

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
297350/510839

Created
4 April 2025 08:47

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
Unspecified

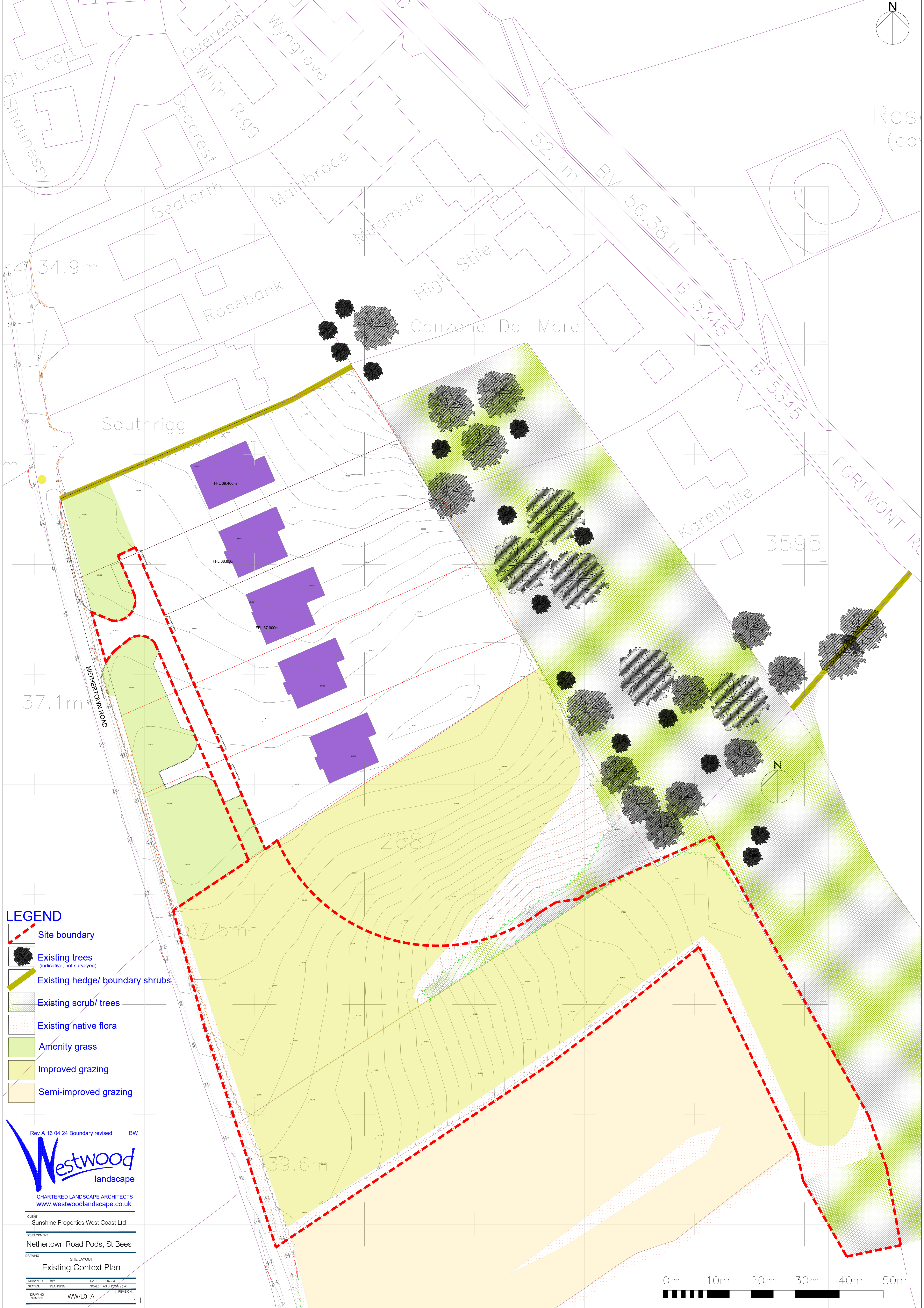
Location (easting/northing)
297350/510839

