed Site Information
- Appendix C** – NRW Designation and Flood Maps
- Appendix D** – BGS and CSAI Maps
- Appendix E** – DCWW Sewer Map
- Appendix F** – Drainage Design Information

Revision	Date	Notes	Author	Approved
-	23/01/2025	First issue	WH	PC
A	10/03/2026	Updated to suit revised layout	WH	PC



1.0 INTRODUCTION

In accordance with The Well-being of Future Generations (Wales) Act 2015, Schedule 3 to the Flood and Water Management Act 2010 and the Sustainable Drainage (Approval & Adoption) (Wales) Order 2018, this Sustainable Drainage Approving Body (SAB) Pre-Application Report has been carried out to provide design clarification to the hierarchy S1 and standards (S2-S6) of the Welsh Government Statutory Standards for Sustainable Drainage Systems.

From 7th January 2019, new developments of more than one dwelling or where the area covered by construction work equals or exceeds 100 square metres require approval before construction can commence. Approval is considered by the Sustainable Drainage Approval Body.

Adoption and management arrangements, including funding mechanisms for maintenance of SuDS infrastructure and all drainage elements are to be agreed by the SAB as part of this approval. The objective being to ensure SuDS infrastructure is correctly maintained and functions effectively for its design life.

An application for Sustainable Drainage Approval is required to comply with:

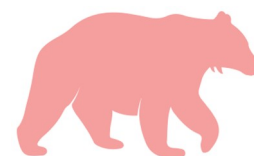
- Flood and Water Management Act 2010 (Schedule 3)
- Statutory Standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems (2018)
- Local Guidance/ policy (where available)

The SuDS approach mimics natural drainage, managing surface runoff at or close to the surface and as close to its source as practicable, controlling the flow (volume and rate of runoff) and providing a range of additional benefits. It contrasts with traditional drainage techniques, which are based on underground pipes to convey rainwater away from properties as quickly as possible.

The use of SuDS is a way of helping to achieve sustainable development in both new and existing developments.

Key elements of the SuDS design approach include:

- Drainage systems should be considered at the earliest stages of site design to influence the layout of roads, buildings and public open spaces.
- Planning of a new site layout should be informed by the topography and the requirements of surface water management systems to both effectively drain and treat the runoff.
- Any existing watercourse, ditches, and other drainage features both within and adjoining the site should help inform proposals.
- SuDS should work as a management train to control flow rates and reduce volumes of runoff, providing treatment to protect water quality and opportunities to encourage biodiversity and amenity.
- Well designed, easy to maintain SuDS will deliver a range of important benefits for the local environment, the development and local communities.
- Surface based sustainable drainage components are visible in their operation and performance and are generally simpler and easier to operate, monitor and maintain.
- Take account of existing flood risk management policies and procedures.



2.0 EXISTING SITE

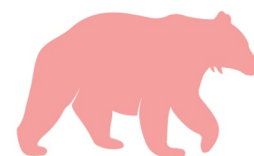
The 0.044ha greenfield site is located to the north of no. 18 Ridgeway Hill in Newport, NP20 5DG (E.329644, N.188227).

The site is located in a residential area with existing dwellings located to the north, west, and south of the site.



Figure 1 – Site Location

A topographical survey has been carried out and is included within Appendix A of this report along with the Site Location Plan. The topographical survey shows that the site consists of soft landscaping areas, with wall and fence features around the northern, western, and southern site boundaries. The existing site levels vary between 85.31 to 83.07 mAOD and slope from the north-western to the south-eastern direction.



3.0 PROPOSED DEVELOPMENT

It is proposed to construct 2 no. detached bungalow dwellings with associated parking bays, footpaths, and external landscaping.

A proposed site plan has been included within Appendix B of this report.

4.0 SURFACE WATER STRATEGY

4.1 Statutory National Standards for Sustainable Drainage Systems

An application for Sustainable Drainage Approval is required to comply with:

- Flood and Water Management Act 2010 (Schedule 3)
- Statutory Standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems (2018)
- Local Guidance/ policy (where available)

The following sections within this report therefore considers and addresses all Welsh Government Statutory Standards for Sustainable Drainage Systems.

4.2 Flood Risk Overview

It is important to consider the flood risk to the development with the recommendations set out in Technical Advice Note 15 (TAN 15) Development and Flood Risk, published by the National Assembly for Wales in July 2004.

Natural Resource Wales (NRW) flood maps have been included within Appendix C of this report

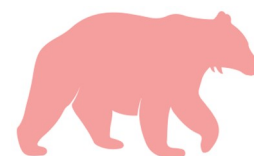
The proposed development is located entirely within Flood Development Zone A. Flood zone A is defined by the NRW as an area considered to be at little or no risk of fluvial or tidal/coasting flooding.

The map also indicates the site is at no risk from pluvial sources or recorded flood extent.

Guidance on surface water runoff from development within TAN 15 advises that all types of land use change/vulnerability will have an impact on the hydrological cycle and flooding is therefore not confined to floodplains.

In all flood zones, development should not increase the risk of flooding elsewhere. If not sufficiently managed, runoff from proposed developments can result in flooding at other locations and may significantly alter the frequency and extent of floods in other locations.

The following drainage considerations and proposals therefore aim to minimise additional runoff from the developed site and ultimately aim to minimise the risk of flooding within the site and the surrounding area.



4.3 Standard S1 - Surface Water Destination

Required considerations for Standard S1 has been shown below:

Priority Level 1: Surface water runoff is collected for use;

Priority Level 2: Surface water runoff is infiltrated to ground;

Priority Level 3: Surface water runoff is discharged to a surface water body;

Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;

Priority Level 5: Surface water runoff is discharged to a combined sewer.

Note that Priority Levels 1 is the preferred (highest priority) and that 4 and 5 should only be used in exceptional circumstances.

As much of the runoff as possible (subject to technical or cost constraints) should be discharged to each destination before a lower priority destination (level) is considered.

Depending on the site characteristics, drainage from different parts of the site could have different drainage destinations.

Depending on the quantity of runoff and the potential for a particular destination to manage that runoff, small events may discharge to a higher level while larger events may need to make use of lower priority destinations.

Water is a valuable resource and rainwater should be collected (harvested) for non-potable use where practicable. This not only reduces potable water demand, but it can also reduce the volume of surface water runoff requiring disposal. One or more of the following exception criteria needs to be demonstrated if rainwater harvesting (RWH) is not used:

- a) There is no foreseeable demand for non-potable water on the site throughout its design life;
- b) There is no foreseeable need to harvest water at the site as the relevant water undertaker's water resources and drought management plans do not identify potential stresses on mains water supplies;
- c) The use of rainwater harvesting is not a viable/ cost-effective part of the solution for managing surface water runoff on the site, taking account of the potential water supply benefits of such a system.

It is therefore recommended that water can be collected by small water collection facilities for watering of proposed vegetation etc. The proposed development will incorporate a small rainwater harvesting device to collect rainwater for irrigation and washing use for each plot. However, the volume will not suffice for the management of surface water during extreme rainfall events.

Below is a graph extracted from the DWR Cymru Water Resources Management Plan (March 2019). This along with the current drought management plans illustrate that the SEWCUS area, of which the site is located, does not expect any potential stresses on water main supplies.

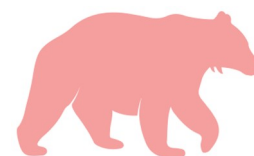


Table 1 – SEWCUS Annual Average Supply vs Demand (2080s Climate Change Allowance)

The second preferred method of surface water disposal is via infiltration to ground.

A desktop study has been undertaken to assess the potential of discharge via infiltration. Various sources have been used including the British Geological Survey (BGS) and Cranfield Soil and Agri-food Institute (CSAI) Soilsmap mapping. These extracts have been included within Appendix D of this report.

The bedrock geology has been identified as St Maughans Formation - Argillaceous rocks and sandstone, interbedded.

Soilsmap has identified the soil as slightly acid-loamy and clayey soil with impeded drainage.

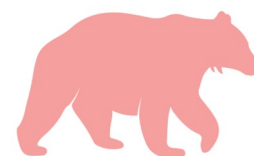
Infiltration testing in accordance with BRE365 has been scheduled to be completed prior to SAB full application. This soakaway testing will confirm if soakaways are feasible for the proposed development. However, at the time of writing, based on the information from the desktop study, it is assumed that infiltration is not feasible.

Moreover, as stated in Building Regulation Part H (Wales) the use of soakaway would need to be a minimum of 5m away from a building or road or in areas of unstable land. Therefore, due to limited space and various site constraints, soakaways are considered not feasible on this site.

The third preferred method of surface water disposal is discharge to a surface water body. There appears to be no watercourses in proximity to the proposed site. It is therefore not viable to discharge via this method.

The next preferred method of disposal is to a surface water sewer, highway drain, or another surface water drainage system. The DCWW sewer map included within Appendix E of this report identified an existing surface water sewer on Ridgeway Hill. At this stage, it is proposed to discharge the surface water runoff to the surface water public sewer stated above. A CCTV survey shall be carried out prior to the SAB full application. A S106 agreement shall be agreed with DCWW prior to the surface water sewer connection.

A proposed drainage layout illustrating the drainage arrangement has been included within Appendix F of this report.



4.4 Standard S2 - Hydraulic Control

Required considerations for Standard S2 has been shown below:

1. Surface water should be managed to prevent, so far as possible, any discharge from the site for the majority of rainfall events of less than 5mm.
2. The surface water runoff rate for the 1 in 1 year return period event (or agreed equivalent) should be controlled to help mitigate the negative impacts of the development runoff on the morphology and associated ecology of the receiving surface water bodies.
3. The surface water runoff (rate and volume) for the 1% (1 in 100 year) return period event (or agreed equivalent) should be controlled to help mitigate negative impacts of the development on flood risk in the receiving water body.
4. The surface water runoff for events up to the 1% (1 in 100 year) return period (or agreed equivalent) should be managed to protect people and property on and adjacent to the site from flooding from the drainage system.
5. The risks (both on site and off site) associated with the surface water runoff for events greater than the 1% (1 in 100 year) return period should be considered. Where the consequences are excessive in terms of social disruption, damage or risk to life, mitigating proposals should be developed to reduce these impacts.
6. Drainage design proposals should be examined for the likelihood and consequences of any potential failure scenarios (e.g. structural failure or blockage), and the associated flood risks managed where possible.

The greenfield QBAR runoff value for the undeveloped site has been calculated as 5.13 l/s/ha using the FEH Statistical method.

Preliminary calculations are included within Appendix F of this report.

The proposed sub-catchment areas are included within CSK08 within Appendix F.

It is proposed to restrict runoff from the proposed development to a maximum rate of Q_{PROPOSED} **0.072 l/s** for plot 01, and **0.082 l/s** for plot 02, for all rainfall events up to and including the 1 in 100yr +40% climate change and 10% Urban Creep allowance.

	QBAR	Proposed Positively Drained Area	Q _{PROPOSED}
Plot 01	5.13 l/s/ha	0.014 (ha)	0.072 l/s
Plot 02	5.13 l/s/ha	0.016 (ha)	0.082 l/s

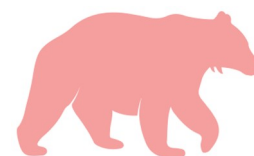
Table 2 – Discharge Rate Summary

An ACO Q-plate orifice flow control or similar shall be used to restrict the surface water runoff to the above-stated discharge rate for all rainfall events up to and including the 1 in 100yr +40%cc +10%uc allowance for both plots.

Causeway Flow has been used to estimate the attenuation required for the development. Calculations have been included within Appendix F of this report.

It is proposed to utilise a combination of attenuation methods including permeable paving sub-base and geo-cellular crate attenuation to accommodate the attenuation required.

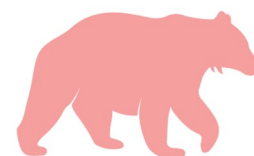
The proposed drainage layout illustrating the size and location of these SuDS features are included within Appendix F.



It should be noted that detailed calculations shall be submitted with the full application and an allowance for 10% urban creep shall be made within the drainage model.

Interception methods of each SuDS feature have also been considered within the design. Table 3 below is an extract from *CIRIA C753 The SuDS Manual* and identifies infiltration systems along with requirements for which the surface water drainage design for this scheme was broadly based on.

