DRAINAGE MAINTENANCE PLAN

Proposed Commercial Development, Crossgate, South Shields

Reference:	22123/RO/SuDS.1
Date:	February 2024
Version:	1

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CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

Modo Bloc

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DOCUMENT HISTORY

VERSION	PURPOSE/DESCRIPTION	DATE
1	First Issue	26.02.2024

1.0 INTRODUCTION

This document details the inspection and maintenance specification for sustainable drainage systems (SuDS) maintained by a management company on behalf of the operator.

The document is laid out detailing:

- A description of the SUDS component and its use
- Maintenance requirements and frequencies as set out in **Appendix B**
- Inspection requirements and frequencies as set out in **Appendix B**

The activities listed are specific to the SUDS on the development and represent the minimum maintenance and inspection requirements. This may include:

- Maintenance frequency
- Measurement and recording of sediment levels
- Photographic recording of problem areas
- Increased frequency of litter removal in areas identified as litter hotspots

The sustainable drainage system for the site is shown in **Appendix A** and comprises of four asset types: a cellular attenuation storage for all storm events up to and including 100 years plus 40% climate change events, flow control and below ground pipes/gullies and bypass petrol interceptors.

The management company will be responsible for the inspection and maintenance of the entire system, including removal of material deposited within the system. Any gross contamination of the system will be, as practicable, contained, safely removed, and reported to the appropriate body. In such cases, the management company will liaise with the Environment Agency and Local Authority to assist in identifying the polluter to enable the appropriate action to be taken by those organisations.

The developer and management company will be responsible for carrying out a yearly review of the SUDS to establish if the current management regime is meeting the management objectives. If any significant changes are required to the approved Management Plan, then the developer is to liaise with the Lead Local Flood Authority/Planners and the Developer Services team at Anglian Water, should this be required.

2.0 GEOCELLUAR ATTENUATION

The geoculluar is a surface water storage attenuation system that provides flow control through the attenuation of stormwater runoff from the development.

The flow rate is not restricted before entering the structure, but the flow is restricted to greenfield runoff prior to leaving the site. The flow is to be restricted by a hydro brake flow control unit (the hydro brake is to be maintained by the management company as part of the below ground piped network). The hydro brake (flow control) is positioned within a flow control manhole structure prior to discharging to the public sewer.

For Engineering Plan refer to **Appendix A.**

For operation and maintenance requirements refer to the maintenance log in **Appendix B.**

3.0 BELOW GROUND DRAINAGE NETWORK (INCLUDING FLOW CONTROL AND BYPASS INTERCEPTORS)

The below ground drainage network consists of pipes, road gullies, manholes and bypass petrol interceptors.

For operation and maintenance requirements refer to the maintenance log in **Appendix B.**

