



**ARCH
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DRAINAGE TECHNICAL NOTE



QUEENS VIEW, NETLEY



**ARCH
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DRAINAGE TECHNICAL NOTE

FOR

QUEENS VIEW
NETLEY

Client:

Amiri Homes
Eagle Point
Little Park Farm Rd
Segensworth
Fareham
PO15 5TD

ISSUE		A	B	C
Issued By	C Hendry			
Date	03.03.2025			
Purpose	Information			
Approved By	CH			

Project No. AAL307

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1.0 Executive Summary

Following the granting of planning permission, Arch Associates has been appointed by Amiri Homes to prepare a technical note to discharge the following planning conditions:

7. Drainage

No development shall commence on site until full details of the surface water drainage scheme, based on the principles set out in the Drainage Strategy (Arch Associates, 30/11/2023, ref. AAL307), have been submitted to and approved in writing by the Local Planning Authority. The details shall include:

- a) A technical summary highlighting any changes to the design from that within the approved Drainage Strategy;*
- b) Winter groundwater monitoring infiltration test results undertaken in accordance with BRE365 and providing a representative assessment of those locations where infiltration features are proposed;*
- c) Detailed drainage plans to include type, layout and dimensions of drainage features including references to link to the drainage calculations;*
- d) Detailed drainage calculations to demonstrate existing runoff rates are not exceeded and there is sufficient attenuation for storm events up to and including 1:100+ climate change;*
- e) Evidence that urban creep has been included within the calculations;*
- f) Confirmation that sufficient water quality measures have been included to satisfy the methodology in the Ciria SuDS Manual C753;*
- g) Exceedance plans demonstrating the flow paths and areas of ponding in the event of blockages or storms exceeding design criteria. The surface water drainage scheme shall thereafter be implemented in accordance with the approved details.*

Reason: To ensure suitable drainage to prevent flood risk, in accordance with Policy DM6 of the Eastleigh Borough Local Plan (2016-2036).

8. Drainage maintenance

Prior to first occupation of the development hereby permitted, details for the long term maintenance arrangements for the surface water drainage system shall be submitted to and approved in writing by the Local Planning Authority. The details shall include:

- a. Maintenance schedules for each drainage feature type and ownership;*
- b. Details of protection measures. The drainage system shall thereafter be maintained in accordance with the approved details.*

Reason: To ensure long term management of the drainage system to protect against flood risk, in accordance with Policy DM6 of the Eastleigh Borough Local Plan (2016-2036).

For clarity and ease of reference, the following technical submission will be itemised for each planning condition.

2.0 Technical Submission

2.1 Pre-Commencement Condition 7

a) A technical summary highlighting any changes to the design from that within the approved Drainage Strategy;

RESPONSE:

In essence, the design remains largely unchanged from our previously submitted strategy other than an incoming service route across the car park has meant that the soakaway is now best placed slightly further south.



b) Winter groundwater monitoring infiltration test results undertaken in accordance with BRE365 and providing a representative assessment of those locations where infiltration features are proposed;

RESPONSE:

Following the planning application submission, a borehole was installed to 5m depth on site by Soils Ltd. (report ref: 21241/GMLR) and was monitored from early December 2023 to April 2024. The well remained dry throughout the monitoring period.

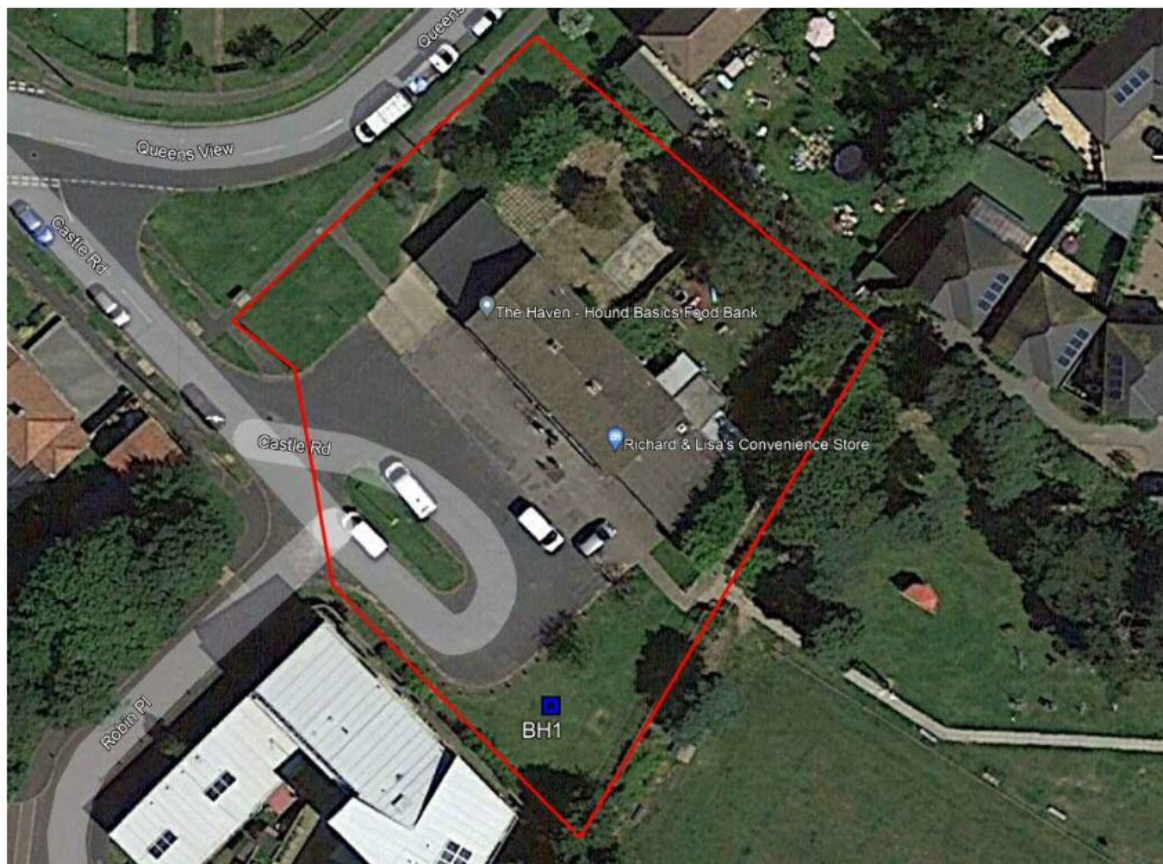


Table 3.3 Groundwater Monitoring

Exploratory Hole	Well Depth (m bgl)	Depth to Water (m bgl)					
		4/12/2023 ¹	7/12/23 ²	12/01/24 ²	16/02/24 ²	18/03/24 ²	04/04/24 ²
BH1	5.00	N/E	4.75	DRY	4.57	DRY	4.40

Note(s): ¹ Reading taken during drilling, ² Reading taken during monitoring G.L. = Ground Level N/E – Not encountered

c) Detailed drainage plans to include type, layout and dimensions of drainage features including references to link to the drainage calculations;

RESPONSE:

Refer to updated Arch Associates drawing pack in Appendix 1.

d) Detailed drainage calculations to demonstrate existing runoff rates are not exceeded and there is sufficient attenuation for storm events up to and including 1:100+ climate change;

RESPONSE:

Refer to updated FLOW modelling output in Appendix 2. The system can cater for the 1 in 100 year event plus 45% for climate change plus 10% for urban creep.

e) Evidence that urban creep has been included within the calculations;

RESPONSE:

Refer to updated FLOW modelling output in Appendix 2. The system can cater for the 1 in 100 year event plus 45% for climate change plus 10% for urban creep.

f) Confirmation that sufficient water quality measures have been included to satisfy the methodology in the Ciria SuDS Manual C753;

RESPONSE:

Based on the guidance in CIRIA C753, the following analysis has been undertaken with the relative mitigation indices for the proposed levels of treatment taken from CIRIA C753 Tables 26.3 (surface waters) and Table 26.4. The resultant assessment is summarised within the Table below.

Element	Pollution Hazard Indices			
	Pollution Hazard Level	Total Suspended Solids	Metals	Hydrocarbons
Residential Parking	Low	0.5	0.4	0.4
	Pollution Mitigation Indices			
Permeable Paving		0.7	0.6	0.7
Total		0.7	0.6	0.7
Sufficiency		Sufficient	Sufficient	Sufficient

g) Exceedance plans demonstrating the flow paths and areas of ponding in the event of blockages or storms exceeding design criteria. The surface water drainage scheme shall thereafter be implemented in accordance with the approved details.

RESPONSE:

Refer to Appendix 3 for exceedance routing plan.



2.2 Pre-Commencement Condition 8

Prior to first occupation of the development hereby permitted, details for the long term maintenance arrangements for the surface water drainage system shall be submitted to and approved in writing by the Local Planning Authority. The details shall include:

- a. Maintenance schedules for each drainage feature type and ownership;*
- b. Details of protection measures. The drainage system shall thereafter be maintained in accordance with the approved details.*

RESPONSE:

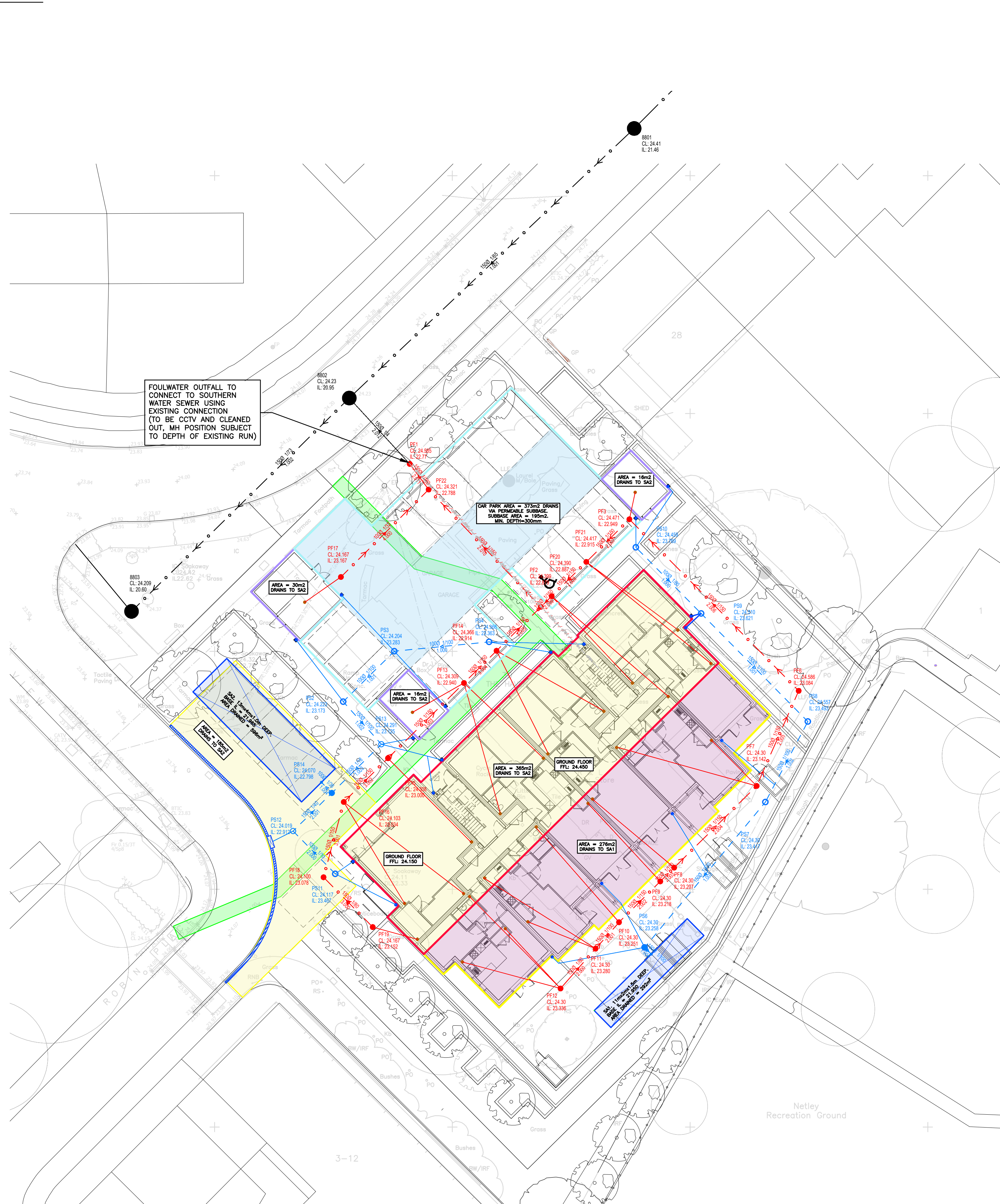
Refer to Appendix 4 for Drainage Maintenance Manual.



