clancy consulting



Dixons Newall Green Academy, Manchester.

Drainage Maintenance Strategy.

Prepared for Morgan Sindall.

14/01/2026

FS0998-CCL-SE-8-XX-T-C-0200 Rev. C01
Status: A5

Carl Dawson
Principal Civil Engineer
[redacted]
enquiries@clancy.co.uk

Clancy Consulting Ltd.
4th Floor
Windmill Green
24 Mount Street
Manchester
M2 3NX

A5 - Construction Record (No Comments)

Dixon Newall Green Academy

Outline Drainage Maintenance Operations

This section is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details. Where proprietary products are specified, the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

Drainage components are indicated on Clancy Consulting Ltd Drainage Layout drawing reference FS0998-CCL-SE-8-XX-D-C-5200-C04.

All drainage items included within this document are private and not offered for adoption.

Client to confirm the details of person/company responsible for maintenance of drainage items. Details to be added to the below table.

Name	Company	Contact number and email

Components

The following components have been included within the drainage design for the proposed development:

- Manhole and Inspection Chambers
- Catchpit Chambers
- Linear Drains
- Gullies
- Pipework
- Attenuation Tank – KEYTEC POLYSTORM.
- Flow Control Unit – ESS AQUABRAKE.
- Bio Solar Green Roof – BAUDER.

A suitable maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

It is assumed that the maintenance of the drainage network will be the responsibility of an on-site facilities management team.

A copy of the final construction drainage layout should be provided in the final Operations and Maintenance Manual.

The surface water network has been designed to accommodate the 1 in 100 year storm rainfall event plus an allowance for climate change particular to the requirements of the site. It may be that the exceedance flows above the 1 in 30 year storm rainfall event are stored within the site partially above ground, on non-habitable external landscaping, parking or other space. As the flows are generally being attenuated on site and within SuDS features there will be a period of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken as noted below.

It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.

Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris or litter.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas such as the filter drains and the upstream/downstream chambers.

Should any oil or fuel spillages occur, these are to be cleaned up locally to prevent contaminants being washed into the surface water system by rainfall. Spillages such as these should not be washed into the drainage system.

Manholes and Inspection Chambers

Description

Manholes providing rodding and jetting access to pipe work.

Normally manholes, in similarity to inspection chambers, are designed for access by operatives. Manholes must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

It is not likely that Manholes will present maintenance issues. However, they allow both the access to the drainage infrastructure and allow visual inspection from the surface of any key maintenance issues.

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove covers and ensure that there are no blockages. Inspect and ascertain any parts that are not operating correctly and resolve.	For 3 months after installation
	Check covers do not need repairing.	Monthly
	Check drainage is running freely by inspecting manholes and inspection chambers.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate.	2 – 4 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System recovery following a pollution event • Manhole Cover replacement • Repairs to brickwork or concrete • Chanel repair	When required (tasks to repair problems due to wear, damage or vandalism)

Catchpits

Description

Catchpits are similar to manholes, however, they include a sump to the base which is designed to capture silt and prevent it reaching other parts of the drainage network. Catchpits provide a useful location to remove silt for drainage networks. Catchpits must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

If the silt captured in catchpits does not get removed regularly it will cause silt to move downstream to other part of the drainage network, some of which may be difficult to access, or totally inaccessible.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove manhole covers and ensure that there are no blockages. Inspect and identify any parts that are not operating correctly and resolve. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	For 3 months after installation
	Check covers do not need repairing. Repair/replace as required.	Monthly
	Inspect catchpits to ensure that the drainage is running freely, and free of debris. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate. Resolve any chamber structural defects, or any defects that could reduce the free flow of water.	2 – 4 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System recovery following a pollution event • Manhole Cover Replacement • Repairs to brickwork or concrete	When required (tasks to repair problems due to wear, damage or vandalism)

Linear Drains

Description

Surface Water is drained over impermeable sections towards grated, or slot-type linear drains at low points and water is carried to below ground pipework.

Maintenance Issues

Linear drains could get blocked by silt or debris, causing flooding.

Linear drains frequently include silt traps at outlets which can cause siltation of downstream drainage infrastructure if the appropriate maintenance is not undertaken.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect linear drains to make sure that there are no blockages at surface level. Remove covers to outflow boxes and check for blockages or siltation. Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation
	Inspect linear drains to make sure that there are no blockages at surface level.	Monthly
	Remove covers to outflow boxes and check for blockages or siltation.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Jetting of linear drains and suction vacuuming of outlet boxes (to Water Jetting Association standards) and CCTV where appropriate.	1 – 2 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System rehabilitation following a pollution event • Linear drain cover replacement • Chanel repair • Ensure that impermeable surfaces surrounding linear drains have not settled below top of linear drain level, causing ponding	When required (tasks to repair problems due to wear, damage or vandalism)

Gullies

Description

Surface Water is drained over impermeable areas towards grated gullies at low points and water is carried to below ground pipework.

Maintenance Issues

Gullies can become blocked by silt or debris, causing flooding.

Gullies include integral silt traps which can cause siltation of downstream drainage infrastructure if the appropriate maintenance is not undertaken.

Gullies frequently include a trapped outlet which prevents liquids lighter than water (ie oil and fuel) departing the gully. If silt and light liquids do not get removed regularly silt and oil will move downstream to other areas of the drainage network, some of which may be difficult to access, or totally inaccessible.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect to ensure that there are no blockages at surface level, and that the outfall is operating efficiently. Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation
	Check that there are no blockages at surface level.	Monthly
	Remove covers to check for blockages or siltation.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Remove oil and silt using specialist vacuum extraction plant.	1 – 2 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System rehabilitation following a pollution event • Cover replacement • Structural failure of gully pot • Ensure that impermeable surfaces surrounding linear drains have not settled below top of gully cover level, causing ponding	When required (tasks to repair problems due to wear, damage or vandalism)

Pipework

Description

Below ground drainage pipework connects drainage inlets (gullies, linear drains etc) to manholes as well as providing connections between manholes.

Maintenance Issues

Pipes could become blocked by silt, debris fat, grease, or collapse. In addition, it's possible for pipe joints to become displaced or for roots to grow from the surrounding ground into the pipes.

These factors can cause a reduction in, or loss of, the hydraulic capability of the pipes which could cause flooding to land and buildings.

Defects in pipes could cause a reduction in stability to ground underlying foundations, thus, causing settlement and damage to buildings and external surfaces.

The material of pipes and associated couplings can be damaged if aggressive liquids are passed through the pipes.

It is recommended that trees are not planted within 3m of pipes to reduce the risk of root ingress.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation.
	Monitor working of drainage at ground level. The indications damaged pipework's may include localised flooding or emission of smells.	Monthly
	Remove manholes covers to check for blockages.	Every 6 months
Occasional maintenance	CCTV pipework, clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	• Silt removal. • Fat and Grease removal. • Erosion repairs. • Joint displacement. • Structural failure, cracking or collapse. • System rehabilitation following a pollution event.	When required (tasks to repair problems due to wear, damage or vandalism)

Geocellular Attenuation Storage – POLYSTORM PSM1A

Description

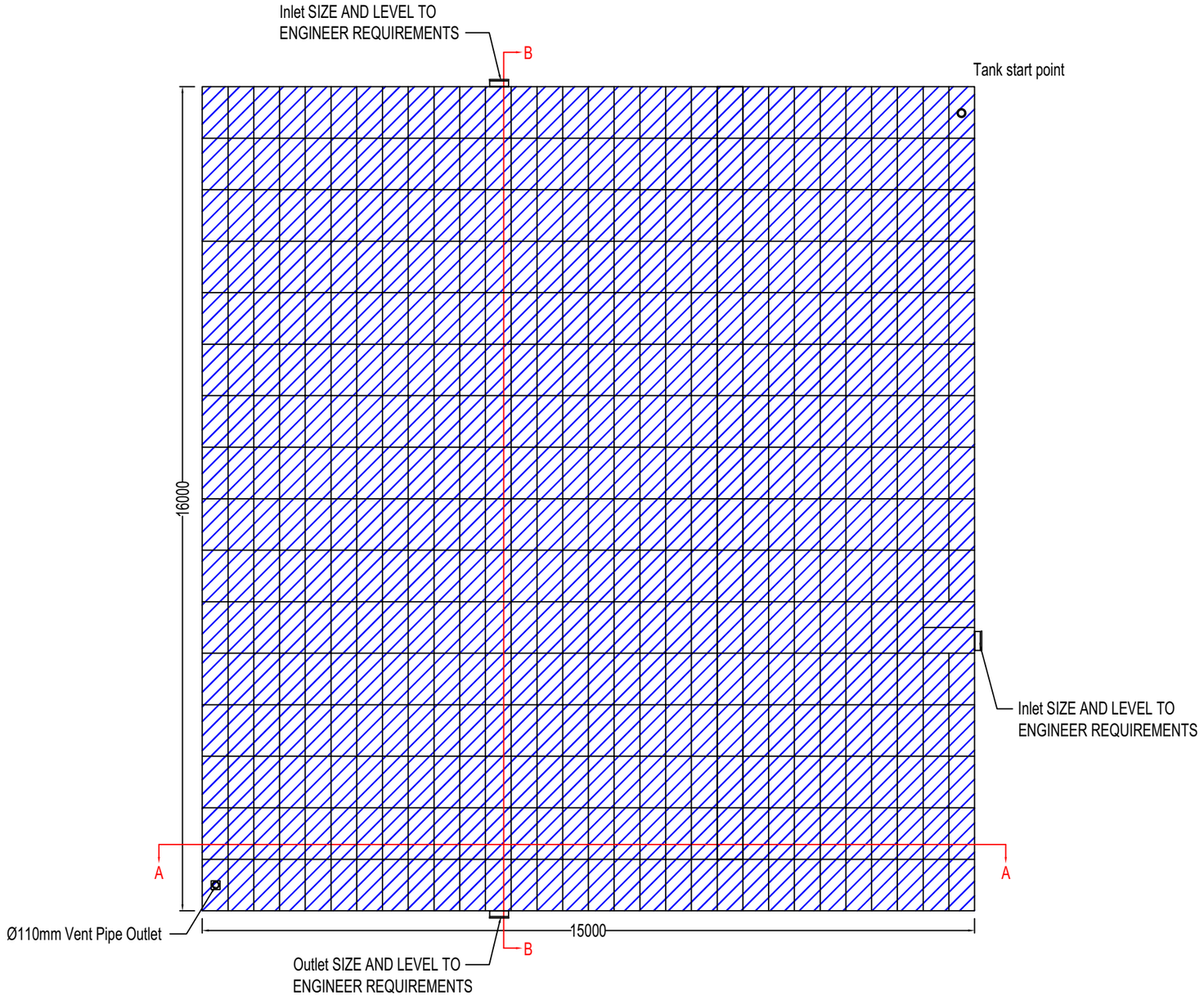
Attenuation storage tanks are used to create a below-ground space for the temporary storage of surface water before infiltration, controlled release or use. Geocellular storage crates are advantageous as they allow for spatial versatility as opposed to in situ concrete tanks.