Systems	Interception Methods that can be assumed to be compliant for zero runoff for the first 5mm for 80% of events during the Summer and 50% in Winter
Green roofs	All surfaces that have green roofs
Rainwater harvesting systems	All surfaces drained to RWH systems designed to BS 8515:2009+A1:2013 whether for surface water management or just water supply, provided the RWH system design is based on regular daily demand for non-potable water.
Soakaway or other infiltration system	Areas of the site drained to systems that are designed to infiltrate runoff for events greater than a 1 month return period
Permeable pavements	All permeable pavements, whether lined or not, can be assumed to comply, provided there is no extra area drained to the permeable pavement. Where the pavement also drains an adjacent impermeable area, compliance can be assumed for all soil types where the pavement is unlined, as long as the extra paved area is no greater than the permeable pavement area. Where the infiltration capacity of the ground below the pavement is greater than 1×10^{-6} m/s, up to 5 times the permeable pavement area can be added as extra contributing area. Where the permeable pavement also drains an adjacent impermeable area and is lined, compliance cannot be deemed to have been achieved and extra downstream Interception components will be required
Filter Strips/Swales	Roads drained by filters strips/swales, where the longitudinal gradient of the vegetated area is less than 1:100, are suitable for Interception delivery for impermeable surface areas up to 5 times the base of the vegetated surface area receiving the runoff. Components steeper than 1 in 100 cannot be deemed to provide Interception unless additional effective Interception design can be demonstrated. Any filter strip/swale that is unlined, has a gradient less than 1 in 100 and has an infiltration capability greater than 1×10^{-6} m/s can be assumed to comply with Interception for a contributing area up to 25 times the area, or a larger area where infiltration capacities and design characteristics allow. Interception cannot be deemed to have been provided for impermeable areas draining to a swale within 5 m from the swale outlet, unless the swale is flat and has a slightly raised outlet to create a temporary storage zone to encourage infiltration before runoff takes place. Greater loading ratios can be achieved by providing flat swales with greater temporary storage and infiltration, but these require detailed design, based on the use of appropriate continuous rainfall time series
Infiltration Trenches	Roads drained by infiltration trenches can be considered to provide Interception.
Detention Basins	Areas of the site drained to detention basins with a flat unlined base (without specific provision for routing low flows directly to the outlet) can be assumed to comply, where the drained impermeable surface area is less than 5 times the vegetated surface area receiving the runoff for any soil type. The area of the basin that is assumed to contribute to Interception of runoff should be below the outlet level of the basin. Areas up to 25 times the base area of the basin can be assumed to meet Interception requirements where infiltration rates are greater than 1×10^{-6} m/s.



	Higher loading ratios can be achieved where specific provision is made for water being stored below the outlet pipe and higher infiltration rates exist. Where a basin is designed to infiltrate runoff, specific provision should be made for the upstream control of sediments to minimise risks of waterlogging, high maintenance costs and reduced component amenity value.
Bio-retention areas and Rain Gardens	Areas of the site drained to unlined bioretention components can be assumed to comply' where the impermeable surface area is less than 5 times the vegetated surface area receiving the runoff. They can be designed to deliver Interception for larger areas, where suitable infiltration capacity is available.
Ponds	Areas drained by ponds (with a permanent water pool that is effectively maintained by the outlet structure) are not assumed to deliver Interception.

Table 3 – CIRIA C753 Interception Mechanisms

The proposed drainage shall include lined permeable paving systems and lined rain gardens. Due to site constraints, all proposed SuDS features on site are proposed to be lined. Interception on site has been designed to be met as much as practically possible.

4.5 Standard S3 - Water Quality

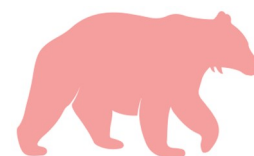
Standard S3 addresses the drainage design requirements to minimise the potential pollution risk posed by the surface water runoff to the receiving water body.

Treatment for surface water runoff should be provided to prevent negative impacts on the receiving water quality and/or protect downstream drainage systems, including sewers.

The proposed Simple Index Approach as identified in CIRIA C753 has been used to determine the SuDS pollution requirements for the proposed development.

Table 4 below has been taken from CIRIA C753 and identifies the Pollution Hazard Indices for Different Land Use Classifications.

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Residential roofs	Very Low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (min)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to	High	0.8	0.8	0.9



be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways				
--	--	--	--	--

Table 4 – CIRIA C753 Pollution Hazard Indices for Different Land Use Classifications

To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index that equals or exceeds the pollution hazard index for each contaminant type.

Total SuDS Mitigation Index $\geq$ Pollution Hazard Index

Where the mitigation index of an individual component is insufficient, two components (or more) in series will be required, where:

$$\text{Total SuDS Mitigation Index} = \text{Mitigation Index} + 0.5 (\text{Mitigation Index of Component 2})$$

Table 5 is an extract from CIRIA C753 and identifies the SuDS mitigation indices for discharges to surface waters.

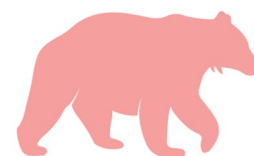
Type of SuDS component	TSS	Metals	Hydro-Carbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate, that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Table 5 – CIRIA C753 SuDS Mitigation Indices for Discharges to Surface Waters

Below are the tables that illustrate that the requirements of the Simple Index Approach has been met where possible. The mitigation for each feature is greater than or equal to the corresponding pollution hazard indices. The Pollution Hazard Indices of 'Private Footpath' has been assumed as 'Other Roofs' in Table 4.

Sub-catchment A1 (Proposed Plot 01 Roof A)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Residential Roofs	0.2	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 6 – SuDS Mitigation Indices for Sub-Catchment A1



Sub-catchment A2 (Proposed Plot 01 Roof B)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Residential Roofs	0.2	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Rain Garden	0.8	0.8	0.8

Table 7 –SuDS Mitigation Indices for Sub-Catchment A2

Sub-catchment B1 (Proposed permeable block paving parking bay)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Individual property driveways	0.5	0.4	0.4
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 8 –SuDS Mitigation Indices for Sub-Catchment B1

Sub-catchment B2 (Proposed permeable slab paving front footpath)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Private Footpath	0.3	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
D-rainclean channel	0.9	0.9	0.9

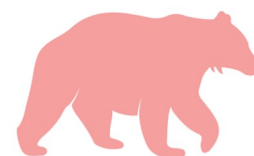
Table 9 –SuDS Mitigation Indices for Sub-Catchment B2

Sub-catchment B3 (Proposed permeable slab paving rear footpath)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Private Footpath	0.3	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 11 –SuDS Mitigation Indices for Sub-Catchment B3

Sub-catchment C1 (Proposed Plot 02 Roof A)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Residential Roofs	0.2	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 12 –SuDS Mitigation Indices for Sub-Catchment C1



Sub-catchment C2 (Proposed Plot 02 Roof B)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Residential Roofs	0.2	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Rain Garden	0.8	0.8	0.8

Table 13 –SuDS Mitigation Indices for Sub-Catchment C2

Sub-catchment D1 (Proposed permeable block paving parking bay)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Individual property driveways	0.5	0.4	0.4
Mitigation Index	TSS	Metals	Hydro-Carbons
D-rainclean channel	0.9	0.9	0.9

Table 14 –SuDS Mitigation Indices for Sub-Catchment D1

Sub-catchment D2 (Proposed concrete driveway)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Individual property driveways	0.5	0.4	0.4
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 15 –SuDS Mitigation Indices for Sub-Catchment D2

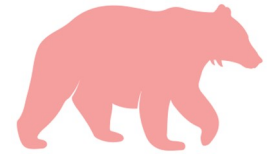
Sub-catchment D3 (Proposed permeable block paving parking bay)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Individual property driveways	0.5	0.4	0.4
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 16 –SuDS Mitigation Indices for Sub-Catchment D3

Sub-catchment D4 (Proposed permeable slab paving footpath)			
Pollution Hazard Indices	TSS	Metals	Hydro-Carbons
Private Footpath	0.3	0.2	0.05
Mitigation Index	TSS	Metals	Hydro-Carbons
Permeable pavement	0.7	0.6	0.7

Table 16 –SuDS Mitigation Indices for Sub-Catchment D4

The above tables demonstrate the requirements for treatment and interception shall be met.



4.6 Standard S4 – Amenity

The aim of standard S4 is to ensure that, wherever possible, and having regard to the need to prioritise infiltration drainage and rainwater harvesting, the SuDS scheme makes the best contribution to development design by maximising benefits for amenity as well as for biodiversity, water quantity and quality.

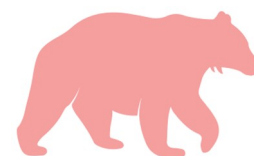
Where SuDS are on the surface, high quality visual impact is essential to ensuring public acceptability and maximise amenity benefits. Public acceptance is dependent on appropriate design and materials, planting and landscaping, maintenance regimes that retain performance and minimise risks, and appropriate engagement and awareness programmes, including the use of signs to explain that the area is part of the drainage system, how it works and who is responsible for maintenance.

By enhancing visual character, SuDS can help contribute to specific amenity benefits including:

- Creating aesthetically pleasing places,
- Increased attractiveness of individual buildings, locations and areas,
- Enhanced economic investment within the local area,
- Increased employment productivity due to the quality of the working environment,
- Enhanced property and land values,
- Increased tourism.

The proposed site incorporates 2 areas of bio-retention/rain garden features to enhance the visual characteristics of the development. The bioretention areas are located where residents and the public will pass and observe frequently.

The planting specification along with proposed details shall be incorporated within the full application.



4.7 Standard S5 – Biodiversity

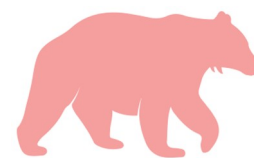
Standard S5 addresses the design of SuDS to ensure, where possible, they create ecologically rich green and blue corridors in developments and enrich biodiversity value by linking networks of habitats and ecosystems together.

The aim of standard S5 is to ensure that, wherever possible, and having regard to the need to prioritise infiltration drainage and rainwater harvesting, the SuDS scheme makes the best use of a site to maximise benefits for biodiversity, as well as for amenity, water quantity and quality. Biodiversity benefits will usually be best achieved by drainage systems which are on the surface and visible with vegetated components, forming part of the local green infrastructure and local ecosystem structure. It is important to ensure that the SuDS design does not damage existing sensitive habitats.

There are key design characteristics that can help create habitats and associated ecosystems, for example:

- The inclusion of structural variability in the SuDS design – both horizontally and vertically,
- The use of biodiverse planting,
- The inclusion of biodiverse water features,
- The incorporation of areas of grassland and wet woodland features,
- The use of gentle slopes and shallow water gradients.

The planting specification along with proposed details for the proposed rain gardens shall be incorporated within the full application to maximise and improve biodiversity on site.



4.8 Standard S6 - Construction & Maintenance

Required considerations for Standard S6 has been shown below:

1. All elements of the surface water drainage system should be designed so that they can be constructed easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).
2. All elements of the surface water drainage system should be designed to ensure maintenance and operation can be undertaken (by the relevant responsible body) easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).
3. The surface water drainage system should be designed to ensure structural integrity of all elements under anticipated loading conditions over the design life of the development site, taking into account the requirement for reasonable levels of maintenance.

It should be noted that all of the proposed surface water drainage on site serving the new development shall be privately maintained. All operational and maintenance requirements for the private drainage network will therefore be made clear to the owner or private management company who shall be responsible for maintaining the network.

A detailed SuDS Maintenance plan will be provided for the full application.

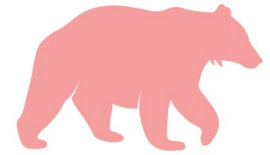
5.0 FOUL WATER STRATEGY

The proposed foul network has been included within the proposed drainage layout within Appendix F.

It is proposed that the foul water from the 2 no. proposed dwellings shall discharge to the DCWW public foul sewer beneath Ridgeway Hill. The proposed lateral drains and demarcation chambers will be offered to DCWW as part of an S104 agreement. An S106 agreement will be required prior to any communication with the public foul sewer.

All onsite private foul drainage serving the development shall be designed in accordance with Building Regulations Approved Document Part H. All adoptable assets will be designed in accordance with Sewers for Adoption 7th Edition.

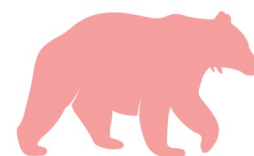
Welsh Water shall confirm the sewer network capacity and location of the proposed sewer prior to construction.



6.0 SURFACE WATER EXCEEDANCE/BLOCKAGE EVENT

Precautions have been taken to not worsen the pluvial flood risk within the vicinity of the site. The proposed drainage features have been designed to not cause flooding for all rainfall events up to and including 1 in 100 years rainfall event + 40% climate change allowance, a 10% urban creep allowance will also be included in the calculation in the SAB full application stage.

In the unlikely event of an exceedance event or a blockage, the ponding surface water will overflow and runoff to the lowest site level and away from the buildings as illustrated within Appendix F of this report. The proposed flow control chamber shall include an overflow/weir wall for blockage events, details will be included in the SAB full application stage.



7.0 CONCLUSION

Statutory Standard S1 *Surface Water Destination* Overview – It is proposed to discharge the surface water runoff from the development to the existing surface water sewer located on Ridgeway Hill. A S106 agreement shall be agreed with DCWW prior to the surface water sewer connection.

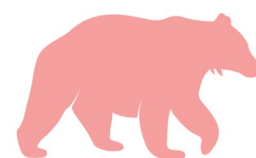
Statutory Standard S2 *Hydraulic Control* Overview – It is proposed to restrict runoff from the proposed development to a maximum flow rate of **0.154 l/s** (0.072l/s for plot 01 + 0.082l/s for plot 02) for all rainfall events up to and including the 1 in 100yr +40% climate change and 10% Urban Creep allowance.