Scale
1:2,500

Created
4 Apr 2025 08:47

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area





- LEGEND**
- Site boundary
 - Existing trees
(indicative, not surveyed)
 - Existing hedge/ boundary shrubs
 - Existing scrub/ trees
 - Existing native flora
 - Amenity grass
 - Improved grazing
 - Semi-improved grazing

Rev A 16 04 24 Boundary revised BW

Westwood
landscape

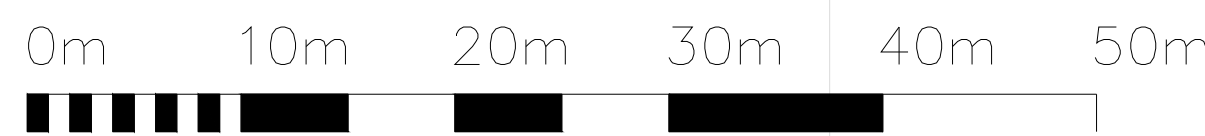
CHARTERED LANDSCAPE ARCHITECTS
www.westwoodlandscape.co.uk

CLIENT:
Sunshine Properties West Coast Ltd

DEVELOPMENT:
Nethertown Road Pods, St Bees

DRAWING:
SITE LAYOUT
Existing Context Plan

DRAWN BY	BW	DATE	18.07.23
STATUS	PLANNING	SCALE	AS SHOWN @ A1
DRAWING NUMBER	WW/L01A	REVISION	



APPENDIX B – INFILTRATION TESTING RESULTS

All trial holes on site were 1000mm x 300mm x 1000mm.

TP01 Percolation Test Results

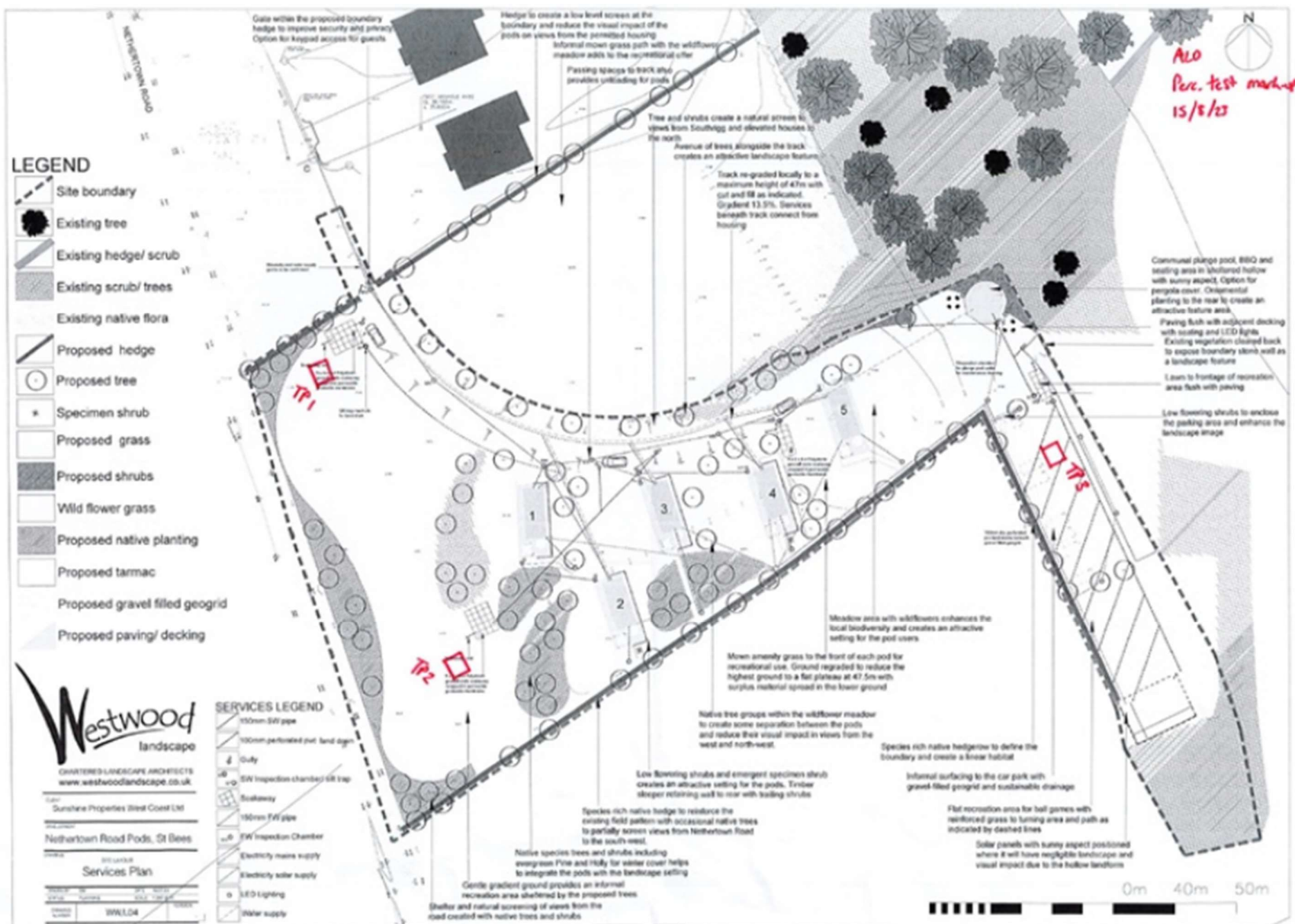
Test Number	Date of Test	Time @ 750mm deep	Time @ 250mm deep	Time (mins) from 750mm to 250mm
1	06/11/2023	09:58	16:32	394
2	07/11/2023	10:52	17:15	368
3	08/11/2023	10:45	17:30	375
			Average	379