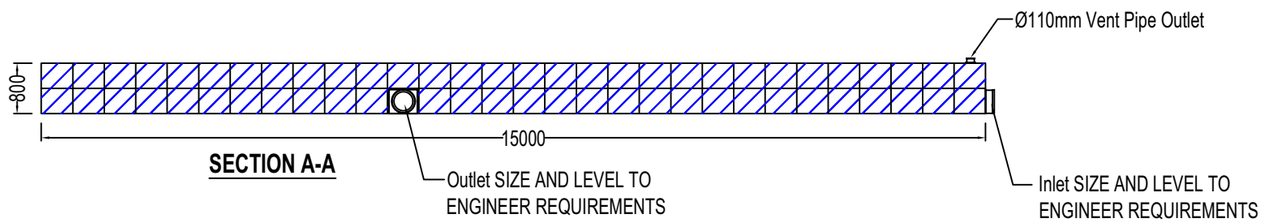
Maintenance Issues

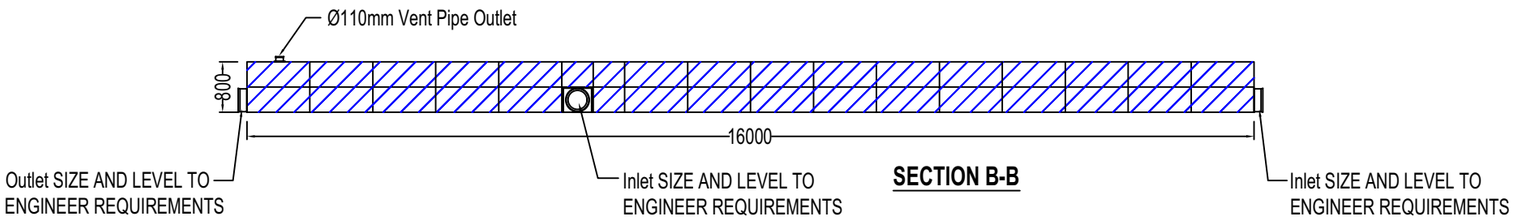
For Geocellular attenuation tanks typical issues relate to the build-up of silt within the tank, causing a decrease in capacity over time.

Maintenance Regime

Schedule	Action Required	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. Take remedial action as appropriate	For 3 months after installation, then annually.
	Remove debris from the catchment surface (where it may cause a risk to performance)	Monthly
	For systems where rainfall infiltrate into the tank from above, check surface of filter for blockage by sediment, algae or other matter. Remove blockage and replace surface infiltration medium as appropriate.	Annually
	Remove Sediment from pre-treatment structures and/or internal forebays.	Annual, or as needed
Remedial Actions	Repair/rehabilitate inlets, outlets, overflows and vents.	As needed
Monitoring	Check all inlets, outlets, vents and overflows to ensure that they are working as designed.	Annually
	Survey inside of tank for sediment build-up and remove as appropriate.	Every 5 years or as needed.



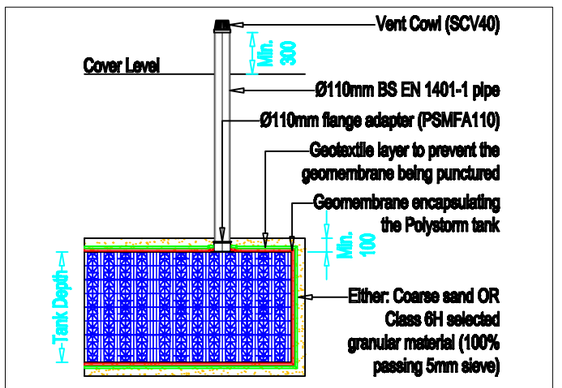




PROPOSED POLYSTORM STRUCTURE	
Plan Area	240m²
Tank Volume	192m³
Storage	182.4m³
Polystorm-R Units	960 (PSM1A)

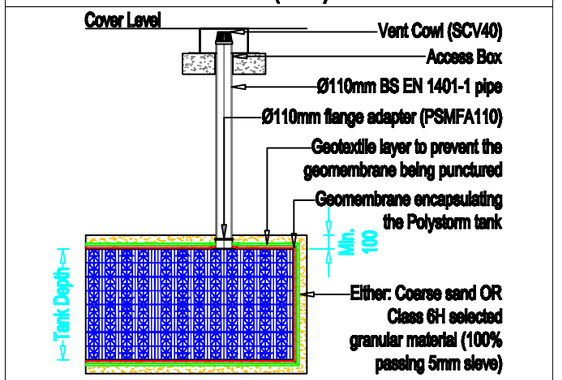
LEGEND:

Polystorm-R Units (PSM1A)



ATTENUATION TANK VENTILATION SYSTEM - OPTION 1)

Scale (N.T.S)



ATTENUATION TANK VENTILATION SYSTEM - OPTION 2)

Scale (N.T.S)

NOTES:-

1. THIS DRAWING DETAILS A PROPOSED POLYPIPE CIVILS & GREEN URBANISATION PRODUCT GENERAL ARRANGEMENT, REFLECTING OUR INTERPRETATION OF THE INFORMATION PROVIDED.
2. POLYPIPE CIVILS & GREEN URBANISATION (PCGU) PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH PCGU RECOMMENDATIONS (REFER TO PCGU TECHNICAL GUIDANCE FOR FURTHER INFORMATION); GIVING DUE CONSIDERATION TO THE SITE SPECIFIC CONDITIONS AND REQUIREMENTS, IN ADDITION TO ANY REQUIREMENTS MANDATED BY THE RELEVANT APPROVING AND ULTIMATE OWNER ORGANISATIONS).
3. DO NOT SCALE, REFER TO FIGURED DIMENSIONS ONLY.
4. ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE STATED.
5. ALL DIMENSIONS ARE NOMINAL AND MAY VARY WITHIN MANUFACTURING OR CONSTRUCTION TOLERANCES.
6. ALL SITE TEMPORARY AND ENABLING WORKS BY OTHERS.
7. THIS DRAWING IS INTENDED FOR GUIDANCE ONLY. CONFIRMATION OF THE INFORMATION CONTAINED WITHIN THIS DOCUMENT SHOULD BE SOUGHT FROM THE OVERSEEING ENGINEER(S) PRIOR TO THE COMMENCEMENT OF FINAL DESIGN OR CONSTRUCTION ACTIVITIES.
8. PLEASE REFER TO POLYSTORM & POLYSTORM LITE TECHNICAL GUIDE.
9. THE PROPOSED POLYSTORM STRUCTURE GENERAL ARRANGEMENT HAS BEEN BASED ON PROVIDING THE MINIMUM STRUCTURE VOLUME STATED ONLY. NO STRUCTURAL OR HYDRAULIC ASSESSMENT HAS BEEN MADE OF THE SUITABILITY OF THE PROPOSED POLYSTORM STRUCTURE FOR THE PROPOSED APPLICATION, NOR HOW IT WILL INTEGRATES INTO THE PROPOSED DRAINAGE SYSTEM.
10. ALL MEMBRANE JOINTS TO BE WELDED RATHER THAN GLUED.

Notes :- All the Dimensions by Millimeters

KEYTEC INSTALLATION SERVICES

KEYTEC INSTALLATION SERVICES
ROYLE HOUSE
COWM TOP BUSINESS PARK
COWM TOP LANE
OL11 2PU
TEL: 01706 374416
EMAIL: TECHNICAL@KEYTEC.CO.UK

PROJECT	DIXON NEWALL GREEN ACADEMY ATTENUATION TANK
TITLE	DETAILS OF ATTENUATION/STORAGE TANK DETAILS USING POLYSTORM PSM1A UNITS.
Scale	N.T.S.
Drawn	AY
Checked	KD
Date	14/06/2024
Drawing No.	PSM - 2.0
Revision	R0

© Copyright

A5 - Construction Record (No Comments)

Polystorm-R Modular Cell

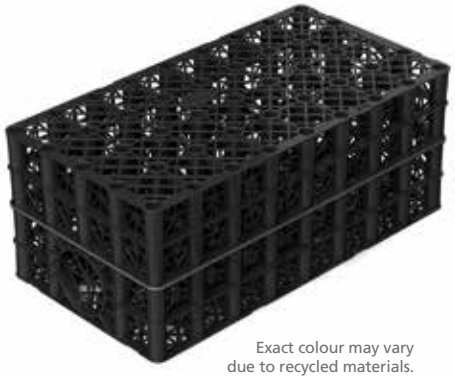
Data Sheet

PRODUCT INFORMATION **P1** **ISSUE 4 - SEPT 2017**

Product code: PSM1A

The Polystorm-R modular cell is ideally suited for loaded applications at greater depths, such as housing, commercial and infrastructure projects and has a compressive strength of up to 61 tonnes/m². It offers all the proven performance of the Polystorm cell, with the added benefits of being manufactured from over 90% recycled material content.

Wherever performance criteria and standards allow, we will always maximise the sustainability of our products by using post consumer plastics in their manufacture. By sourcing and carefully controlling the quality of the recycled material we use our precision injection moulding. Therefore we are able to guarantee consistent quality in our recycled plastic, giving you the confidence and the performance levels you expect from the market leader.



Exact colour may vary due to recycled materials.

Key Benefits

- Made from specially selected and controlled recycled materials
- Environmentally friendly, sustainable solution
- Has undergone stringent testing to ensure product performance
- Compressive strength of 61 tonnes/m²
- Ideal for retention, attenuation and infiltration applications with a suitable geomembrane or geotextile
- BBA approved
- Allow flexibility of shape - ideal for shallow excavation systems, narrow strips or use in restricted areas
- Can be used as part of a value engineered hybrid system with Polystorm, Polystorm Lite and Polystorm Xtra
- Integrated inlet and outlet
- 3D flow throughout the structure
- 95% void ratio
- Light weight yet robust - excellent Health and Safety and installation benefits
- 60 years creep limited life expectancy

Technical Support

Detailed guidance and assistance is available.
For further information, please contact our Technical Team on **+44 (0) 1509 615100** or email **civils@polypipe.com**

BBA BRITISH BOARD OF AGREMENT
CERTIFICATE No. 06/4297

ELEMENT	VALUE
PHYSICAL PROPERTIES	
Length	1m
Width	0.5m
Depth	0.4m
Total volume	0.2m³
Unit weight	9kg (approx)
Unit storage volume	0.19m³ (190 litres)
Void ratio	95%
SHORT TERM COMPRESSIVE STRENGTH	
Vertical	610 kN/m² **
Lateral	63 kN/m² **
SHORT TERM DEFLECTION	
Short-term vertical deflection	60 kN/m² per mm
LONG TERM DEFLECTION	
Estimated long term vertical deflection (creep)	0.2798 Ln (design life in hrs) +0.485 [Based on an applied test load = 162 kN/m²] Creep data limit 60 years
Estimated long term lateral deflection (creep)	1.0192 Ln (design life in hrs) -3.864 [Based on an applied test load = 30.8 kN/m²] Creep data limit 60 years

Note: Polystorm-R is ideal for use in trafficked and pedestrian applications subject to a structural design check and suitable installation conditions

* Each unit includes 4 Clips and 2 Shear Connectors.