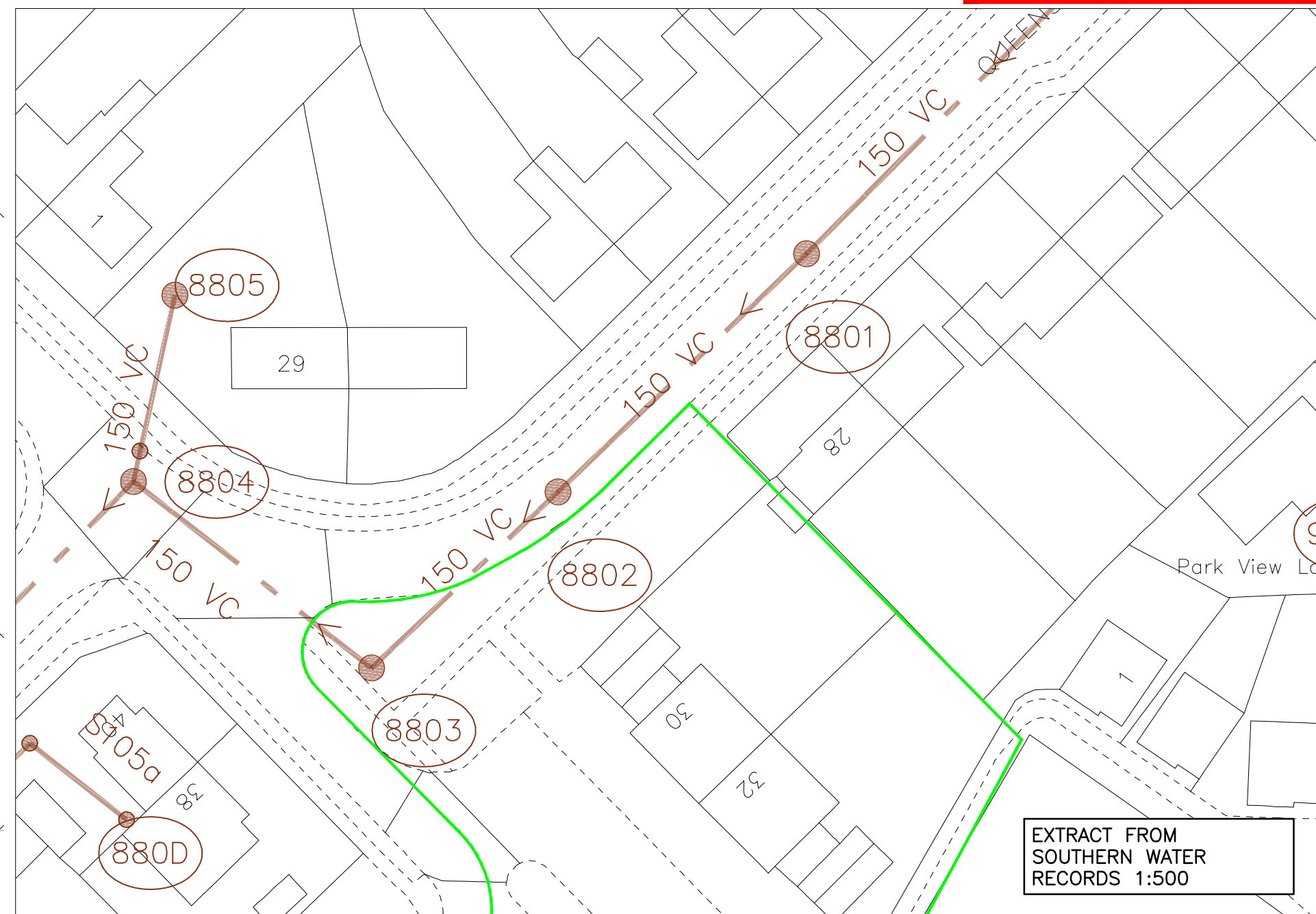
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Appendix 1

Drainage Drawing Pack



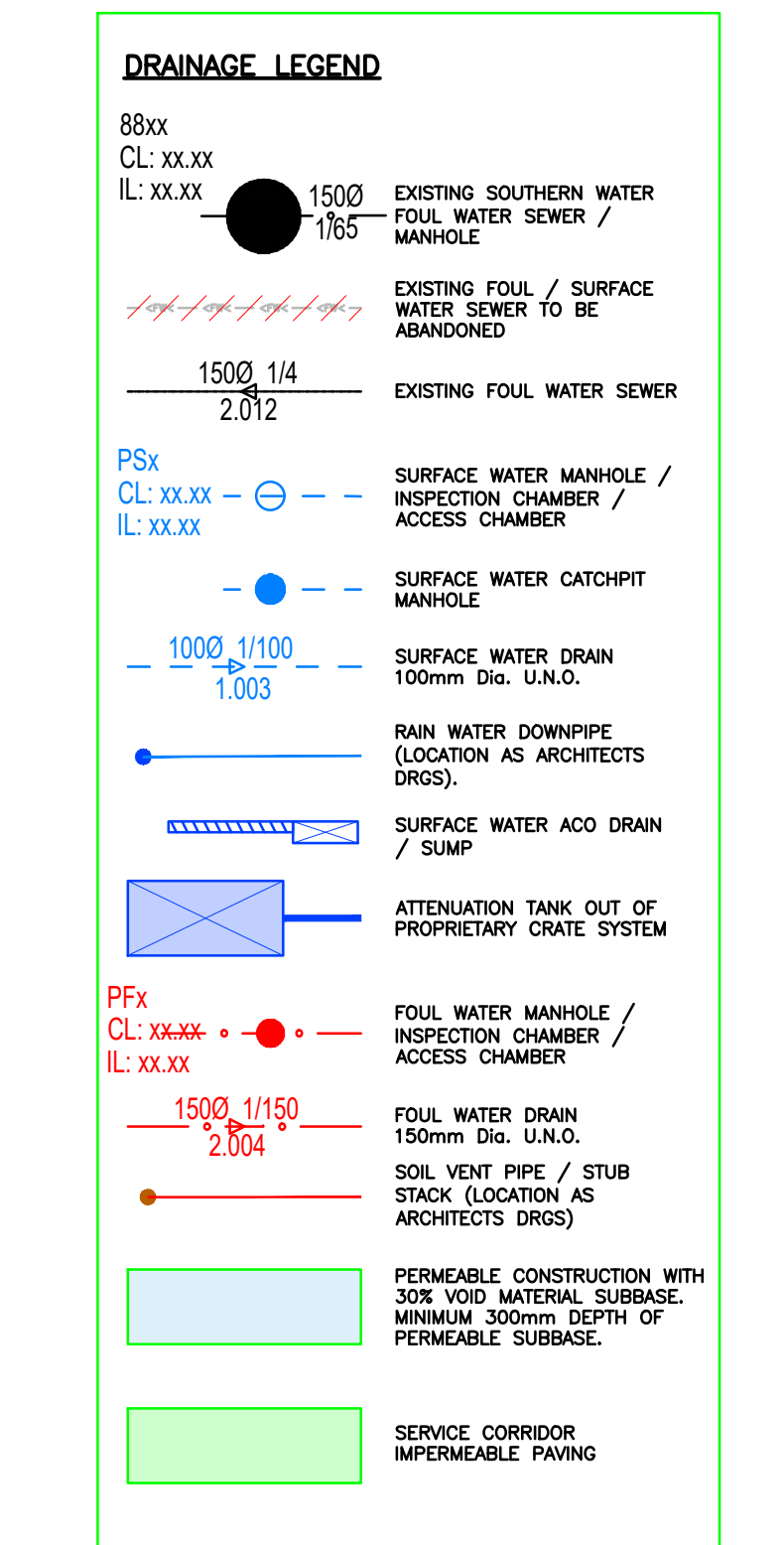
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PHASE: 0								
MH No.	MANHOLE DIMENSION (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
8801	1200Ø	Type B	D400	24.410	21.460	2.800	445875.295	108863.971
8802	1200Ø	Type A	D400	24.230	20.950	3.130	445851.330	108841.301
8803	1200Ø	Type A		24.209	20.600	3.459	445833.011	108823.365

PHASE: 0 (PRIVATE)								
MH No.	MANHOLE DIMENSION (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
PS2	450Ø	Type D	B125	24.223	23.173	0.900	445850.820	108815.772
PS3	450Ø	Type D	C250	24.204	23.283	0.821	445855.117	108820.016
PS4	450Ø	Type D	C250	24.366	23.363	0.903	445863.095	108820.795
PS6	450Ø	CATCHPIT	A15	24.300	23.258	0.892	445876.177	108795.106
PS7	450Ø	Type D	A15	24.300	23.417	0.733	445886.337	108807.330
PS8	450Ø	Type D	A15	24.557	23.493	0.913	445889.903	108814.100
PS9	450Ø	Type D	A15	24.510	23.621	0.739	445880.933	108823.184
PS10	450Ø	Type D	B125	24.459	23.769	0.590	445875.440	108828.746
PS11	450Ø	Type D	D400	24.117	23.467	0.550	445850.155	108801.293
PS12	450Ø	Type D	D400	24.019	22.912	0.956	445846.604	108804.888
PS13	450Ø	Type D	B125	24.291	23.125	1.016	445854.025	108812.191
PS14	450Ø	CATCHPIT	D400	24.070	22.798	1.122	445849.859	108808.091
SA1a		TANK		24.300	23.250	0.900	445876.737	108794.539
SA2a		TANK		24.039	22.765	1.124	445848.991	108808.991
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PF2	450Ø	Type D	B125	24.399	22.879	1.370	445867.445	108823.739
PF3	450Ø	Type D	C250	24.471	22.949	1.372	445874.892	108831.108
PF6	450Ø	Type D	A15	24.586	23.084	1.353	445889.133	108816.686
PF7	450Ø	Type D	A15	24.300	23.142	1.008	445885.598	108808.682
PF8	450Ø	Type D	A15	24.300	23.207	0.943	445878.657	108801.814
PF9	450Ø	Type D	A15	24.300	23.218	0.932	445877.490	108800.659
PF10	450Ø	Type D	A15	24.300	23.251	0.899	445874.021	108797.226
PF11	450Ø	Type D	A15	24.300	23.280	0.870	445872.049	108795.008
PF12	450Ø	Type D	A15	24.300	23.336	0.814	445869.100	108791.653
PF13	450Ø	Type D	C250	24.309	22.940	1.219	445860.978	108817.340
PF14	450Ø	Type D	C250	24.366	22.914	1.302	445863.717	108820.050
PF15	450Ø	Type D	B125	24.308	23.000	1.158	445854.582	108811.012
PF16	450Ø	Type D	D400	24.103	23.034	0.918	445850.868	108807.336
PF17	450Ø	Type D	D400	24.167	23.167	0.900	445850.627	108826.255
PF18	450Ø	Type D	D400	24.100	23.078	0.872	445849.165	108801.006
PF19	450Ø	Type D	B125	24.167	23.152	0.865	445853.300	108796.818
PF20	450Ø	Type D	C250	24.390	22.887	1.353	445868.355	108824.639
PF21	450Ø	Type D	C250	24.417	22.915	1.353	445871.272	108827.525
PF22	450Ø	Type D	C250	24.321	22.788	1.383	445858.003	108833.608