Statutory Standard S3 *Water Quality* Overview – It is proposed to utilise SuDS features in accordance with the CIRIA C753 Simple Index Approach to provide suitable mitigation measures.

Statutory Standard S4 *Amenity* Overview – It is proposed to maximise the amenity offered by SuDS components by optimising the location of the rain garden areas. These features have been located such that they shall be clearly visible to residents, visitors, and the public.

Statutory Standard S5 *Biodiversity* Overview – It is proposed to maximise the biodiversity offered by the introduction and planting specification of the rain garden areas. A planting specification will be submitted in the SAB full application to maximise the biodiversity potential on site.

Statutory Standard S6 *Construction & Maintenance* Overview – All proposed drainage components shall be specified such that each feature can be constructed as easily, safely and cost-effectively as practically possible. All of the proposed surface water drainage on site serving the new development shall be privately maintained. All operational and maintenance requirements for the private drainage network will therefore be made clear to the residents who shall be responsible for maintaining the system.



Appendix A



SITE LOCATION PLAN

Scale: 1:1250

KEY

— SAB Boundary

Notes:

1. This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/specifications.
2. This drawing has been produced for SAB application only and is not to be used for construction.
3. Exact location of all apparatus to be determined on site.

A	09/03/26	Updated to suit revised layout	WH	PC
---	----------	--------------------------------	----	----

Rev.	Date.	Details.	By.	Chk.
------	-------	----------	-----	------

Amendments



Bear Structures

Rugged by design

Sophia House 28 Cathedral Road Cardiff CF11 9LJ
United Kingdom 029 20 304 979

Project:

**DWELLING AT RIDGEWAY HILL,
NEWPORT**

Title:

SITE LOCATION PLAN

Drawing Status:

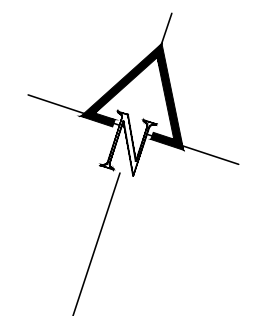
FOR INFORMATION

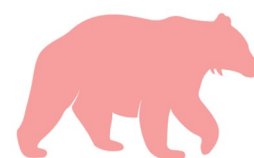
Drawn:	Checked:	Scale(s) at A4:
--------	----------	-----------------

WH	PC	1:1250
----	----	--------

Date:	Job No.	Drawing No.	Revision
-------	---------	-------------	----------

20/01/2025	P0616	CSK13	A
------------	--------------	--------------	----------

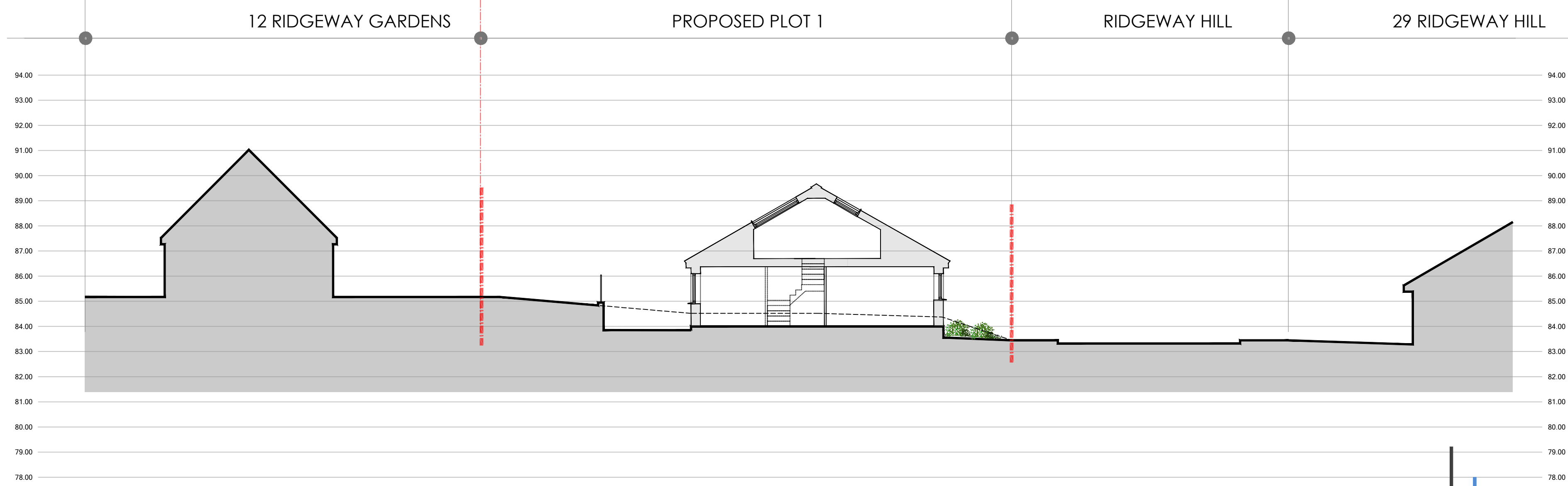
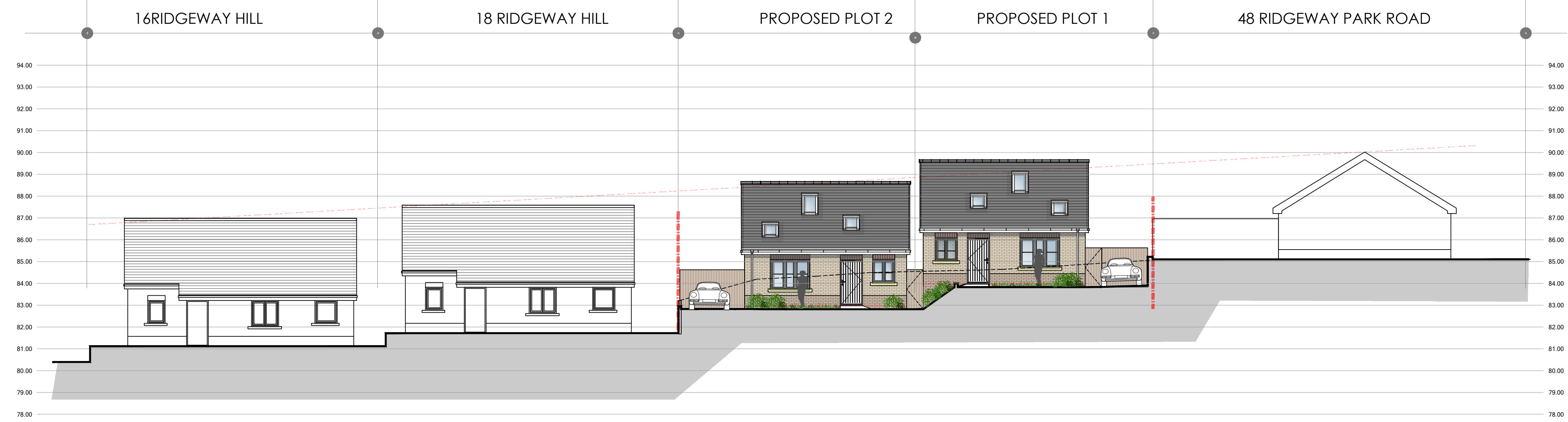




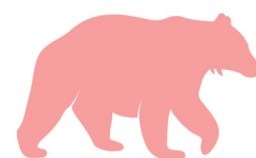
Appendix B



KEY TO SCHEDULE	
REFER TO BOUNDARY TREATMENTS & BOUNDARY IDENTIFICATION DRAININGS FOR FURTHER DETAIL	
	SEE APPLICATION BOUNDARY
	DENOTES 1800MM HIGH TREATED CLOSE SPACED FENCE.
	DENOTES FACING BRICK RETAINING/BOUNDARY WALL - REFER TO ENGINEERS DRAWINGS FOR R/WALL DETAILS
	DENOTES <1M RETAINING WALL WITH 1800MM HIGH TREATED CLOSE BOARDED FENCE ON TOP - REFER TO ENGINEERS DRAWINGS FOR R/WALL DETAILS
	DENOTES PERMEABLE PAVING PARKING BAYS WITH 500MM x 100MM PC CONCRETE PARAPETTS TO SEGREGATE BAYS
	DENOTES AREAS OF 400 x 400mm PC CONC. PAVING SLABS TO FORM PAVED AREAS AND 1000mm WIDE ASPHALT TO CURBSIDE OF HOUSES AND PLAS - REFER TO ZONING APPLICATION FOR FURTHER DETAILS
	DENOTES AREAS OF LANDSCAPE WITH CURBLES OF DWELLINGS AND ADJOINING AREAS, INCORPORATING SHRUB SPECIES AS PER SEPARATE LANDSCAPING DRAWINGS BY OTHERS
	DENOTES AREAS OF TURFED GRASS TO REAR GARDENS
	DENOTES 1800MM HIGH TREATED CLOSE BOARDED GATE WITH A SECURITY LOCK, IN COMPLIANCE WITH NDIS800 - NIGHT GATE TO BE SIGNAL HEIGHT TO ADJACENT WALL/GATE TO ADJACENT WALL
	DENOTES POSITION OF SECTION OR SMALLER SWIFT BOX IN SMOOTHED IRON - TO BE INSTALLED AT 50MM FROM FRONTED WALL. GROUND LEVEL - TO BE APPROVED BY COUNCIL TO SATISFY CONDITION OF PLANNING APPROVAL
	DENOTES POSITION OF SECTION OR SWIFT BOX (MPC AL) OR SMALLER - REFER TO ELEVATIONS FOR EXACT LOCATION - TO BE APPROVED BY COUNCIL TO SATISFY CONDITION OF PLANNING APPROVAL
	DENOTES POSITION OF ELECTRIC METER CHANGING POINT



Client	Drawing No	Scale	Revision
Riversee Ltd	LT2417.04.01	Varies @ A0	
Job Title	Drawing Title	Date	Checked
Ridgeway Hill, Newport	Proposed Site Layout + Section	Jan 26	KML



