

PROPOSED DEVELOPMENT OF 12 No RESIDENTIAL
UNITS INCLUDING PARKING AREAS AT
MAYFLOWER WAY, ANGMERING, WEST SUSSEX

PROPOSED FOUL AND SURFACE WATER
DRAINAGE STRATEGY

Proposed Development of 12 No Residential Units including Parking Areas at Mayflower Way, Angmering West Sussex

Proposed Foul and Surface Water Drainage Strategy

1.0 Introduction

BLB Engineers Ltd have been appointed by Angmering Community Land Trust via The Howse Wallis Partnership to prepare a Foul and Surface Water Drainage Statement in support of a Full Planning Application.

The purpose of the Drainage Statement is to comply with the Local Requirements List of Arun District Council for Development Proposals for Buildings and hard Surfaces.

The proposals include the construction of 12 No dwellings as two storey terraced units in 3 No. blocks, with various associated gardens, parking areas, access drives and landscaping, including an orchard.

Two blocks are orientated north – south within the site, comprising Units 1- 7, separated by a mews court area, with gardens to the west and a vehicular access driveway/parking to the north.

One block, orientated east – west within the site, contains Units 8-12 and is fronted by a proposed orchard to the north, gardens to the south and a vehicular access driveway/parking area to the east.

The site is currently an open grassed field separated from the main A259 by open fields to the south and west.

To the north lies a light commercial estate and to the east is a mixture of residential and light commercial.

Current access to the site is via a wide private concrete road, from Roundstone Lane to the east of the site.

Please refer to the Architects' detailed site layout drawings.

2.0 Site Drainage Constraints

We have been provided with a copy of the current Southern Water Asset Map which records the existing public foul and surface water sewerage known to Southern Water and owned by them.

We have attached a copy of the Southern Water Asset Map to this Report as Appendix A.

From the Asset Map, it is apparent that the site is remote from the existing public sewerage system by some distance.

There are existing separate foul and surface water public sewers in Parsons Close/Rowan Way, some 200m (in a direct line) to the north of the site.

There are existing foul sewers only in Downs Way, some 100m to the south of the site but on the south side of the main A259 Roundstone Bypass Road.

Therefore the existing public sewerage in Parsons Close/Rowan Way to the north (which has both foul and surface water sewers) would appear to be the only viable point of connection to the existing public sewer infrastructure.

In terms of disposal of wastewater discharge, the depth of the existing foul public sewerage in Parsons Close/Rowan Way is such that it is not considered viable with any certainty to connect by gravity alone from the site at the requisite minimum gradients over circa 270m distance in an indirect line.

From survey data and from Southern Water Asset Map information and assuming a 150mm diameter pipe laid to a minimum recommended gradient it has been determined that, theoretically, it is just possible that a gravity sewer connection could be achieved.

However, this assumes that any sewer can be laid at a constant gradient without any obstructions along the route of the sewer which might adversely affect a constant gradient.

As such, any foul connection to the public sewerage will require pumping.

As an alternative, consideration was given to the viability of providing an on – site wastewater treatment plant in conjunction with a drainage field.

This required detailed investigation of the soakage potential of the subsoil, in conjunction with the available space afforded by site layout, in anticipation of the need for eventual compliance with the Building Regulations and Environment Agency Regulations.

In terms of disposal of surface water discharge, the depth of the existing surface water public sewerage in Parsons Close/Rowan Way is again such that it is not considered possible to connect the surface water drainage by gravity alone.

As such, any surface water connection to the public sewerage will require a pumped system.

As an alternative, consideration has been given to the viability of utilising infiltration or SUDS measures, contained entirely within the boundaries of the site.

Again, this required detailed investigation of the soakage potential of the subsoil.

3.0 Ground Investigations

A comprehensive Desk Study, Site Investigation and Risk Assessment Report was commissioned by The Howse Wallis Partnership on behalf of Angmering Community Land Trust, and has been undertaken and prepared by Southern Testing Ltd, (Report J13227 dated 25 August 2017) which is appended to this Report as Appendix B.

The scope of the site investigations contained in the Southern Testing Report relevant to this Drainage Statement is as follows :-

- i) Soakage testing to BRE 365 Soakaway Design for the purposes of establishing the soil soakage rate in connection with the design of soakaways for the purposes of the disposal of surface water.

A subsequent further investigation and report was carried out by Southern Testing as a supplementary exercise (Report J13227 dated November 2017) which is appended to this Report as Appendix B.

The scope of the site investigation contained in this Supplementary Report relevant to this Drainage Statement is as follows :-

- i) Further soakage testing at shallow depth (i.e. at depths less than 1.0m) to BRE 365 for the purposes of establishing the soil soakage rate in connection with the design of shallow blanket soakaways and permeable pavements.

Whilst these soakage test did not include testing in accordance with BS 6297 Code of Practice for the Design and Installation of Drainage Fields for Use in Wastewater Treatment, the tests would be an indication as to viability of the use of a drainage field for the disposal of wastewater effluent from a package wastewater treatment plant.