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Rev.	Date	Description	By
P01	03.03.2025	PRELIMINARY ISSUE FOR COMMENT	JH

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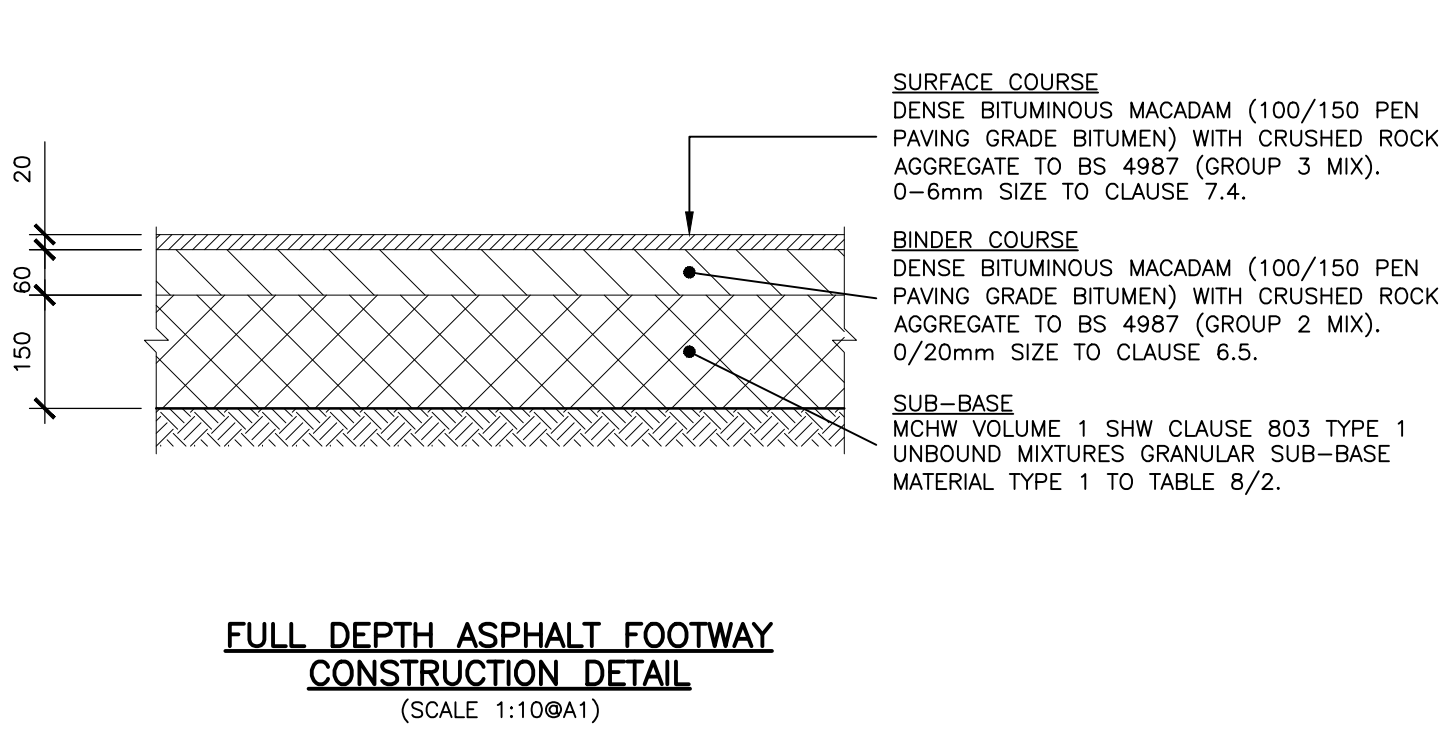
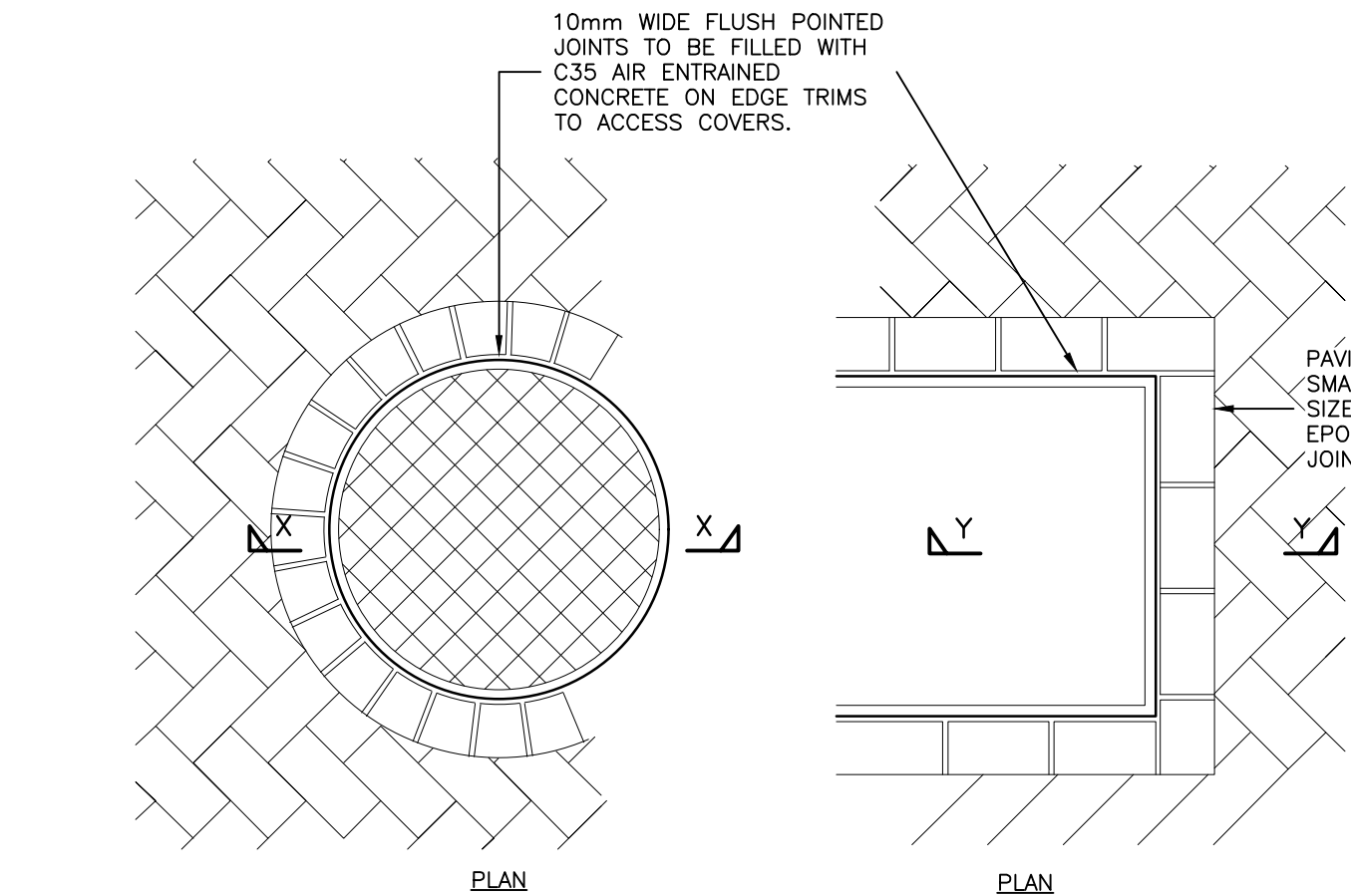
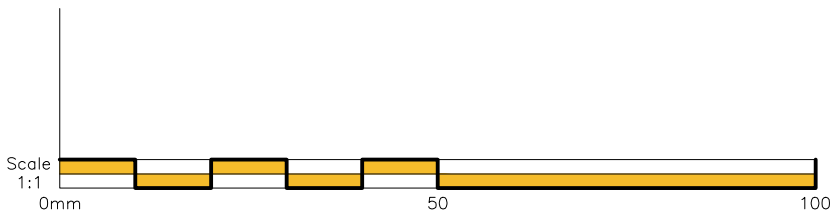
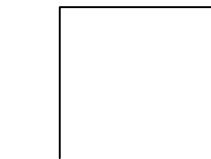
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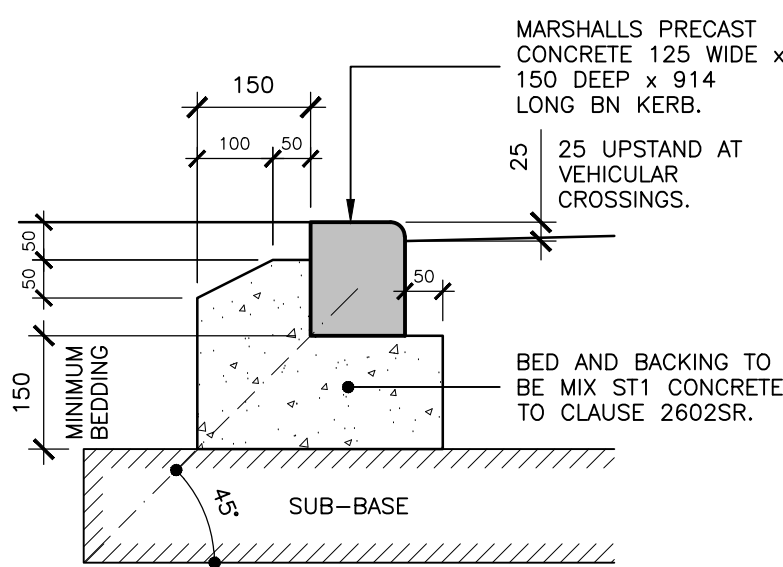
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RE—DEVELOPMENT OF 30—32 QUEENS VIEW, NETLEY.