** Compressive strength at yield, maximum recommended value for design purposes.

Polypipe Civils
Charnwood Business Park, Loughborough, Leicestershire LE11 1LE
Tel: +44 (0) 1509 615100 Fax: +44 (0) 1509 610215 Email: civils@polypipe.com
www.polypipe.com/wms

Polypipe

A5 - Construction Record (No Comments)

Polystorm-R Modular Cell

Data Sheet

PRODUCT INFORMATION **P2** **ISSUE 4 - SEPT 2017**

RECOMMENDED MAXIMUM DEPTH OF INSTALLATION (to cell invert) [m]

TYPICAL SOIL TYPE	TYPICAL ANGLE OF SHEAR RESISTANCE	SOIL WEIGHT kN/m³	WITHOUT GROUNDWATER (below base of cells) NORMAL CASE		WITH GROUNDWATER AT 1M BELOW GROUND LEVEL AND UNITS WRAPPED IN GEOMEMBRANE	
			Pedestrian	Trafficked (cars) <3000kg GVW	Pedestrian	Trafficked (cars) <3000kg GVW
Stiff over consolidated clay e.g. London clay	24	20.0	2.2	1.9	1.8	1.6
Normally consolidated silty sandy clay e.g. alluvium, made ground	26	19.0	2.4	2.2	1.9	1.7
Loose sand and gravel	30	18.0	3.0	2.7	2.0	1.9
Medium dense sand and gravel	33	19.0	3.2	2.9	2.0	1.9
Dense sand and gravel	38	20.0	3.7	3.5	2.1	2.0

Note:
1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)
2) Assuming water density = 10.0kN/m³
3) Assumed ultimate limit state (ULS) partial factor of safety applied to: Material = 2.75 Lateral pressure = 1.35

Durability

The polymer material used in the manufacture of the Polystorm-R unit has an adequate resistance to attack from the type and quantities of chemicals that may be expected to naturally occur in uncontaminated soils and rainwater runoff. When installed in accordance with our recommendations, it is expected that the Polystorm-R unit will have a design life in excess of 60 years*. The installer of a proposed geocellular structure should ensure that an appropriate design check has been undertaken, in accordance with the recommended methodology and factors of safety given in CIRIA C680 (2008), Structural Design of Modular Geocellular Drainage Tanks, prior to the commencement of construction activities.

* Derived from long term extrapolated creep testing

Notes

1. Unless stated, all values are nominal and may vary within normal production tolerances.
2. The characteristic unit parameters stated have been based on Polypipe BBA certificate N° 06/4297, sheet 3.
3. Polypipe reserve the right to change product specifications without prior notice.
4. This document is uncontrolled and updates will not be issued automatically.

RECOMMENDED MINIMUM COVER LEVELS [m]

LIVE LOAD CONDITIONS	PEDESTRIAN	LIGHT TRAFFICKED	
		Car park with vehicle mass <GVW	
Minimum cover depth required (m)	0.50	<3000kg 0.50	<9000kg 0.65

Note
1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)
2) Assumed serviceability limit state (SLS) partial factor of safety applied to: Material = 1.5 Live load = 1.0 Dead load = 1.0
3) Shallower minimum burial depths may be applicable subject to an assessment of the specific site conditions. For further details please consult our Technical Team on 01509 615100.

All descriptions and illustrations in this publication are intended for guidance only and shall not constitute a 'sale by description'. All dimensions given are nominal and Polypipe may modify and change the information, products and specifications from time to time for a variety of reasons, without prior notice. The information in this publication is provided 'as is' on September 2017. Updates will not be issued automatically. This information is not intended to have any legal effect, whether by way of advice, representation or warranty (express or implied). We accept no liability whatsoever (to the extent permitted by law) if you place any reliance on this publication you must do so at your own risk. All rights reserved. Copyright in this publication belongs to Polypipe and all such copyright may not be used, sold, copied or reproduced in whole or part in any manner in any media to any person without prior consent. Polypipe is a registered trademark of Polypipe. All Polypipe products are protected by Design Right under CDPA 1988. Copyright © 2016 Polypipe. All rights reserved.

Polypipe Civils
Charnwood Business Park, Loughborough, Leicestershire LE11 1LE
Tel: +44 (0) 1509 615100 Fax: +44 (0) 1509 610215 Email: civils@polypipe.com
www.polypipe.com/wms

Polypipe

A5 - Construction Record (No Comments)

Vortex Controls – ESS TYPE3 AQUABRAKE

Description

Vortex controls are installed in some manholes to limit the rate of flow. Vortex controls are normally constructed in steel and installed in a manhole with a sump.

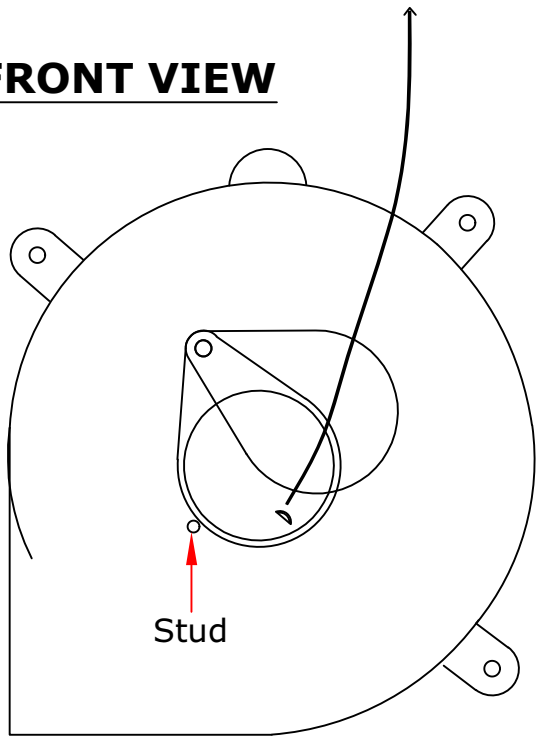
Maintenance Issues

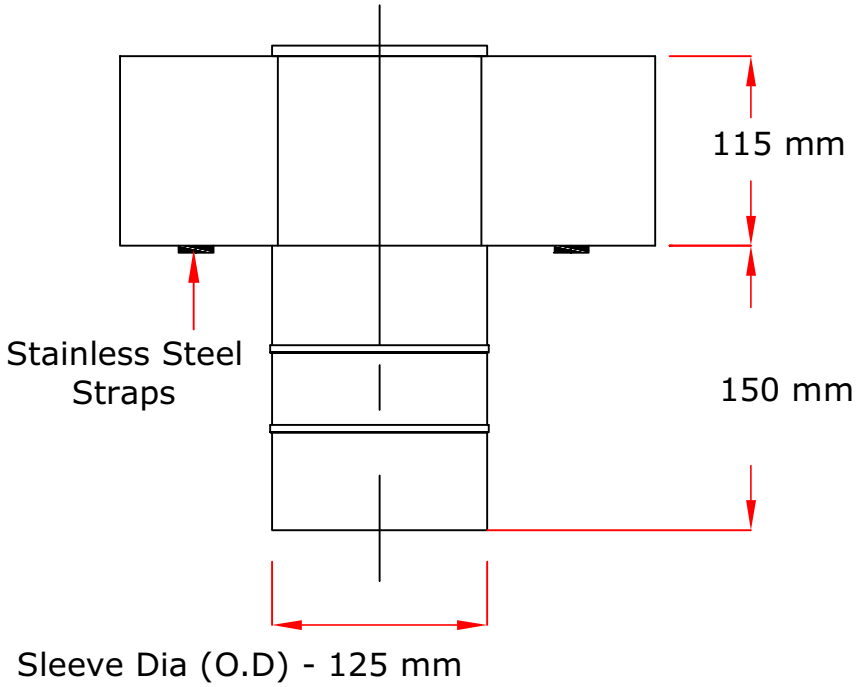
Vortex controls could become blocked by debris, plastic bags or other sheet material. If silt is allowed to build up in the sump the operation of the device could be impeded causing flooding upstream.

Maintenance Regime

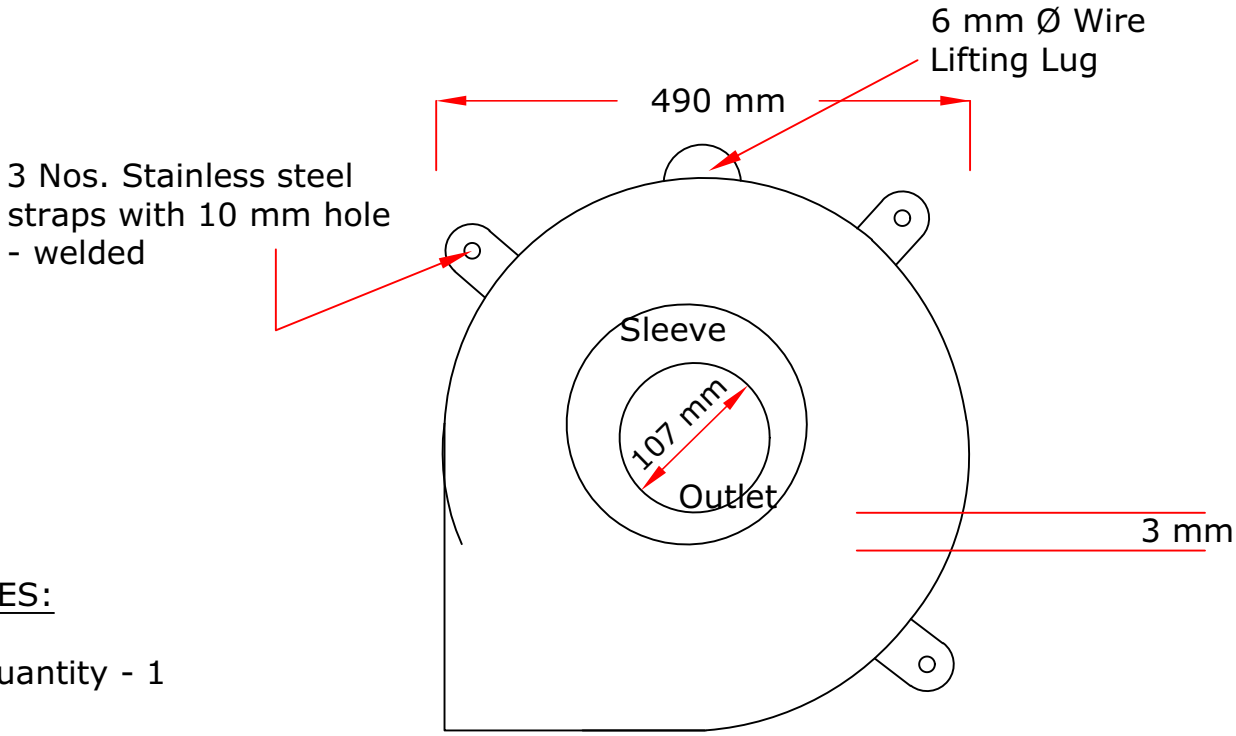
Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Check manufacturer's specification. Inspect and identify any parts that are not operating, consult supplier and remediate as required.	For 3 months after installation
	Monitor working of drainage at ground level. Where localised flooding occurs, check the condition of all system elements.	Monthly
	Remove manholes covers to check for blockages. Remove sediment from pre-treatment structures, gullies, catchpits etc.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	Inspect, and remedy to ensure that the features are in fully working order.	As required (tasks to repair problems due to wear, damage or vandalism).