During the first attendance by Southern Testing in July 2017, infiltration tests in accordance with BRE Digest 365 Soakaway design:1991 were performed at two locations to provide guidance on the suitability of the ground for the adoption of a surface water drainage system.

A total of 6 No tests were carried out (3No. repeat tests per test pit) at depths of between 3.0m and 3.40m below existing ground level.

Based on the results an indicative design infiltration rate for the purposes of soakaway design in the order of 3.86×10^{-5} m/sec was calculated.

It should be borne in mind that these initial tests were carried out at depths of 3.0m – 3.40m within chalky gravel and are indicative of the soakage rates that could be expected for any soakaway designed to be installed at this depth.

Mindful that in the interests of cost efficiency it will be more likely that shallow 'blanket type' soakaways such as those constructed using Wavin Aquacell crate units or permeable paving would be used for the purposes of surface water disposal, further soakage testing was commissioned.

The depth of the tests were specifically limited to a maximum 1.0m below ground level to represent typical soakage rates that could be expected for any soakaway designed to be installed at this depth.

During the second attendance by Southern Testing in November 2017, infiltration tests in accordance with BRE Digest 365 Soakaway design: 1991 were carried out to provide guidance on the suitability of the ground for the adoption of an on-site infiltration system.

Two previously- dug trial pits were re- tested at depth and a further 4 No trial pits were excavated to a maximum depth of around 1.0 m and tested.

These further tests were carried out by Southern Testing in November 2017, when any significant ground water level was likely to be rising.

The re – testing of the earlier pits dug in July 2017 indicated that there was little difference in the recommended design soakage rate and no groundwater was encountered in any of the test pits down to a depth of 3.40m.

As a result, a design soakage rate for any soakaway at around 3.0m depth within the chalky gravels have been assumed as unchanged at 3.86×10^{-5} m/sec.

For shallow blanket type soakaways and permeable paving, based on the results an indicative design infiltration rate for the purposes of soakaway design in the order of 5.0×10^{-6} m/sec was calculated.

As was expected, the soakage rates at the shallower depth were slower than those at greater depth, due to the upper soils consisting of Brickearth, a silty clay.

No specific testing was undertaken for the purposes of the design of drainage fields in accordance with BS 6297 Code of Practice for the Design and Installation of Drainage Fields for Use in Wastewater Treatment.

However, Southern Testing were requested to convert the results of the shallow testing to BRE 365 to a Vp value (in mm/sec), as specified in BS 6297.

This conversion exercise gave the following results :-

TP201 – 166.7 mm/sec

TP203 (1) – 31.94 mm/sec

TP203 (2) – 125 mm/sec

TP204 – 45.04 mm/sec

TP205 – 167.74 mm/sec

4.0 Surface Water Drainage Design

Given the apparent viability of the use of soakaways at reasonably shallow depths, BLB Engineers Ltd consulted with Wavin Technical Services Department, manufacturers of the Aquacell Modular Stormwater Storage System.

The modular system will be designed in accordance with the principles contained within the SUDS Manual.

Wavin Technical Services department were requested to provide designs for soakaway storage volumes for a modular area within the site of 75 m², which typically represents the plan roof area of a single dwelling unit.

A design return period for soakaway design of 1:100 years was utilised, with an additional 30% uplift in volume for climate change and with a factor of safety against future siltation of 2.

A design figure for permeability of 5.00×10^{-6} m/s was utilised in connection with the design.

We have attached the results of the Wavin Design to this report (Refer to Appendix C).

Due to the fact that Aquacell units can be considered 'blanket soakaways', for the purposes of design CIRIA 156 can be utilised instead BRE 365.

The CIRIA 156 design philosophy has the advantage over BRE 365 in that the base area of soakaways can be utilised as part of the drained perimeter of the soakaway, leading to more soakage efficacy particularly in soils of relatively low permeability.

We have consulted with Arun Building Control as to the potential issues with draining this site and Building Control has accepted in principle the design philosophy of using CIRIA 156 in lieu of BRE 365 for soakaway design at Building Regulations design stage.

Roof/Impermeable external areas

On the basis of the Wavin design, it can be seen that the required attenuation storage under the specified storm event for the purposes of roof/impermeable area drainage can be accommodated within Aquacell soakaways, and that soakaways capable of discharging to half volume within the requisite 24 hours as defined by both CIRIA 156 and BRE 365, and consequently by Building Control.

We have attached as part of this report our drawing BLB/e 17134/SP1A indicating the extent of Aquacell soakaways required in order to accommodate the 1 : 100 year storm event plus 30 % for climate change (Refer to Appendix D).

Hardlandscaping

All hard landscaping areas to the site can be drained under the requisite range of storm events, with permeable pavements, designed in accordance with the principles contained within the SUDS manual.

Based on initial calculations, and pending further information such as CBR values for the subsoil at formation level, a permeable sub- base layer of around 400mm thick will be required as part of the construction make up of permeable areas.

The permeable sub base layer would be required under all external permeable surfaces, including access driveways, footways and private car parking spaces.

