



Drainage Maintenance & Management Manual

Pebble Walk, Sinah Lane, Hayling Island, Hampshire

Client

BDW Southampton
Tollbar House, Tollbar Way
Hedge End
Hampshire, SO30 2UH
Ref: 10162
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Consulting Engineers

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Schedule of Appendices

- A Site Drainage Plan
- B Site Conveyance Plan

Issue	Issue date	Compiled	Checked
Initial Issue	31 October 2022	DS	MR
Revision A	27 December 2022	DS	MR
Revision B	27 March 2023	DS	MR
Revision C	05 May 2023	DS	MR

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1 Introduction

- 1.1 This report has been prepared for Barratt Developments, BDW Southampton in relation to a development at 'Pebble Walk', Sinah Lane, Hayling Island, Hampshire. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.
- 1.2 GTA Civils & Transport Ltd. was appointed by the client to provide a Drainage Maintenance & Management Manual (DMMM) as requested by Hampshire County Council, Planning (Developer Contributions).

2 Existing and Proposed Site

- 2.1 Existing: the pre-development site was unoccupied agricultural land.
- 2.2 Proposal: development of the site to provide 195 new dwellings.
- 2.3 Drainage design: the site main drainage drawing for the development, by GTA Civils & Transport Ltd, is included in Appendix A. This drawing indicates that the proposed drainage is by way of gravity and pumped systems, with foul water connecting to existing public foul sewer which crosses the open space to the north, and surface water connecting via a proposed attenuation lagoon with restricted discharges, to the existing watercourse network surrounding the site, by way of a new swale, the maintenance requirements of which are explained in this report. Due to the nature of the existing subsoils, infiltration techniques are not appropriate for this site.
- 2.4 Drainage, Site Outfall: the existing ditches fall towards the north of the development site and convey surface water to the ordinary watercourse and a final outfall into Sinah Lake.

3 Maintenance Schedule

- 3.1 The timescales for the installation for the on-site drainage is dependent on planning, however this will commence as soon as the planning permission is granted, and the works will take 4-5 months as part of the main infrastructure package.
- 3.2 The following sections detail the main drainage items used within the scheme and details the maintenance requirements for each item.
- 3.3 All maintenance regimes are to be in accordance with the CIRIA report C753, The SuDS Manual.
- 3.4 To ensure ongoing compliance with the requirements of the maintenance schedule, an Estate Management Company will be set up by the Client to administer the site wide infrastructure excluded from the drainage items adopted by the Water Authority, including all the private drainage items listed in the schedule below and will undertake the inspections and maintenance activities in accordance with the schedules below.
- 3.5 The main sewers, including the pumping stations will be adopted by Southern Water who will be responsible for their maintenance on completion. This excludes the attenuation basin and swales which will be maintained by the Management Company in accordance with the schedules below.
- 3.6 The main access roads and road gullies will be adopted by Hampshire County Council who will be responsible for their maintenance on completion.
- 3.7 The Estate Management Company will seek financial contributions (in the form of service charges), at regular intervals, from the leaseholders/owners of the development to include for the regular costs of the maintenance of the site drainage. A separate sinking fund will be maintained to provide for the anticipated replacement cost of the major components at the end of the manufacturer's design life. These funds are to be held in bank client accounts kept separate from the bank account of the Estate Management Company

4 Drains, Manholes, Gullies, Channel Drains

- 4.1 Regular inspection and maintenance is required to ensure the effective long-term operation of private drains, manholes, gullies & channel drains.
- 4.2 Prior to construction: a CCTV survey to be carried out on all receiving existing public sewer systems prior to connection with adopted sewers.
- 4.3 Post Completion: a CCTV survey to be carried out on all new and retained existing drainage systems and any downstream receiving systems, prior to connection with adopted sewers.
- 4.4 The report will be used to prove the integrity of the as-built drainage system prior to issue of practical completion certificate and will be handed over to the Client & Management Company for future reference.
- 4.5 Ongoing maintenance responsibility for all sewers and pumping stations are by Southern Water, and adoptable road gullies by Hampshire County Council. All other private gullies and drainage are to be maintained by management company in shared areas and homeowners within conveyed land. Operation and maintenance requirements for all sewer manholes, gullies and channel drains are described in the following table:

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	6 Monthly intervals.
	Common yard & car park & other hard standing areas to be swept clear of debris, to prevent possibility of blockages to the receiving drainage systems.	Monthly.
	Debris removal from gullies & channel drains (where may cause risks to performance).	6 Monthly intervals, after autumn leaf fall, or as required based on specific observations.