FRONT VIEW





TOP VIEW



NOTES:

1. Quantity - 1
2. Outlet - 107 mm
3. All welds continuous, unless otherwise noted

SECTION VIEW

ENVIRONMENTAL SUSTAINABLE SOLUTIONS LTD

SOLUTIONS HOUSE
DANE STREET
ROCHDALE
OL11 4EZ
TEL: 01706 374416
FAX 01706 376785

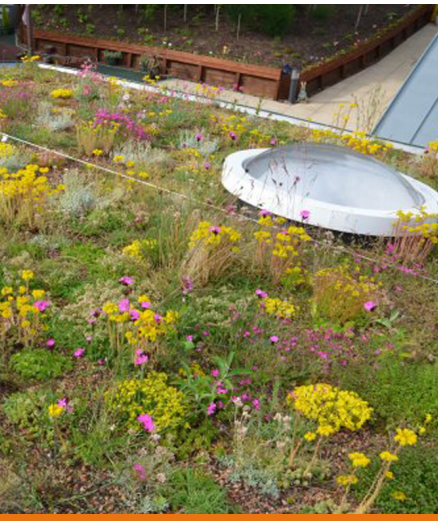
FLUIDIC-AMP AQUABRAKE STAINLESS STEEL STRAP ATTACHMENT FABRICATION DRAWING		HEAD 0.92 m DISCHARAGE 5.0 lts/sec (ESS-TYPE3)	
DATE 10/03/2022	DRAWN MI	NAME:	
SCALE N.T.S.	CHECKED AY	JOB No.	REVISION No. R0

BAUDER
making roofs secure.

General Maintenance Wildflower / Biodiverse Systems

WB blanket, Bauder Flora seed mixes and wildflower plug planted systems







Revision: V1 February 2022

General maintenance procedures

Bauder biodiverse green roof systems

These practises should be carried out annually as part of a structured maintenance regime.

General Maintenance

Maintenance is necessary to keep biodiverse green roof systems in good condition. After installation, regular watering and minor upkeep will be needed until the planting has rooted into the growing medium and adapted to its location. The level of ongoing maintenance will depend on the species of vegetation included and the purpose for which it was initially installed. Whilst the intent may have been a naturalised biodiverse roof, this can cause problems with the build-up of dead or unwanted vegetation and its potential fire risks if not correctly maintained.

Bauder biodiverse green roofs include a selected species mix to provide a balanced plant community on the roof. They are currently installed to meet BREEAM or Biodiversity Net Gain targets and require maintenance to remain sustainable. Maintenance is best carried out annually, during springtime and in late autumn. This may include strimming and the removal of dead organic matter.

Please note: Designated biodiverse areas should be disturbed as little as possible during maintenance to minimise the upset of any micro-habitats that may have colonised.

Preliminary Maintenance Procedures

The following procedures should be carried out in order to ensure the roof is maintained in good condition and to protect the validity of the waterproofing system guarantee:

- Ensure that relevant health and safety procedures are followed when working at roof level, this includes making sure that safe access can be gained to the roof. It is advised that the contractor should always seek proof of current maintenance for any man-safe roof access systems prior to proceeding with the work on site.
- Ensure all dead vegetation is removed with a strimmer and provision made for the debris to be safely lowered to the ground and disposed of.
- Bauder recommends removing unwanted leaf litter that has fallen onto the roof surface from overhanging trees both in the spring and autumn, to ensure that this does not smother the vegetation beneath.
- Remove the lids of all inspection chambers, ensure that all rainwater outlets and downpipes are free from blockages and that water can flow freely away.
- Ensure that any protective metal flashings and termination bars remain securely fixed in place. Renew or repair as necessary.
- Examine all mastic sealant and mortar pointing for signs of degradation. Repair or replace as necessary.
- Check that all promenade tiles and paving slabs remain in position, secure and in good condition.
- Ensure that any new items of plant/equipment that may have been introduced to the roof are mounted on suitable isolated slabs and that any fixings used to secure the plant/equipment in place do not penetrate the waterproofing. If in doubt, please contact Bauder for further advice.
- The building owner should keep a record of all inspections and maintenance carried out on the roof. Any signs of damage, contamination or degradation to the waterproofing should be reported to Bauder immediately, in order for arrangements to be made to carry out remedial work if necessary.
- When carrying out any maintenance to adjoining roof areas, care must be taken not to damage either the green roof landscaping or the waterproofing system. If considered that either element has been effected, Bauder should

Revision: V1 February 2022

General maintenance procedures

Bauder biodiversity green roof systems

be contacted for advice. Any waterproofing damage caused after completion of the original installation may invalidate the guarantee.

- Any unauthorised alterations to the waterproofing system will invalidate the guarantee. If such a situation should arise, Bauder should be contacted to advise on the alteration and how it should be incorporated without effecting the guarantee.

Plant Related Maintenance Tasks

Plant encroachment

- Any vegetation which has invaded into drainage outlets, inspection chambers, walkways and the vegetation barriers (pebbles) should be removed. Additional washed stoned pebbles, similar to existing, can be added if movement or settlement of the pebble vegetation barrier has occurred.

Plant Maintenance

In the absence of a management plan for the green roof, the following activities should be carried out:

Maintenance of the Bauder Native Wildflower Planting

- In the late autumn the vegetation should be strimmed back to a height of 50-70mm and unwanted waste matter raked up and removed.
- To promote growth, an application of 80mg/m² of slow release organic fertiliser to the vegetation may be required.

Weeding

- In a biodiverse green roof, with the exception of saplings which should always be removed, weeds are only consid -ered as an aesthetic problem. If weeds become invasive, they can be manually removed.

Irrigation

- The need for irrigation in a biodiverse green roof system is determined through a client's visual requirements of the vegetation.
- If it is intended that the roof should have colour and interest for the longest period through the growing season, then irrigation will significantly aid in achieving this. Should the requirement be only to deliver biodiversity, then the provision of sufficient watering points at roof level to allow for only occasional watering in periods of prolonged drought can be considered sufficient.

Support

Modern biodiversity green roof installations will normally require only minimal maintenance. Bauder is happy to offer advice on any green roof challenges. Enquiries should be forwarded to the Technical Department at the address below.

Please note: In the event of any query arising which it is thought may affect the condition of the system, then contact Bauder. Bauder cannot accept responsibility for any problem or failure due to use outside those parameters for which the system was designed or 'acts of god' beyond our control e.g. extreme weather conditions or damage through pests.

Bauder Limited
70 Landseer Road, Ipswich, Suffolk, IP3 0DH
bauder.co.uk

Bauder Limited
O'Duffy Centre, Carrickmacross, Co.Monaghan
bauder.ie

A5 - Construction Record (No Comments)

Revision: V1 February 2022

General maintenance procedures

Bauder biodiversity green roof systems

Bauder Green Roof Maintenance Service

Green roof maintenance service is carried out by Bauder's preferred maintenance providers. These experienced green roof maintenance companies have worked closely with Bauder carrying out maintenance services throughout mainland Britain for several years.

A typical maintenance programme includes:

- **Roof evaluation** - a comprehensive review of a Bauder green roof to determine what remedial work, if any, needs to be completed.
- **Removal of weeds and unwanted items** - over time a green roof can become congested with leaves, debris and other unwanted vegetation, which can be removed.
- **Inspection** - examination of roof outlets and removal of any encroaching vegetation to enable water to flow freely to rainwater pipes.
- **Application of fertiliser** - to help restore a green roof to its best, an organic slow release granular fertiliser will encourage growth.
- **Testing** - after all work has been performed, the irrigation system will be examined to ensure it works as expected.

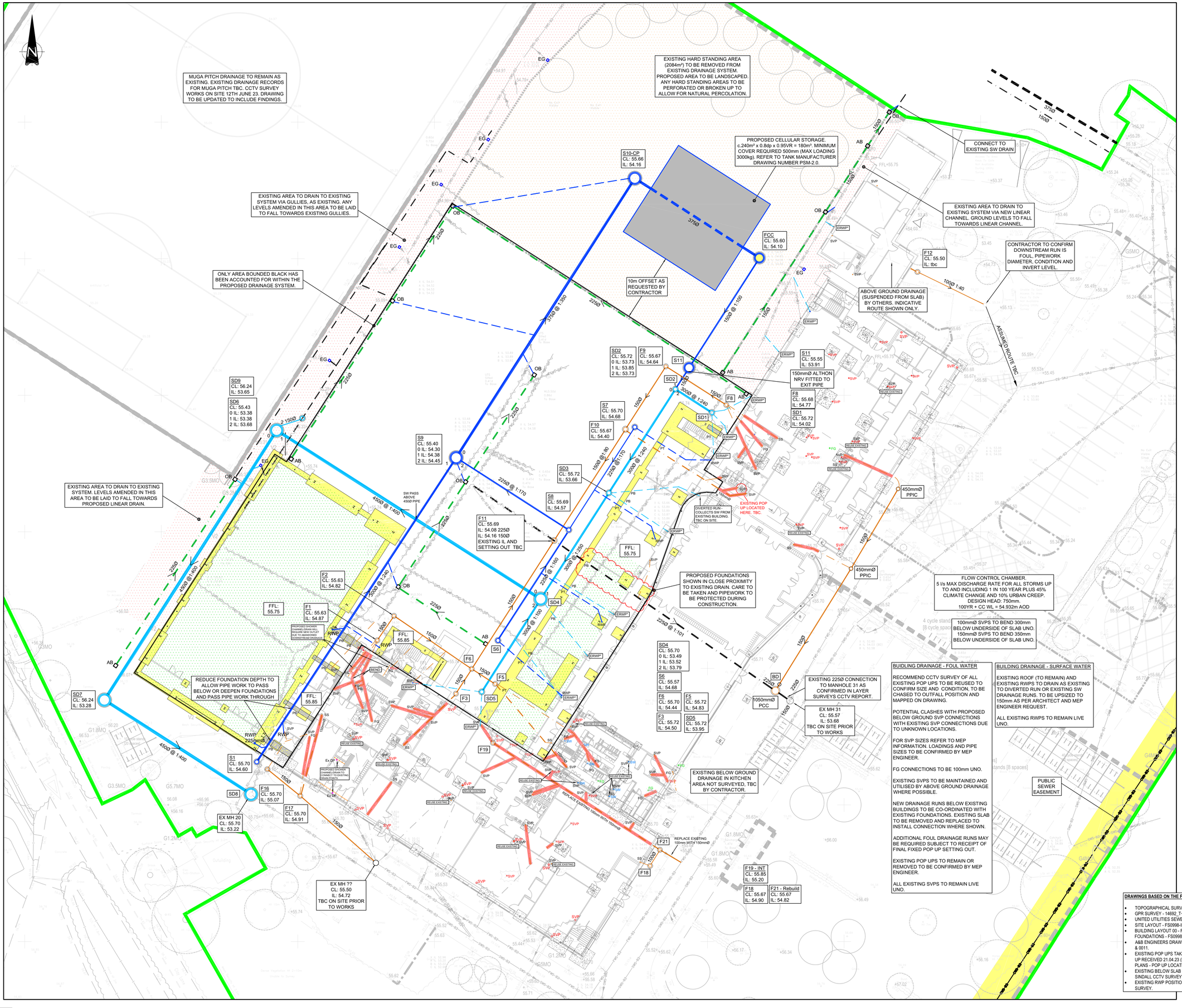
This work can be undertaken by the companies detailed below, who directly manage the maintenance of green roofs and will cover all aspects of the service from quotations through to invoicing. Bauder and our preferred suppliers are committed to the arrangement and will ensure a continued high standard of expert care and advice for our customers.