Appendix C



P0616

Allwedd / Map Key

Zone C1

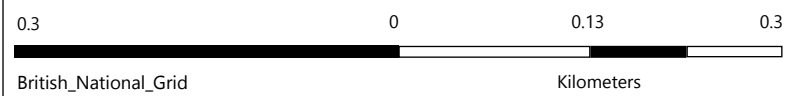
Zone C2

Zone B

Zone A

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
17/12/2024



Flood Map for Planning - Basic
P0616

Legend

TAN15 Defended Zones

Rivers

Sea

Rivers and Sea

Rivers and Sea

Flood Zone 3

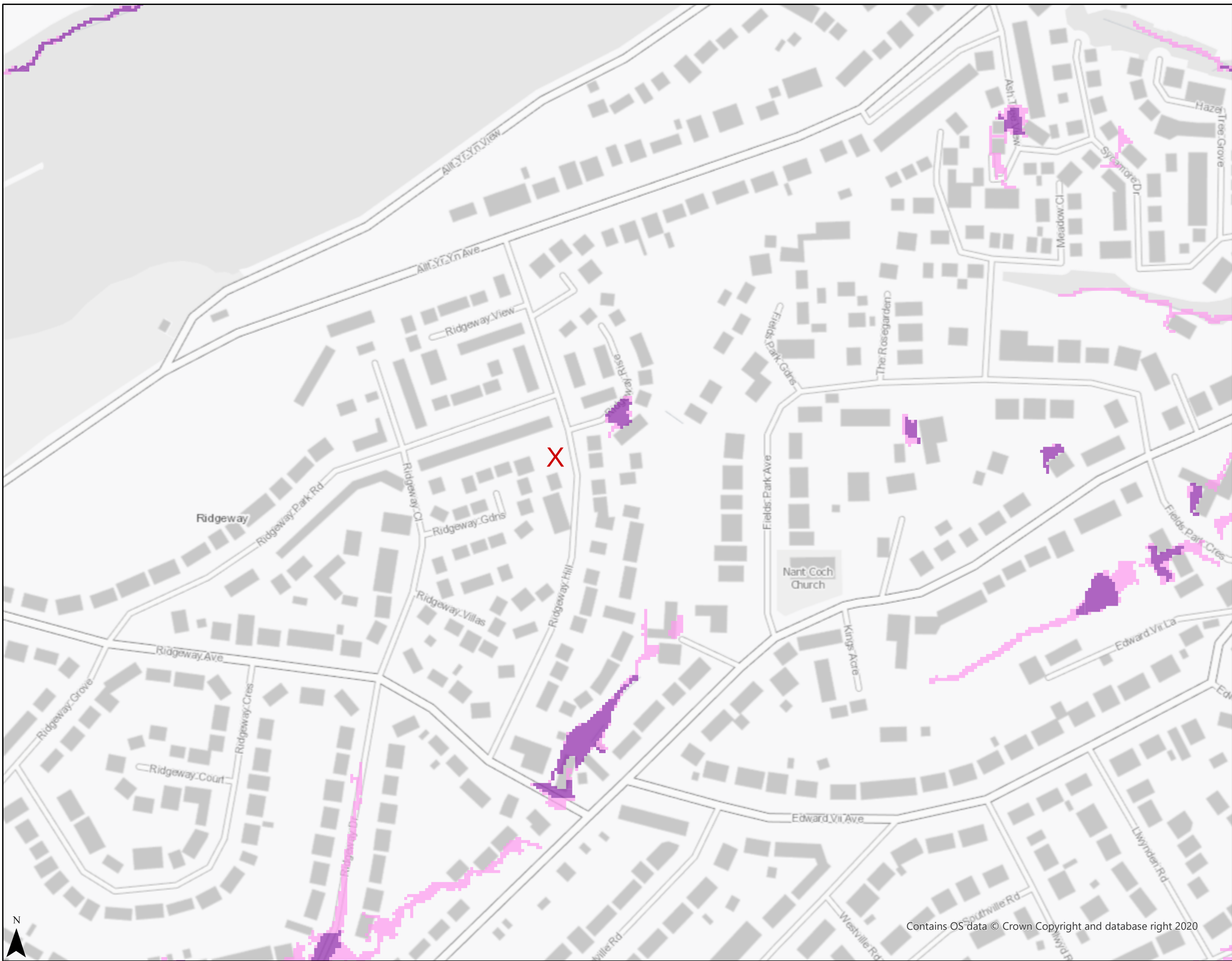
Flood Zone 2

Surface Water and Small Watercourses

Flood Zone 3

Flood Zone 2

Recorded Flood Extents



N



0.1 0.05 0 0.1



km

Disclaimer

<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

Contains OS data © Crown Copyright and database right 2020

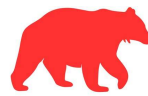
Scale at A3: 1:2,500

Date: 17/12/2024

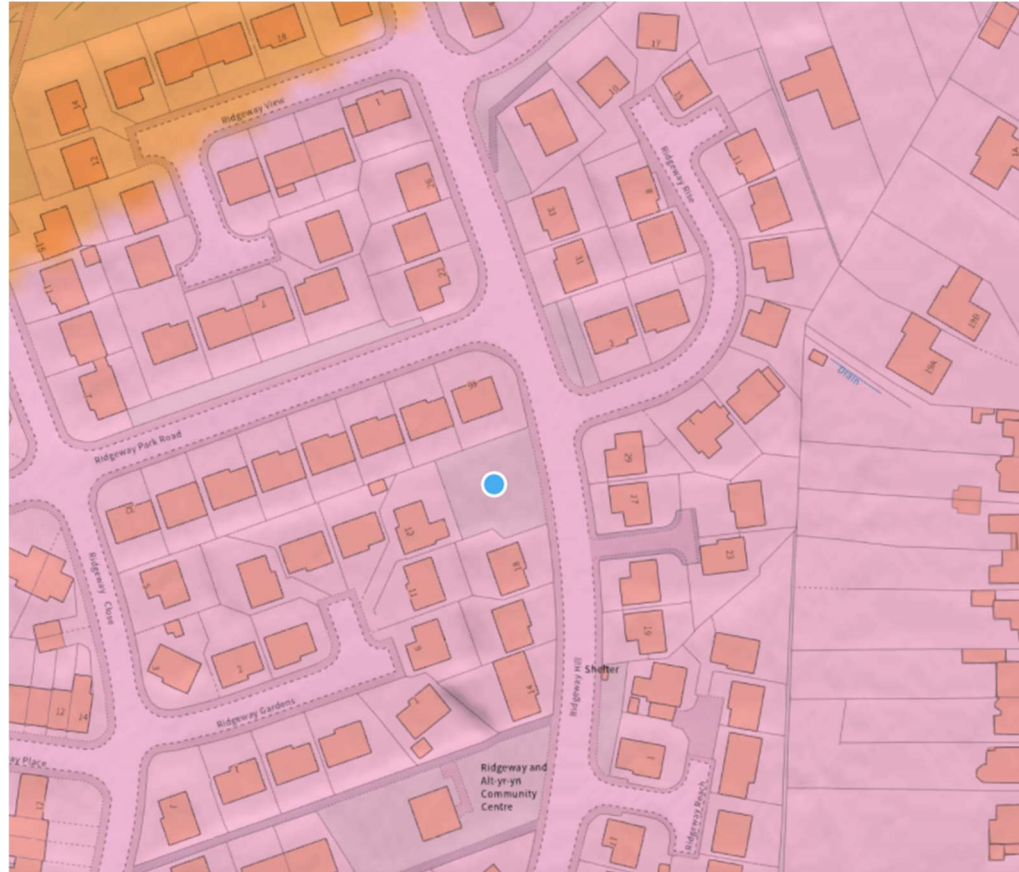
© NRW/CNC. Some information derived from © UK Centre for Ecology & Hydrology © UKCEH, the Environment Agency © EA and Getmapping Plc and Bluesky International Limited, Defra, © Met Office and DARD Rivers Agency, © Cranfield University, © James Hutton Institute, © Ordnance Survey, © Land & Property Services. All rights reserved.



Appendix D



Bear Consulting
Civil and Structural Engineers



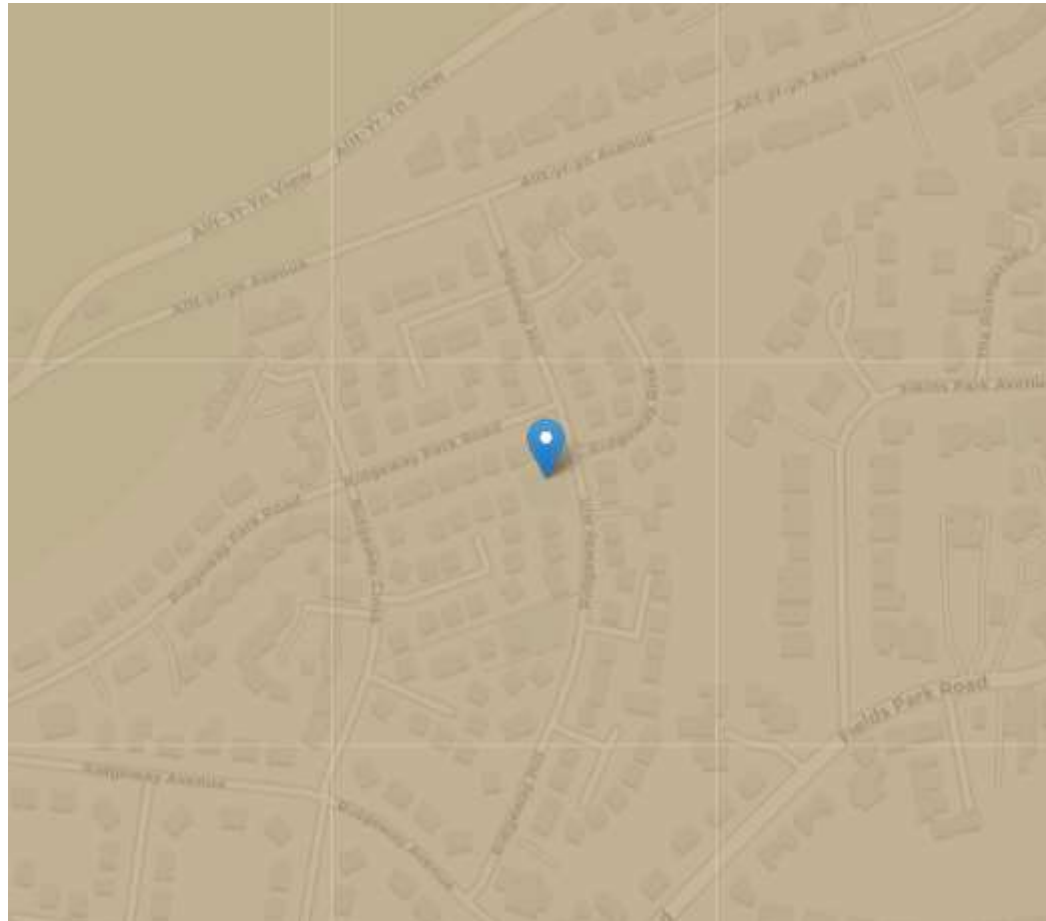
British Geology Survey - Bedrock and Superficial Deposit Map

Bedrock Geology:

St Maughans Formation - Argillaceous rocks and sandstone, interbedded. Sedimentary bedrock formed between 419.2 and 393.3 million years ago during the Devonian period.



Bear Consulting
Civil and Structural Engineers



Soilscape 8:

Slightly acid loamy and clayey soils with impeded drainage

Texture:

Loamy some clayey

Coverage:

England: 10.6%, Wales: 1.9%, England & Wales: 9.4%

Drainage:

Slightly impeded drainage



Fertility:

Moderate to high



Landcover:

Arable and grassland

Habitats:

Wide range of pasture and woodland types

Carbon:

Low

Drains to:

Stream network

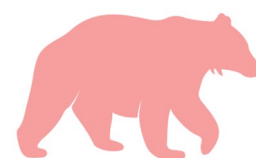
Water protection:

Farmed land is drained and therefore vulnerable to pollution run-off and rapid through-flow to streams; surface capping can trigger erosion of fine sediment

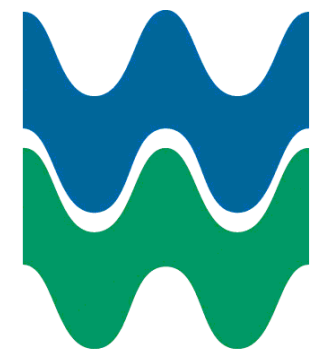
General cropping:

Reasonably flexible but more suited to autumn sown crops and grassland; soil conditions may limit safe groundwork and grazing, particularly in spring

Cranfield Soil and AgriFood Institute Soilsapes Mapping

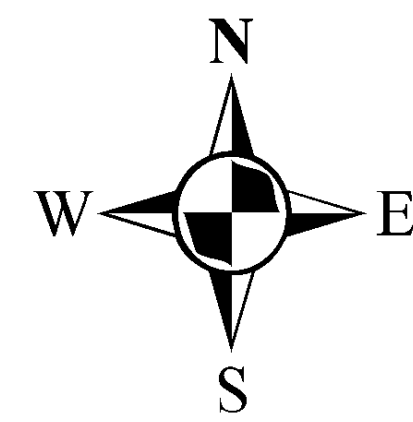


Appendix E



Dŵr Cymru
Welsh Water

Newport, South Wales



LEGEND(Representative of most common features)

- Waste network:**
- Fault chamber
 - Surface water chamber
 - Combined chamber
 - Combined sewer overflow
 - Special purpose chamber
 - Treatment works
 - △ Pumping station
- Surface water:**
- Surface water
 - Foul
 - Former S24 sewers (for indicative purposes only)
- Other features:**
- Outfall
 - Lamphole
 - Storm Overflow
 - Rising main
 - Gravity sewer
 - Private sewer
 - Private sewer subject to Sect. 104 adoption agreement
 - Private Sewer Transfer
 - Lateral Drain
 - Inspection Chamber

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases, pipe material (other than Asbestos Cement (AC) or Pitch Fibre (PF)) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

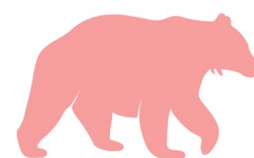
Dŵr Cymru Cyfngedig (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the basis of the best information available and to the best of its knowledge and belief. It is not intended to be relied upon as a guarantee of accuracy. The Company is not responsible for any loss or damage caused by reliance on this information. The Company is not responsible for any loss or damage caused by reliance on this information. The Company is not responsible for any loss or damage caused by reliance on this information.

Service pipes are not generally shown but their presence should be anticipated.

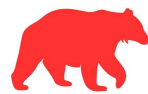
EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Reproduced by permission of the Ordnance Survey on behalf of HMNS. © Crown copyright and database right 2017. All rights reserved. Ordnance Survey Licence number: 100019204

Map Ref: 329758,188444
Map scale: 1:1250
Printed by: John Emma
Printed on: 02 Mar 2020



Appendix F



Bear Consulting
Civil and Structural Engineers

Storage Estimate		
Return Period (years)	100	OK Cancel
Climate Change (%)	40	
Impermeable Area (ha)	0.014	Update
Peak Discharge (l/s)	0.072	Calc
Infiltration Coefficient (m/hr) (leave blank if no infiltration)	0.00000	
Required Storage (m³)	Calc	
from	14	
to	18	
With infiltration (m³)		
from	14	
to	18	

Causeway Flow – Quick Storage Calculation for Plot 01

Storage Estimate		
Return Period (years)	100	OK Cancel
Climate Change (%)	40	
Impermeable Area (ha)	0.016	Update
Peak Discharge (l/s)	0.082	Calc
Infiltration Coefficient (m/hr) (leave blank if no infiltration)	0.00000	
Required Storage (m³)	Calc	
from	16	
to	20	
With infiltration (m³)		
from	16	
to	20	

Causeway Flow – Quick Storage Calculation for Plot 02

Calculated by:	Walter Hung
Site name:	P0616
Site location:	

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.58846° N
Longitude:	3.01696° W
Reference:	2382887628
Date:	Jan 02 2025 13:33

Runoff estimation approach

FEH Statistical

Site characteristics

Total site area (ha):	1
-----------------------	---

Methodology

Q _{MED} estimation method:	Calculate from BFI and SAAR
BFI and SPR method:	Specify BFI manually
HOST class:	N/A
BFI / BFIHOST:	0.621
Q _{MED} (l/s):	
Q _{BAR} / Q _{MED} factor:	1.08

Hydrological characteristics

	Default	Edited
SAAR (mm):	1057	1057
Hydrological region:	9	9
Growth curve factor 1 year:	0.88	0.88
Growth curve factor 30 years:	1.78	1.78
Growth curve factor 100 years:	2.18	2.18
Growth curve factor 200 years:	2.46	2.46

Notes

(1) Is $Q_{\text{BAR}} < 2.0 \text{ l/s/ha}$?