We have attached as part of this report our drawing BLB/e17134/SP1A indicating the extent of a provisionally 400mm thick permeable sub- base required in order to accommodate the 1 : 100 year storm event plus 30 % for climate change (Refer to Appendix D).

All proposals for the use of soakaways or other infiltration measures for the discharge of surface water will be subject to groundwater table monitoring throughout the course of the winter months and subject to the approval of Arun District Council's Drainage Engineer, Building Control and the Environment Agency.

Two further visits by Southern Testing are diarised between January and April 2018 for this purpose, and the results will inform the detailed design stage.

The detailed design will be subsequently submitted to discharge any related planning condition.

On the basis of previous investigations and preliminary discussions with Arun District Council Officers, we understand it is unlikely that seasonal groundwater table levels will adversely affect the performance of shallow soakaways.

The scheme is for the delivery of affordable housing, and will likely be retained as such in perpetuity by a registered provider.

Issues associated with future maintenance and management of on – site infiltration features will not be problematic.

Given that the whole site is to be drained by way of on – site infiltration, there will be no negative net impact on the existing Greenfield run- off rate.

The site is entirely within Flood Zone 1 with a low risk of flooding. As such, in accordance with the Environment Agency's Flood Risk Assessments ; Climate Change Allowances, a central peak rainfall intensity allowance of 20% is considered appropriate for the total potential change anticipated for 2017 – 2115.

For the purposes of soakaway design the climate factor has been increased to 30%.

The housing streetscape will be designed so as to reflect the natural topography of the site, and as such, the houses within the development will not be at risk from flooding.

Surface water run -off from the site will be contained within the site via infiltration and therefore neighbouring land will not be at greater flood risk than pre- development.

5.0 Wastewater (Foul) Drainage Design

Mindful of the constraints of the site with respect to the disposal of wastewater from the site, BLB Engineers have explored the possibility of discharging wastewater into a package wastewater treatment plant contained within the site, with the resulting effluent discharging into a drainage field within the site.

BLB Engineers have consulted with various manufacturers of package wastewater treatment plants including Klargester and Condor.

From initial feedback we are advised that a typical daily DWF (dry weather flow) of around 8m³/day would be discharged as effluent.

Based on the converted Percolation Values (Vp) provided by Southern Testing, it is apparent that the soakage rates of the subsoil on the site at depths less than 1.0m depth are not within the acceptable range of percolation values considered appropriate in BS 6297 Code of Practice for the Design and Installation of Drainage Fields for Use in Wastewater Treatment.

Even allowing for more compliant percolation rates if further testing was commissioned, it is apparent that there is insufficient space available on the site for a drainage field whilst complying with the Building Regulations and the Environment Agency's General Binding Rules.

Therefore the only viable means of disposing of wastewater from the site is to discharge into the public foul sewerage system.

From the current Southern Water Asset Map the only available practical point of connection to the public sewer infrastructure is in Parsons Close, some 200m (in a direct line) to the north west of the site.

Subject to Southern Water connection approval, it is therefore proposed to connect at manhole reference 1505 in Parsons Close via a new short gravity sewer from a new manhole constructed in the verge to the south of manhole 1505, within Parish Council - owned land.

It is proposed that a new private pumping station will be constructed within the site, which will be connected to the new manhole by a private rising main, also laid within land owned by the Parish Council.

Both the pumping station and the rising main will be owned and maintained in perpetuity, by the developer.

It is the intention that, subject to Southern Water approval, the new manhole south of manhole reference 1505 and the new connecting gravity sewer will be offered to Southern Water for adoption.

We have attached as part of this report our drawing BLB/e17134/002 (refer to Appendix D) indicating the proposed location of the pumping station and the intended route of the rising main/new foul sewer.

6.0 Summary

Ground investigations indicate that a permeability rate is viable for the disposal of surface water on site, and that blanket soakaways in the form of Aquacell unit soakaways or similar can be utilised for the disposal of roof run-off and other impermeable surfaces.

A permeable paving/sub- base can be designed in order to drain hard landscaping and other permeable areas.

Infiltration features can be designed to accommodate the 1: 100 year storm event plus 30 % for climate change.

Given that the whole site is to be drained by way of on-site infiltration measures, there will be no negative net impact on the existing Greenfield run off rate.

The site is entirely within Flood Zone 1 with a low risk of flooding.

The housing streetscape will be designed so as to reflect the natural topography of the site, and as such, the houses within the development will not be at risk from flooding.

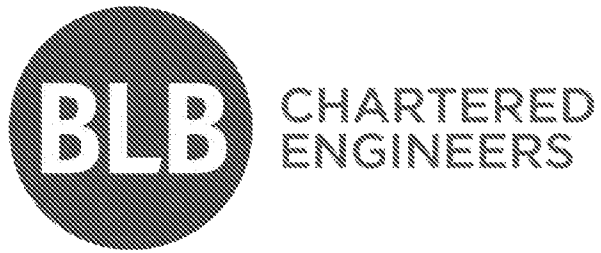
Surface water run -off from the site will be contained within the site via infiltration and therefore neighbouring land will not be at greater flood risk than pre – development.