Green roof maintenance contractors currently recommended to maintain green roof elements for the Bauder system

Green Maintenance in England and Wales:
The Urban Greening Company
Mr Mike Cottage
[redacted] Ridgeway
Marlow
Buckinghamshire
SL7 3LH
[redacted]
tugc.co.uk

Green Maintenance in Scotland:
Urban Utopia Landscapes
Mr Gavin Gale
[redacted]
Edinburgh
Lothian
EH5 3DW
0800 061 4353
office@urbanutopialandscapes.com
urbanutopialandscapes.com

If you would like Bauder to forward your details to one of the preferred maintenance companies, please email [redacted] giving the details of the green roof and contact information with explicit permission for your details to be shared with the preferred supplier.


MUGA PITCH DRAINAGE TO REMAIN AS EXISTING. EXISTING DRAINAGE RECORDS FOR MUGA PITCH TBC. CCTV SURVEY WORKS ON SITE 12TH JUNE 23. DRAWING TO BE UPDATED TO INCLUDE FINDINGS.
EXISTING HARD STANDING AREA (2084m²) TO BE REMOVED FROM EXISTING DRAINAGE SYSTEM. PROPOSED AREA TO BE LANDSCAPED. ANY HARD STANDING AREAS TO BE PERFORATED OR BROKEN UP TO ALLOW FOR NATURAL PERCOLATION.
PROPOSED CELLULAR STORAGE. c.240m² x 0.8dp x 0.95VR = 180m³. MINIMUM COVER REQUIRED 500mm (MAX LOADING 3000kg). REFER TO TANK MANUFACTURER DRAWING NUMBER PSM-2.0.
CONNECT TO EXISTING SW DRAIN
EXISTING AREA TO DRAIN TO EXISTING SYSTEM VIA GULLIES, AS EXISTING. ANY LEVELS AMENDED IN THIS AREA TO BE LAID TO FALL TOWARDS EXISTING GULLIES.
EXISTING AREA TO DRAIN TO EXISTING SYSTEM VIA NEW LINEAR CHANNEL. GROUND LEVELS TO FALL TOWARDS LINEAR CHANNEL.
ONLY AREA BOUNDED BLACK HAS BEEN ACCOUNTED FOR WITHIN THE PROPOSED DRAINAGE SYSTEM.
10m OFFSET AS REQUESTED BY CONTRACTOR
CONTRACTOR TO CONFIRM DOWNSTREAM RUN IS FOUL, PIPEWORK DIAMETER, CONDITION AND INVERT LEVEL.
ABOVE GROUND DRAINAGE (SUSPENDED FROM SLAB) BY OTHERS. INDICATIVE ROUTE SHOWN ONLY.
ASSUMED ROUTE TBC
150mmØ ALTHON NRV FITTED TO EXIT PIPE
EXISTING AREA TO DRAIN TO EXISTING SYSTEM. LEVELS AMENDED IN THIS AREA TO BE LAID TO FALL TOWARDS PROPOSED LINEAR DRAIN.
SW PASS ABOVE 450Ø PIPE
DIVERTED RUN - COLLECTS SW FROM EXISTING BUILDING. TBC ON SITE.
EXISTING POP UP LOCATED HERE. TBC.
450mmØ PPIC
PROPOSED FOUNDATIONS SHOWN IN CLOSE PROXIMITY TO EXISTING DRAIN. CARE TO BE TAKEN AND PIPEWORK TO BE PROTECTED DURING CONSTRUCTION.
FLOW CONTROL CHAMBER. 5 l/s MAX DISCHARGE RATE FOR ALL STORMS UP TO AND INCLUDING 1 IN 100 YEAR PLUS 45% CLIMATE CHANGE AND 10% URBAN CREEP. DESIGN HEAD: 750mm. 100YR + CC WL = 54.932m AOD
100mmØ SVPS TO BEND 300mm BELOW UNDERSIDE OF SLAB UNO. 150mmØ SVPS TO BEND 350mm BELOW UNDERSIDE OF SLAB UNO.
REDUCE FOUNDATION DEPTH TO ALLOW PIPE WORK TO PASS BELOW OR DEEPEN FOUNDATIONS AND PASS PIPE WORK THROUGH
EXISTING 225Ø CONNECTION TO MANHOLE 31 AS CONFIRMED IN LAYER SURVEYS CCTV REPORT.
EX MH 31 CL: 55.57 IL: 53.68 TBC ON SITE PRIOR TO WORKS
EXISTING BELOW GROUND DRAINAGE IN KITCHEN AREA NOT SURVEYED, TBC BY CONTRACTOR.
PUBLIC SEWER EASEMENT
EX MH 20 CL: 55.70 IL: 53.22
EX MH ?? CL: 55.50 IL: 54.72 TBC ON SITE PRIOR TO WORKS
REPLACE EXISTING 100mm WITH 150mmØ
REPLACE EXISTING 100mm WITH 150mmØ
S10-CP CL: 55.66 IL: 54.16
FCC CL: 55.60 IL: 54.10
F12 CL: 55.50 IL: tbc
S11 CL: 55.55 IL: 53.91
SD2 CL: 55.72 0 IL: 53.73 1 IL: 53.85 2 IL: 53.73
F9 CL: 55.67 IL: 54.64
F8 CL: 55.68 IL: 54.77
SD1 CL: 55.72 IL: 54.02
S7 CL: 55.70 IL: 54.68
F10 CL: 55.67 IL: 54.40
SD9 CL: 56.24 IL: 53.65
SD6 CL: 55.43 0 IL: 53.38 1 IL: 53.38 2 IL: 53.68
S9 CL: 55.40 0 IL: 54.30 1 IL: 54.38 2 IL: 54.45
SD3 CL: 55.72 IL: 53.66
S8 CL: 55.69 IL: 54.57
F11 CL: 55.69 IL: 54.08 225Ø IL: 54.16 150Ø EXISTING IL AND SETTING OUT TBC
F2 CL: 55.63 IL: 54.82
F1 CL: 55.63 IL: 54.87
FFL: 55.75
FFL: 55.85
SD4 CL: 55.70 0 IL: 53.49 1 IL: 53.52 2 IL: 53.79
S6 CL: 55.57 IL: 54.68
F6 CL: 55.70 IL: 54.44
F6 CL: 55.72 IL: 54.83
F3 CL: 55.72 IL: 54.50
SD5 CL: 55.72 IL: 53.95
SD7 CL: 56.24 IL: 53.28
S1 CL: 55.70 IL: 54.60
SD8
F16 CL: 55.70 IL: 55.07
F17 CL: 55.70 IL: 54.91
F19 - INT CL: 55.85 IL: 55.20
F18 CL: 55.67 IL: 54.90
F21 - Rebuild CL: 55.67 IL: 54.82
1050mmØ PCC
PROPOSED SHOWER CHANNEL DRAIN TO REPLACE NEW OUTLET DUE TO ABANDONED DOWNSTREAM DRAINAGE
PROPOSED SHOWER CHANNEL DRAIN TO CONNECT TO EXISTING DRAIN POINTS
Ex DP
Ex DP
EXISTING AREA TO DRAIN TO EXISTING SYSTEM VIA NEW LINEAR CHANNEL. GROUND LEVELS TO FALL TOWARDS LINEAR CHANNEL.
4 cycle stands [8 cycle spaces]
G5MO
G3.5MO
G3MO
G1.8MO
G5.7MO
G1.2MO
G4MO
G4.2MO
G4.5MO
G4.8MO
G5MO
G1.2MO
G1.8MO
G3.5MO
G3MO
G5.7MO
G1.8MO
G1.2MO
G5

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.
3. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
4. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
5. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND INFORMATION AVAILABLE AT THE TIME OF THE DESIGN.
6. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.
7. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.
8. COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/ LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
9. ALL BELOW SLAB DRAINAGE CONNECTIONS SHOWN TO THE PENETRATION POSITIONS ARE INDICATIVE ONLY. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON ARCHITECT'S GROUND FLOOR SETTING-OUT PLANS.
10. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.
11. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.
12. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.
13. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
14. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.
15. ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.
16. INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.
17. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
18. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
    - 100mm to 300mm DIA TO BE VITRIFIED CLAY
    - 375mm DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
19. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER.
20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
21. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
22. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.
23. ALL ADOPTABLE DRAINAGE PIPES WILL REQUIRE A MINIMUM OF 1200mm COVER, IN ACCORDANCE WITH SEWERAGE UNDERTAKERS REQUIREMENTS. WHERE THIS IS NOT ACHIEVED, IT WILL BE NECESSARY TO AGREE THE BED AND SURROUND DETAIL.
24. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.
25. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.
26. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.
27. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
28. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.
29. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.
30. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
31. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.
32. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
    - B125 LOAD CLASS IN PEDESTRIAN AREAS
    - D400 LOAD CLASS IN VEHICULAR AREAS.
33. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.
34. GREASE TRAPS SHOULD BE PROVIDED ABOVE GROUND WITHIN AN ENZYME TREATMENT SYSTEM, BY APPROPRIATE SPECIALIST DESIGNER. WHERE A BELOW GROUND GREASE TREATMENT SYSTEM IS REQUIRED - ADDITIONAL NOTES REQUIRED AND DESIGN ADJUSTED TO SUIT.
35. DILUTION TRAPS TO BE PROVIDED WITHIN ABOVE GROUND DESIGNS TBC BY MEP.
36. CONNECTIONS OUT OF LINEAR DRAINS TO MATCH SIZE OF CHANNEL UNO. LINEAR CHANNEL SIZES TBC BY SELECTED MANUFACTURER.
37. PIPE AND MANHOLE NUMBERS REFERENCE ON SURFACE WATER PIPE RUNS TO BE READ IN CONJUNCTION WITH THE SURFACE WATER HYDRAULIC CALCULATIONS.