	Lift and inspect receiving manholes to check for any blockages.	Monthly.
Remedial Actions	Repair any damaged gully or channel drain gratings. Replace / fix any loose channel drain covers.	As required. As required.
Monitoring	Carry out full CCTV survey to confirm ongoing integrity of all drains. Inspect all gullies and silt pits & drainage channels during the survey.	10-yearly intervals.

- 4.6 Where appropriate refer also to specialist drainage channel drain manufacturer's information and maintenance requirements.
- 4.7 In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in 'Safe Working in Sewers and at Sewage Works' published by National Joint Health and Safety Committee for the Water Services.

5 Cut-Off Filter Drains

- 5.1 Ongoing maintenance responsibility for the site boundary cut-off land drain features are to be the responsibility of the management company. The features and associated access easements are indicated on the Conveyance Plan included in Appendix B. The features within conveyed land are to be available for inspection at all times, including the carrying out of any necessary repair works, by the Management Company in accordance with the schedule described in the following table:

Schedule	Action	Frequency
Regular Maintenance	Remove litter (including leaf litter) and debris from filter drain surface.	Monthly, or with more frequent intervention if required.
Occasional Maintenance	Inspect filter drain surface and inlet pipework for blockages, clogging, standing water and structural damage. Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010) At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	6 Monthly maximum intervals As required Five yearly, or as required

6 Attenuation Basin, Swales and Control Chambers

6.1 Inspection Frequency and Maintenance Requirements: as per table below.

Schedule	Action	Frequency
Regular Maintenance	Remove litter and debris Cut grass. Manage other vegetation and remove nuisance plants. Inspect permanent water depth for silt accumulation. Silt removal is only to be carried out after consultation with Environmental Officers. Inspect vegetation coverage	Monthly, or as required. Monthly (during growing season), Monthly at start, then as required. Monthly for 6 months, quarterly for 2 years, then half yearly Monthly for 6 months, quarterly for 2 years, then half yearly
Occasional maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required.	As required or if bare soil is exposed over 10% or more of the swale treatment area
Remedial actions	Repair erosion or other damage by re-turfing or reseeded. Relevel uneven surfaces and reinstate design levels. Remove build-up of silt accumulation from permanent water depth. Silt removal is only to be carried out after consultation with Environmental Officers. Remove and dispose of oils or petrol residues using safe standard practices	As required. As required. Monthly for 6 months, quarterly for 2 years, then half yearly As required.

	Remove and dispose of oils or petrol residues using safe standard practices	As required.
Control Chambers, Orifice Plates and Hydrobrakes	Check hydrobrake orifices are clear and retention tank door is closed. Check function of retention tank door and oil if necessary. Similarly, check outfalls and inlets of attenuation ponds to ensure pipes are clear and freeflowing.	First 2 years of occupation – Monthly Then annually

7 Contamination or Dilution of Spillage

- 7.1 In the event of a spillage it is the responsibility of the resident to clear up any spillage before it enters the drainage system. The primary method of dealing with any spillage of hydrocarbons should be using sand to soak up the leak and prevent any hydrocarbons entering the drainage system. Once sand has been contaminated it should not be washed into the drainage system but disposed of by a Licensed Contractor.

7.2 Environment Agency – Emergency Contact Number

In the event of a spillage the Environment Agency should be contacted to notify the event and seek advice. The Environment Agency Incident Hotline is 0800 80 70 60 (Freephone 24hrs).