Drawing title
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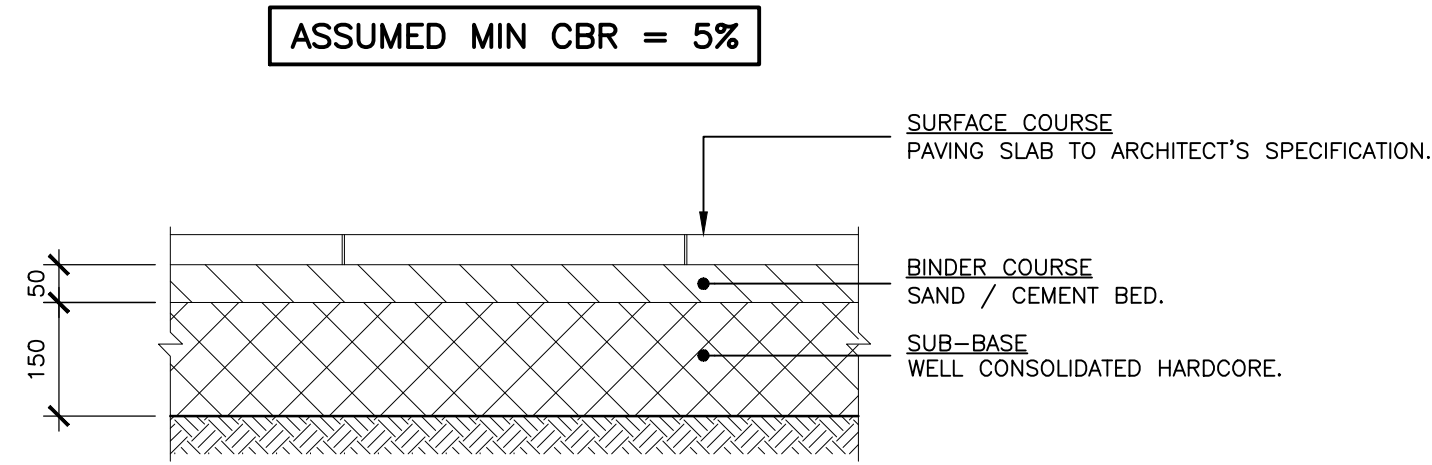
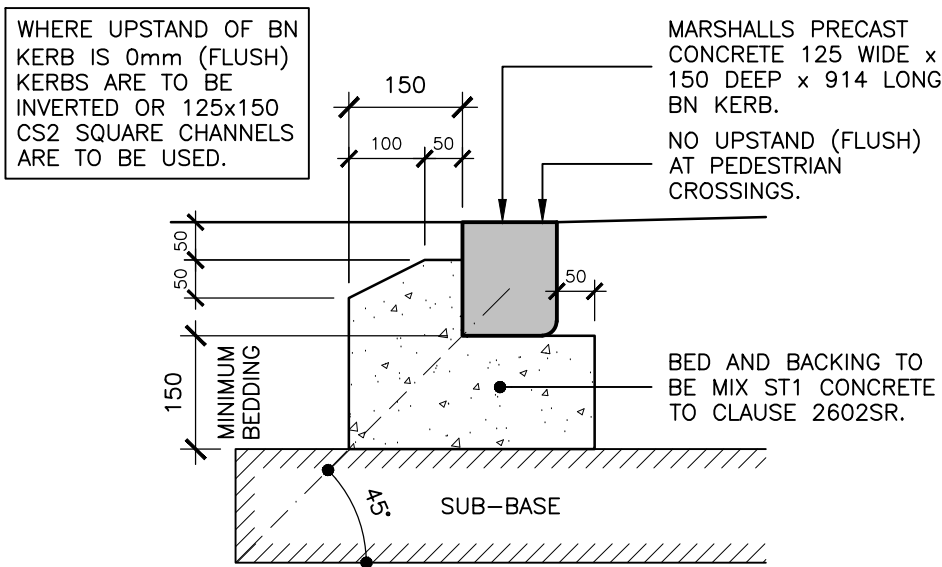
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Project code					
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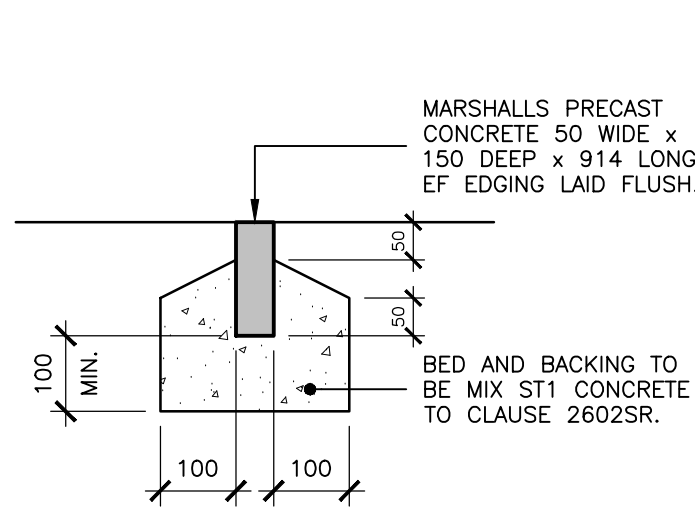


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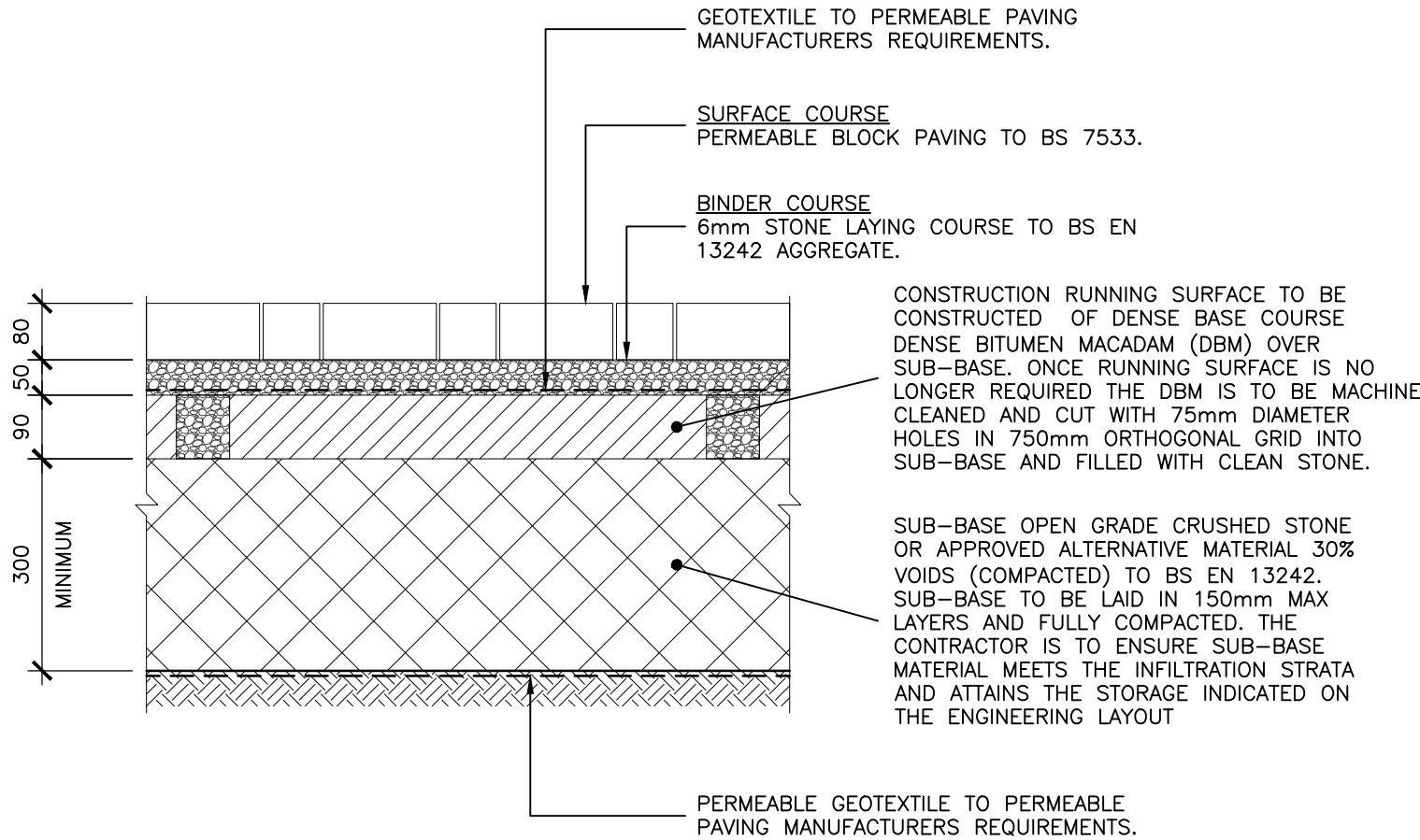
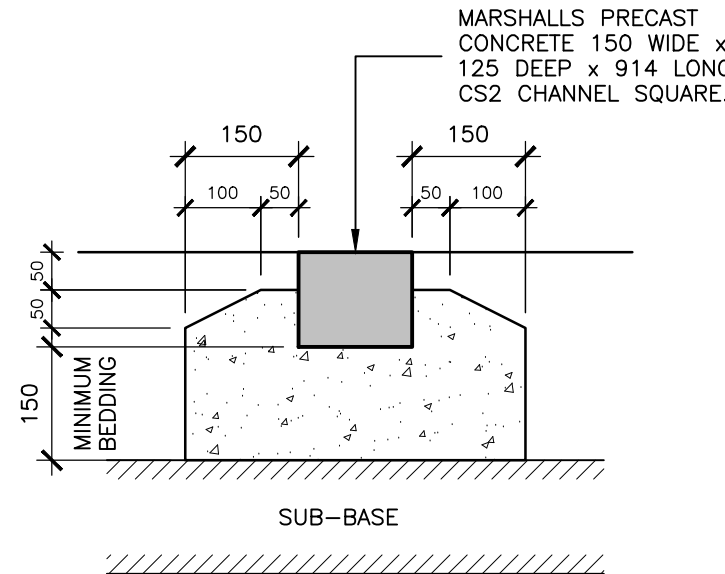