TP02 Percolation Test Results

Test Number	Date of Test	Time @ 750mm deep	Time @ 250mm deep	Time (mins) from 750mm to 250mm
1	06/11/2023	10:49	11:54	65
2	07/11/2023	08:20	09:35	75
3	08/11/2023	08:15	09:25	70
			Average	70

TP03 Percolation Test Results

Test Number	Date of Test	Time @ 750mm deep	Time @ 250mm deep	Time (mins) from 750mm to 250mm
1	06/11/2023	12:30	15:00	150
2	07/11/2023	11:05	13:45	160
3	08/11/2023	12.10	14:56	166
			Average	158.67



APPENDIX C – UNITED UTILITIES SEWER RECORDS



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	16.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	20.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	16.000	Check Discharge Rate(s)	✓
Ratio-R	0.300	1 year (l/s)	4.3
Summer CV	0.750	30 year (l/s)	8.7
Winter CV	0.840	100 year (l/s)	10.6
Analysis Speed	Normal	Check Discharge Volume	x
Skip Steady State	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 %)
2	0	0	0
30	50	0	0
100	50	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.70
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.690	Betterment (%)	0
SAAR (mm)	1008	QBar	5.1
Soil Index	4	Q 1 year (l/s)	4.3
SPR	0.47	Q 30 year (l/s)	8.7
Region	10	Q 100 year (l/s)	10.6
Growth Factor 1 year	0.85		

Results for 2 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 winter	SW09	10	46.515	0.015	1.5	0.0112	0.0000	OK
15 minute winter	SW08	10	43.868	0.018	3.0	0.0129	0.0000	OK
15 minute winter	SW04	10	40.377	0.027	4.5	0.0199	0.0000	OK
15 minute winter	SW03	10	39.026	0.026	5.9	0.0190	0.0000	OK
15 minute winter	SW02	10	37.536	0.036	7.5	0.0278	0.0000	OK
15 minute winter	SW01	10	36.866	0.066	9.0	0.0476	0.0000	OK
180 minute winter	Soakaway	176	35.215	-1.316	2.4	6.8722	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 winter	SW09	1.000	SW08	1.5	1.404	0.022	0.0197	
15 minute winter	SW08	1.001	SW04	3.0	1.776	0.030	0.0199	
15 minute winter	SW04	1.002	SW03	4.4	2.073	0.069	0.0223	
15 minute winter	SW03	1.003	SW02	5.9	2.214	0.067	0.0168	
15 minute winter	SW02	1.004	SW01	7.5	1.410	0.129	0.0358	
15 minute winter	SW01	1.005	Soakaway	8.8	1.205	0.382	0.1180	
180 minute winter	Soakaway	Infiltration		0.6				