When Q_{BAR} is $< 2.0 \text{ l/s/ha}$ then limiting discharge rates are set at 2.0 l/s/ha .

(2) Are flow rates $< 5.0 \text{ l/s}$?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is $\text{SPR}/\text{SPRHOST} \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Q_{BAR} (l/s):		5.13
1 in 1 year (l/s):		4.52
1 in 30 years (l/s):		9.13
1 in 100 year (l/s):		11.19
1 in 200 years (l/s):		12.62

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Q-Plate Design and Performance Report

Project Details

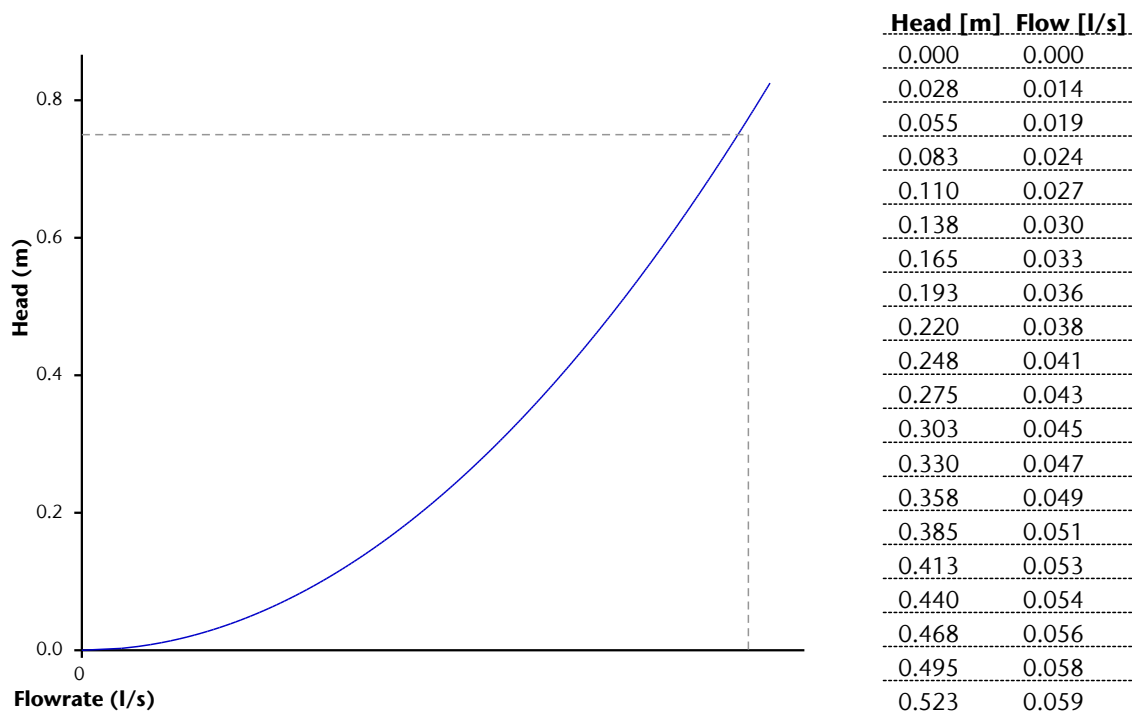
Project : New Project
Chamber Number : 1
Chamber Name : 1

Reference

Design Reference : 00005837
Created by : Walter Hung
Date Produced : 20-01-2025

Design

Description	Size [m]	Description	Rate [l/s]	Description	Model
Design Head	0.750	Design Flow Rate	0.072	Design Style	Curved Back



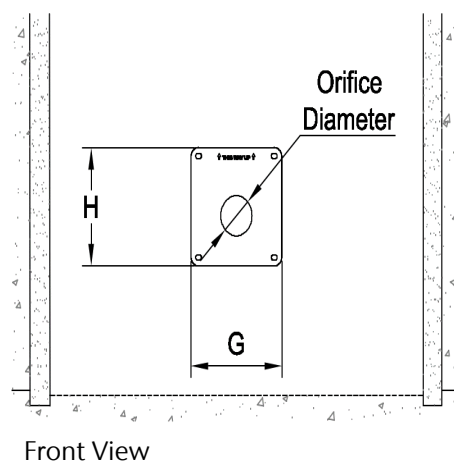
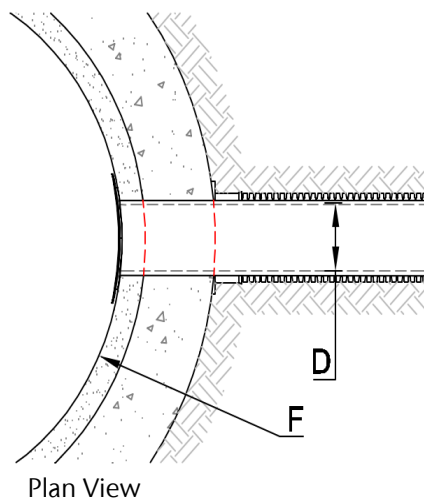
Specification

Description	Size [mm]
Minimum Outlet Pipe Diameter	100
Minimum Sump Depth	300
Minimum Chamber Diameter	600

Disclaimer: This design only applies to ACO Q-Brake and ACO Q-Plate products and no other parties' products. It is the responsibility of the designer ('user') to verify that the design parameters have been entered correctly and that relevant industry standards and guidelines have been taken into consideration. ACO Q-Brake and Q-Plate are intended to be used with surface water only.

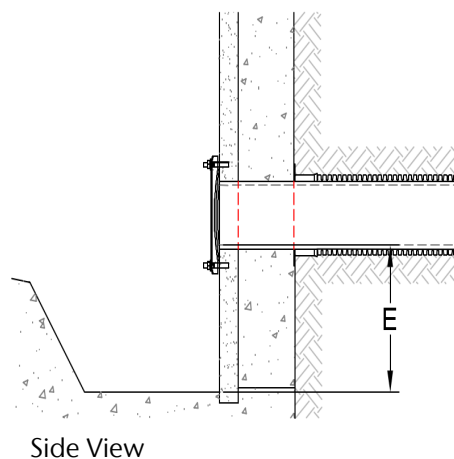
ACO Q-Plate Dimensions

Model: QP100



Flow Control Dimensions

Key	Description	Size [mm]
	Orifice diameter	6
G	Plate width	243
H	Plate height	245



Chamber/Pipework Dimensions

Key	Description	Min [mm]	Design [mm]
D	Outlet pipe DN	100	100
E	Sump depth	300	
F	Chamber diameter	600	1050

* Design dimensions shown are as selected by the designer.

Disclaimer: This design only applies to ACO Q-Brake and ACO Q-Plate products and no other parties' products. It is the responsibility of the designer ('user') to verify that the design parameters have been entered correctly and that relevant industry standards and guidelines have been taken into consideration. ACO Q-Brake and Q-Plate are intended to be used with surface water only.

Q-Plate Design and Performance Report

Project Details

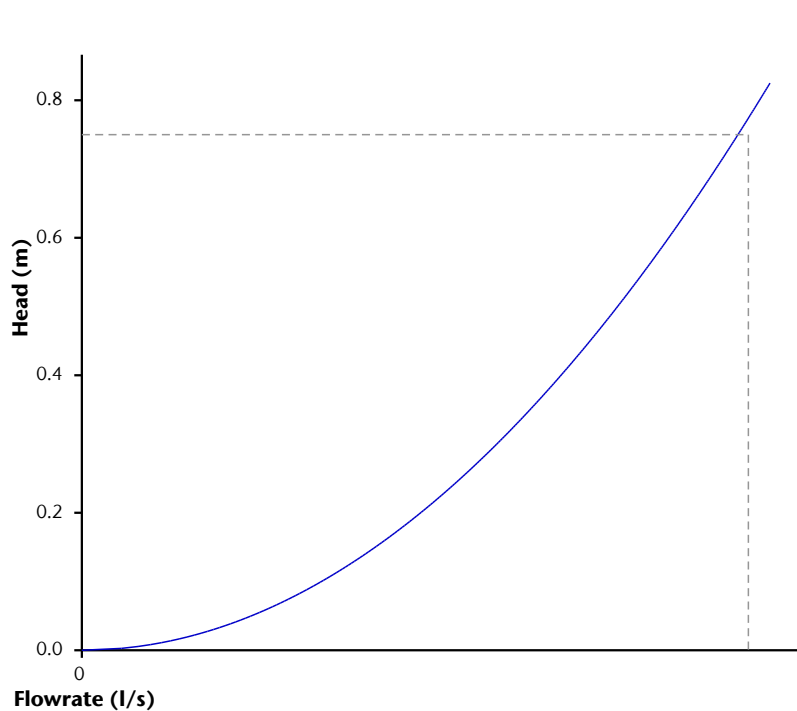
Project : New Project
Chamber Number : 1
Chamber Name : 1

Reference

Design Reference : 00005837
Created by : Walter Hung
Date Produced : 20-01-2025

Design

Description	Size [m]	Description	Rate [l/s]	Description	Model
Design Head	0.750	Design Flow Rate	0.082	Design Style	Curved Back



Head [m] Flow [l/s]

0.000	0.000
0.028	0.015
0.055	0.022
0.083	0.027
0.110	0.031
0.138	0.035
0.165	0.038
0.193	0.041
0.220	0.044
0.248	0.046
0.275	0.049
0.303	0.051
0.330	0.054
0.358	0.056
0.385	0.058
0.413	0.060
0.440	0.062
0.468	0.064
0.495	0.066
0.523	0.067
0.550	0.069
0.578	0.071
0.605	0.072
0.633	0.074
0.660	0.076
0.688	0.077
0.715	0.079
0.743	0.080
0.770	0.082
0.798	0.083
0.825	0.085

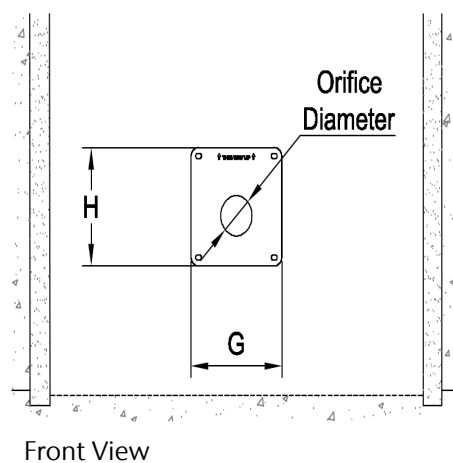
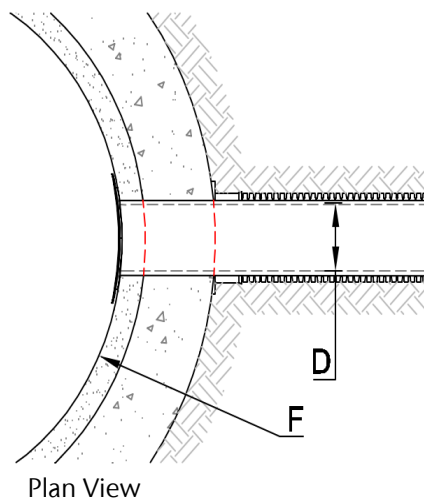
Specification

Description	Size [mm]
Minimum Outlet Pipe Diameter	100
Minimum Sump Depth	300
Minimum Chamber Diameter	600

Disclaimer: This design only applies to ACO Q-Brake and ACO Q-Plate products and no other parties' products. It is the responsibility of the designer ('user') to verify that the design parameters have been entered correctly and that relevant industry standards and guidelines have been taken into consideration. ACO Q-Brake and Q-Plate are intended to be used with surface water only.