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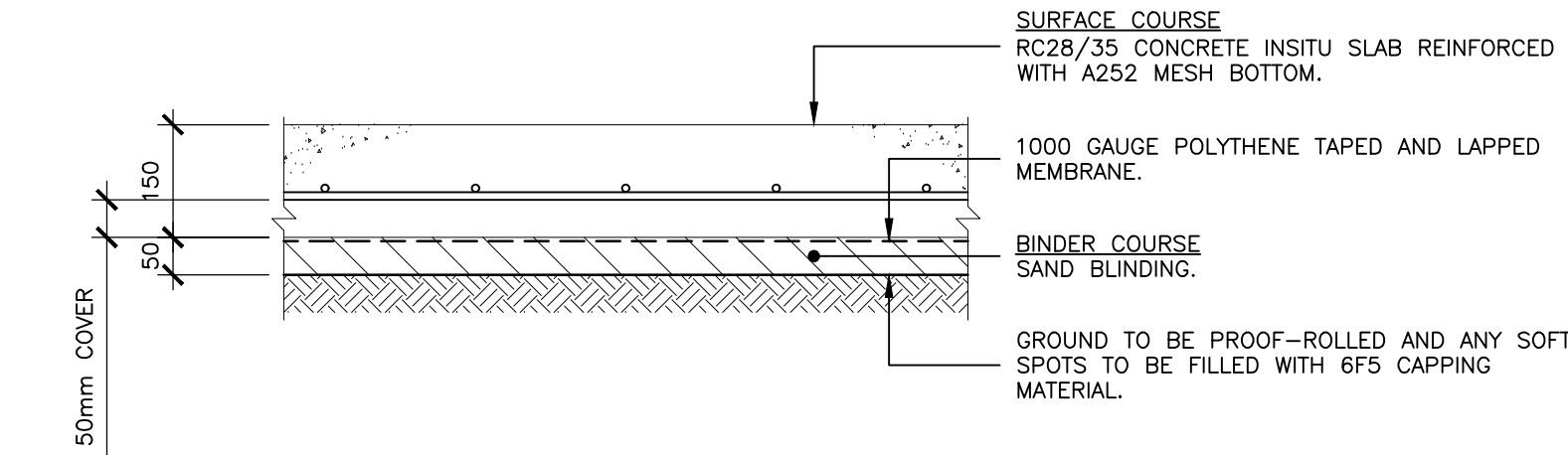
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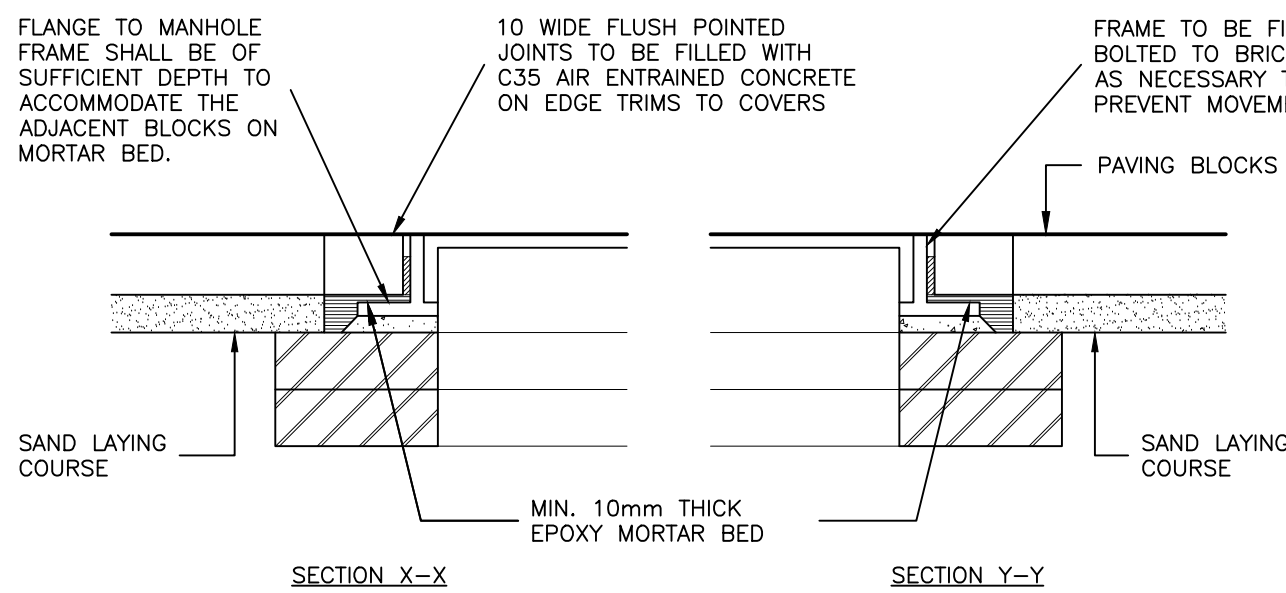
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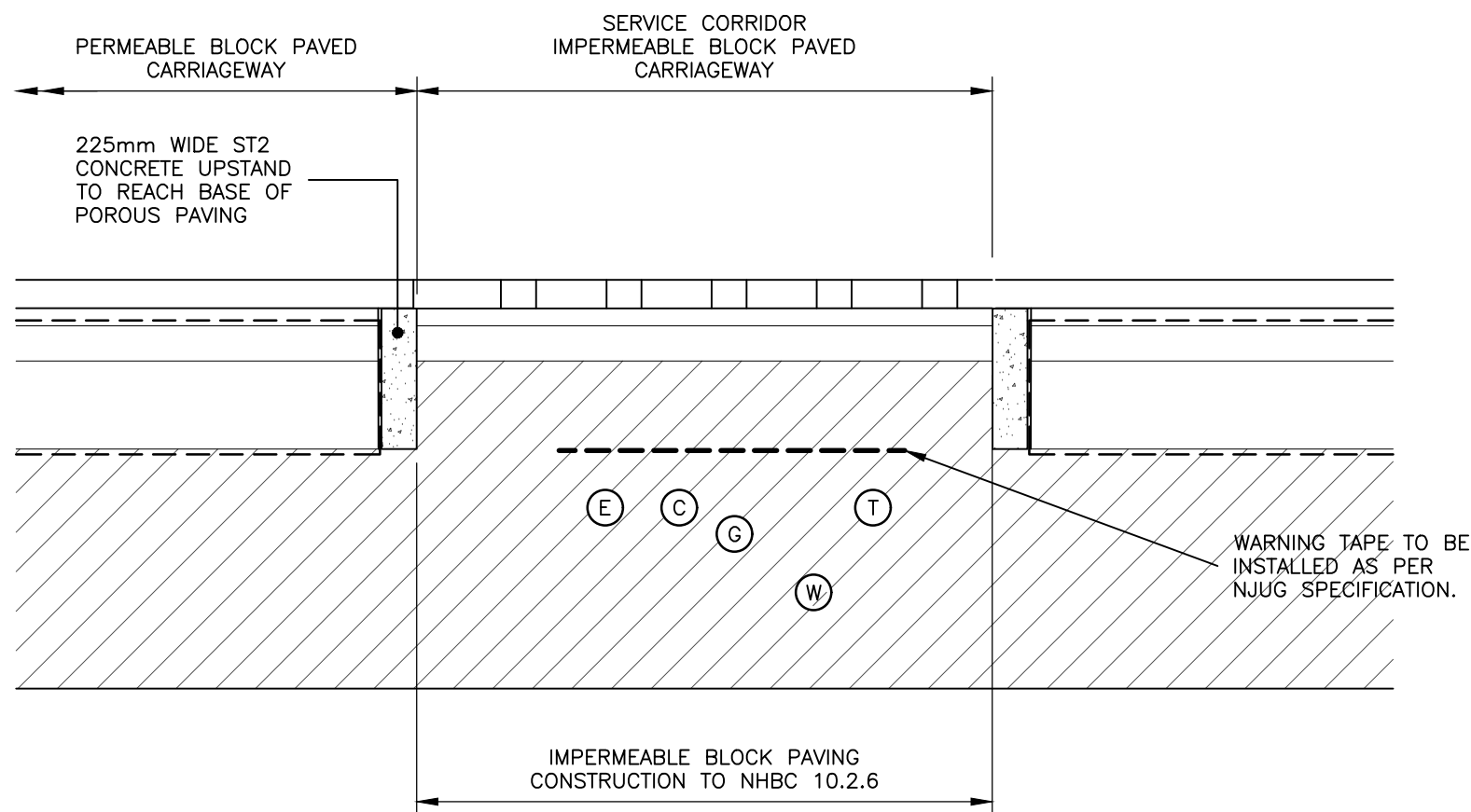
PERMEABLE BLOCK PAVED PRIVATE SHARED PARKING AND ASSOCIATED ACCESS AREAS
(SCALE 1:10@A1)



SHED BASE CONSTRUCTION DETAIL
(SCALE 1:10@A1)



TYPICAL SECTION - IMPERMEABLE BLOCK PAVED SERVICE CORRIDOR IN PERMEABLE BLOCK PAVING



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INDICATES A RESIDUAL RISK AS A WARNING



INDICATES A RESIDUAL RISK FOR INFORMATION

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Rev.	Date	Description	By

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Client
EASTLEIGH BOROUGH COUNCIL

Architect
MH ARCHITECTS

Project title

RE-DEVELOPMENT OF 30-32 QUEENS VIEW, NETLEY.

Drawing title
EXTERNAL WORKS DETAILS.

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AS SHOWN	A1	MAR 2025	TA	CH	S3
Name	Project code	Originator	Functional	Spatial	Form
		breakdown	breakdown	breakdown	breakdown
		Number	Revision		

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Appendix 2

Surface Water Calculations



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
CV	1.000	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	100.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
PS10		4.00	24.459	450	445875.440	108828.790	0.690
PS9	0.010	4.00	24.510	450	445880.933	108823.184	0.889
PS8	0.010	4.00	24.557	450	445889.903	108814.100	1.064
PS7	0.010	4.00	24.300	450	445886.337	108807.330	0.883
PS6			24.300	450	445876.177	108795.132	1.042
SA1			24.300		445877.643	108793.712	1.050

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	PS10	PS9	7.817	0.600	23.769	23.671	0.098	79.8	100	4.15	55.8
1.001	PS9	PS8	12.766	0.600	23.621	23.493	0.128	99.7	150	4.36	55.8
1.002	PS8	PS7	7.652	0.600	23.493	23.417	0.076	100.7	150	4.49	55.8
1.003	PS7	PS6	15.895	0.600	23.417	23.258	0.159	100.0	150	4.75	55.8
2.004	PS6	SA1	1.000	0.600	23.258	23.250	0.008	125.0	150	4.77	55.8

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.862	6.8	0.0	0.590	0.739	0.000	0.0	0	0.000
1.001	1.006	17.8	2.0	0.739	0.914	0.010	0.0	34	0.671
1.002	1.001	17.7	4.0	0.914	0.733	0.020	0.0	48	0.810
1.003	1.005	17.8	5.9	0.733	0.892	0.029	0.0	59	0.904
2.004	0.897	15.9	5.9	0.892	0.900	0.029	0.0	64	0.833

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	7.817	79.8	100	Circular	24.459	23.769	0.590	24.510	23.671	0.739
1.001	12.766	99.7	150	Circular	24.510	23.621	0.739	24.557	23.493	0.914
1.002	7.652	100.7	150	Circular	24.557	23.493	0.914	24.300	23.417	0.733
1.003	15.895	100.0	150	Circular	24.300	23.417	0.733	24.300	23.258	0.892

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	PS10	450	Manhole	Adoptable	PS9	450	Manhole	Adoptable
1.001	PS9	450	Manhole	Adoptable	PS8	450	Manhole	Adoptable
1.002	PS8	450	Manhole	Adoptable	PS7	450	Manhole	Adoptable
1.003	PS7	450	Manhole	Adoptable	PS6	450	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.004	1.000	125.0	150	Circular	24.300	23.258	0.892	24.300	23.250	0.900
	Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type	
	2.004	PS6	450	Manhole	Adoptable	SA1		Junction		

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
PS10	445875.440	108828.790	24.459	0.690	450		0	1.000	23.769	100
PS9	445880.933	108823.184	24.510	0.889	450		1	1.000	23.671	100
PS8	445889.903	108814.100	24.557	1.064	450		1	1.001	23.621	150
PS7	445886.337	108807.330	24.300	0.883	450		1	1.002	23.493	150
PS6	445876.177	108795.132	24.300	1.042	450		1	1.002	23.417	150
PS5	445876.177	108795.132	24.300	1.042	450		0	1.003	23.417	150
PS4	445876.177	108795.132	24.300	1.042	450		1	1.003	23.258	150
SA1	445877.643	108793.712	24.300	1.050			1	2.004	23.258	150
SA2	445877.643	108793.712	24.300	1.050			1	2.004	23.250	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
30	0	0	0
100	45	10	0



Node SA1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.06408	Invert Level (m)	21.950	Depth (m)	1.500
Side Inf Coefficient (m/hr)	0.06408	Time to half empty (mins)	1061	Inf Depth (m)	
Safety Factor	3.0	Pit Width (m)	2.000	Number Required	1
Porosity	0.95	Pit Length (m)	11.000		



Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	PS10	1	23.769	0.000	0.0	0.0000	0.0000	OK
15 minute summer	PS9	10	23.674	0.053	4.8	0.0084	0.0000	OK
15 minute summer	PS8	10	23.581	0.088	9.5	0.0139	0.0000	OK
15 minute summer	PS7	10	23.526	0.109	14.2	0.0173	0.0000	OK
15 minute summer	PS6	10	23.378	0.120	14.2	0.0191	0.0000	OK
720 minute winter	SA1	675	22.487	-0.763	0.9	11.2333	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)
15 minute summer	PS10	1.000	PS9	0.0	0.000	0.000	0.0003
15 minute summer	PS9	1.001	PS8	4.8	0.594	0.270	0.1037
15 minute summer	PS8	1.002	PS7	9.5	0.778	0.536	0.0931
15 minute summer	PS7	1.003	PS6	14.2	0.982	0.798	0.2289
15 minute summer	PS6	2.004	SA1	14.0	0.971	0.884	0.0144
720 minute winter	SA1	Infiltration		0.2			



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS10	11	23.896	0.127	2.8	0.0202	0.0000	SURCHARGED
15 minute summer	PS9	11	23.895	0.274	9.7	0.0436	0.0000	SURCHARGED
15 minute summer	PS8	11	23.862	0.369	15.7	0.0586	0.0000	SURCHARGED
15 minute summer	PS7	11	23.777	0.360	23.8	0.0573	0.0000	SURCHARGED
15 minute summer	PS6	11	23.434	0.176	23.5	0.0280	0.0000	SURCHARGED
360 minute summer	SA1	360	23.015	-0.235	4.7	22.2519	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	PS10	1.000	PS9	-2.8	-0.398	-0.409	0.0612
15 minute summer	PS9	1.001	PS8	8.6	0.648	0.486	0.2247
15 minute summer	PS8	1.002	PS7	15.7	0.889	0.885	0.1347
15 minute summer	PS7	1.003	PS6	23.5	1.332	1.321	0.2798
15 minute summer	PS6	2.004	SA1	23.4	1.332	1.478	0.0172
360 minute summer	SA1	Infiltration		0.3			



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
CV	1.000	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	100.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
PS4	0.009	4.00	24.366	450	445863.095	108820.795	1.003
PS3	0.009	4.00	24.204	450	445855.117	108820.016	0.921
PS2	0.005	4.00	24.223	450	445850.820	108815.772	1.050
PS13	0.018	4.00	24.291	450	445854.025	108812.191	1.166
PS11		4.00	24.117	450	445850.155	108801.293	0.650
PS12	0.019	4.00	24.019	450	445846.604	108804.888	1.107
PS14			24.070	450	445849.859	108808.091	1.272
SA2			24.039		445848.991	108809.022	1.253

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	PS4	PS3	8.016	0.600	23.363	23.283	0.080	100.2	100	4.17	55.8
1.001	PS3	PS2	6.040	0.600	23.283	23.223	0.060	100.7	100	4.31	55.8
1.002	PS2	PS13	4.806	0.600	23.173	23.125	0.048	100.1	150	4.39	55.8
1.003	PS13	PS14	5.845	0.600	23.125	22.798	0.327	17.9	150	4.43	55.8
2.000	PS11	PS12	5.053	0.600	23.467	22.962	0.505	10.0	100	4.03	55.8
2.001	PS12	PS14	4.567	0.600	22.912	22.798	0.114	40.1	150	4.08	55.8
1.004	PS14	SA2	1.250	0.600	22.798	22.786	0.012	100.0	150	4.45	55.8

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.768	6.0	1.8	0.903	0.821	0.009	0.0	38	0.674
1.001	0.766	6.0	3.6	0.821	0.900	0.018	0.0	56	0.801
1.002	1.004	17.7	4.6	0.900	1.016	0.023	0.0	52	0.848
1.003	2.393	42.3	8.3	1.016	1.122	0.041	0.0	45	1.862
2.000	2.457	19.3	0.0	0.550	0.957	0.000	0.0	0	0.000
2.001	1.594	28.2	3.8	0.957	1.122	0.019	0.0	37	1.117
1.004	1.005	17.8	12.1	1.122	1.103	0.060	0.0	91	1.080



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	8.016	100.2	100	Circular	24.366	23.363	0.903	24.204	23.283	0.821
1.001	6.040	100.7	100	Circular	24.204	23.283	0.821	24.223	23.223	0.900
1.002	4.806	100.1	150	Circular	24.223	23.173	0.900	24.291	23.125	1.016
1.003	5.845	17.9	150	Circular	24.291	23.125	1.016	24.070	22.798	1.122
2.000	5.053	10.0	100	Circular	24.117	23.467	0.550	24.019	22.962	0.957
2.001	4.567	40.1	150	Circular	24.019	22.912	0.957	24.070	22.798	1.122
1.004	1.250	100.0	150	Circular	24.070	22.798	1.122	24.039	22.786	1.103

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	PS4	450	Manhole	Adoptable	PS3	450	Manhole	Adoptable
1.001	PS3	450	Manhole	Adoptable	PS2	450	Manhole	Adoptable
1.002	PS2	450	Manhole	Adoptable	PS13	450	Manhole	Adoptable
1.003	PS13	450	Manhole	Adoptable	PS14	450	Manhole	Adoptable
2.000	PS11	450	Manhole	Adoptable	PS12	450	Manhole	Adoptable
2.001	PS12	450	Manhole	Adoptable	PS14	450	Manhole	Adoptable
1.004	PS14	450	Manhole	Adoptable	SA2		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
PS4	445863.095	108820.795	24.366	1.003	450	 0	1.000	23.363	100
PS3	445855.117	108820.016	24.204	0.921	450	 0	1.000	23.283	100
						0	1.001	23.283	100
PS2	445850.820	108815.772	24.223	1.050	450	 0	1.001	23.223	100
						0	1.002	23.173	150
PS13	445854.025	108812.191	24.291	1.166	450	 0	1.002	23.125	150
						0	1.003	23.125	150
PS11	445850.155	108801.293	24.117	0.650	450	 0	2.000	23.467	100
PS12	445846.604	108804.888	24.019	1.107	450	 0	1.000	22.962	100
						0	2.001	22.912	150
PS14	445849.859	108808.091	24.070	1.272	450	 0 1	1.001 1.003	22.798 22.798	150 150
						0	1.004	22.798	150



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SA2	445848.991	108809.022	24.039	1.253		1	1.004	22.786	150



Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
30	0	0	0
100	45	10	0

Node SA2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.06408	Invert Level (m)	21.965	Depth (m)	1.000
Side Inf Coefficient (m/hr)	0.06408	Time to half empty (mins)	1006	Inf Depth (m)	
Safety Factor	3.0	Pit Width (m)	4.000	Number Required	1
Porosity	0.95	Pit Length (m)	13.000		



Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS4	11	23.485	0.122	4.4	0.0194	0.0000	SURCHARGED
15 minute summer	PS3	11	23.441	0.158	8.3	0.0252	0.0000	SURCHARGED
15 minute summer	PS2	10	23.264	0.091	10.3	0.0145	0.0000	OK
15 minute summer	PS13	10	23.205	0.080	18.9	0.0127	0.0000	OK
15 minute summer	PS11	1	23.467	0.000	0.0	0.0000	0.0000	OK
15 minute summer	PS12	10	23.003	0.091	9.2	0.0145	0.0000	OK
15 minute summer	PS14	10	22.996	0.198	27.9	0.0314	0.0000	SURCHARGED
360 minute winter	SA2	352	22.407	-0.379	3.3	21.8540	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	PS4	1.000	PS3	4.0	0.554	0.660	0.0627
15 minute summer	PS3	1.001	PS2	7.9	1.012	1.314	0.0458
15 minute summer	PS2	1.002	PS13	10.2	1.087	0.574	0.0497
15 minute summer	PS13	1.003	PS14	18.8	1.223	0.444	0.0792
15 minute summer	PS11	2.000	PS12	0.0	0.000	0.000	0.0077
15 minute summer	PS12	2.001	PS14	9.1	0.587	0.322	0.0658
15 minute summer	PS14	1.004	SA2	27.8	1.578	1.564	0.0218
360 minute winter	SA2	Infiltration		0.4			



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	PS4	11	24.017	0.654	8.7	0.1041	0.0000	SURCHARGED
15 minute summer	PS3	11	23.900	0.617	14.5	0.0981	0.0000	SURCHARGED
15 minute summer	PS2	11	23.513	0.340	17.2	0.0541	0.0000	SURCHARGED
15 minute summer	PS13	11	23.436	0.311	32.9	0.0495	0.0000	SURCHARGED
15 minute summer	PS11	1	23.467	0.000	0.0	0.0000	0.0000	OK
15 minute summer	PS12	10	23.217	0.305	18.3	0.0486	0.0000	SURCHARGED
15 minute summer	PS14	10	23.141	0.343	49.7	0.0546	0.0000	SURCHARGED
720 minute summer	SA2	705	22.918	0.132	5.4	47.0964	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	PS4	1.000	PS3	6.8	0.871	1.129	0.0627
15 minute summer	PS3	1.001	PS2	13.7	1.753	2.279	0.0473
15 minute summer	PS2	1.002	PS13	18.7	1.186	1.054	0.0846
15 minute summer	PS13	1.003	PS14	32.6	1.850	0.770	0.1029
15 minute summer	PS11	2.000	PS12	0.0	0.000	0.000	0.0198
15 minute summer	PS12	2.001	PS14	17.9	1.015	0.634	0.0804
15 minute summer	PS14	1.004	SA2	49.3	2.799	2.775	0.0218
720 minute summer	SA2	Infiltration		0.5			