4.0 INSPECTION AND REPORTING

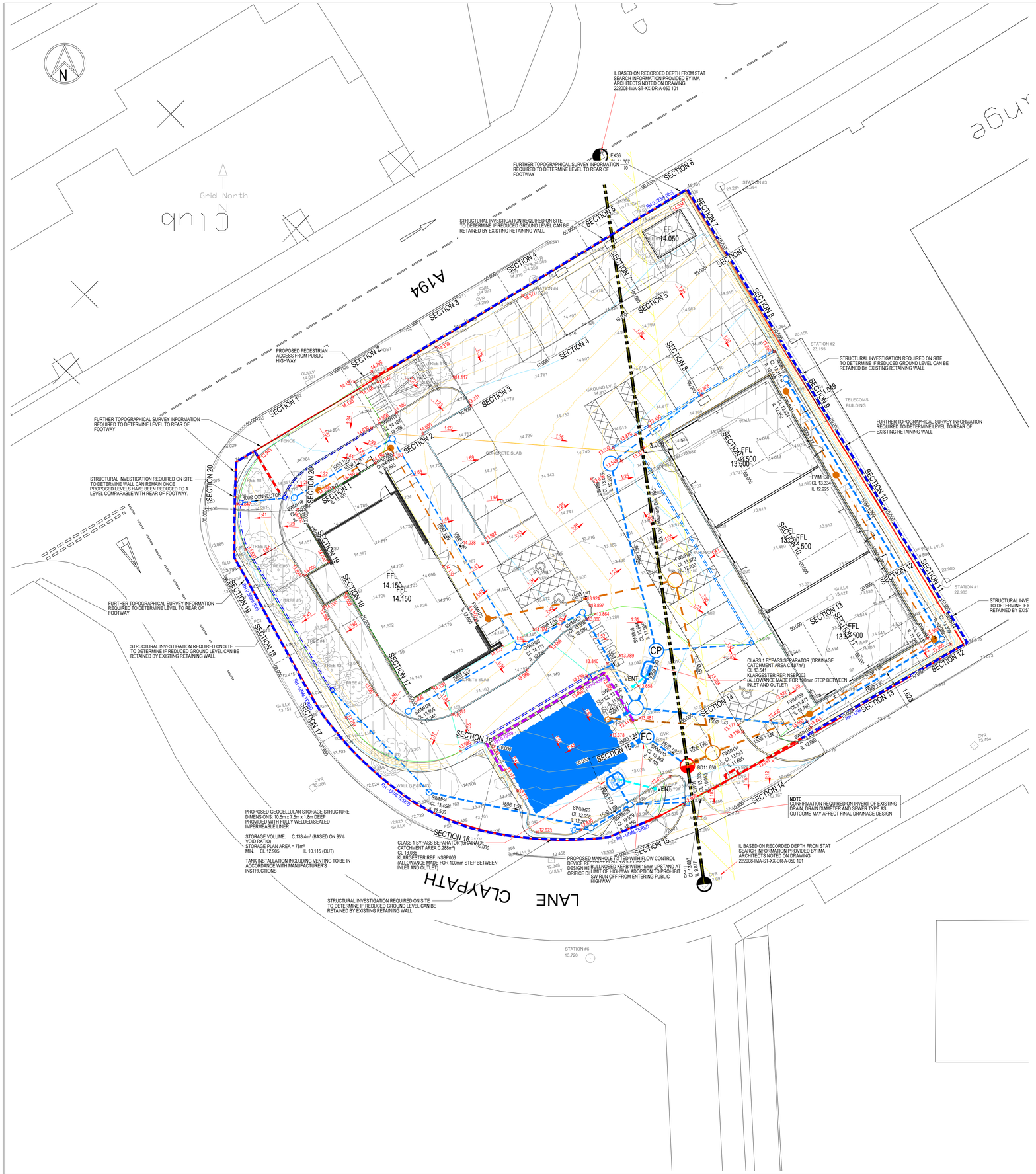
The details of the site-specific SuDS features, maintenance requirements and frequencies can be found within the Maintenance Log in **Appendix B**.

The Maintenance Log shall be maintained and updated after every maintenance activity by the management company.

This Maintenance Log will be held by the management company and available for inspection by the LLFA at South Shields Council if requested.

A copy of the Maintenance Log can be found in **Appendix B.**

Appendix A Engineering Plan



DRAINAGE SPECIFICATIONS FOR WATER AUTHORITY

1. ALL ADOPTABLE SEWER WORKS AND MATERIALS TO BE IN ACCORDANCE WITH "CODE FOR ADOPTION", THE RELEVANT BRITISH/EUROPEAN AND WATER AUTHORITY'S STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
2. MANHOLE COVERS SHALL/MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF WATER AUTHORITY BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. WATER AUTHORITY IS NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUN-OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM **(DIRECTLY OR IN-DIRECTLY)**, AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUN-OFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUN-OFF.
5. COVER SLABS MUST CARRY THE BSI KITEMARK OR WILL BE REJECTED BY WATER AUTHORITY INSPECTOR. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600mm X 600mm FOR THE WATER AUTHORITY SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (**CPSA**), 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
6. SULPHATE RESISTANT CEMENT (**C20-DC2**) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES OR THE WIDTH OF THE CANOPY AT MATURE HEIGHT.
9. SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED AND SURROUND). WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (**TABLE A2**).
11. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
12. WATER AUTHORITY POLICY IS THAT TYPE 'C' BRICK MANHOLES AND 1050mm DIA MANHOLE RINGS ARE NOT PREFERRED. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE 'B' MANHOLE WITH 1200mm DIA OR 1500mm DIA RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1 - 1.5m.
13. ALL ADOPTABLE PLASTIC SEWER PIPES TO BE KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS/EN13476). ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND WATER AUTHORITY WOULD PREFER CLAYWARE CHANNEL IN MANHOLES. PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
14. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40kN/m, 150mm DIA 40kN/m, 225mm DIA 45kN/m AND 300mm DIA. 72kN/m. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE 4(CLASS 120 TO EN 1916/BS5911-1 2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN13476.
15. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.