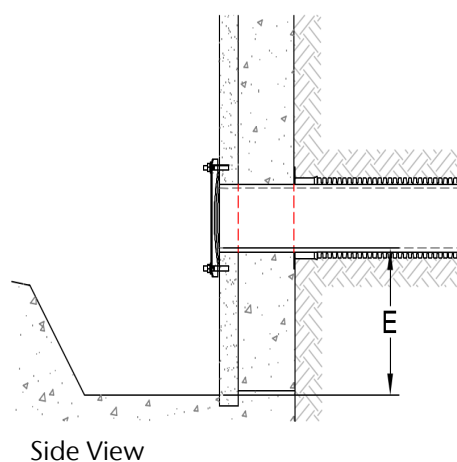
ACO Q-Plate Dimensions

Model: QP100



Flow Control Dimensions

Key	Description	Size [mm]
	Orifice diameter	7
G	Plate width	243
H	Plate height	245

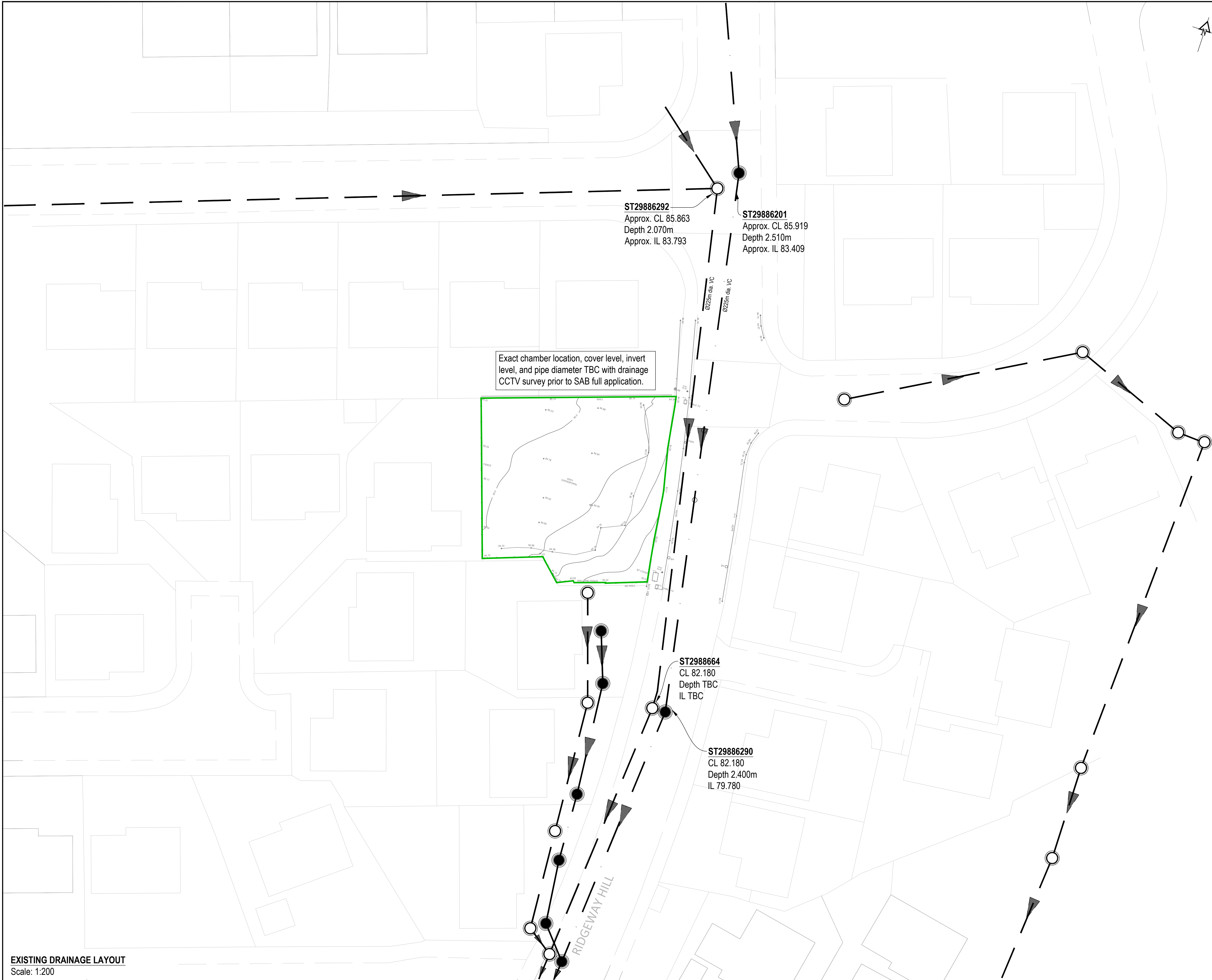


Chamber/Pipework Dimensions

Key	Description	Min [mm]	Design [mm]
D	Outlet pipe DN	100	100
E	Sump depth	300	
F	Chamber diameter	600	1050

* Design dimensions shown are as selected by the designer.

Disclaimer: This design only applies to ACO Q-Brake and ACO Q-Plate products and no other parties' products. It is the responsibility of the designer ('user') to verify that the design parameters have been entered correctly and that relevant industry standards and guidelines have been taken into consideration. ACO Q-Brake and Q-Plate are intended to be used with surface water only.



KEY	
	SAB Boundary
	Existing Public Storm Chamber
	Existing Public Foul Chamber
	Existing Storm Sewer
	Existing Foul Sewer

- Notes:**
1. This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
 2. This drawing has been produced for SAB application only and is not to be used for construction.
 3. Exact location of all apparatus to be determined on site.
 4. Topographical survey was provided by the architect.
 5. Existing public drainage information was provided from DCWW sewer map and shown partially and approximately in the vicinity of the site. TBC with drainage CCTV survey prior to SAB full-application.
 6. Other drainage features might be present around the site. TBC with drainage CCTV survey prior to SAB full application.

Rev.	Date.	Details.	By.	Chk.
B	09/03/26	Updated to suit revised layout	WH	PC
A	22/09/25	Updated to suit drainage CCTV survey information	WH	PC

Bear Consulting
Rugged by design
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:
DWELLINGS AT RIDGEWAY HILL, NEWPORT

Title:
EXISTING DRAINAGE LAYOUT

Drawing Status:
FOR INFORMATION

Drawn: WH	Checked: PC	Scale(s) at A1: 1:200	Job No: P0616	Drawing No: CSK03	Revision: B
--------------	----------------	--------------------------	-------------------------	-----------------------------	-----------------------

EXISTING DRAINAGE LAYOUT
Scale: 1:200



KEY

SAB Boundary

Existing Overland Flow Direction

- Notes:
1.

This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
2.

This drawing has been produced for SAB application only and is not to be used for construction.
3.

Exact location of all apparatus to be determined on site.
4.

Topographical survey was provided by the architect.
5.

Existing overland flow direction shown indicatively.

A	09/03/26	Updated to suit revised layout	WH	PC
Rev.	Date	Details	By	Chk.
Amendments				

Bear Consulting

Rugged by design

Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:

DWELLINGS AT RIDGEWAY HILL, NEWPORT

Title:

EXISTING OVERLAND FLOW DIRECTION

Drawing Status:

FOR INFORMATION

Drawn:

Checked:

Scale(s) at A1:

WH

PC

1:50

Date:

Job No:

Drawing No:

Revision

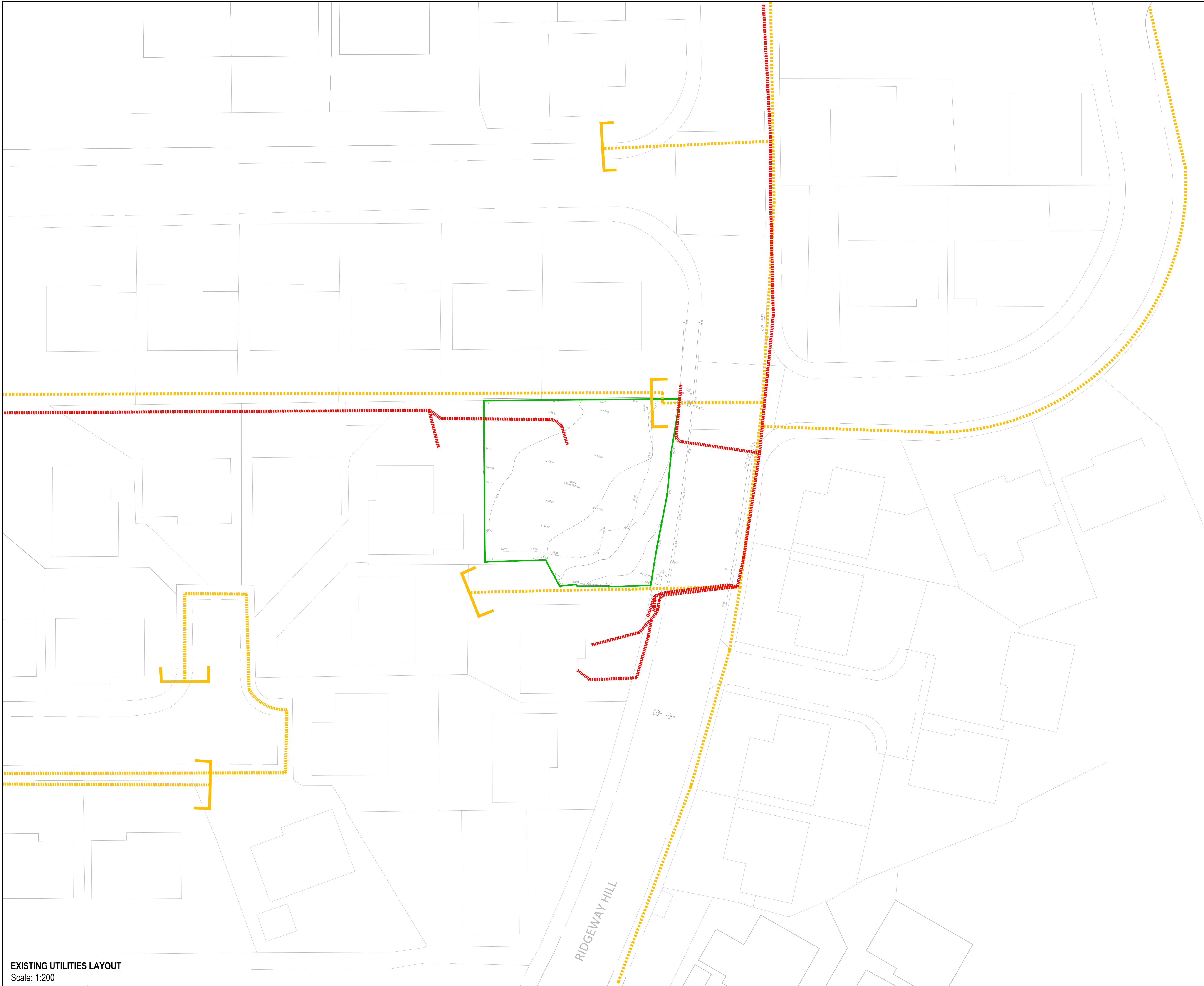
17/01/2025

P0616

CSK04

A

EXISTING OVERLAND FLOW DIRECTION
Scale: 1:50



EXISTING UTILITIES LAYOUT
Scale: 1:200

- KEY
- SAB Boundary
 - Existing Underground electric service
 - Existing Underground gas service
 - Existing Underground gas service End Cap

- Notes:
- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
 - This drawing has been produced for SAB application only and is not to be used for construction.
 - Exact location of all apparatus to be determined on site.
 - Topographical survey was provided by the architect
 - Existing gas services information was provided by Wales and West Utilities and shown partially and approximately in the vicinity of the site.
 - Existing electricity services information was provided by National Grid and shown partially and approximately in the vicinity of the site.
 - Other utilities might be present around the site. TBC with utilities survey prior to SAB full application.

A	09/03/26	Updated to suit revised layout	WH	PC
Rev.	Date	Details	By	Chk.
Amendments				



Bear Consulting
Rugged by design
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:

A
NEWPORT

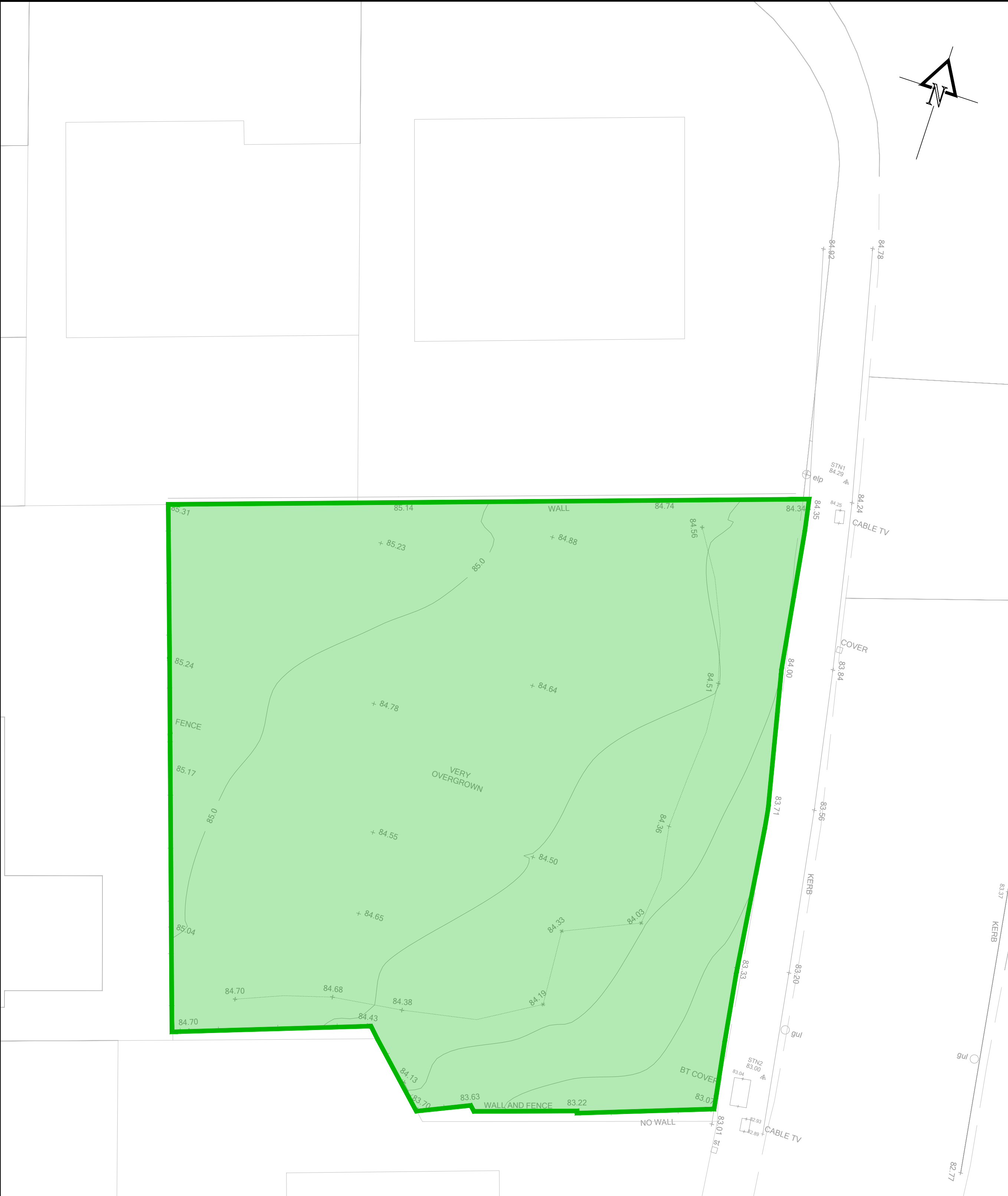
Title:

EXISTING UTILITIES LAYOUT

Drawing Status:

FOR INFORMATION

Drawn:	Checked:	Scale(s) at A1:
WH	PC	1:200
Date:	Job No:	Drawing No:
17/01/2025	P0616	CSK05
		Revision
		-

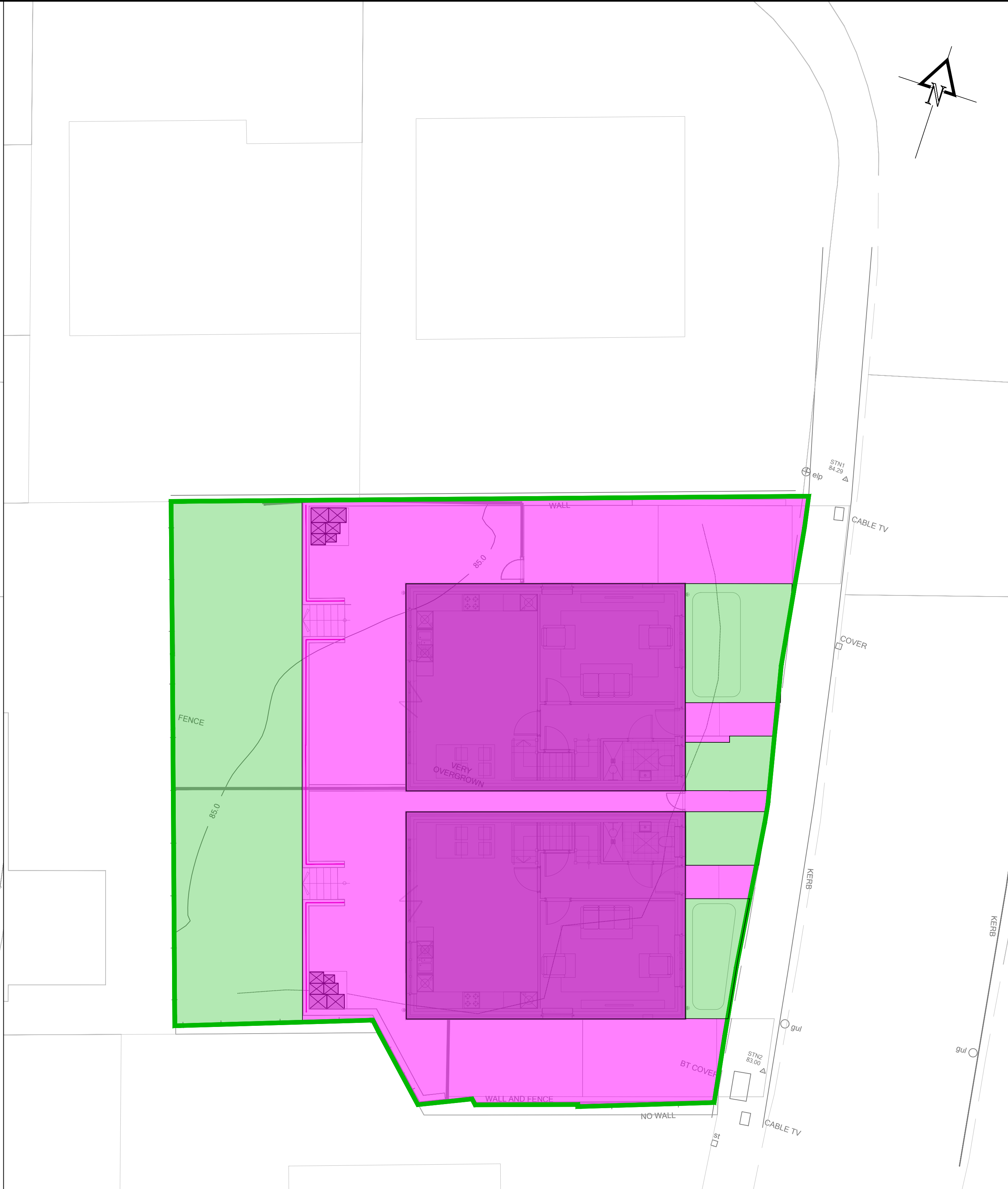


EXISTING HARDSTANDING AREA
Scale: 1:100

Existing Key

- SAB Boundary (0.044ha)
- Existing Soft Landscaping Area (0.044ha)

PROPOSED HARDSTANDING AREA
Scale: 1:100



Proposed Key

- SAB Boundary (0.044ha)
- Proposed Hardstanding Roof Area (0.015ha)
- Proposed Hardstanding Area (0.016ha)
- Total Hardstanding Area 0.031ha**
- Proposed Soft Landscaping Area (0.013ha)

- Notes:**
1. This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
 2. This drawing has been produced for SAB application only and is not to be used for construction.
 3. Exact location of all apparatus to be determined on site.
 4. Topographical survey was provided by the architect.
 5. Proposed site layout was provided by the architect (Ref:LT2417.04.01 - Site Layout + Floor Plans [Revised] 4.dwg).

Rev.	Date	Details	By	Chk.
A	09/03/26	Updated to suit revised layout	WH	PC

Amendments

Bear Consulting
Rugged by design
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

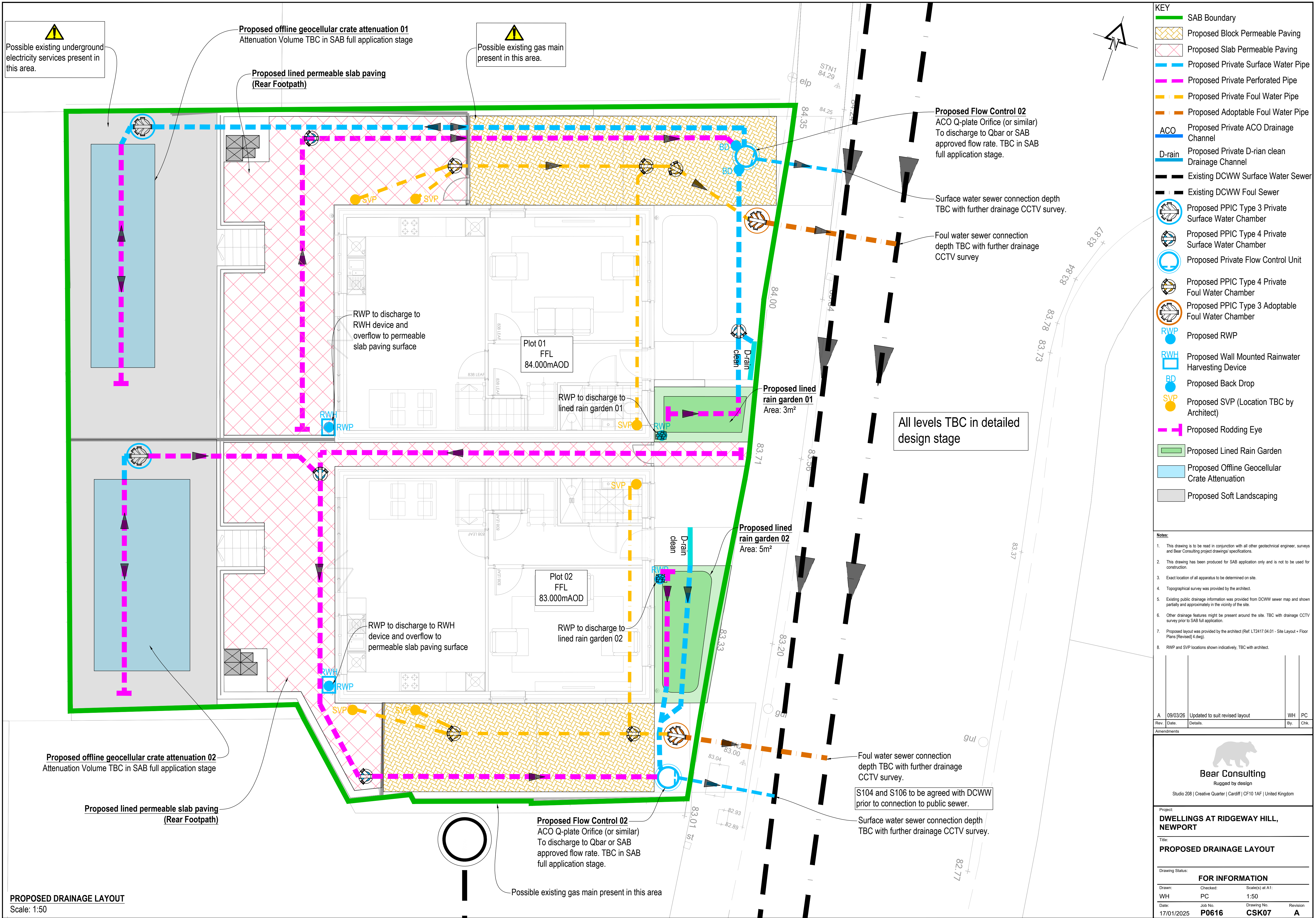
Project: **DWELLINGS AT RIDGEWAY HILL, NEWPORT**

Title: **HARDSTANDING AREA COMPARISON**

Drawing Status: **FOR INFORMATION**

Drawn:	Checked:	Scale(s) at A1:
WH	PC	AS SHOWN

Date:	Job No:	Drawing No:	Revision
17/01/2025	P0616	CSK06	A



PROPOSED DRAINAGE LAYOUT
Scale: 1:50

KEY

- SAB Boundary
- Proposed Block Permeable Paving
- Proposed Slab Permeable Paving
- Proposed Private Surface Water Pipe
- Proposed Private Perforated Pipe
- Proposed Private Foul Water Pipe
- Proposed Adoptable Foul Water Pipe
- Proposed Private ACO Drainage Channel
- Proposed Private D-rian clean Drainage Channel
- Existing DCWW Surface Water Sewer
- Existing DCWW Foul Sewer
- Proposed PPIC Type 3 Private Surface Water Chamber
- Proposed PPIC Type 4 Private Surface Water Chamber
- Proposed Private Flow Control Unit
- Proposed PPIC Type 4 Private Foul Water Chamber
- Proposed PPIC Type 3 Adoptable Foul Water Chamber
- Proposed RWP
- Proposed Wall Mounted Rainwater Harvesting Device
- Proposed Back Drop
- Proposed SVP (Location TBC by Architect)
- Proposed Rodding Eye
- Proposed Lined Rain Garden
- Proposed Offline Geocellular Crate Attenuation
- Proposed Soft Landscaping

Notes:

- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
- This drawing has been produced for SAB application only and is not to be used for construction.
- Exact location of all apparatus to be determined on site.
- Topographical survey was provided by the architect.
- Existing public drainage information was provided from DCWW sewer map and shown partially and approximately in the vicinity of the site.
- Other drainage features might be present around the site. TBC with drainage CCTV survey prior to SAB full application.
- Proposed layout was provided by the architect (Ref: LT2417.04.01 - Site Layout + Floor Plans [Revised] 4.dwg).
- RWP and SVP locations shown indicatively, TBC with architect.