Arch Associates Limited				Page 1	
Town House St Geroge's Square		QUEENS VIEW			
Bishops Waltham		NETLEY			
Southampton S032 1AF		PERMEABLE PAVING			
Date 30/11/2023 11:30		Designed by ARCH ASSOCIATES			
File PERM PAV.SRCX		Checked by CH			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+45%)					
Half Drain Time : 131 minutes.					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	23.309	0.159	1.2	9.5	0 K
30 min Summer	23.357	0.207	1.2	12.8	0 K
60 min Summer	23.397	0.247	1.2	15.6	0 K
120 min Summer	23.419	0.269	1.2	17.0	0 K
180 min Summer	23.419	0.269	1.2	17.0	0 K
240 min Summer	23.413	0.263	1.2	16.6	0 K
360 min Summer	23.398	0.248	1.2	15.6	0 K
480 min Summer	23.382	0.232	1.2	14.5	0 K
600 min Summer	23.366	0.216	1.2	13.4	0 K
720 min Summer	23.350	0.200	1.2	12.3	0 K
960 min Summer	23.319	0.169	1.2	10.2	0 K
1440 min Summer	23.268	0.118	1.2	6.7	0 K
2160 min Summer	23.218	0.068	1.2	3.3	0 K
2880 min Summer	23.198	0.048	1.1	2.0	0 K
4320 min Summer	23.188	0.038	0.8	1.2	0 K
5760 min Summer	23.184	0.034	0.7	1.0	0 K
7200 min Summer	23.181	0.031	0.6	0.8	0 K
8640 min Summer	23.179	0.029	0.5	0.7	0 K
10080 min Summer	23.177	0.027	0.4	0.6	0 K
15 min Winter	23.309	0.159	1.2	9.5	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
15 min Summer	131.324	0.0	21		
30 min Summer	88.267	0.0	35		
60 min Summer	56.615	0.0	62		
120 min Summer	35.051	0.0	118		
180 min Summer	26.079	0.0	148		
240 min Summer	20.989	0.0	180		
360 min Summer	15.437	0.0	248		
480 min Summer	12.404	0.0	316		
600 min Summer	10.458	0.0	384		
720 min Summer	9.093	0.0	450		
960 min Summer	7.284	0.0	578		
1440 min Summer	5.319	0.0	822		
2160 min Summer	3.876	0.0	1152		
2880 min Summer	3.092	0.0	1472		
4320 min Summer	2.245	0.0	2204		
5760 min Summer	1.786	0.0	2880		
7200 min Summer	1.495	0.0	3672		
8640 min Summer	1.295	0.0	4400		
10080 min Summer	1.146	0.0	5024		
15 min Winter	131.324	0.0	21		
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Arch Associates Limited				Page 2	
Town House St Geroge's Square		QUEENS VIEW			
Bishops Waltham		NETLEY			
Southampton S032 1AF		PERMEABLE PAVING			
Date 30/11/2023 11:30		Designed by ARCH ASSOCIATES			
File PERM PAV.SRCX		Checked by CH			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+45%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	23.357	0.207	1.2	12.8	0 K
60 min Winter	23.398	0.248	1.2	15.6	0 K
120 min Winter	23.421	0.271	1.2	17.1	0 K
180 min Winter	23.418	0.268	1.2	16.9	0 K
240 min Winter	23.409	0.259	1.2	16.4	0 K
360 min Winter	23.387	0.237	1.2	14.8	0 K
480 min Winter	23.362	0.212	1.2	13.1	0 K
600 min Winter	23.337	0.187	1.2	11.4	0 K
720 min Winter	23.313	0.163	1.2	9.8	0 K
960 min Winter	23.270	0.120	1.2	6.8	0 K
1440 min Winter	23.209	0.059	1.2	2.7	0 K
2160 min Winter	23.190	0.040	0.9	1.4	0 K
2880 min Winter	23.186	0.036	0.8	1.1	0 K
4320 min Winter	23.180	0.030	0.5	0.8	0 K
5760 min Winter	23.177	0.027	0.4	0.6	0 K
7200 min Winter	23.175	0.025	0.4	0.5	0 K
8640 min Winter	23.173	0.023	0.3	0.5	0 K
10080 min Winter	23.172	0.022	0.3	0.4	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	88.267	0.0	35		
60 min Winter	56.615	0.0	62		
120 min Winter	35.051	0.0	118		
180 min Winter	26.079	0.0	152		
240 min Winter	20.989	0.0	188		
360 min Winter	15.437	0.0	264		
480 min Winter	12.404	0.0	338		
600 min Winter	10.458	0.0	408		
720 min Winter	9.093	0.0	474		
960 min Winter	7.284	0.0	598		
1440 min Winter	5.319	0.0	800		
2160 min Winter	3.876	0.0	1124		
2880 min Winter	3.092	0.0	1460		
4320 min Winter	2.245	0.0	2208		
5760 min Winter	1.786	0.0	2952		
7200 min Winter	1.495	0.0	3544		
8640 min Winter	1.295	0.0	4288		
10080 min Winter	1.146	0.0	5032		
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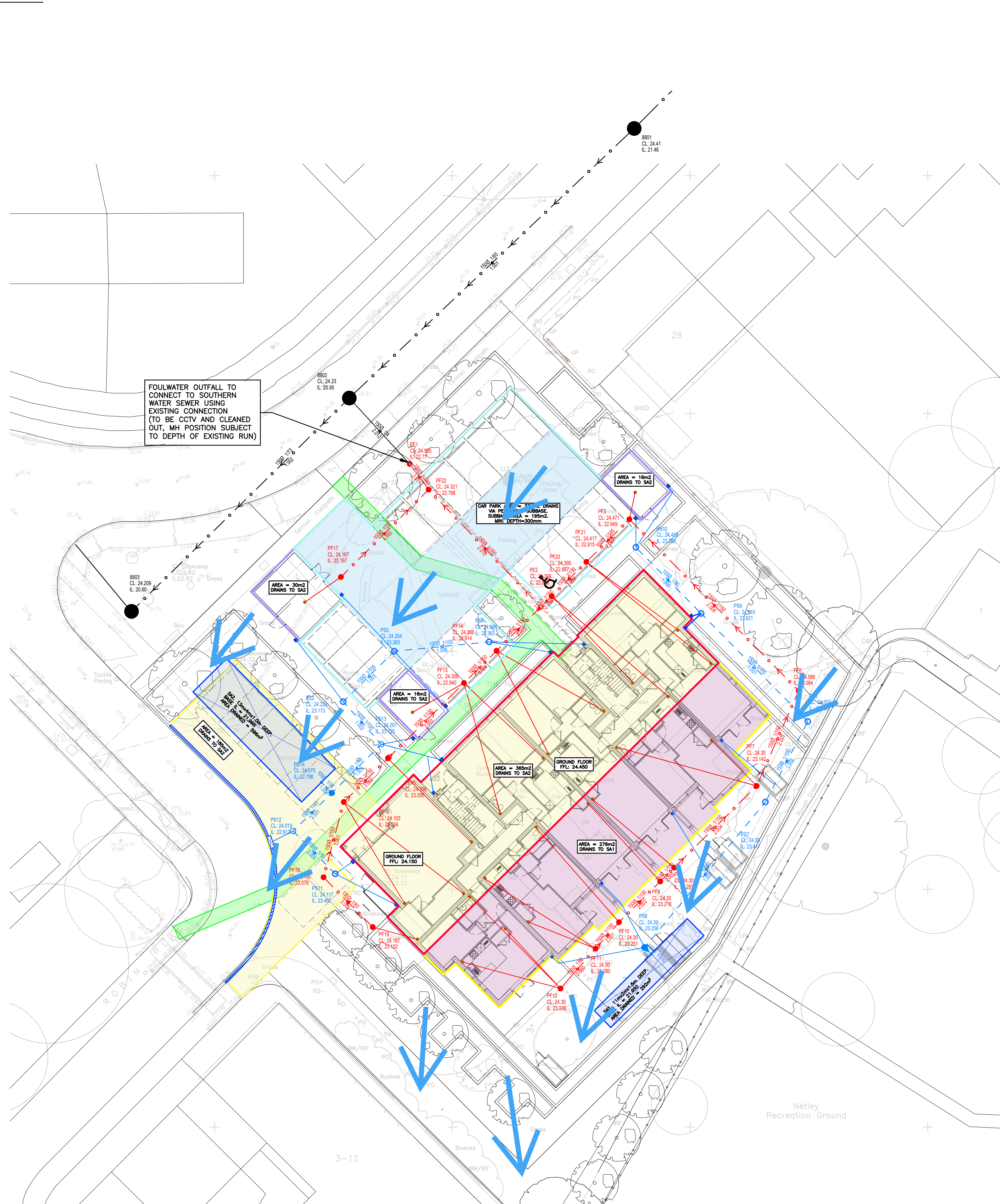
Arch Associates Limited		Page 3																								
Town House St Geroge's Square Bishops Waltham Southampton S032 1AF	QUEENS VIEW NETLEY PERMEABLE PAVING																									
Date 30/11/2023 11:30 File PERM PAV.SRCX	Designed by ARCH ASSOCIATES Checked by CH																									
XP Solutions	Source Control 2020.1.3																									
Model Details Storage is Online Cover Level (m) 24.250 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.06400</td><td>Width (m)</td><td>10.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>19.5</td></tr><tr><td>Max Percolation (l/s)</td><td>54.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>3.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.35</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>23.150</td><td>Cap Volume Depth (m)</td><td>0.300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.06400	Width (m)	10.0	Membrane Percolation (mm/hr)	1000	Length (m)	19.5	Max Percolation (l/s)	54.2	Slope (1:X)	500.0	Safety Factor	3.0	Depression Storage (mm)	5	Porosity	0.35	Evaporation (mm/day)	3	Invert Level (m)	23.150	Cap Volume Depth (m)	0.300
Infiltration Coefficient Base (m/hr)	0.06400	Width (m)	10.0																							
Membrane Percolation (mm/hr)	1000	Length (m)	19.5																							
Max Percolation (l/s)	54.2	Slope (1:X)	500.0																							
Safety Factor	3.0	Depression Storage (mm)	5																							
Porosity	0.35	Evaporation (mm/day)	3																							
Invert Level (m)	23.150	Cap Volume Depth (m)	0.300																							
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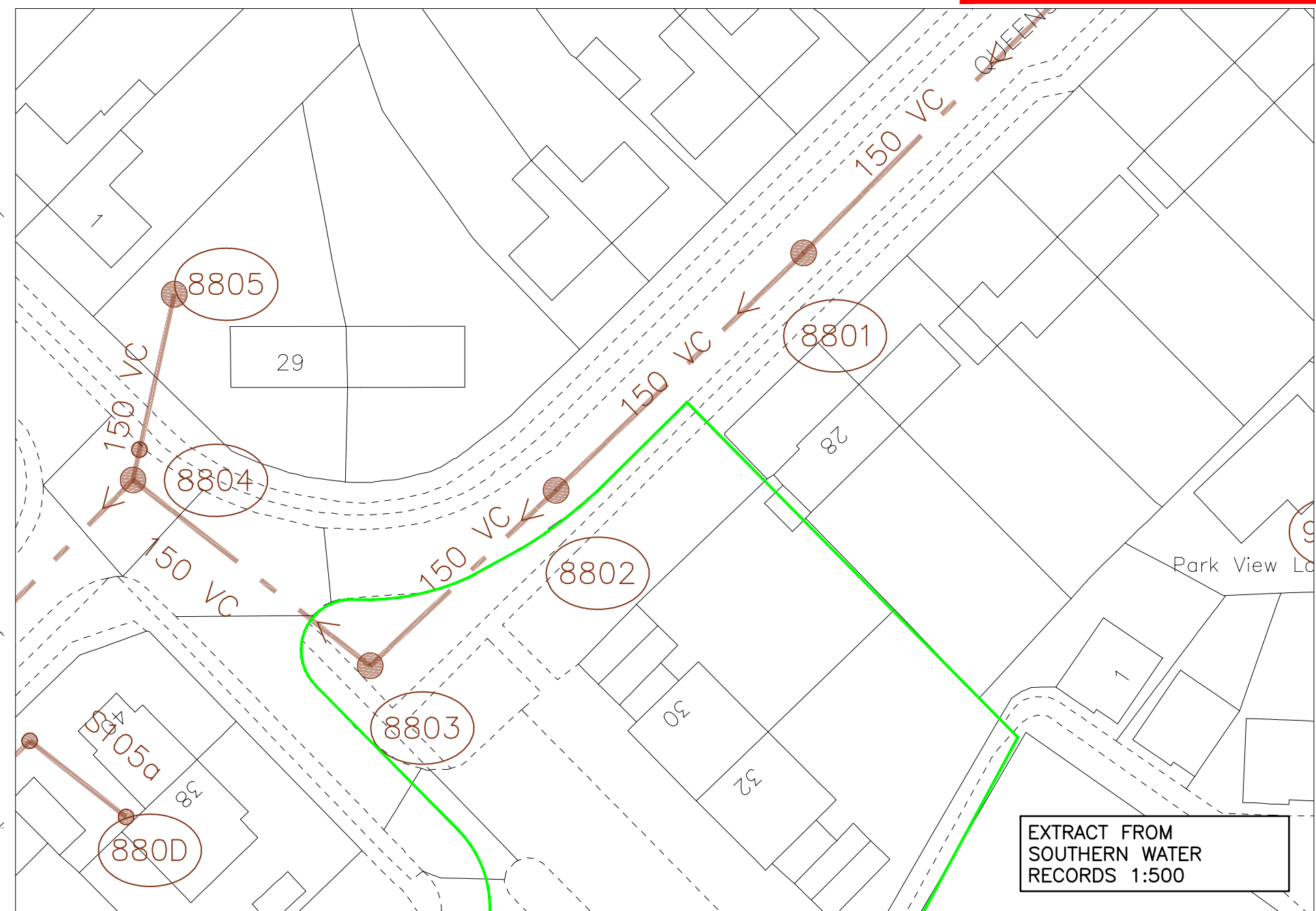
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ASSOCIATES