MANHOLE SCHEDULE

MH REF	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT (m)	DS PIPE DIA (m)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	RECESSED	RESTRICTED ACCESS	BACK DROP	COMMENTS	EASTING	NORTHING
SURFACE WATER														
S1	55.70	54.60	0.80	0.300	600	PPIC	600X600	D400	N	Y	N	HEAD OF RUN	380813.984	387446.295
S2 - OMITTED														
S3 - OMITTED														
S4 - OMITTED														
S5 - OMITTED														
S6	55.57	54.68	0.67	0.225	600	PPIC	600X600	D400	N	Y	N		380849.314	387464.08
S7	55.57	54.68	0.67	0.225	600	PPIC	600X600	D400	N	Y	N	REINSTATED NEW POSITION	380869.352	387495.328
S8	55.69	54.57	0.89	0.225	600	PPIC	600X600	D400	N	Y	N		380859.694	387480.264
S9	55.40	54.30	0.73	0.375	1500	PCC	1200X600	D400	N	Y	N		380843.196	387490.845
S10	55.35	54.16	0.82	0.375	1500	PCC	1200X600	D400	N	N	N	CATCHPIT TYPE	380869.361	387521.844
FCC	55.60	54.10	1.35	0.150	1200	PCC	1200X600	D400	N	N	N	FLOW CONTROL CHAMBER	380887.604	387510.395
S11	55.55	53.91	1.49	0.150	1200	PCC	1200X600	D400	N	N	N	NRV	380877.302	387504.013
FOUL WATER														
F1	55.63	54.87	0.61	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380831.645	387464.102
F2	55.63	54.82	0.66	0.15	450	PPIC	450X450	D401	N	N	N	NON ENTRY	380834.086	387467.681
F3	55.72	54.50	1.07	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	380843.152	387456.285
F4 - OMITTED														
F5	55.72	54.83	0.74	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380848.911	387457.711
F6	55.70	54.44	1.11	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	380845.478	387459.912
F7 - OMITTED														
F8	55.68	54.77	0.76	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380882.755	387498.583
F9	55.67	54.64	0.88	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380873.899	387504.223
F10	55.67	54.40	1.12	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	380867.992	387495.013
F11	55.69	54.08	1.39	0.225	600	PPIC	600X600	D400	N	Y	N	NON ENTRY. SETTING OUT SUBJECT TO POSITION OF EXISTING DRAIN. TBC	380857.542	387478.719
F12	55.50	TBC	TBC	0.1	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380910.756	387518.057
F13 - OMITTED														
F14 - OMITTED														
F15- OMITTED														
F16	55.70	55.07	0.48	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380815.531	387445.221
F17	55.70	54.91	0.64	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380820.361	387441.323
F18	55.70	54.67	0.88	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380871.599	387431.077
F19	55.67	55.20	0.32	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY - INTERNAL - DOUBLE LOCKING AND SEALED TYPE.	380848.589	387449.09
F20	55.67	54.96	0.56	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380874.558	387435.812
F21	55.67	54.82	0.70	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	380873.024	387433.431
DIVERTED SURFACE WATER														
SD1	55.72	54.02	1.40	0.300	600	PPIC	600X600	D400	N	Y	N	NON ENTRY	380880.636	387497.467
SD2	55.72	53.73	1.69	0.300	600	PPIC	600X600	D400	N	Y	N	NON ENTRY	380875.298	387500.89
SD3	55.72	53.66	1.76	0.300	600	PPIC	600X600	D400	N	Y	N	NON ENTRY	380865.557	387485.702
SD4	55.70	53.49	1.76	0.450	1500	PCC	600X600	D400	N	N	N		380855.578	387470.154
SD5	55.70	53.95	1.45	0.300	600	PPIC	600X600	D400	N	Y	N	NON ENTRY	380846.946	387456.546
SD6	55.40	53.38	1.57	0.450	1500	PCC	600X600	D400	N	N	N		380816.907	387494.851
SD7	56.24	53.28	2.51	0.450	1500	PCC	600X600	D400	N	N	N		380791.674	387455.36
SD8	55.70	53.22	2.03	0.450	1500	PCC	600X600	D400	N	N	N		380813.145	387441.554
SD9	56.24	53.65	2.44	0.150	600	PPIC	600X600	D400	N	Y	N	NON ENTRY	380820.671	387496.629

NON ENTRY - REDUCER CAP REQUIRED AND FITTED TO SHAFT, PPIC - POLYPROPYLENE INSPECTION CHAMBER, CP - CATCH PIT TYPE, PCC - PRECAST CONCRETE.

Rev	Date	Description	By	Check	App.
C04	08.12.25	FINAL CONSTRUCTION ISSUE	SJT	CD	CD
C03	11.10..24	DRAWING NUMBER UPDATE	RB	SW	CB
C02	05.07.24	UPDATED TO SUIT CONTRACTOR PREFERRED TANK LOCATION	CD	SW	CB
C01	19.06.24	STAGE 5 - CONSTRUCTION	CD	SW	CB
P01	02.11.23	PRELIMINARY	AA	CD	CD

COPYRIGHT: THE COPYRIGHT OF THIS DRAWING IS VESTED IN CLANCY CONSULTING.
IT SHALL NOT BE USED WITHOUT PERMISSION BY ANYONE FOR ANY PURPOSE.
DO NOT SCALE THIS DRAWING ELECTRONICALLY OR MANUALLY.
WORK TO FIGURED DIMENSIONS ONLY.
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
DO NOT TURN ON LAYERS THAT HAVE BEEN TURNED OFF.
DO NOT THAW LAYERS THAT HAVE BEEN FROZEN.
DRAWING MUST BE PRINTED IN BLACK AND WHITE ONLY.

Client: MORGAN SINDALL CONSTRUCTION

Project: DIXON NEWALL GREEN ACADEMY

Office: ALTRINCHAM

Discipline: CIVIL

Title: DRAINAGE NOTES AND MANHOLE SCHEDULE TANK RELOCATION OPTION 1

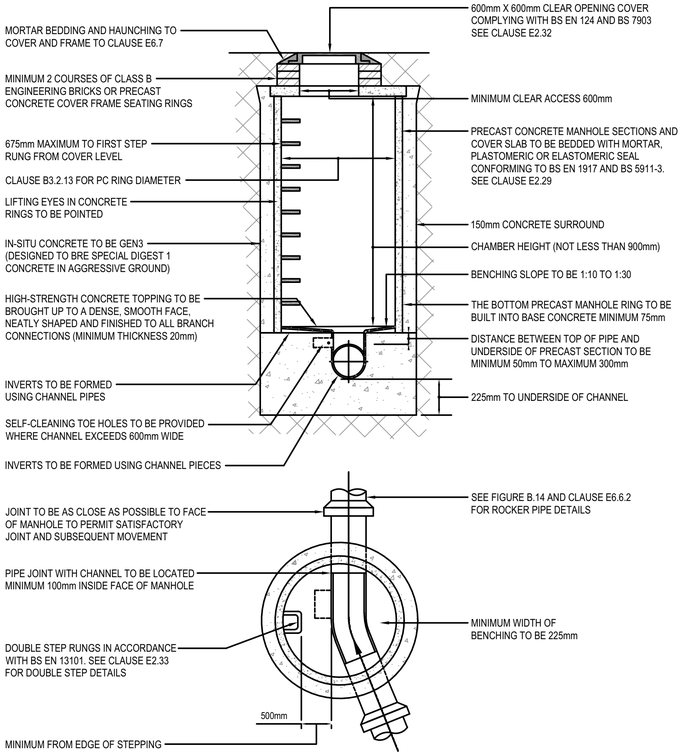
Scale @ A1: 1:500

Status: A5

clancy consulting
www.clancy.co.uk
Birmingham 0121 200 7000 . Glasgow 0141 222 2720 . Liverpool 0151 227 5000 . London 020 3077 6970 . Manchester 0161 613 6000 . Newcastle 0191 221 0702 . Norwich 01603 305199 . Peterlee 01392 475375 . Reading 0118 941 7888

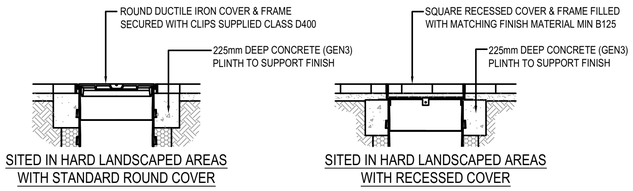
Job Number	Originator	Building/Zone	Level
FS0998	CCL	SE-8	XX
Type	**Discipline**	**Drawing No.**	**Revision**
L	C	5211	C04

THIS DRAWING HAS BEEN UPDATED TO INCORPORATE KNOWN DESIGN REVISIONS MADE DURING THE CONSTRUCTION PERIOD, EITHER INSTRUCTED BY OR ADVISED TO CLANCY. NO SITE MEASUREMENTS OR SURVEYS HAVE BEEN UNDERTAKEN DURING THE PREPARATION OF THIS DRAWING.



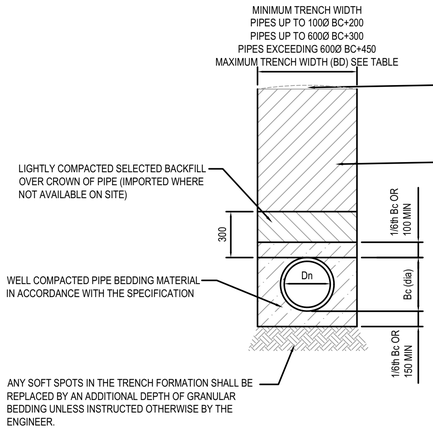
MANHOLE COVERS WITHIN TRAFFICKED PAVED AREAS TO BE D400 RECESSED COVERS.

TYPICAL MANHOLE DETAIL - TYPE 2
(MAXIMUM DEPTH FROM COVER TO SOFFIT OF PIPE 3.0 m)



SITED IN HARD LANDSCAPED AREAS WITH STANDARD ROUND COVER

SITED IN HARD LANDSCAPED AREAS WITH RECESSED COVER

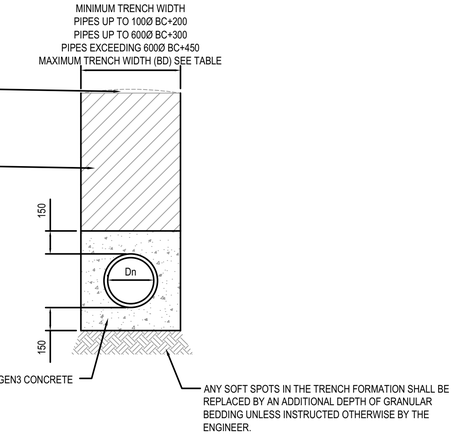


CLASS S - 360° GRANULAR SURROUND PIPE BEDDING DETAIL

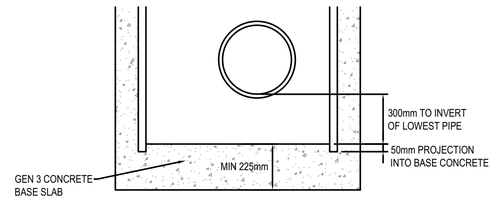
THE FLEXIBLE JOINTS IN THE PIPES SHALL BE MAINTAINED AT THE END OF EACH PIPE WITH COMPRESSIBLE SHEET CUT ACCURATELY TO FIT THE PIPE PROFILE TO BREAK THE CONCRETE SURROUND

Dn	Bd
150	0.6
225	0.7
300	0.85
375	1.05
450	1.15
525	1.25
600	1.35
675	1.45
750	1.50

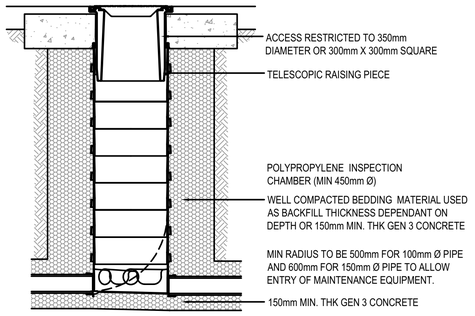
MAXIMUM TRENCH WIDTH



CLASS Z - CONCRETE BED AND SURROUND PIPE BEDDING DETAIL
(COVER < 900mm IN VEHICULAR LOADING AND OPEN FIELD.
COVER <600mm ELSEWHERE EXCEPT UNDER BUILDINGS.)