There is no viable means of draining the site of wastewater by the use of infiltration measures.

Foul drainage of the site will be provided by connecting to the existing public foul sewerage system, subject to Southern Water approval.

BLB Chartered Engineers Ltd

January 2018



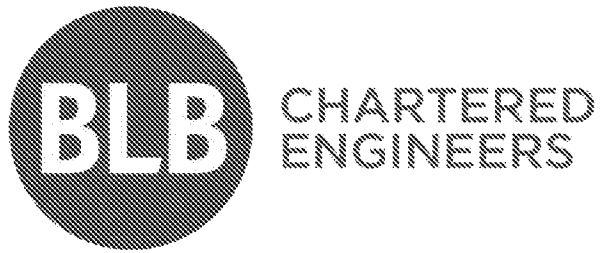
APPENDIX A

SOUTHERN WATER ASSET MAP



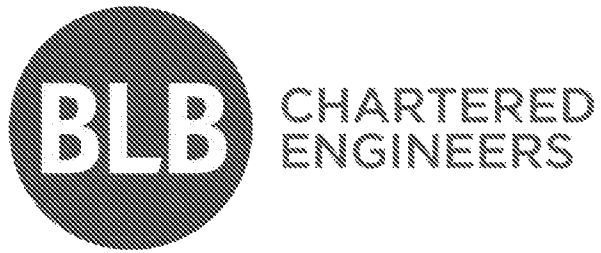
Southern
Water





APPENDIX B

SOUTHERN TESTING GROUND INVESTIGATION REPORTS



APPENDIX C

WAVIN AQUACELL UNIT DESIGN

WAVIN Stormwater Management

AquaCell Soakaway designed in accordance with CIRIA 156

Project & Site Details

Project Number	S15560-A	Produced by	Harry Wrobel
Client	BLB Chartered Engineers	Checked by	
Site Name	Mayflower Way		
Location	Angmering	Date	04/01/2018

Drainage Details

Area	75 m ²	Climate Change	30 %
Catchment Type	Unknown	Effective Area	88 m ²
Area Reduction Factor	0.9	Additional Inflow	0.00 l/s

Discharge Parameters

Infiltration Rate	5.00E-06	Soil Type	Unknown
Factor of Safety	2	Source	S.I.R
Effective Infiltration Rate	2.50E-06		
Additional Outflow*	0.00 l/s	Depth to Groundwater (m)	Unknown

*flat rate from pump only

Rainfall Data

R value					0.4	Storm Return Period			1 in 100 years	
M5-60					20	Country			England and Wales	
								Storage	Time To	
Time	Z1 Value	y mm	Z2 Value	p mm	Value i	a	b	Height	Half -Empty	
5min	0.38	7.60	1.84	13.98	0.17	-108.18	0.011	0.095	4.64	
10min	0.52	10.40	1.91	19.86	0.12	-76.57	0.011	0.134	6.37	
15min	0.63	12.60	1.91	24.07	0.10	-61.67	0.011	0.162	7.54	
30min	0.80	16.00	1.99	31.84	0.06	-40.49	0.011	0.213	9.54	
1hr	1.00	20.00	2.03	40.60	0.04	-25.49	0.011	0.267	11.54	
2hr	1.19	23.80	2.03	48.31	0.02	-14.80	0.011	0.308	12.97	
4hr	1.44	28.80	2.01	57.89	0.01	-8.51	0.011	0.351	14.35	
6hr	1.59	31.80	1.97	62.65	0.01	-5.89	0.011	0.360	14.65	
10hr	1.81	36.20	1.97	71.31	0.01	-3.74	0.011	0.373	15.06	
24hr	2.35	47.00	1.89	88.83	0.00	-1.51	0.011	0.336	13.88	
48hr	2.69	53.80	1.81	97.38	0.00	-0.42	0.011	0.166	7.70	

Soakaway Parameters

Length	3.0 m	Width	4.5 m
Depth	0.4 m	Void	95 %

Results

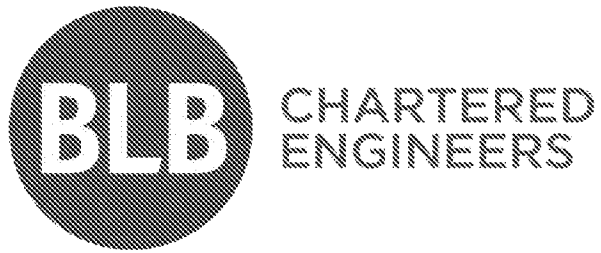
Critical storm duration (hrs)	10hr	
Required Storage Height	0.373	PASS
Half Time Empty	15.06	PASS

AquaCell Modular Units

No. Units Long	3	No. Units Wide	9
No. Units Deep	1		
Total Number of Units	27	Unit Type	AquaCell Prime



CONNECT TO BETTER



APPENDIX D

FOUL/STORMWATER DRAINAGE STRATEGY DRAWINGS

This drawing is copyright and shall not be reproduced nor used for any other purpose without written permission of the authors.

Do not scale from this drawing, use figured dimensions only.

The drawing must be read in conjunction with all other related drawings and documentation.