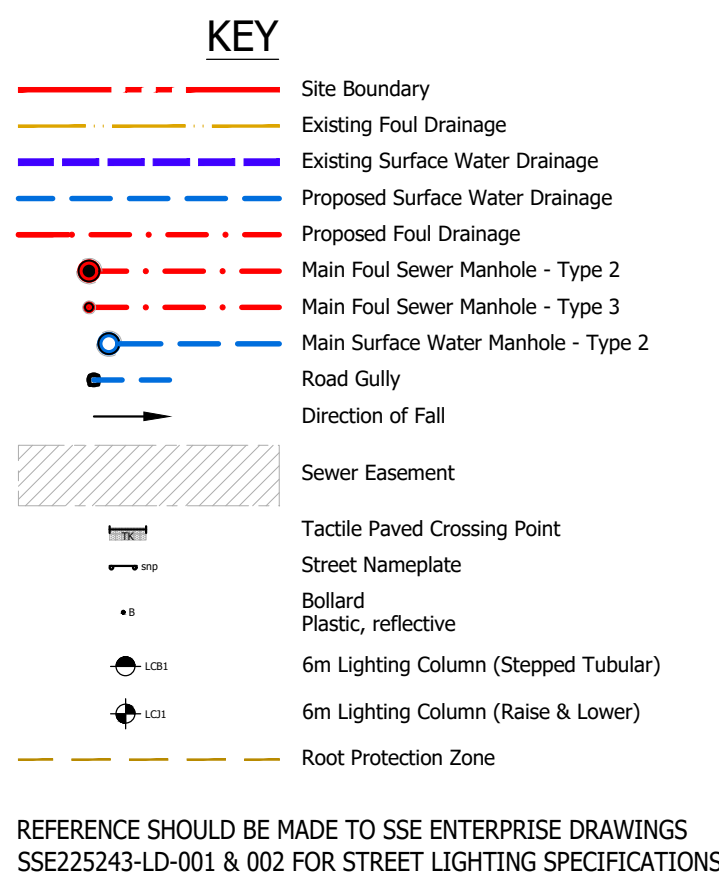
- End of Report -

Appendix A

Site Drainage Layout

GENERAL NOTES

1. ALL ADAPTABLE HIGHWAY CONSTRUCTION WORKS SHALL BE CARRIED OUT TO THE STANDARD LAID DOWN IN THE HAMPSHIRE COUNTY COUNCIL SPECIFICATIONS, WITH A VIEW TO ADOPTION UPON COMPLETION.
2. ALL ADAPTABLE SEWERS AND SHALL BE CONSTRUCTED TO THE STANDARDS LAID DOWN IN THE "SEWERAGE SECTOR GUIDANCE" AND SOUTHERN WATER SPECIFICATIONS, WITH A VIEW TO ADOPTION UPON COMPLETION.
3. BEFORE CONNECTIONS ARE MADE TO EXISTING DRAINAGE, IT'S LEVEL IS TO BE CHECKED AND CONFIRMED AGAINST LAID DOWN SPECIFICATIONS AND THE PRICE INCREASED OF ANY SIGNIFICANT DIFFERENCE. **NO CONNECTIONS ARE TO BE MADE TO THE EXISTING PUBLIC SEWERS PRIOR TO A SIGNED AGREEMENT WITH SOUTHERN WATER.**
4. ALL SEWERS WITH LESS THAN 1.2m COVER WHEN LAID BENEATH THE ROAD OR BENEATH FOOTPATHS/VERGES IMMEDIATELY ADJACENT TO THE CARRIAGEWAY, OR 0.9m OF COVERS IN OTHER AREAS, SHALL BE PROTECTED WITH CONCRETE IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED (FOR RESIDENTIAL TYPE LOCATIONS, REFER TO SEWER SECTIONS).
5. THE MINIMUM SIZE OF PIPE CONNECTING PIPES TO THE DRAINAGE SYSTEM SHALL BE 150mm DIA. LAID AT A MINIMUM GRADIENT OF 1 IN 80.
6. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF THE DRAINAGE SYSTEM, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
7. THE DESIGN IS SUCH THAT WATER FROM PRIVATE AREAS DOES NOT SHED TO ADAPTABLE AREAS AND VISA VERSA.
8. 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.
9. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
10. IT IS THE SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.



Highway construction is to be carried out to the latest versions of the Hampshire County Council details which can be found at <https://www.hants.gov.uk/transport/developers/standard-details>. This Drawing is to be read in conjunction with Hampshire companion document to manual for streets and HCC construction details:

- HCC11/C/010 - Precast Concrete Kerbs
- HCC11/C/045 - Footways Types 1A, 1B, 2 & 3
- HCC11/C/055 - Footways Types 5, 6A & 6B (Stangthens)
- HCC11/C/060 - Uncontrolled Pedestrian Crossing in New Works
- HCC11/C/100 - Flat Top Road Hump & Junction Table Type 1
- HCC11/C/135 - Wooden Dragon's Teeth and Bollards
- HCC11/C/155 - Standard Traffic Signs ... Foundation Details
- HCC11/D/015 - Gully Type 1T
- HCC11/D/045 - Manhole Types M22, etc.
- HCC11/L/015- 5m & 6m "Post Top" Tubular Steel Planted Columns
- HCC11/L/020- 5m & 6m Rise and Lower TS Planted Columns
- HCC11/L/035- Planted Column Erection Details ... in Paved Areas

Pavement Design Specification.