A	09/03/26	Updated to suit revised layout	WH	PC
Rev.	Date	Details	By	Chk.
Amendments				

Bear Consulting
Rugged by design
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:
DWELLINGS AT RIDGEWAY HILL, NEWPORT

Title:
PROPOSED DRAINAGE LAYOUT

Drawing Status:
FOR INFORMATION

Drawn:	Checked:	Scale(s) at A1:
WH	PC	1:50
Date:	Job No:	Drawing No:
17/01/2025	P0616	CSK07
		Revision
		A

PROPOSED SUB-CATCHMENT PLAN
Scale: 1:50



KEY

- SAB Boundary (0.044ha)
- Sub-catchment Area A1 (0.003ha)
Proposed Plot 01 Roof A
to discharge via small rainwater harvesting device
and overflow to permeable slab paving surface
- Sub-catchment Area A2 (0.004ha)
Proposed Plot 01 Roof B
to discharge via proposed rain garden 01
- Sub-catchment Area B1 (0.002ha)
Proposed permeable block paving parking bay
- Sub-catchment Area B2 (0.001ha)
Proposed impermeable slab paving footpath
to discharge via D-rain clean drainage channel
- Sub-catchment Area B4 (0.004ha)
Proposed permeable slab paving rear footpath
- Total Plot 01 Modelled Area = 0.014ha
- Sub-catchment Area C1 (0.003ha)
Proposed Plot 02 Roof A
to discharge via small rainwater harvesting device
and overflow to permeable slab paving surface
- Sub-catchment Area C2 (0.004ha)
Proposed Plot 02 Roof B
to discharge via rain garden B1
- Sub-catchment Area D1 (0.001ha)
Proposed impermeable slab paving
to discharge via D-rain clean drainage channel
- Sub-catchment Area D2 (0.002ha)
Proposed asphalt driveway
to runoff to permeable block paving surface
- Sub-catchment Area D3 (0.002ha)
Proposed permeable block paving parking bay
- Sub-catchment Area D4 (0.004ha)
Proposed permeable slab paving footpath
- Total Plot 02 Modelled Area = 0.016ha
Total Modelled Area (Plot 01+Plot 02)= 0.030ha
- Sub-catchment Area E (0.0012ha)
Proposed Soft Landscaping
NOT included within hydraulic modeling
- Sub-catchment Area F (0.001ha)
Other minor hardstanding area
(e.g. retaining wall outline)
NOT included within hydraulic modeling

- Notes:**
- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
 - This drawing has been produced for SAB application only and is not to be used for construction.
 - Exact location of all apparatus to be determined on site.
 - Topographical survey was provided by the architect.
 - Proposed layout was provided by the architect (Ref: LT2417.04.01 - Site Layout + Floor Plans [Revised] 4.dwg).
 - Proposed sub-catchment plan shown indicatively.

Rev.	Date	Details	By	Chk.
A	09/03/26	Updated to suit revised layout	WH	PC
Amendments				

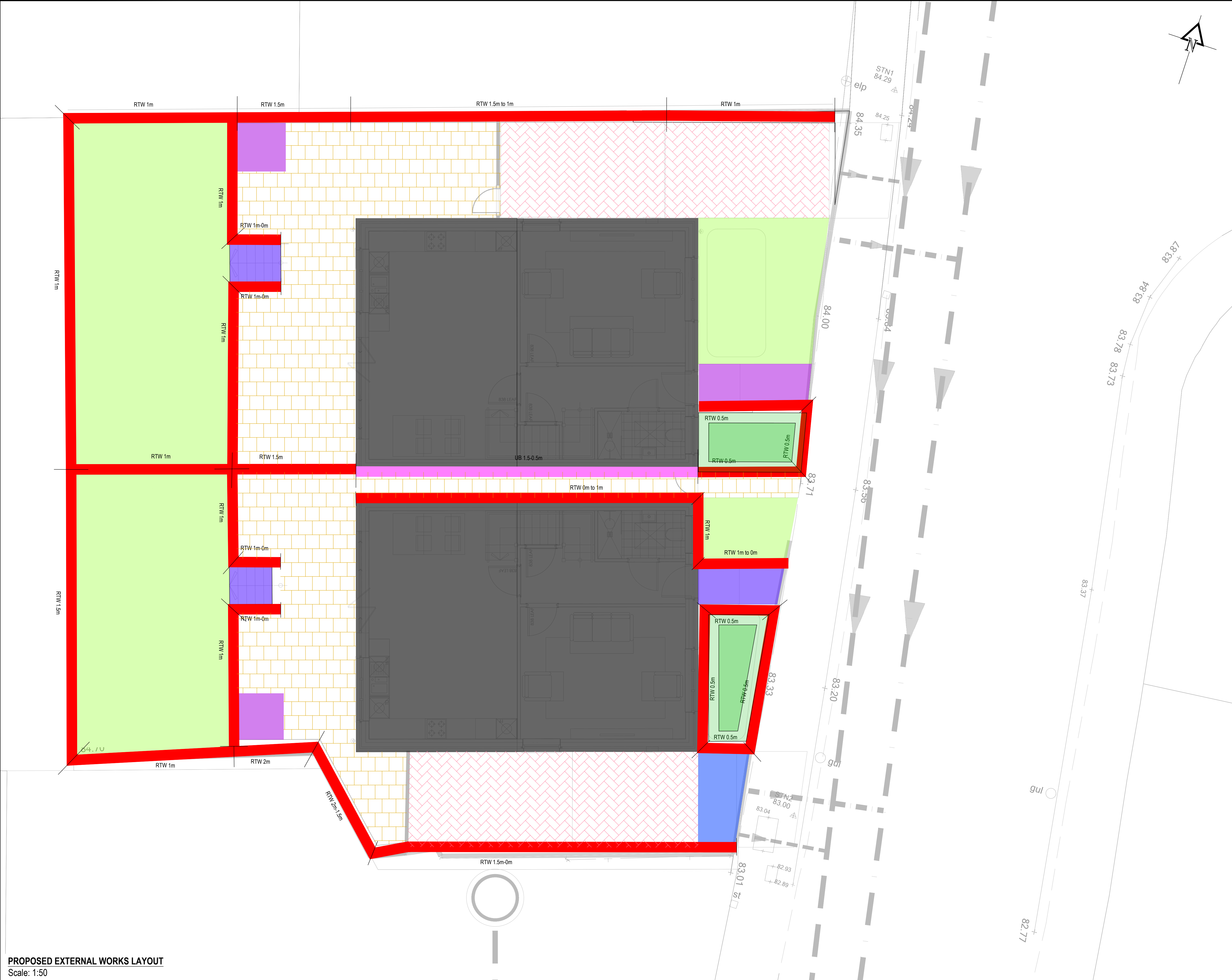

Bear Consulting
Rugged by design
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:
**DWELLINGS AT RIDGEWAY HILL,
NEWPORT**

Title:
PROPOSED SUB-CATCHMENT PLAN

Drawing Status:
FOR INFORMATION

Drawn:	Checked:	Scale(s) at A1:
WH	PC	1:50
Date:	Job No:	Drawing No:
17/01/2025	P0616	CSK08
		Revision
		A



KEY

- Proposed Structure
- Proposed Concrete Footpath
- Proposed Concrete Driveway
- Proposed Concrete Steps
- Proposed permeable block paving
- Proposed permeable slab paving
- Proposed rain garden
- Proposed soft landscaping
- Proposed Masonry Retaining Wall
- Proposed Dwelling Underbuild

Notes:

- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
- This drawing has been produced for SAB application only and is not to be used for construction.
- Exact location of all apparatus to be determined on site.
- Topographical survey was provided by the architect.
- Proposed layout was provided by the architect (Ref: LT2417.04.01 - Site Layout + Floor Plans [Revised] 4.dwg.
- Proposed external works layout shown indicatively.
- All levels and retaining features location TBC in detailed design stage.

A	09/03/26	Updated to suit revised layout	WH	PC
Rev.	Date.	Details.	By	Chk.
Amendments				



Bear Consulting
Rugged by design

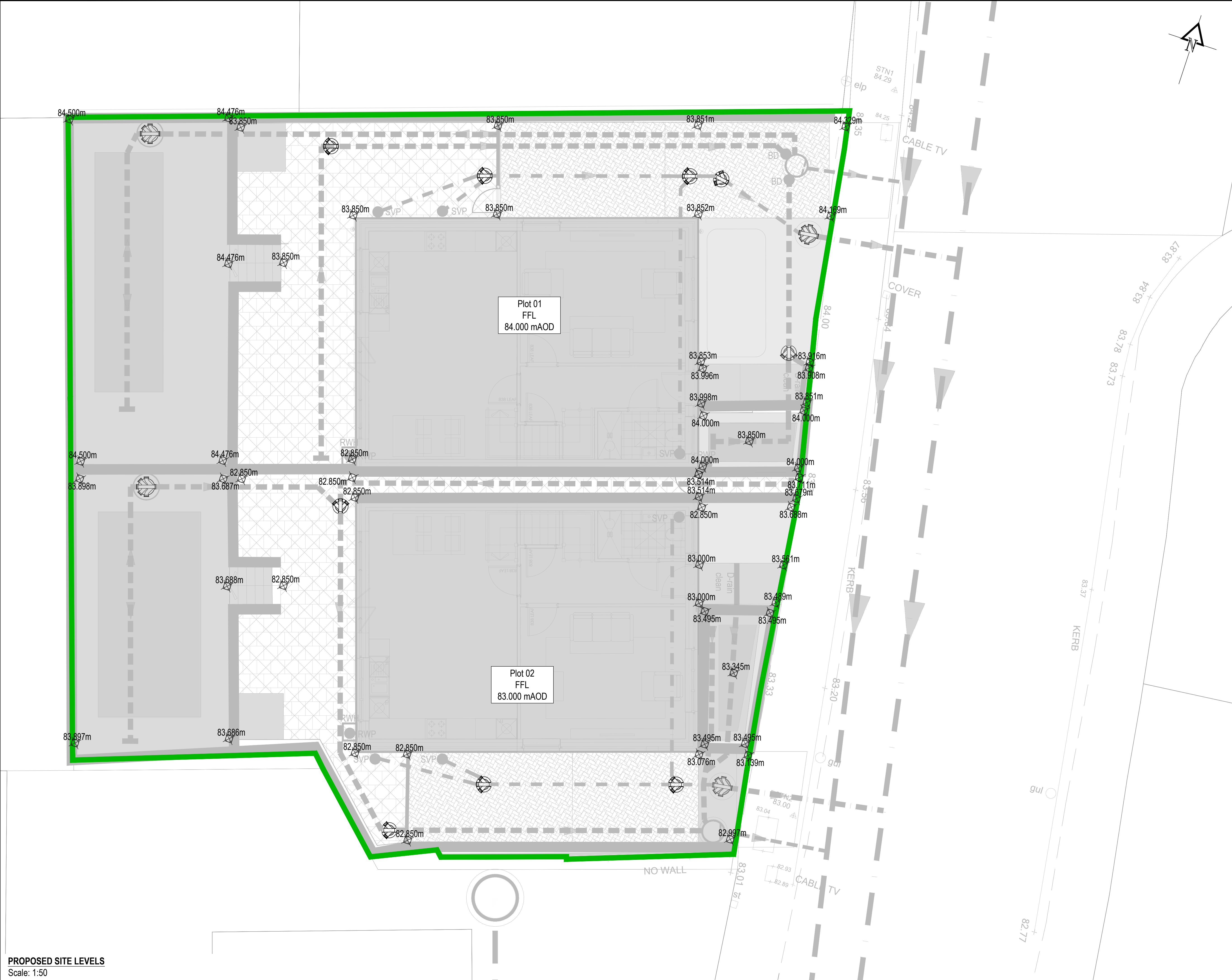
Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:
**DWELLINGS AT RIDGEWAY HILL,
NEWPORT**

Title:
PROPOSED EXTERNAL WORKS LAYOUT

Drawing Status: FOR INFORMATION			
Drawn:	Checked:	Scale(s) at A1:	
WH	PC	1:50	
Date:	Job No:	Drawing No:	Revision
14/01/2025	P0616	CSK09	A

PROPOSED EXTERNAL WORKS LAYOUT
Scale: 1:50



PROPOSED SITE LEVELS
Scale: 1:50

KEY

SAB Boundary

xx.xxxm Proposed Site Levels

All levels TBC in detailed design stage

- Notes:
1.

This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/ specifications.
2.

This drawing has been produced for SAB application only and is not to be used for construction.
3.

Exact location of all apparatus to be determined on site.
4.

Topographical survey was provided by the architect.
5.

Proposed overland flow direction shown indicatively.
6.

Proposed layout was provided by the architect (Ref: LT2417.04.01 - Site Layout + Floor Plans [Revised] 4.dwg).

A

09/03/26

Updated to suit revised layout

WH

PC

Rev.

Date.

Details.

By

Chk.

Amendments

Bear Consulting

Rugged by design

Studio 208 | Creative Quarter | Cardiff | CF10 1AF | United Kingdom

Project:

DWELLINGS AT RIDGEWAY HILL, NEWPORT

Title:

PROPOSED SITE LEVELS

Drawing Status:

FOR INFORMATION

Drawn:

Checked:

Scale(s) at A1:

WH

PC

1:50

Date:

Job No.

Drawing No.

Revision

17/01/2025

P0616

CSK11

A