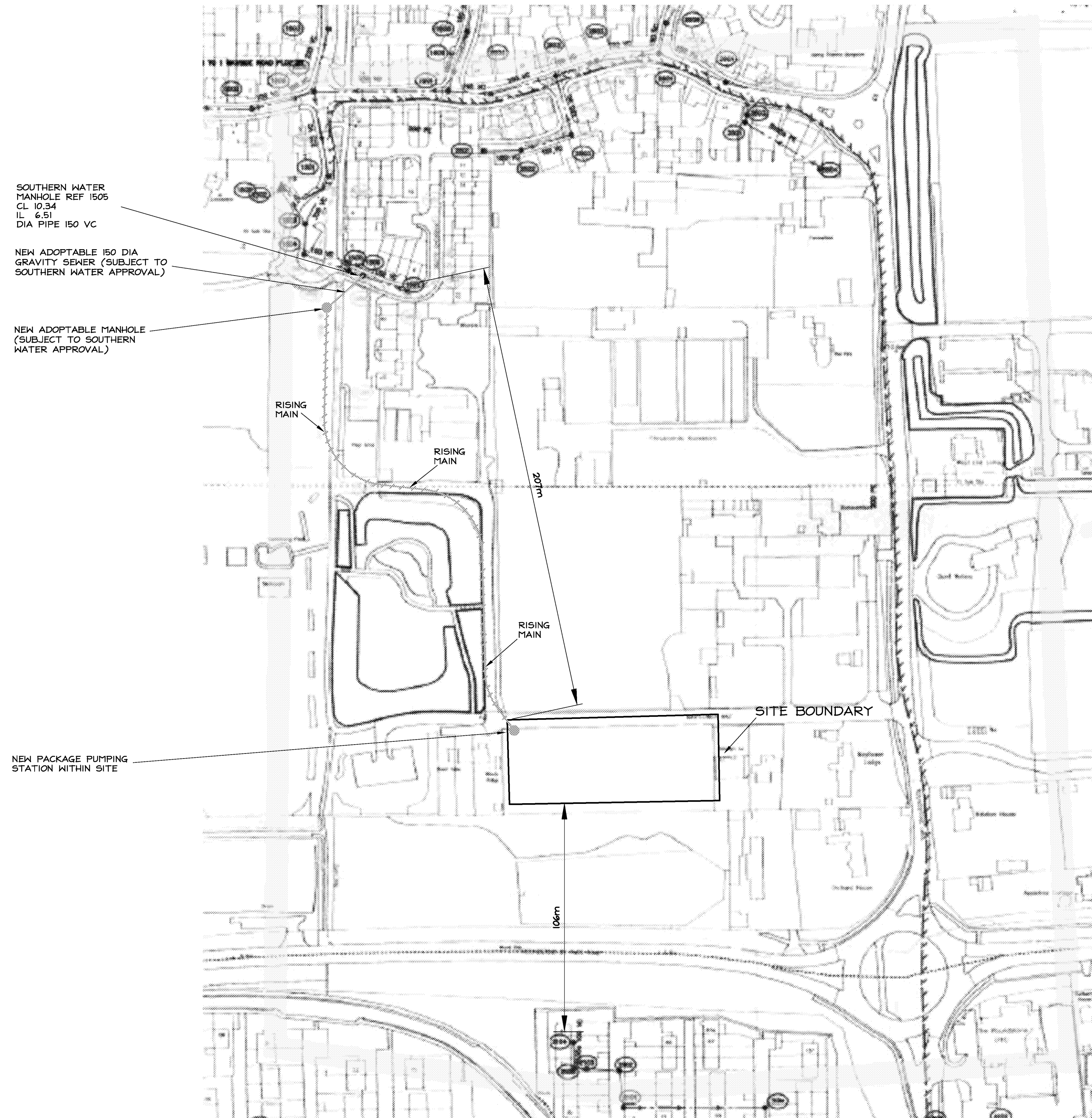
It is the contractor's responsibility to ensure compliance with the Building Regulations.

It is the contractor's responsibility to check all dimensions on site, any discrepancy to be reported immediately to Engineer.

Contractor to check all existing structural arrangement as assumed on drawing prior to ordering of new columns, beams etc. Any discrepancies reported immediately to Engineer.

The contractor shall be responsible for all temporary stability works and shall provide all necessary propping, shoring and temporary works throughout the construction process.

Details and sizes shown are indicative only and are subject to confirmation by the relevant Specialist Sub-contractor.