Bituminous Carriageway:
40mm thick Dense Asphalt Concrete Surface Course. AC10 Surf Surf 100/150 to Clause 912 on, 65mm thick Dense Asphalt Concrete Binder Course. AC20 Dense BBN 40/60 DES Clause 929 on, bond coat on, 160mm thick Asphalt Concrete HDM Base Course AC32 Dense Base 40/60 Clause 929 laid in 2 x 80mm courses with bond coat between each on.
* 155mm min. thick Granular Sub-Base Material Type 1 (see below). Specification Clause 803 on, ** Capping Layer. Material to be 6F2 or Similar.

Blockwork Carriageway (Mountable Shoulder):
200x100x80mm thick Concrete Block Paving (Colour - Brindle) Laid to 45° Herringbone Pattern on, 30mm thick Category B1 Sharp Sand (to be certified) on, 90mm Base, AC20 Dense Base Asphalt to BS EN 13108-1 40/60 PEN on, * 250mm min. thick Granular Sub-Base Material Type 1 (see below). Specification Clause 803 on, ** Capping Layer. Material to be 6F2 or Similar.

Grass Verges:
Top soil as BS3882 with sub-soil loosened to 150mm depth. Finished turf level to be 25mm above adjacent kerbs. Existing carriageway construction to be broken out to allow free draining subsoil.

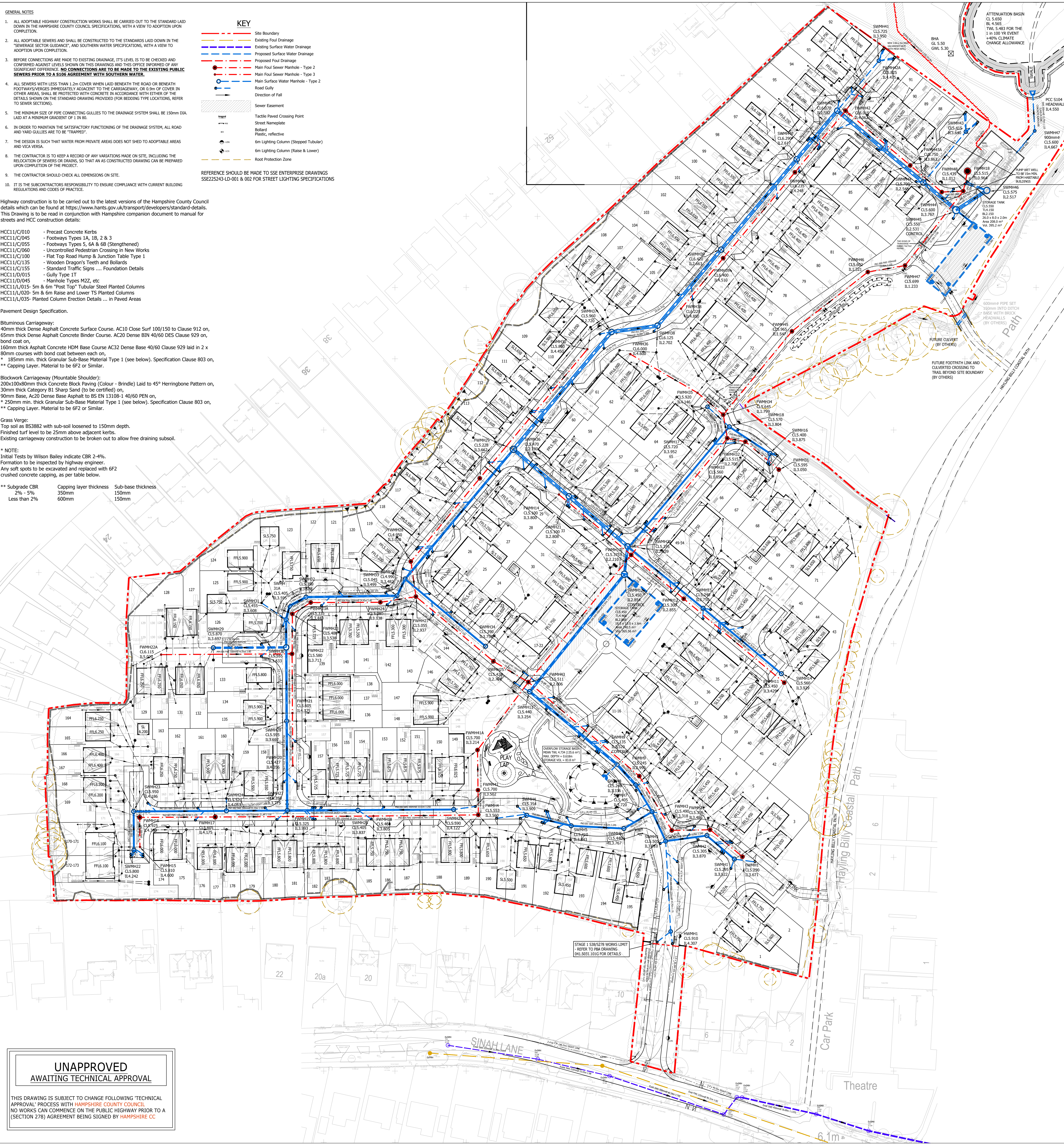
* NOTE:
Initial Tests by Wilson Bailey Indicate CBR 2-4%.
Formation to be inspected by highway engineer.
Any soft spots to be excavated and replaced with 6F2 crushed concrete capping, as per table below.