OTHER DRAINAGE NOTES

16. ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2002 EDITION.
17. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
18. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
19. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
20. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DEWATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
21. FOR PIPE SPECIFICATION PLEASE REFER TO ADDITIONAL NOTES.
22. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN295 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN295 PIPE CRUSHING STRENGTH.
23. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS 120 UNLESS NOTED OTHERWISE.
24. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS AND SERVICE YARD AREAS. CLASS C250 TO BE USED IN CAR PARKING AREAS.
25. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF "THE STREET WORKS REGULATIONS 1992" AND RELEVANT PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
26. ALL TRADITIONAL RAINWATER PIPE DOWN COMERS TO DISCHARGE TO TRAPPED GULLIES.
27. ALL SIPHONIC DRAINAGE DOWN COMERS TO MANUFACTURER SPECIFICATION.
28. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
29. ALL GULLY LEADS TO BE 150mm DIAMETER.
30. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
31. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
32. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
33. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
34. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
35. WHERE PLASTIC PIPES ARE INSTALLED PRIOR TO GETTING APPROVAL THEN A LIGHT LINE CCTV SURVEY AND REPORT (ELECTRONIC DEFLECTION TESTING) OF THE PROSPECTIVELY ADOPTABLE SEWERS ARE REQUIRED PRIOR TO APPROVAL AT THE DEVELOPERS EXPENSE.
36. THERE SHOULD BE ENOUGH CLEARANCE TO ACCOMMODATE THE BEDDING FOR BOTH PIPES, APPROX. 300mm: IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED.

GENERAL SAFETY NOTES:

1. WHERE THE BASE (ROAD BASE) HAS BEEN USED AS A TEMPORARY RUNNING SURFACE DURING THE CONTRACT IT SHALL BE THOROUGHLY CLEANED AND POWER WASHED AS NECESSARY. AFTER DRYING AND IMMEDIATELY BEFORE THE BINDER COURSE IS LAID A TACK COAT OF BITUMEN EMULSION CLASS A1-40 OR K1-40 TO BS434 SHALL BE APPLIED AT A RATE OF 0.35-0.55 LITRES/SQ METER.
2. ALL RADIUS KERBS WITH A RADIUS OF 12m OR LESS SHALL BE FORMED WITH PROPRIETARY RADIUS KERBS.

HEALTH & SAFETY:

1. CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.

ROADS & DRAINAGE

2. CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALLING DRAINAGE
3. THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
4. CONNECTIONS TO EXISTING SEWERS TO BE MADE BY APPROVED CONTRACTOR ONLY.
5. CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WEILS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
6. UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIER.

PIPES & CABLES

7. CONTRACTOR TO OBTAIN ALL SERVICE RECORDS PRIOR TO WORKS COMMENCING.
8. SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED BY HAND DIG AND PROTECTED ACCORDINGLY.

EXCAVATION/FILL

9. CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
10. CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
11. CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.

KEY

- SITE BOUNDARY
- MAJOR CONTOUR
- MINOR CONTOUR
- NEW RETAINING WALL
- EXISTING ADOPTABLE COMBINED WATER (EX. 300Ø → EXCMWH CL 0.000 IL 0.000; CWI## CL 0.000 IL 0.000)
- PROPOSED ADOPTED COMBINED WATER (1500 1:150 →)
- CP — PROPOSED CATCHPIT
- FC — PROPOSED FLOW CONTROL
- PROPOSED CELLULAR STORAGE
- PROPOSED PRIVATE SURFACE WATER (1500 1:150 →)
- PROPOSED PRIVATE SURFACE WATER MANHOLE (SWMH CL 0.000 IL 0.000)
- PROPOSED PRIVATE SURFACE WATER PPIC (SWIC CL 0.000 IL 0.000)
- DC — PROPOSED DRAINAGE CHANNEL
- KD — PROPOSED KERB DRAINAGE (BEANY BLOCK)
- PROPOSED PRIVATE GULLY
- PROPOSED PRIVATE FOUL WATER (1500 1:150 →)
- PROPOSED PRIVATE FOUL WATER MANHOLE (FWMH CL 0.000 IL 0.000)
- PROPOSED PRIVATE FOUL WATER PPIC (FWIC CL 0.000 IL 0.000)
- PROPOSED FLOOR GULLY