Results for 30 year +50% CC 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 winter	SW09	10	46.525	0.025	4.1	0.0181	0.0000	OK
15 minute winter	SW08	10	43.879	0.029	8.2	0.0210	0.0000	OK
15 minute winter	SW04	10	40.396	0.046	12.2	0.0336	0.0000	OK
15 minute winter	SW03	10	39.044	0.044	16.2	0.0315	0.0000	OK
15 minute winter	SW02	10	37.562	0.062	20.6	0.0470	0.0000	OK
15 minute winter	SW01	11	36.965	0.165	24.6	0.1191	0.0000	SURCHARGED
360 minute winter	Soakaway	288	35.800	-0.731	4.3	25.6081	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 winter	SW09	1.000	SW08	4.1	1.895	0.060	0.0398
15 minute winter	SW08	1.001	SW04	8.1	2.342	0.083	0.0413
15 minute winter	SW04	1.002	SW03	12.1	2.737	0.188	0.0463
15 minute winter	SW03	1.003	SW02	16.2	2.941	0.184	0.0345
15 minute winter	SW02	1.004	SW01	20.5	1.698	0.354	0.0808
15 minute winter	SW01	1.005	Soakaway	23.7	1.442	1.029	0.2776
360 minute winter	Soakaway	Infiltration		0.8			

Results for 100 year +50% CC 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 winter	SW09	10	46.528	0.028	5.2	0.0203	0.0000	OK
15 minute winter	SW08	10	43.883	0.033	10.4	0.0236	0.0000	OK
15 minute winter	SW04	10	40.403	0.053	15.5	0.0384	0.0000	OK
15 minute winter	SW03	10	39.049	0.049	20.7	0.0356	0.0000	OK
15 minute winter	SW02	11	37.582	0.082	26.3	0.0626	0.0000	OK
15 minute winter	SW01	11	37.199	0.399	31.1	0.2886	0.0000	FLOOD RISK

360 minute winter	Soakaway	344	36.121	-0.410	5.5	35.8607	0.0000	OK
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Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	SW09	1.000	SW08	5.2	2.033	0.076	0.0471
15 minute winter	SW08	1.001	SW04	10.3	2.492	0.105	0.0493
15 minute winter	SW04	1.002	SW03	15.5	2.918	0.240	0.0552
15 minute winter	SW03	1.003	SW02	20.6	3.039	0.235	0.0461
15 minute winter	SW02	1.004	SW01	25.9	1.726	0.447	0.0916
15 minute winter	SW01	1.005	Soakaway	30.6	1.736	1.329	0.2813

360 minute winter	Soakaway	Infiltration		0.9			
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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	16.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	20.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	16.000	Check Discharge Rate(s)	✓
Ratio-R	0.300	1 year (l/s)	4.3
Summer CV	0.750	30 year (l/s)	8.7
Winter CV	0.840	100 year (l/s)	10.6
Analysis Speed	Normal	Check Discharge Volume	x
Skip Steady State	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 %)
2	0	0	0
30	50	0	0
100	50	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.70
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.690	Betterment (%)	0
SAAR (mm)	1008	QBar	5.1
Soil Index	4	Q 1 year (l/s)	4.3
SPR	0.47	Q 30 year (l/s)	8.7
Region	10	Q 100 year (l/s)	10.6
Growth Factor 1 year	0.85		

Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

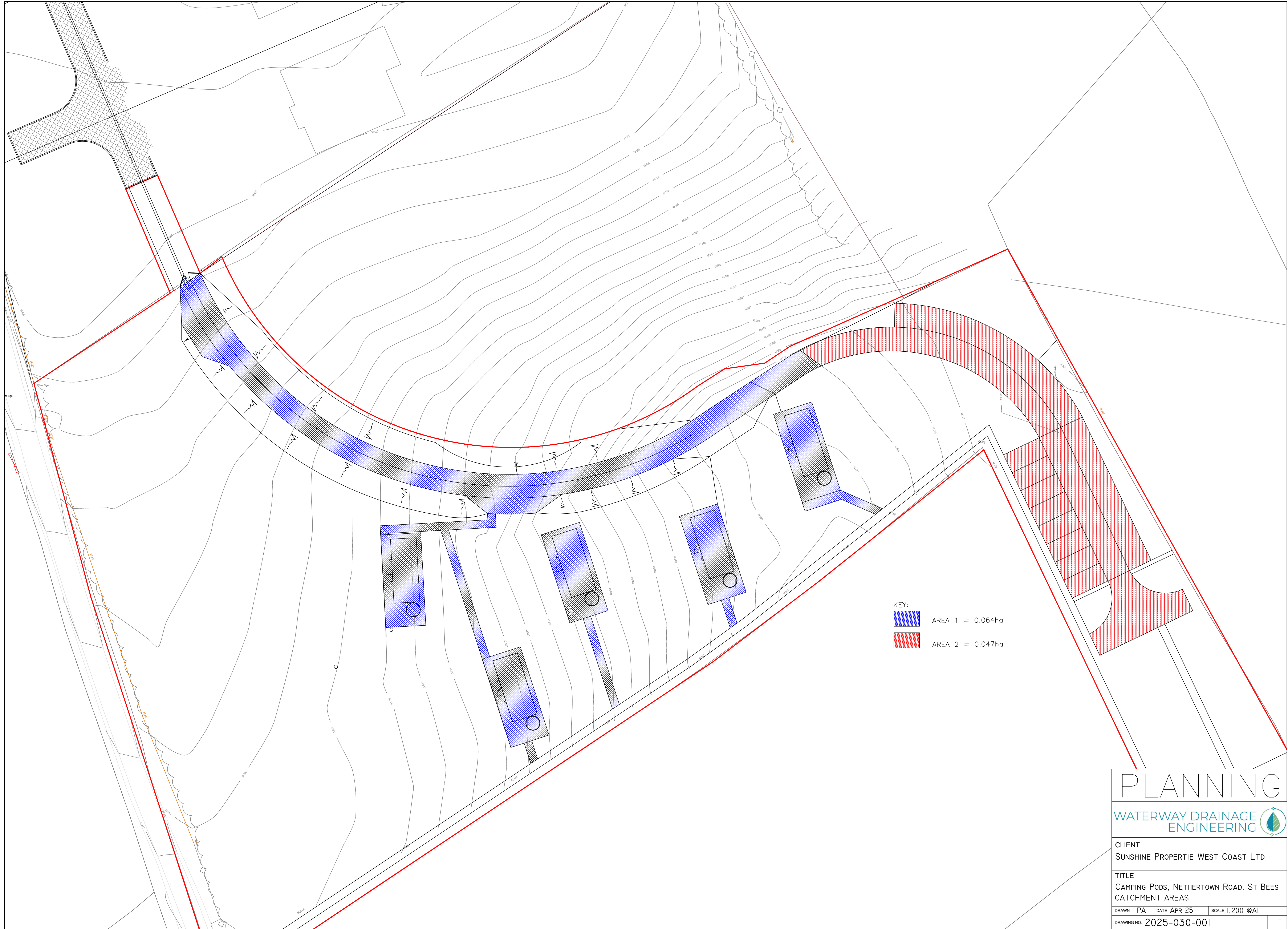
Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter		SW10	10	45.233	0.033	1.5	0.0176	0.0000	OK
120 minute winter		Permeable Gravel Car Park	84	44.946	0.015	2.2	3.4131	0.0000	OK
Link Event (Upstream Depth)		US Node	Link	DS Node		Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter		SW10	1.000	Permeable Gravel Car Park		1.5	1.380	0.151	0.0124
120 minute winter		Permeable Gravel Car Park	Infiltration			1.0			

Results for 30 year +50% CC 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 winter		SW10	10	45.255	0.055	4.1	0.0287	0.0000	OK
120 minute winter		Permeable Gravel Car Park	84	44.975	0.044	6.4	9.8103	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 winter	SW10	1.000	Permeable Gravel Car Park		4.1		1.644	0.411	0.0262
120 minute winter	Permeable Gravel Car Park	Infiltration			2.9				

Results for 100 year +50% CC 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 winter		SW10	10	45.262	0.062	5.2	0.0327	0.0000	OK
120 minute winter		Permeable Gravel Car Park	86	44.991	0.060	8.5	13.2425	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 winter	SW10	1.000	Permeable Gravel Car Park		5.2		1.700	0.522	0.0322
120 minute winter	Permeable Gravel Car Park	Infiltration			3.3				