** Subgrade CBR	Capping layer thickness	Sub-base thickness
2% - 5%	350mm	150mm
Less than 2%	600mm	150mm

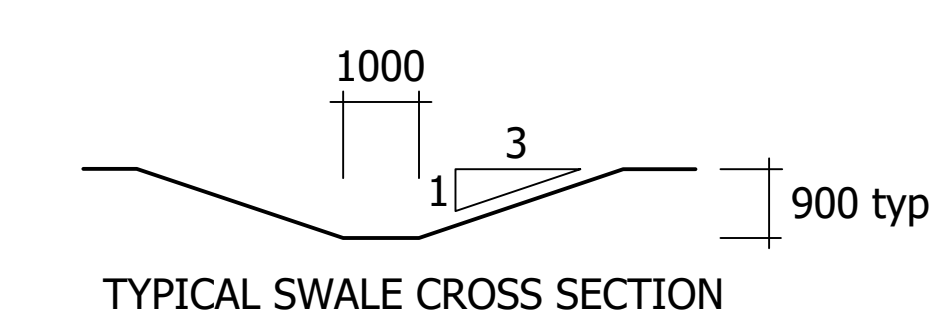
GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non-intrusive observations, record drawings or the like. The contractor shall safety carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to job prior to works commencing.
2. Tender or billing drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
5. Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made otherwise due to the client proceeding prior to these approvals is considered wholly at the Client's risk, gta hold no responsibility for resulting adverse works or costs.

CONTINUED ON DRAWING 10162/1016

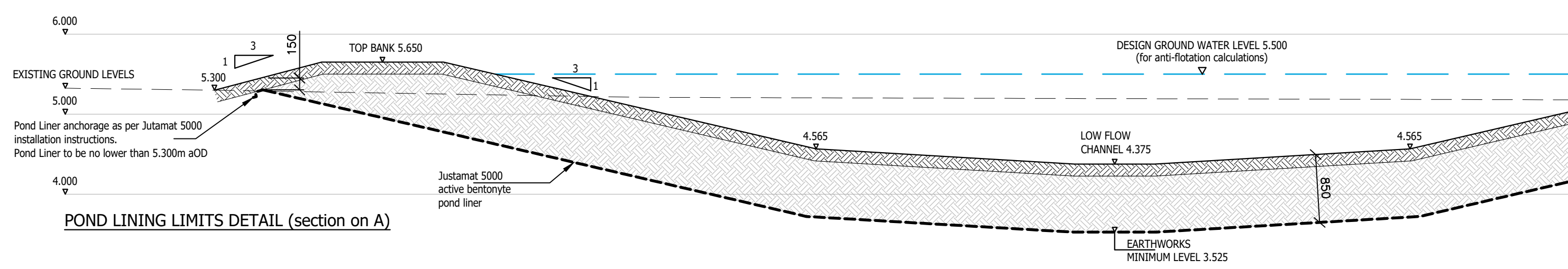
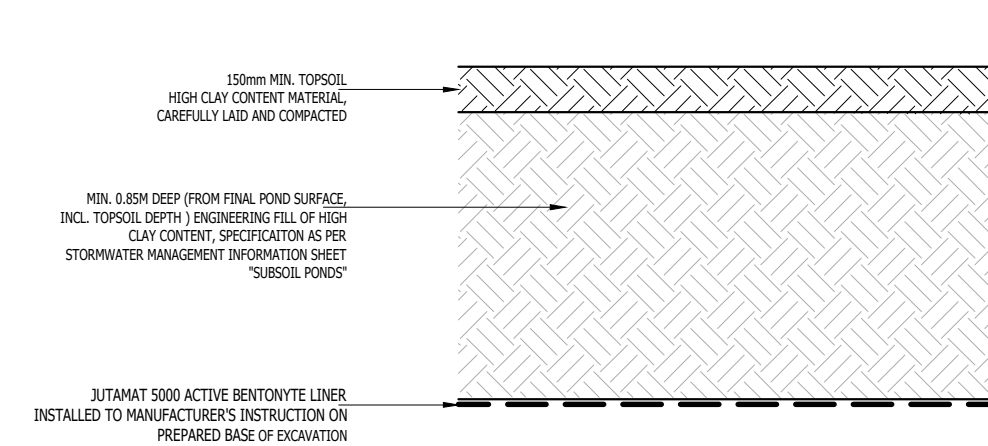