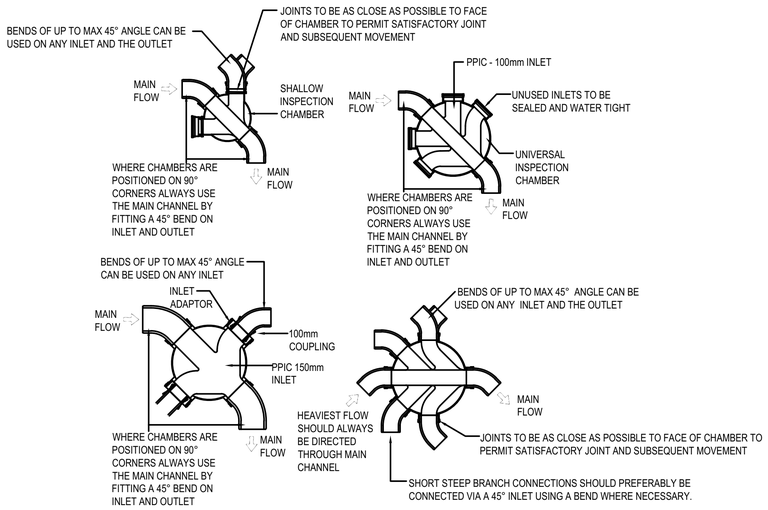


CATCH PIT DETAIL



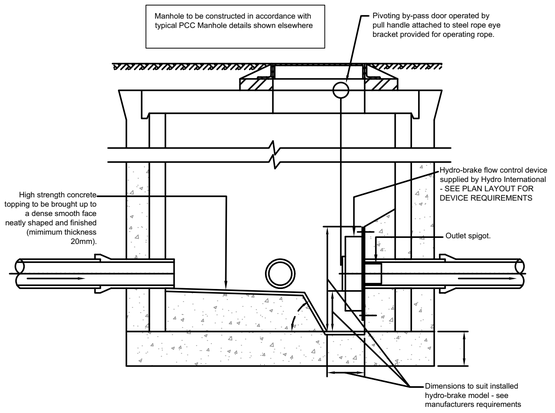
DEEP INSPECTION CHAMBER
DEPTHS BETWEEN 1.2m AND 3.0m

TYPICAL INSPECTION CHAMBER COVER DETAILS

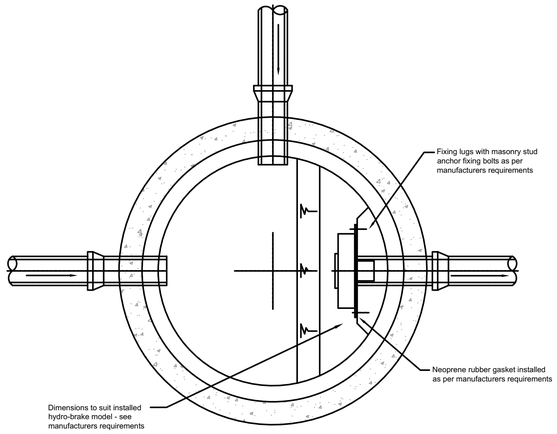


INSPECTION CHAMBER BASE DETAILS

TYPICAL INSPECTION CHAMBER DETAILS - PPIC



TYPICAL FLOW CONTROL MANHOLE (HYDRO-BRAKE)



THIS DRAWING HAS BEEN UPDATED TO INCORPORATE KNOWN DESIGN REVISIONS MADE DURING THE CONSTRUCTION PERIOD, EITHER INSTRUCTED BY OR ADVISED TO CLANCY. NO SITE MEASUREMENTS OR SURVEYS HAVE BEEN UNDERTAKEN DURING THE PREPARATION OF THIS DRAWING.

GENERAL NOTES

1. DO NOT SCALE THIS DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO COMMENCING ANY WORKS SHOWN.
5. ALL DETAILS TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCILS BUILDING CONTROL, OR ANY OTHER RELEVANT STANDARDS BODY.
6. ALL PROPRIETARY PRODUCT TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

DRAINAGE NOTES

1. NO WORK SHOULD COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY, ADOPTING SEWERAGE UNDERTAKERS, ENVIRONMENT AGENCY AND/OR ANY OTHER RELEVANT AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE DEVELOPERS RISK AND CLANCY CONSULTING LIMITED WILL NOT BE HELD RESPONSIBLE FOR SUBSEQUENT DELAYS IN APPROVALS, REMEDIAL COSTS OR DELAYS.
2. ALL INVERT LEVELS OF EXISTING FOUL AND SURFACE WATER SYSTEMS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS. ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO CLANCY CONSULTING LIMITED
3. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
   150MM DIA TO BE VITRIFIED CLAY.
   225MM DIA TO BE VITRIFIED CLAY.
   300MM DIA TO BE VITRIFIED CLAY.
   375MM DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
4. ALL VITRIFIED CLAY PIPES TO BS EN 295-1:
   ALL CONCRETE PIPES TO BE TO BS EN 1916.
   ALL CONCRETE MANHOLES TO BE TO BS EN1917.
5. LATERAL CONNECTIONS FROM MAIN SEWERS TO DEMARCATION CHAMBER TO BE 150MM DIA MINIMUM UNO AND CONSTRUCTED TO ADOPTABLE STANDARDS.
6. FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
7. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
8. ALL SEWER WORKS TO COMPLY WITH WRC 'SEWERS FOR ADOPTION, 6TH EDITION', STW'S REQUIREMENTS AND KITE-MARKED(OR SIMILAR APPROVED) WHERE PRACTICABLE. WHERE CONFLICTING DETAILS OCCUR, STW'S DETAILS SHALL TAKE PRECEDENCE IN ALL CASES.
9. MANHOLE COVERS SHALL HAVE A CLEAR OPENING IN ACCORDANCE WITH SFA 6TH EDITION AND SHALL BE CLASS D400 TO BS EN 124 WITH 150MM DEEP FRAMES IN VEHICULAR TRAFFICED AREA. CLASS B125 COVERS AND FRAMES TO BE PROVIDED ON ALL OTHER MANHOLES IN LANDSCAPING.
10. FILLED GROUND MUST BE FILLED AND CONSOLIDATED BEFORE ANY SEWER WORKS ARE CARRIED OUT.
11. WATER AUTHORITIES ARE NOT OBLIGED TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUN OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY), AN ALTERNATIVE METHOD OF DISPOSAL OF LAND DRAINAGE RUN OFF WILL THEREFORE BE REQUIRED AND ANY PROPOSALS MUST BE AGREED WITH THE LOCAL AUTHORITY LAND DRAINAGE SECTION.
12. COVER SLABS MUST CARRY THE BSI KITEMARK AND SHALL COMPLY WITH BS 5911 PART3 / BS EN 1917 :2000. WHERE THE CLEAR OPENING OF THE KITE-MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS SPECIFIED ABOVE. PLEASE REFER TO CONCRETE PIPELINE SYSTEMS ASSOCIATION (CPSA) 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITE-MARKED COVER SLAB OPENING SIZES.
13. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
14. ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
15. SEWERS MUST HAVE 5M CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH THE SFA 6TH REQUIREMENTS.
16. ALL PIPES TO HAVE CLASS 'S' GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WIS 4-08-02 (TABLE A2). WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES (OR LESS THAN 0.9M IN NON-VEHICULAR ACCESSED AREAS), THEN A CLASS 'Z' BEDDING TO BE USED.
17. ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.
18. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
19. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300MM DIAMETER.
20. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS.
21. SECTION 163 OF THE HIGHWAYS ACT 1980 REQUIRES PROVISION TO BE MADE TO PREVENT WATER FALLING ON OR FLOWING ONTO THE HIGHWAY FROM PRIVATE DRIVEWAYS OR PROPERTIES. ANY DRAINAGE REQUIREMENTS MUST BE CONNECTED INTO THE PRIVATE SURFACE WATER DRAINAGE SYSTEM.
22. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-
   (i) ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.
   (ii) THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.
   (iii) PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.
   (iv) ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.
23. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CURTINS SPECIFICATION FOR DRAINAGE WORKS AND ANY OTHER SUBSEQUENT ADDITIONS TO THIS LIST.
24. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
25. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE-WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LLFA AND ENVIRONMENT AGENCY.
26. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

C02	08.12.25	FINAL CONSTRUCTION ISSUE	SJT	CD	CD
C01	19.06.24	STAGE 5 ISSUE - CONSTRUCTION	CD	SW	DS
P02	11.09.23	WS4 UPDATE	CD	SW	DS
T01	02.06.23	STAGE 4	CD	SW	DS
P01	24.03.23	PRELIMINARY	CD	SW	DS
Rev	Date	Description	By	Check	App.

COPYRIGHT: THE COPYRIGHT OF THIS DRAWING IS VESTED IN CLANCY CONSULTING. IT SHALL NOT BE USED WITHOUT PERMISSION BY ANYONE FOR ANY PURPOSE.
DO NOT SCALE THIS DRAWING ELECTRONICALLY OR MANUALLY.
WORK TO FIGURED DIMENSIONS ONLY.
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
DO NOT TURN ON LAYERS THAT HAVE BEEN TURNED OFF.
DO NOT THAW LAYERS THAT HAVE BEEN FROZEN.
DRAWING MUST BE PRINTED IN BLACK AND WHITE ONLY.

Client: MORGAN SINDALL CONSTRUCTION

Project: DIXON NEWALL GREEN ACADEMY

Office: ALTRINCHAM

Discipline: CIVILS

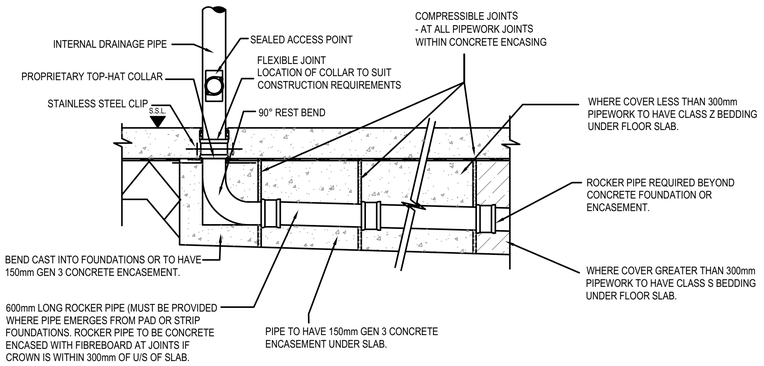
Title: DRAINAGE DETAILS SHEET 1

Scale @ A1: NTS

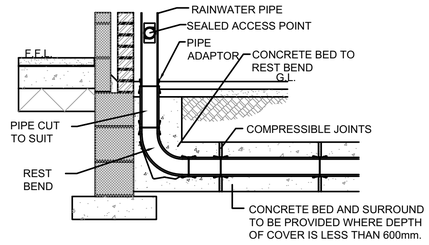
Status: A5

clancy consulting
www.clancy.co.uk
Birmingham 0121 200 3900 · Glasgow 0141 222 7720 · Liverpool 0151 227 5000 · London 020 3077 0370 · Manchester 0161 613 5000 · Newcastle 0191 221 0702 · Norwich 01603 299190 · Prestwick 01292 475375 · Reading 0118 941 7888

Job Number	Originator	Building/Zone	Level
FS0998	CCL	SE-9	XX
Type	**Discipline**	**Drawing No.**	**Revision**
D	C	5300	C02