PLANNING

WATERWAY DRAINAGE
ENGINEERING



CLIENT
SUNSHINE PROPERTIE WEST COAST LTD

TITLE
CAMPING PODS, NETHERTOWN ROAD, ST BEES
CATCHMENT AREAS

DRAWN PA

DATE APR 25

SCALE 1:200 @AI

DRAWING NO. 2025-030-001

Water Management Solutions

Klargester

AquaTreat Full Retention GRP Surface Water Treatment Separators

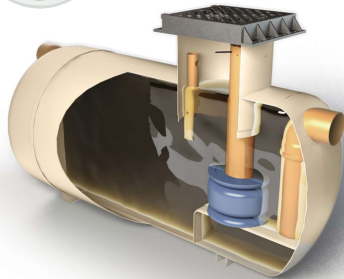
Mitigation Indices

TSS	Metals	Hydrocarbons
0.8%	0.6%	0.9%



Why choose an AquaTreat separator?

- Larger silt storage capacities (compared to vortex separators)
- Our indices cater for high polluted lands (single piece solution)
- Reduced risk of silt build up
- Lesser risk of downstream pollution in SuDS solution due to high capacity silt storage
- Easier servicing, with maintenance from ground level
- SmartServ Pro remote monitoring solution (available as optional extra)



Our range has been tested against full flow

Our units have been tested at their maximum flow rate (10l/s), unlike some products which have been tested based on bypass and therefore only 10% of the flow. This ensures total accuracy of our silt retention results, by replicating the full effect of the silt wash through.

As part of our Planet Passionate programme, Kingspan are dedicated to delivering innovative surface water management technologies, developed on the back of 65 years' experience.

*Terms and conditions apply. View online at <https://www.kingspan.com/gb/en-gb/products/wastewater-management/warranty-terms>



Klargester AquaTreat

Full Retention GRP Surface Water Treatment Separators

Technical Specifications

Model	10 l/s Low Risk		6 l/s Medium Risk			
	Treated Flowrate [l/s]	Connectable Surface Area [m ²]	Treated Flowrate [l/s]	Connectable Surface Area [m ²]	Length (mm)	Diameter (mm)
SWT001	10	1333	6	800	2610	1225
SWT002	15	2004	9	1202	3910	1225
SWT003	19	2535	11	1524	3230	2010
SWT004	23	3105	14	1863	3960	2010
SWT005	28	3747	17	2248	4750	2010
SWT006	34	4563	21	2738	5970	2010
SWT007	44	5814	26	3489	7365	2010
SWT008	48	6368	29	3821	5744	2820
SWT009	52	6880	31	4128	6200	2820
SWT010	61	8177	37	4906	7365	2820
SWT011	72	9635	43	5781	8675	2820
SWT012	83	11082	50	6649	9975	2820
SWT013	94	12535	56	7521	11280	2820
SWT014	100	13362	60	8017	11994	2820
SWT015	106	14183	64	8510	12766	2820
SWT016	113	15029	68	9017	13528	2820
SWT017	119	15897	72	9538	14300	2820
SWT018	126	16754	75	10053	15071	2820
SWT019	132	17601	79	10560	15833	2820

Low		
CoP at 10 l/s	% Removal	Mitigation Index
Total Suspended Solids (TSS)	75.6%	0.7
Metals*	57%	0.5
Hydrocarbons	99.6%	0.9
* Reduction of heavy metals by collecting and retaining suspended solids is assumed as 7.5%		

Medium		
CoP at 6 l/s	% Removal	Mitigation Index
Total Suspended Solids (TSS)	81.8%	0.8
Metals*	61.4%	0.6
Hydrocarbons	99.6%	0.9
* Reduction of heavy metals by collecting and retaining suspended solids is assumed as 7.5%		