PHASE 0	MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING	NORTHING	COVER TYPE
	FWMH01	1200	Type B	5.91	4.307	1.278	470871.745	99798.962	675x875x150mm D400
	FWMH02	1350	Type C	5.295	3.932	1.073	470894.10	99824.386	1220x885x150mm D400
	FWMH03	1350	Type C	5.305	3.870	1.435	470884.464	99832.840	1220x885x150mm D400
	FWMH04	1350	Type C	5.505	3.81	1.695	470869.893	99830.703	1220x885x150mm D400
	FWMH05	1350	Type C	5.354	3.909	1.445	470821.231	99839.761	1220x885x150mm D400
	FWMH06	1350	Type C	5.41	3.843	1.567	470836.849	99836.070	1220x885x150mm D400
	FWMH07	1350	Type C	5.44	3.767	1.673	470855.341	99835.114	1220x885x150mm D400
	FWMH08	1350	Type C	5.405	3.72	1.685	470865.238	99840.985	1220x885x150mm D400
	FWMH09	1200x1050	Type C	5.24	3.336	1.904	470859.511	99850.416	1220x885x150mm D400
	FWMH10	1200x1050	Type C	5.135	3.320	1.815	470822.824	99857.541	1220x885x150mm D400
	FWMH11	1350	Type C	5.57	3.844	1.726	470822.308	99853.151	675x875x150mm D400
	FWMH12	2100	Type B	5.45	2.854	2.596	470855.508	99824.366	675x875x150mm D400
	FWMH13	1350	Type C	5.56	3.829	1.731	470810.615	99858.474	1220x885x150mm D400
	FWMH14	1350	Type C	5.4	3.75	1.65	470853.151	99872.429	1220x885x150mm D400
	FWMH15	1350	Type C	5.40	3.875	1.525	470806.815	99866.776	1220x885x150mm D400
	FWMH16	1200	Type B	5.72	3.852	1.868	470884.699	99883.142	675x875x150mm D400
	FWMH17	1350	Type C	5.57	3.884	1.686	470862.321	99876.136	1220x885x150mm D400
	FWMH18	1800	Type B	5.395	2.840	2.555	470857.007	99833.558	675x875x150mm D400
	FWMH19	1350	Type C	5.10	2.808	2.292	470836.047	99851.753	1220x885x150mm D400
	FWMH20	1350	Type C	5.80	2.422	3.378	470853.382	99827.486	1220x885x150mm D400
	FWMH21	1350	Type C	5.95	4.122	1.668	470795.614	99841.786	1220x885x150mm D400
	FWMH22	1350	Type C	5.405	3.837	1.568	470792.003	99841.502	1220x885x150mm D400
	FWMH23	1350	Type C	5.35	3.775	1.575	470737.180	99841.440	1220x885x150mm D400
	FWMH24	1350	Type C	5.595	3.697	1.898	470737.004	99872.814	1220x885x150mm D400
	FWMH25	1350	Type B	5.87	3.697	2.173	470711.266	99898.557	675x875x150mm D400
	FWMH26	1800	Type C	5.555	3.633	1.472	470786.850	99898.709	1220x885x150mm D400
	FWMH27	1350	Type C	5.455	3.608	1.847	470736.792	99908.478	1220x885x150mm D400
	FWMH28	1350	Type C	5.35	3.578	1.772	470743.804	99916.353	1220x885x150mm D400
	FWMH29	1350	Type C	5.345	3.489	1.856	470743.804	99916.353	1220x885x150mm D400
	FWMH30	1350	Type C	5.39	3.75	1.64	470806.815	99899.105	1220x885x150mm D400
	FWMH31	1350	Type C	4.99	3.482	1.508	470778.567	99922.287	1220x885x150mm D400
	FWMH32	2100	Type B	5.47	2.78	2.69	470816.613	99906.099	675x875x150mm D400
	FWMH33	1800	Type B	5.960	2.72	3.240	470851.006	10009.449	675x875x150mm D400
	FWMH34	1800	Type B	6.127	2.702	3.425	470887.142	10011.599	675x875x150mm D400
	FWMH35	1800	Type B	6.42	2.803	3.617	470889.462	10038.324	675x875x150mm D400
	FWMH36	1800	Type B	6.29	2.617	3.673	470915.956	100070.045	675x875x150mm D400
	FWMH37	1200	Type B	5.725	3.35	2.375	470944.831	100104.619	675x875x150mm D400
	FWMH38	1800	Type B	6.07	2.592	3.478	470932.207	100077.109	675x875x150mm D400
	FWMH39	1350	Type C	5.287	3.64	1.647	470975.351	100079.736	1220x885x150mm D400
	FWMH40	1800	Type B	5.70	2.548	3.152	470960.428	100101.868	675x875x150mm D400
	FWMH41	2400	Type B	5.55	2.531	3.019	470971.947	10052.153	675x875x150mm D400
	FWMH42	2100	Type B	5.575	2.517	3.058	470982.734	10059.107	675x875x150mm D400
	FWMH43	1200x1050	Type C	5.455	3.395	2.060	470738.022	99913.286	1220x885x150mm D400
	FWMH44	1200	Type B	5.29	3.671	1.519	470986.956	99925.225	675x875x150mm D400