DESIGN NOTES:

1. ALL WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
   - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB)
   - SPECIFICATION FOR HIGHWAY WORKS (SHW)
   - LOCAL AUTHORITY DESIGN GUIDE AND SPECIFICATION
2. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHOULD INVESTIGATE AND LOCATE AS NECESSARY ANY STATUTORY UNDERTAKERS EQUIPMENT WITHIN THE NEW ACCESS AND DISCUSS REQUIREMENTS FOR LOWERING/DIVERSION AND PROTECTION WITH THE RELEVANT UNDERTAKER.
3. ALL WORKS WITHIN THE PUBLIC HIGHWAY TO MEET LOCAL AUTHORITY REQUIREMENTS. CONTRACTOR TO APPLY FOR ROAD OPENING NOTICES ETC AS REQUIRED.
4. CBR VALUE NOT AVAILABLE. ROAD CONSTRUCTION DETAIL SUBJECT TO CONFIRMATION OF CBR VALUES. CONTRACTOR TO ALLOW FOR LAB TESTS TO BE UNDERTAKEN IN AGREEMENT WITH LOCAL AUTHORITY HIGHWAY ENGINEER PRIOR TO WORKS COMMENCING.
5. PROPOSED LEVELS HAVE BEEN BASED ON THE EXISTING TOPOGRAPHICAL SURVEY BY **IAN RUTHERFORD SURVEYING - REF JR255 - 01A DATED 30.01.2022.**
6. PROPOSED DRAWING BASED ON ARCHITECTURAL LAYOUT BY **IMA ARCHITECTS RECEIVED VIA EMAIL ON 15.07.2023.**
7. SLOPES GREATER THAN 1 IN 6 MAY REQUIRE STABILISATION. GEOTECHNICAL ENGINEER TO BE CONTACTED TO CONFIRM REQUIREMENTS.

DRAINAGE SUMMARY:
TOTAL SITE AREA: 0.287Ha

- HARD PAVED CONTRIBUTING TO COMBINED SEWER :0.260Ha.
- DISCHARGE RATE BASED ON MINIMUM DISCHARGE RATE FROM 75mm ORIFICE = 3.5 L/SEC. (SUBJECT TO AGREEMENT FROM LOCAL AUTHORITY.
- SITE INVESTIGATION WORKS FOUND THE EXISTING SITE TO COMPRISE OF MADE GROUND FOUNDED ON CLAY, IT IS UNLIKELY DRAINAGE VIA INFILTRATION WILL BE SUITABLE FOR THIS SITE HOWEVER SOAKWAY TESTING TO BRE 356 WILL BE REQUIRED TO CONFIRM THIS.
- THE 100 YEAR +45% CLIMATE CHANGE RAINFALL EVENT HAS BEEN CATERED FOR WITHIN THE SYSTEM DUE TO GROUND LEVELS FALLING TOWARDS THE EXISTING HIGHWAY.

FOUL WATER

- FOUL WATER WILL OUTFALL INTO THE EXISTING COMBINED SEWER PASSING THROUGH THE SITE AT OUTFALL POINT FROM DEVELOPMENT

Date	Revisions	Drawn	Checked	Rev
31.01.2024	LEVELS AMENDED TO SUIT BOUNDARY CONDITIONS.	AM	RWO	2
22.08.2023	FIRST ISSUE	RPB	RB	1

Dwg Status: PLANNING

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Client: MODO BLOCK LTD.