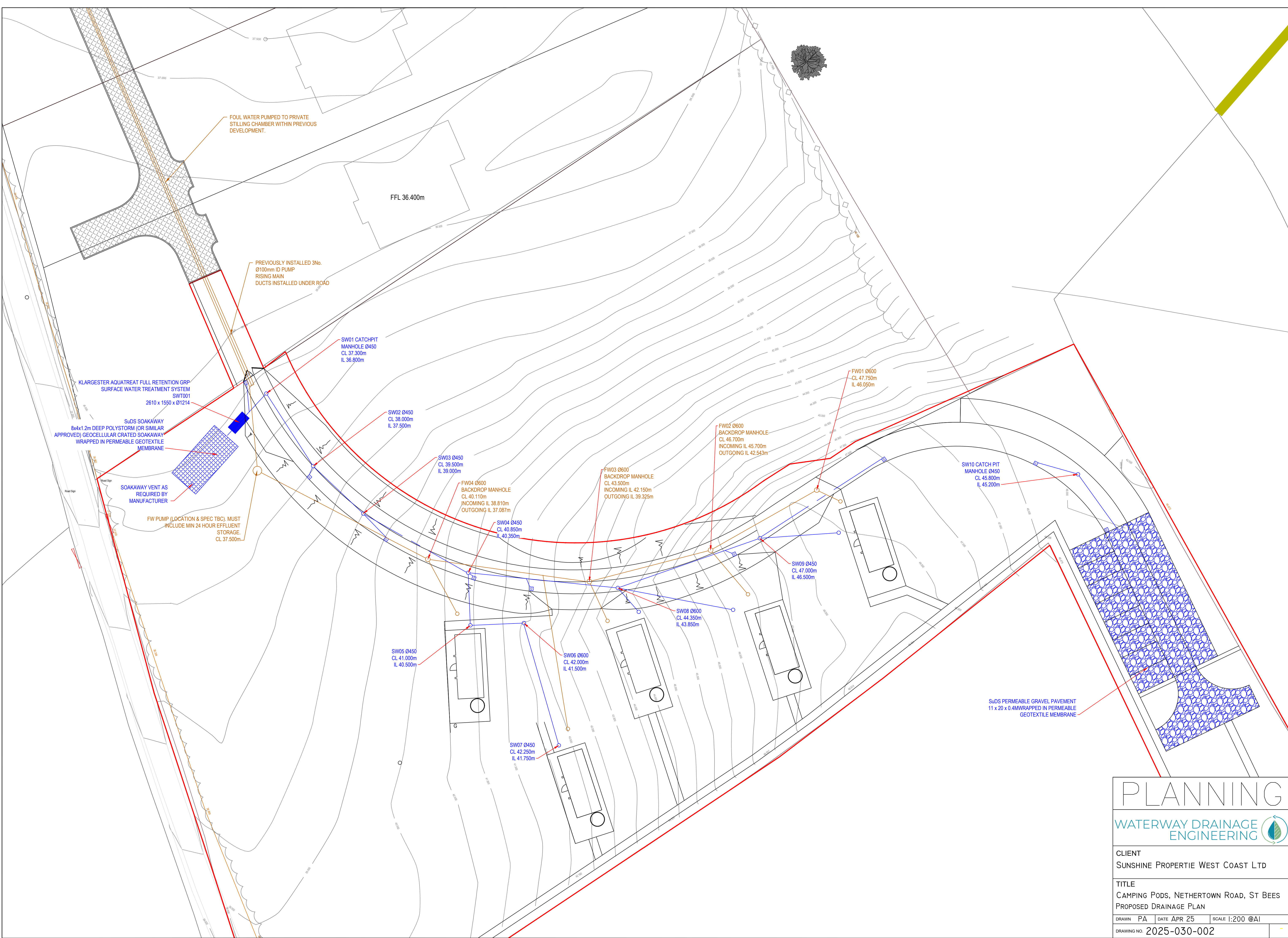
For more information on any of our products: T: +44 (0)1296 633 033

E: accvilsales@kingspan.com or visit kingspan.co.uk/klargester

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PLANNING



WATERWAY DRAINAGE ENGINEERING

CLIENT

SUNSHINE PROPERTIE WEST COAST LTD

TITLE

CAMPING PODS, NETHERTOWN ROAD, ST BEES
PROPOSED DRAINAGE PLAN

DRAWN	PA	DATE	APR 25	SCALE	1:200 @AI
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DRAWING NO. 2025-030-002