	FWMH45	1200	Type B	5.336	3.486	1.850	470985.588	99934.889	675x875x150mm D400
	FWMH46	1200	Type B	5.49	3.318	2.172	470972.156	99934.461	675x875x150mm D400
	FWMH47	1200	Type B	5.533	3.560	1.967	470804.250	99939.916	675x875x150mm D400
	FWMH48	1200	Type B	5.245	2.99	2.255	470860.749	99953.524	675x875x150mm D400
	FWMH49	1200	Type B	5.45	3.429	1.971	470911.594	99968.317	675x875x150mm D400
	FWMH50	1200	Type B	5.301	2.855	2.446	470876.346	99915.756	675x875x150mm D400
	FWMH51	1200	Type A	5.389	2.21	3.179	470857.912	99931.152	675x875x150mm D400
	FWMH52	450	Type D	5.10	3.80	1.30	470932.521	99952.369	675x875x150mm D400
	FWMH53	450	Type D	5.81	4.60	1.11	470965.495	99928.870	300x300x150mm D400
	FWMH54	1350	Type C	5.625	4.38	1.245	470895.433	99939.072	300x300x150mm D400
	FWMH55	1350	Type C	5.805	4.175	1.630	470711.035	99939.170	1220x885x150mm D400
	FWMH56	450	Type D	5.46	3.805	1.505	470767.459	99939.499	1220x885x150mm D400
	FWMH57	450	Type D	5.525	3.993	1.532	470778.237	99939.332	300x300x150mm D400
	FWMH58	450	Type D	5.427	4.386	1.911	470781.131	99957.223	300x300x150mm D400
	FWMH59	450	Type D	5.607	4.125	1.482	470798.022	99975.651	300x300x150mm D400
	FWMH60	1200	Type B	5.58	3.713	1.867	470736.898	99966.446	300x300x150mm D400
	FWMH61	1200	Type B	5.40	3.538	1.862	470736.016	99910.429	675x875x150mm D400
	FWMH62	1200	Type B	5.08	3.138	1.942	470769.889	99914.529	675x875x150mm D400
	FWMH63	1200	Type B	5.42	2.701	2.719	470786.898	99966.446	300x300x150mm D400
	FWMH64	450	Type D	5.55	4.45	1.30	470944.511	10003.349	1220x885x150mm D400
	FWMH65	450	Type D	5.85	4.302	1.78	470970.588	99928.347	675x875x150mm D400
	FWMH66	1350	Type C	5.228	3.602	1.626	470804.759	99958.553	675x875x150mm D400
	FWMH67	450	Type D	5.85	4.45	1.30	470944.511	10003.349	1220x885x150mm D400
	FWMH68	1200	Type B	5.595	3.05	2.545	470909.723	99981.108	300x300x150mm D400
	FWMH69	1200	Type B	5.515	2.70	2.815	470907.079	99970.977	675x875x150mm D400
	FWMH70	1200	Type A	5.56	1.856	3.704	470981.626	99972.082	675x875x150mm D400
	FWMH71	1200	Type A	5.645	1.799	3.846	470890.232	99980.368	675x875x150mm D400
	FWMH72	450	Type D	5.82	4.46	1.30	470944.511	10003.349	1220x885x150mm D400
	FWMH73	450	Type D	6.00	4.60	1.30	470957.585	100001.640	300x300x150mm D400
	FWMH74	450	Type D	6.22	4.85	1.27	470975.392	100017.585	300x300x150mm D400
	FWMH75	1200	Type B	6.40	4.51	1.74	470969.188	100035.301	300x300x150mm D400
	FWMH76	1200	Type B	6.235	4.248	1.987	470915.374	100055.456	675x875x150mm D400
	FWMH77	1200	Type B	5.70	3.502	2.248	470804.146	99948.579	675x875x150mm D400
	FWMH78	1200	Type B	5.803	3.447	2.356	470914.307	10009.441	675x875x150mm D400
	FWMH79	1200	Type B	5.481	2.606	2.725	470821.816	99966.528	675x875x150mm D400
	FWMH80	1200	Type B	5.60	3.767	1.833	470996.889	100058.537	675x875x150mm D400
	FWMH81	1200	Type A	5.903	1.947	4.006	470914.307	100002.641	675x875x150mm D400
	FWMH82	1200	Type B	5.515	3.071	2.444	470821.816	99966.528	675x875x150mm D400
	FWMH83	1200	Type B	5.603	1.233	4.368	470953.998	100032.742	675x875x150mm D400
	FWMH84	1200	Type B	5.283	1.012	4.272	470914.748	100058.070	675x875x150mm D400
	FWMH85	1200	Type B	5.335	3.443	1.892	470745.442	99914.445	675x875x150mm D400
	FWMH41A	1200	Type B	5.70	3.214	2.486	470803.903	99962.675	675x875x150mm D400
	FWMH42A	450	Type D	5.606	4.475	1.251	470940.444	100098.508	300x300x150mm D400
	FWMH43A	450	Type D	5.606	4.475	1.251	470940.444	100098.508	300x300x150mm D400
	FWPUMP	2100	Type S515	5.955	0.984	4.011	470795.940	100060.870	