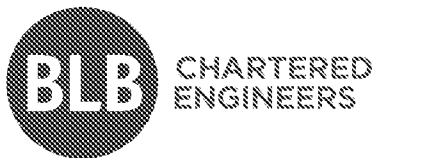


EXTRACT FROM SOUTHERN
WATER SEWER RECORDS

(SCALE 1:1250)

Revisions

-	-	-	
Rev	Date	Description	By



BLB House, 15-16 Hunns Mere Way
Brighton BN2 6AH
t: 01273 301 888
enquiries@blbengineers.co.uk
blbengineers.co.uk



Client: **ANGMERING COMMUNITY LAND TRUST**

Project: MAYFLOWER WAY
ANGMERING
WEST SUSSEX

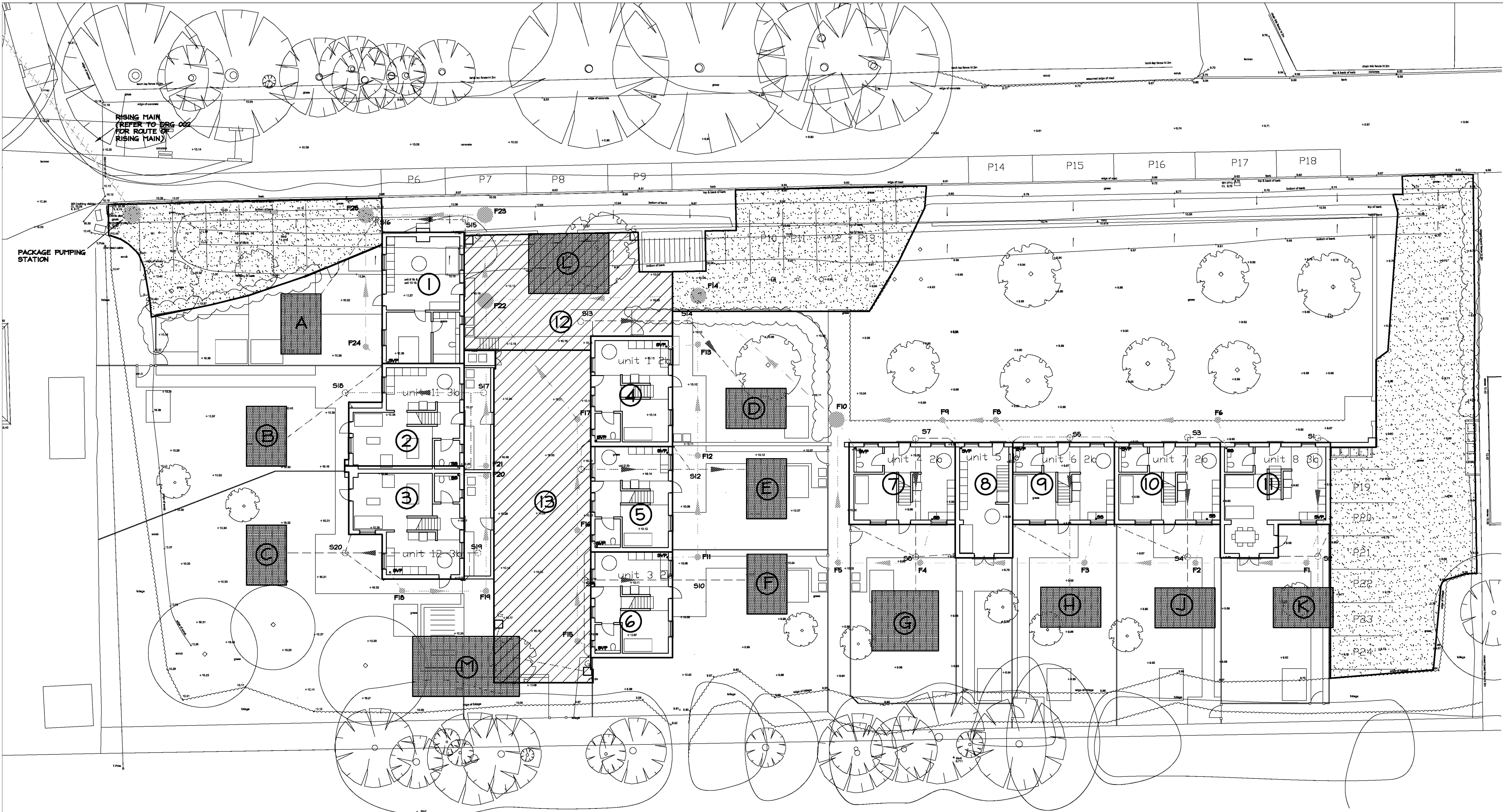
Drawing Title:

**SITE PLAN SHOWING CONNECTION
INTO NEAREST PUBLIC SEWER**

Scale: 1:1250	Drawn By: JC	Date: JAN'18
(when printed @ A1)	Checked By: DCS	Date: JAN'18
Preliminary ☐	Planning ☒	Tender ☐ Construction ☐

Job: e17134 Dwg No: 002 Rev: - A1

PLANNING ISSUE



KEY

- INDICATES LOCATION & REFERENCE OF PROPOSED IMPERMEABLE AREA
- INDICATES LOCATION & REFERENCE OF PROPOSED AQUACELL SOAKAWAY UNITS
- INDICATES TRAPPED ROAD GULLY
- INDICATES FOUL DRAINAGE
- INDICATES SURFACE WATER DRAINAGE
- INDICATES APPROXIMATE EXTENT OF PROPOSED PERMEABLE ROAD CONSTRUCTION - PROVISIONAL THICKNESS OF PERMEABLE SUB - BASE 400MM
- INDICATES APPROXIMATE EXTENT OF PROPOSED IMPERMEABLE PAVING