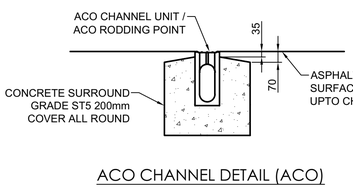


DRAINAGE UNDER BUILDINGS

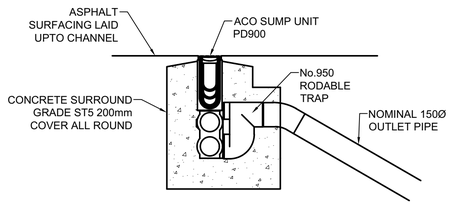


RWP CONNECTION DETAIL

(SCALE 1:20)



ACO CHANNEL DETAIL (ACO)

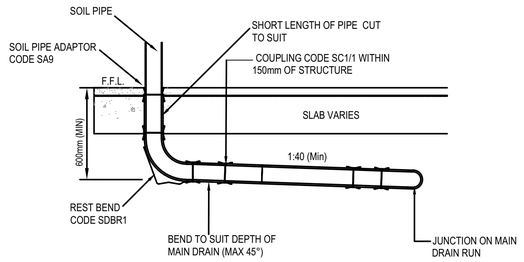


ACO SUMP OUTLET (A-SP)

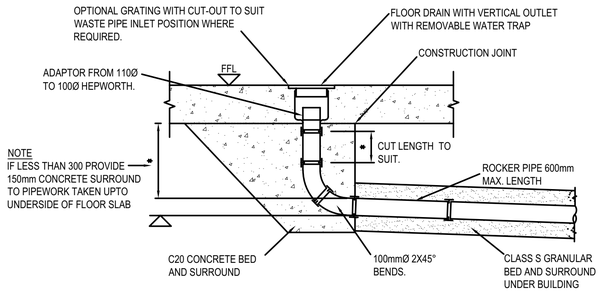
INSTALLED IN ACCORDANCE WITH MANUFACTURER GUIDANCE.

(MINIMUM LOADING CLASS D400)

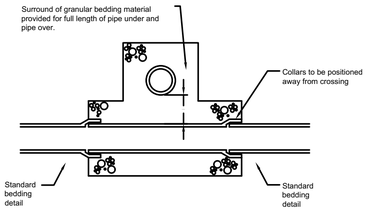
REFER TO MANUFACTURER DESIGN FOR SIZES.



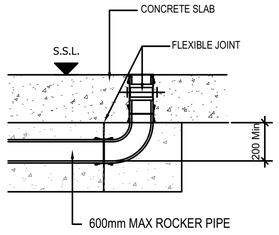
TYPICAL SVP CONNECTION TO MAIN RUN



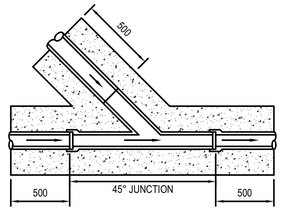
TYPICAL INTERNAL FLOOR DRAIN



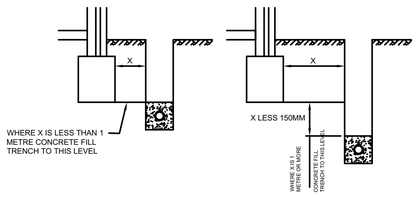
PIPE CROSSINGS DETAIL



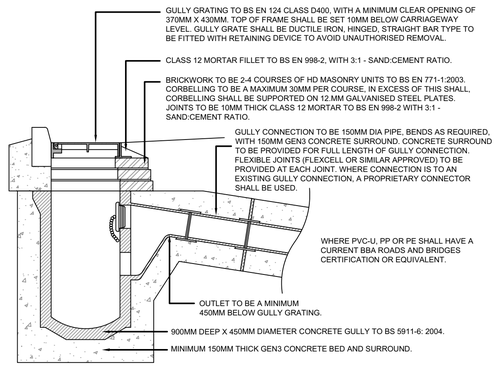
TYPICAL SECTION THROUGH SLAB
(100mmØ downpipe)



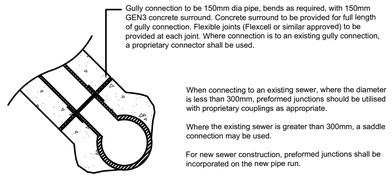
TYPICAL SADDLE CONNECTION



TYPICAL DETAILS WHERE DRAINAGE TRENCH IS DEEPER THAN FOUNDATIONS



ROAD GULLY(G) DETAIL - TYPE 1



SADDLE CONNECTION

THIS DRAWING HAS BEEN UPDATED TO INCORPORATE KNOWN DESIGN REVISIONS MADE DURING THE CONSTRUCTION PERIOD, EITHER INSTRUCTED BY OR ADVISED TO CLANCY. NO SITE MEASUREMENTS OR SURVEYS HAVE BEEN UNDERTAKEN DURING THE PREPARATION OF THIS DRAWING.

GENERAL NOTES

1. DO NOT SCALE THIS DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO COMMENCING ANY WORKS SHOWN.
5. ALL DETAILS TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCILS BUILDING CONTROL, OR ANY OTHER RELEVANT STANDARDS BODY.
6. ALL PROPRIETARY PRODUCT TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

DRAINAGE NOTES

1. NO WORK SHOULD COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY, ADOPTING SEWERAGE UNDERTAKERS, ENVIRONMENT AGENCY AND/OR ANY OTHER RELEVANT AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE DEVELOPER'S RISK AND CLANCY CONSULTING LIMITED WILL NOT BE HELD RESPONSIBLE FOR SUBSEQUENT DELAYS IN APPROVALS, REMEDIAL COSTS OR DELAYS.
2. ALL INVERT LEVELS OF EXISTING FOUL AND SURFACE WATER SYSTEMS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS. ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO CLANCY CONSULTING LIMITED
3. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
   150MM DIA TO BE VITRIFIED CLAY.
   225MM DIA TO BE VITRIFIED CLAY.
   300MM DIA TO BE VITRIFIED CLAY.
   375MM DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
4. ALL VITRIFIED CLAY PIPES TO BS EN 295-1:
   ALL CONCRETE PIPES TO BE TO BS EN 1916.
   ALL CONCRETE MANHOLES TO BE TO BS EN1917.
5. LATERAL CONNECTIONS FROM MAIN SEWERS TO DEMARCATION CHAMBER TO BE 150MM DIA MINIMUM UNO AND CONSTRUCTED TO ADOPTABLE STANDARDS.
6. FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
7. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
8. ALL SEWER WORKS TO COMPLY WITH WRC 'SEWERS FOR ADOPTION, 6TH EDITION', STW'S REQUIREMENTS AND KITE-MARKED(OR SIMILAR APPROVED) WHERE PRACTICABLE. WHERE CONFLICTING DETAILS OCCUR, STW'S DETAILS SHALL TAKE PRECEDENCE IN ALL CASES.
9. MANHOLE COVERS SHALL HAVE A CLEAR OPENING IN ACCORDANCE WITH SFA 6TH EDITION AND SHALL BE CLASS D400 TO BS EN 124 WITH 150MM DEEP FRAMES IN VEHICULAR TRAFFICED AREA. CLASS B125 COVERS AND FRAMES TO BE PROVIDED ON ALL OTHER MANHOLES IN LANDSCAPING.
10. FILLED GROUND MUST BE FILLED AND CONSOLIDATED BEFORE ANY SEWER WORKS ARE CARRIED OUT.
11. WATER AUTHORITIES ARE NOT OBLIGED TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUN OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY), AN ALTERNATIVE METHOD OF DISPOSAL OF LAND DRAINAGE RUN OFF WILL THEREFORE BE REQUIRED AND ANY PROPOSALS MUST BE AGREED WITH THE LOCAL AUTHORITY LAND DRAINAGE SECTION.
12. COVER SLABS MUST CARRY THE BSI KITEMARK AND SHALL COMPLY WITH BS 5911 PART3 / BS EN 1917 :2000. WHERE THE CLEAR OPENING OF THE KITE-MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS SPECIFIED ABOVE. PLEASE REFER TO CONCRETE PIPELINE SYSTEMS ASSOCIATION (CPSA) 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITE-MARKED COVER SLAB OPENING SIZES.
13. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
14. ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
15. SEWERS MUST HAVE 5M CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH THE SFA 6TH REQUIREMENTS.
16. ALL PIPES TO HAVE CLASS 'S' GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WI3 4-08-02 (TABLE A2), WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES (OR LESS THAN 0.9M IN NON-VEHICULAR ACCESSED AREAS), THEN A CLASS 'Z' BEDDING TO BE USED.
17. ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.
18. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
19. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300MM DIAMETER.
20. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS.
21. SECTION 163 OF THE HIGHWAYS ACT 1980 REQUIRES PROVISION TO BE MADE TO PREVENT WATER FALLING ON OR FLOWING ONTO THE HIGHWAY FROM PRIVATE DRIVEWAYS OR PROPERTIES. ANY DRAINAGE REQUIREMENTS MUST BE CONNECTED INTO THE PRIVATE SURFACE WATER DRAINAGE SYSTEM.
22. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-
   (i) ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.
   (ii) THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.
   (iii) PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.
   (iv) ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.
23. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CURTINS SPECIFICATION FOR DRAINAGE WORKS AND ANY OTHER SUBSEQUENT ADDITIONS TO THIS LIST.
24. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
25. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE-WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LLFA AND ENVIRONMENT AGENCY.
26. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

Rev	Date	Description	By	Check	App.
C02	08.12.25	FINAL CONSTRUCTION ISSUE	SJT	CD	CD
C01	19.06.24	STAGE 5 ISSUE - CONSTRUCTION	CD	SW	DS
P02	11.09.23	WS4 UPDATE	CD	SW	DS
T01	02.06.23	STAGE 4	CD	SW	DS
P01	24.03.23	PRELIMINARY	CD	SW	DS

COPYRIGHT: THE COPYRIGHT OF THIS DRAWING IS VESTED IN CLANCY CONSULTING.
IT SHALL NOT BE USED WITHOUT PERMISSION BY ANYONE FOR ANY PURPOSE.
DO NOT SCALE THIS DRAWING ELECTRONICALLY OR MANUALLY.
WORK TO FIGURED DIMENSIONS ONLY.
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
DO NOT TURN ON LAYERS THAT HAVE BEEN TURNED OFF.
DO NOT THAW LAYERS THAT HAVE BEEN FROZEN.
DRAWING MUST BE PRINTED IN BLACK AND WHITE ONLY.

Client: MORGAN SINDALL CONSTRUCTION

Project: DIXON NEWALL GREEN ACADEMY

Office: ALTRINCHAM

Discipline: CIVILS

Title: DRAINAGE DETAILS
SHEET 2

Scale @ A1	Status
NTS	A5

clancy consulting
www.clancy.co.uk
Birmingham 0121 200 3500 Glasgow 0141 222 2720 Liverpool 0151 227 3000 London 020 3077 6970 Manchester 0161 615 6500 Newcastle 0191 221 0702 Norwich 01603 305190 Prestwick 01292 475375 Reading 0118 941 1868

Job Number	Originator	Building/Zone	Level
FS0998	CCL	SE-9	XX
Type	**Discipline**	**Drawing No.**	**Revision**
D	C	5301	C02