Project: CROSSGATE
CLAYPATH LANE, SHOUTH SHIELDS

Title: PRELIMINARY DRAINAGE PLAN

DO NOT SCALE	Scale @ A1: 1:200	Drawn RPB	Checked RB	Date 22.08.2023
Job No 22123		Dwg No D200		Rev 2

Appendix B Maintenance Log

Appendix B - Maintenance visit log sheet

Operation and maintenance requirements for geocellular storage

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work									
			1	2	3	4	5	6	7	8	9	10
Regular maintenance	Inspect for sediment and debris in pre treatment components and floor of inspection tube.	Annually										
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)										
	Inspect structures for evidence of poor operation. Assessment of structure condition and operation to identify necessary remedial works.	Quarterly/after significant rainfall event.										
	Trimming any roots that may be causing blockages	Annually (or as required based on inspections)										
Occasional Maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube.	As required *										
Regular maintenance	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually										
	Manage other vegetation and remove nuisance plant. Weeding should be conducted by hand or use non-toxic and biodegradable weed killer. Invasive species should be removed in accordance with best practice.	Monthly (at implementation) then as required										
	Remove sediment, litter and debris build-up from around inlets	Quarterly to bi-annually										
Occasional maintenance	Re-seed areas of poor vegetation growth.	As required *										
	Remove sediment from inlets and outlet areas.	As required *										
	Prune & trim trees/ shrubs and remove cuttings. Where vegetation is planted as a barrier management of upward growth to encourage outward growth is necessary (after shrub seedlings are established).	As required *										
Remedial Actions	Remove sediment from structure when attenuation volume is reduced by 10%. Sediment level will be dependent upon presence & type of upstream SUDS, size and land use of catchment as well as local soil conditions.											
	Repair / rehabilitation of inlets, outlets and overflows.	As required										

Operation and maintenance requirements for pipes / road gullies

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work									
			1	2	3	4	5	6	7	8	9	10
Regular inspections	Inspect channel within all manholes for blockages and visual damage within manhole	Monthly										
	Operate hydro brake flow control release cable within manhole SW18 to ensure satisfactory movement, reset once complete. Check visible fixing bolts.	Quarterly										
	Operate penstock within manhole SW18 to ensure satisfactory movement, reset once complete. Check visible fixing bolts on penstock.	Quarterly										
Occasional maintenance	Clean out silt and debris from sump in flow control manhole SW18	As required (likely quarterly)										

Operation and maintenance requirements for POS landscaping

Maintenance Schedule	Required Action	Typical Frequency	Date of visit / inspection / work									
			1	2	3	4	5	6	7	8	9	10
Regular inspections	Inspect grassed areas for over compaction or waterlogging	Monthly										
	Inspect grass to ensure it is in healthy condition, free from disease, fungal growth and discoloration. Feed, weedkill and re-seed as necessary.	Quarterly										
	Assess plants for disease, infection, poor growth, invasive species etc and replace as necessary	Quarterly										
Regular maintenance	Remove litter & surface debris	Fortnightly										
	Grass shall be mown to maintain a height between a maximum of 50mm and a minimum of 25mm. During the winter grass shall be maintained at a height of 60mm. Grass not to be cut until a minimum of two weeks has elapsed during the establishment period.	At least once every three weeks from first week of March to last week of October										
	Check tree stakes and ties and adjust/replace as necessary	At each grass cutting visit										
	Watering to take place for at least the first two growing seasons ensuing sufficient water is applied to maintain healthy growth.Water quantity for trees & shrubs: Wet soil to full rooting depth.	As required depending upon weather conditions										
	Clear planting areas of weed growth by a combination of hand-weeding/hoeing and careful use of	Monthly										
	Replace any plants to maintain planting density. Cut back shrubs to maintain a maximum height of 600mm.	As required										
	Aerate planted areas and check for excessive compaction, remediate as necessary	Quarterly										
Occasional maintenance	Pruning to be carried out in accordance with good practice. Trim individual plant/tree appropriate to species, location and season to leave a well-balanced natural shape.	As required										
	Cut back any damaged bark to trees and treat wound with fungicidal sealant	As required										
	Repair damage to any fencing	As required										

Operation and maintenance requirements for Pypass Interceptors

As per manufacturers requirements

* Inspection, Recording and Reporting to be carried out at least annually