N.B.
STORAGE VOLUMES BASED ON INFILTRATION RATE OF 5.0x10⁻⁶ m/s
(REFER TO SOUTHERN TESTING LTD REPORT J13227 DATED AUGUST 2017) AND DESIGNED TO ACCOMMODATE THE 1:100 YEAR STORM EVENT + 30% FOR CLIMATE CHANGE

IMPERMEABLE AREAS

REF	IMPERMEABLE AREA (m ²)
1	65
2	65
3	65
4	55
5	55
6	55
7	55
8	40
9	50
10	50
11	65
12	120
13	185

SOAKAWAY SCHEDULE (1:100 YEAR STORM + 30% CLIMATE CHANGE)

REF	TOTAL AREA TO DRAIN (m ²)	VOLUME OF SOAKAWAY
A	65	3.0L x 4.5W x 0.4D (27 UNITS)
B	65	3.0L x 4.5W x 0.4D (27 UNITS)
C	65	3.0L x 4.5W x 0.4D (27 UNITS)
D	55	3.0L x 4.5W x 0.4D (27 UNITS)
E	55	3.0L x 4.5W x 0.4D (27 UNITS)
F	55	3.0L x 4.5W x 0.4D (27 UNITS)
G	55+40 = 95	5.0L x 4.5W x 0.4D (45 UNITS)
H	50	3.0L x 4.5W x 0.4D (27 UNITS)
J	50	3.0L x 4.5W x 0.4D (27 UNITS)
K	65	3.0L x 4.5W x 0.4D (27 UNITS)
L	120	6.0L x 4.5W x 0.4D (54 UNITS)
M	185	8.0L x 4.5W x 0.4D (72 UNITS)
		TOTAL STORAGE VOLUME 414 UNITS (83 m ³)

FOUL WATER MANHOLE SCHEDULE

MH REF	COVER LEVEL	INVERT LEVEL	DEPTH	MH TYPE	COVER
F1	9.90	9.30	600	450Ø P.P.I.C.	A15
F2	9.90	9.19	710	450Ø P.P.I.C.	A15
F3	9.90	9.08	820	450Ø P.P.I.C.	A15
F4	9.90	8.92	980	450Ø P.P.I.C.	A15
F5	10.00	8.83	1170	450Ø P.P.I.C.	A15
F6	9.90	9.30	600	450Ø P.P.I.C.	A15
F7	9.90	9.19	710	450Ø P.P.I.C.	A15
F8	9.90	9.08	820	450Ø P.P.I.C.	A15
F9	9.90	9.08	820	450Ø P.P.I.C.	A15
F10	10.00	8.69	1310	1200Ø TYPE B	BI25
F11	10.00	9.40	600	450Ø P.P.I.C.	A15
F12	10.10	9.29	810	450Ø P.P.I.C.	A15
F13	10.10	9.18	920	450Ø P.P.I.C.	A15
F14	10.00	8.56	1440	1200Ø TYPE B	C250
F15	10.10	9.50	600	450Ø P.P.I.C.	A15
F16	10.20	9.39	810	450Ø P.P.I.C.	A15
F17	10.20	9.28	920	450Ø P.P.I.C.	A15
F18	10.30	9.60	600	450Ø P.P.I.C.	A15
F19	10.20	9.51	690	450Ø P.P.I.C.	A15
F20	10.20	9.40	800	450Ø P.P.I.C.	A15
F21	10.20	9.38	820	450Ø P.P.I.C.	A15
F22	10.20	8.36	1840	1200Ø TYPE B	A15
F23	10.10	8.29	1810	1200Ø TYPE B	BI25
F24	10.30	9.70	600	450Ø P.P.I.C.	A15
F25	10.10	8.23	1870	1200Ø TYPE B	C250
F26	10.50	8.00	2500	1200Ø TYPE B	BI25

SURFACE WATER MANHOLE SCHEDULE

MH REF	COVER LEVEL	INVERT LEVEL	DEPTH	MH TYPE	COVER
S1	9.90	9.40	500	450Ø P.P.I.C.	A15
S2	9.90	9.30	600	450Ø P.P.I.C.	A15
S3	9.90	9.40	500	450Ø P.P.I.C.	A15
S4	9.90	9.30	600	450Ø P.P.I.C.	A15
S5	9.90	9.40	500	450Ø P.P.I.C.	A15
S6	9.90	9.30	600	450Ø P.P.I.C.	A15
S7	9.90	9.40	500	450Ø P.P.I.C.	A15
S8	9.90	9.30	600	450Ø P.P.I.C.	A15
S9	10.10	9.60	500	450Ø P.P.I.C.	A15
S10	10.10	9.50	600	450Ø P.P.I.C.	A15
S11	10.10	9.60	500	450Ø P.P.I.C.	A15
S12	10.10	9.50	600	450Ø P.P.I.C.	A15
S13	10.10	9.60	500	450Ø P.P.I.C.	A15
S14	10.10	9.50	600	450Ø P.P.I.C.	A15
S15	10.10	9.60	500	450Ø P.P.I.C.	A15
S16	10.10	9.50	600	450Ø P.P.I.C.	A15
S17	10.20	9.70	500	450Ø P.P.I.C.	A15
S18	10.30	9.60	700	450Ø P.P.I.C.	A15
S19	10.20	9.70	500	450Ø P.P.I.C.	A15
S20	10.30	9.60	700	450Ø P.P.I.C.	A15