Appendix 3

Exceedance Routing Plan



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REQUEST A COLOURED COPY IF
THIS STAMP IS NOT RED



PHASE: 0

MH No.	MANHOLE DIMENSION (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
8801	1200Ø	Type B	D400	24.410	21.460	2.800	445875.295	108863.971
8802	1200Ø	Type A	D400	24.230	20.950	3.130	445851.330	108841.301
8803	1200Ø	Type A		24.209	20.600	3.459	445833.011	108823.365

PHASE: 0 (PRIVATE)

MH No.	MANHOLE DIMENSION (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
PS2	450Ø	Type D	B125	24.223	23.173	0.900	445850.820	108815.772
PS3	450Ø	Type D	C250	24.204	23.283	0.821	445855.117	108820.016
PS4	450Ø	Type D	C250	24.366	23.363	0.903	445863.095	108820.795
PS6	450Ø	CATCHPIT	A15	24.300	23.258	0.892	445876.177	108795.106
PS7	450Ø	Type D	A15	24.300	23.417	0.733	445886.337	108807.330
PS8	450Ø	Type D	A15	24.557	23.493	0.913	445889.903	108814.100
PS9	450Ø	Type D	A15	24.510	23.621	0.739	445880.933	108823.184
PS10	450Ø	Type D	B125	24.459	23.769	0.590	445875.440	108828.746
PS11	450Ø	Type D	D400	24.117	23.467	0.550	445850.155	108801.293
PS12	450Ø	Type D	D400	24.019	22.912	0.956	445846.604	108804.888
PS13	450Ø	Type D	B125	24.291	23.125	1.016	445854.025	108812.191
PS14	450Ø	CATCHPIT	D400	24.070	22.798	1.122	445849.859	108808.091
SA1a		TANK		24.300	23.250	0.900	445876.737	108794.539
SA2a		TANK		24.039	22.765	1.124	445848.991	108808.991
PF1	450Ø	Type D	C250	24.585	22.770	1.665	445856.411	108835.767
PF2	450Ø	Type D	B125	24.399	22.879	1.370	445867.445	108823.739
PF3	450Ø	Type D	C250	24.471	22.949	1.372	445874.892	108831.108
PF6	450Ø	Type D	A15	24.586	23.084	1.353	445889.133	108816.686
PF7	450Ø	Type D	A15	24.300	23.142	1.008	445885.598	108808.682
PF8	450Ø	Type D	A15	24.300	23.207	0.943	445878.657	108801.814
PF9	450Ø	Type D	A15	24.300	23.218	0.932	445877.490	108800.659
PF10	450Ø	Type D	A15	24.300	23.251	0.899	445874.021	108797.226
PF11	450Ø	Type D	A15	24.300	23.280	0.870	445872.049	108795.008
PF12	450Ø	Type D	A15	24.300	23.336	0.814	445869.100	108791.653
PF13	450Ø	Type D	C250	24.309	22.940	1.219	445860.978	108817.340
PF14	450Ø	Type D	C250	24.366	22.914	1.302	445863.717	108820.050
PF15	450Ø	Type D	B125	24.308	23.000	1.158	445854.582	108811.012
PF16	450Ø	Type D	D400	24.103	23.034	0.918	445850.868	108807.336
PF17	450Ø	Type D	D400	24.167	23.167	0.900	445850.627	108826.255
PF18	450Ø	Type D	D400	24.100	23.078	0.872	445849.165	108801.006
PF19	450Ø	Type D	B125	24.167	23.152	0.865	445853.300	108796.818
PF20	450Ø	Type D	C250	24.390	22.887	1.353	445868.355	108824.639
PF21	450Ø	Type D	C250	24.417	22.915	1.353	445871.272	108827.525
PF22	450Ø	Type D	C250	24.321	22.788	1.383	445858.003	108833.608

NOTES

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GENERAL NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND DETAILS.
- ALL FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
- ANY DISCREPANCIES BETWEEN THIS DRAWING AND OTHER INFORMATION IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE WORKS ON SITE.
- THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR THE SETTING OUT AND ACCURACY OF ALL DIMENSIONS.
- THE CONTRACTOR IS TO ENSURE THE STABILITY AND STRUCTURAL INTEGRITY OF THE EXISTING PROPERTY AT ALL TIMES DURING WORKS AND IS TO BE RESPONSIBLE FOR ALL PROPPING AND SHORING AS REQUIRED.
- MAIN CONTRACTOR TO PROVIDE AND FIX SUITABLE BRACING AND PROPPING FOR ALL ELEMENTS IN THE TEMPORARY CONDITION DURING CONSTRUCTION STAGE, SUCH AS TO ENSURE STRUCTURE STABILITY AT ALL TIMES.
- IT IS THE CONTRACTORS SOLE RESPONSIBILITY FOR ASCERTAINING SAFE DISPOSAL OF ANY OFF-SITE EXCAVATED SPOIL. NO CLAIM RESULTING FROM ABNORMAL TIP REQUIREMENTS WILL BE ENTERTAINED.

KEY TO HEALTH AND SAFETY SYMBOLS

THESE NOTES ARE BASED ON THE USE OF EXPERIENCED AND COMPETENT CONTRACTORS CARRYING OUT THE WORK USING AN APPROVED SAFE METHOD OF WORKING

- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION
- INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION
- INDICATES A RESIDUAL RISK AS A WARNING
- INDICATES A RESIDUAL RISK FOR INFORMATION

DRAINAGE LEGEND

- 88xx CL: xx.xx IL: xx.xx EXISTING SOUTHERN WATER / MANHOLE
- 1500 1/165 EXISTING FOUL / SURFACE WATER SEWER TO BE ABANDONED
- 1500 1/4 2.012 EXISTING FOUL WATER SEWER
- PSx CL: xx.xx IL: xx.xx SURFACE WATER MANHOLE / INSPECTION CHAMBER / ACCESS CHAMBER
- 1000 1/100 1.003 SURFACE WATER CATCHPIT MANHOLE
- 1000 1/100 1.003 SURFACE WATER DRAIN 100mm Dia. U.N.O.
- RAIN WATER DOWNPIPE (LOCATION AS ARCHITECTS DRGS).
- SURFACE WATER ACO DRAIN / SUMP
- ATTENUATION TANK OUT OF PROPRIETARY CRATE SYSTEM
- PFx CL: xx.xx IL: xx.xx FOUL WATER MANHOLE / INSPECTION CHAMBER / ACCESS CHAMBER
- 1500 1/150 2.004 FOUL WATER DRAIN 150mm Dia. U.N.O.
- SOIL VENT PIPE / STUB STACK (LOCATION AS ARCHITECTS DRGS)
- PERMEABLE CONSTRUCTION WITH JOINT VOID MATERIAL SUBBASE MINIMUM 300mm DEPTH OF PERMEABLE SUBBASE.
- SERVICE CORRIDOR IMPERMEABLE PAVING

P01	03.03.2025	PRELIMINARY ISSUE FOR COMMENT	JH
Rev.	Date	Description	By

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Client
EASTLEIGH BOROUGH COUNCIL

Architect
MH ARCHITECTS

Project title
RE—DEVELOPMENT OF
30—32 QUEENS VIEW, NETLEY.

Drawing title
PROPOSED DRAINAGE OVERVIEW PLAN

Scale 1:200	Paper size A1	Date FEB 2025	Drawn by JH	Checked by CH	Status S0
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Name
Project code
AAL307-AAL - EW - XX - DP - S -5002- P01



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Appendix 4

Maintenance Manual



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DRAINAGE MAINTENANCE PLAN



QUEENS VIEW, NETLEY



**ARCH
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DRAINAGE MAINTENANCE PLAN

for

QUEENS VIEW
NETLEY

Client:

Amiri Homes
Eagle Point
Little Park Farm Rd
Segensworth
Fareham
PO15 5TD

ISSUE		A	B	C
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Project No. AAL307



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- 2.0 SuDS on Site
- 3.0 SuDS Maintenance Schedule
- 4.0 SuDS Maintenance Responsibility
- 5.0 Foul Drainage on Site
- 6.0 Foul Drainage Maintenance

1.0 An introduction to sustainable drainage systems or SuDS

SuDS are an environmentally friendly approach to managing rainfall that uses landscape features to deal with surface water. SuDS aim to:

- Control the flow, volume and frequency of water leaving a development area
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces
- Provide attractive surroundings for the community
- Create opportunities for wildlife

2.0 SuDS on Site

SuDS at this development have been designed to prevent flooding of both the proposed properties, neighbouring properties, and external hard landscaping.

Surface water run-off is directed into the piped gravity drainage system on site and is discharged to ground using soakaways and in places permeable paving.

3.0 SuDS Maintenance Schedule

General Maintenance

In addition to the maintenance of specific SuDS features, such as soakaways, the following table outlines general maintenance requirement of the surface water system.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment & debris from pre-treatment devices & floor of inspection chambers	Annually
	Cleaning of any gutters & any filters on downpipes	Annually
	Trimming and roots that may	Annually (or as required)

	be causing blockages	
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually

Sump Catchpit Manholes

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment & debris from sump	Monthly in the first year and then as required based on inspections
Monitoring	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly in the first year and then annually

Soakaways

Soakaways are buried structures that allow water to soak into the ground. Maintenance will usually be carried out manually, although a suction tanker can be used for sediment/debris removal for large systems. If maintenance is not undertaken for long periods, deposits can become hard-packed and require considerable effort to be removed.

Roads and/or parking areas drainage to infiltration components should be regularly swept to prevent silt being washed off the surface. This will minimise the need for maintenance.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Inspect for sediment and debris in pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	Annually

	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional Maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	As required, based on inspections
Remedial Actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway)	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
	Check soakaway to ensure emptying is occurring	Annually

Permeable Block Paving

Permeable surfaces including permeable block paving, porous asphalt, gravel or free draining soils that allow rain to percolate through the surface into underlying drainage layers. They must be protected from silt, sand, compost, mulch, etc. Permeable block paving and porous asphalt can be cleaned by suction brushing.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to area

		where water runs onto pervious surface from adjacent impermeable areas as this is most likely to collect sediment.
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, though vegetation maintenance or soil slip, has been raised to within 50mm of the level of paving.	As required

4.0 SuDS Maintenance Responsibility

The maintenance of the SuDS features, and drainage generally will be funded by the management company. The management company will formally appoint a drainage company (under a service agreement) to inspect and maintain the apparatus at the required frequency.

5.0 Foul Drainage on Site

Foul water drainage refers to grey water and sewage and potentially wash-down water from plant rooms and bin stores or waste storage areas.

The foul drainage system on site comprises a piped network that discharges by gravity into the existing public foul sewer in Queens View.

6.0 Foul Drainage Maintenance

The foul drainage system has been designed in accordance with the relevant codes of practice and should achieve self-cleansing velocity with the anticipated foul water flows. Maintenance of the system should therefore be minimal, but blockages may occur with improper use, such as inappropriate objects being flushed down toilets, in which case rodding or jetting may be required. This work should be carried out on an ad hoc basis by a specialist contractor.