BASE OF SOAKAWAY - 1.0m (TBC)

NOTES

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- DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
- THE DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS AND DOCUMENTATION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE BUILDING REGULATIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL DIMENSIONS ON SITE, ANY DISCREPANCY TO BE REPORTED IMMEDIATELY.
- DETAILS AND SIZES SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONFIRMATION BY THE RELEVANT SPECIALIST SUB-CONTRACTOR.
- REFER TO DRAWINGS e17134/2 & 3 FOR DRAINAGE DETAILS
- ALL DRAINS WITH LESS THAN 1.2m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.9m OF COVER IN OTHER AREAS, SHALL BE PROTECTED WITH CONCRETE IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWINGS PROVIDED (FOR BEDDING TYPE LOCATIONS, REFER TO THE SEWER SECTIONS).
- IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF DRAINS, ALL ROAD, YARD GULLIES AND CHANNEL DRAINS ARE TO BE 'TRAPPED'.
- ALL PRIVATE SEWERS ARE TO BE 100mm DIA @ 1:80 GRADIENT (FOUL) & 1:100 GRADIENT (SURFACE) UNLESS OTHERWISE STATED. THE PRIVATE DRAINAGE DESIGN ON THE PLAN HAS BEEN BASED ON THE PRINCIPLES OF A HPVC SYSTEM. IT CAN BE ADAPTED TO SUIT A CLAYWARE SYSTEM BUT REFERENCE SHOULD BE MADE TO THIS OFFICE BEFORE AMENDMENTS ARE MADE.
- ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT 'H', B.S.EN752 AND THE LOCAL DISTRICT COUNCIL BUILDING CONTROL SECTION.
- MANHOLES SITUATED WITHIN AREAS ACCESSIBLE TO MOTOR VEHICLES ARE TO BE FITTED WITH SUITABLE STRENGTH COVERS AND FRAMES.
- WHERE DRAINS PASS THROUGH FOUNDATIONS, A FLEXIBLE JOINT SHOULD BE PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE AND A ROCKER PIPE OF MAX 600mm IN LENGTH SHALL BE PROVIDED
- STUB STACKS FITTED WITH AIR ADMITTANCE VALVES MAY BE USED INSTEAD OF SOIL AND VENT PIPES. SUBJECT TO THE ARCHITECT'S APPROVAL (EXCEPT WHERE THE DRAINAGE CONNECTION EXCEEDS 10m BEFORE CONNECTING WITH ANOTHER VENTILATED DRAIN, INSPECTION CHAMBER OR MANHOLE). HEAD OF DRAIN VENT PIPES MUST NOT BE FITTED WITH AIR ADMITTANCE VALVES.
- SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CONCRETE SURROUND SUBJECT TO THE BUILDING INSPECTORS REQUIREMENTS.
- APPROPRIATE MEASURES (TO BE AGREED WITH THE LOCAL AUTHORITIES BUILDING CONTROL SECTION) ARE TO BE TAKEN TO DISCOURAGE RODENT ENTRY INTO THE PROPERTIES.
- WHERE DRAIN RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACKFILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED, AND TO APPROVAL OF THE BUILDING CONTROL OFFICER.
- REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
- THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
- IT IS THE SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.
- CONNECTIONS TO AND DIVERSIONS OF EXISTING DRAINAGE ARE TO BE CHECKED FOR LEVEL AND POSITION PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ON SITE. ANY SIGNIFICANT DIFFERENCES ARE TO BE REPORTED TO THIS OFFICE SO THAT DESIGNS MAY BE ADJUSTED ACCORDINGLY.
- REFERENCE TO BE MADE TO ALL RELEVANT STATUTORY AUTHORITIES TO ENSURE THAT NO CONFLICT EXISTS WITH NEW DRAIN CONNECTIONS. ALL NEW CONNECTIONS TO EXISTING PUBLIC SEWERS TO BE SUBJECT TO APPROVAL DRAINAGE AUTHORITY.

Rev	Date	Description	By
A	04.01.2018	TREATMENT PLANT OMITTED - PUMPING STATION ADDED	



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Client: **ANGMERING COMMUNITY LAND TRUST**

Project: **MAYFLOWER WAY
ANGMERING
WEST SUSSEX
Project Name**

Drawing Title: **DRAINAGE STRATEGY PLAN**

Scale: 1:200
(when printed @ A1)
Drawn By: **JC**
Checked By:
Date: **06/11/17**

Preliminary ☒ Planning ☐ Tender ☐ Construction ☐

Job: **e17134**
Dwg No: **= SP1=**
Rev: **A**

PLANNING ISSUE