ALIGNMENT SWALE								
LOCATION	CHAINAGE	EASTING	NORTHING	RADIUS	BEARING	ANGLE	ARC LENGTH	TOTAL
SPSWALE-1	0.000	471077.403	100186.278		52.85159			
TPSWALE-1a	0.775	471078.021	100186.746		52.85159			
TPSWALE-1		471083.539	100189.922	16.414		45.74073	13.104	6.924
TPSWALE-1b	10.600	471086.517	100190.015					
TPSWALE-1b	13.879	471090.385	100190.887		98.59233			
TPSWALE-2	20.000	471096.438	100188.978					
EPSWALE-1	28.082	471104.429	100187.770		98.59233			

Pebble Walk, Sinh Lane, Hayling Island		Pebble Walk, Sinh Lane, Hayling Island																																																																									
10162		10162																																																																									
Attenuation Lagoon - Anti-Flotation Calculation		Attenuation Lagoon Outfall Swale - Anti-Flotation Calculation																																																																									
V1 - 15.6,21		V1 - 15.6,21																																																																									
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- ## GENERAL NOTES
1. The location, size, depth and specification of excavations that may be shown or referred to on the Drawing have been based from non intrusive observations, ground sounding or by test. The Contractor shall safely carry out investigations, trial holes or soundings prior to commencing work to safely ascertain that the ground conditions that the assessments are accurate, any discrepancies shall be notified to the prior to works commencing.
2. Tending by drilling boulders shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be in situ confirmed.
4. The Drawing shall be read in conjunction with all relevant schedules, consultants drawings and specifications, together with H&S plan requirements
5. Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gfa.
6. All drawings specifications and recommendations made by gfa are subject to Local Authority and other Relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to this approval is considered wholly at the Clients risk. gfa hold no responsibility for resulting abortive works or costs.

- ## GENERAL NOTES
1. ALL ADAPTABLE HIGHWAY CONSTRUCTION WORKS SHALL BE CARRIED OUT TO THE STANDARD Laid DOWN IN THE HAMPSHIRE COUNTY COUNCIL SPECIFICATIONS, WITH A VIEW TO ADOPTION UPON COMPLETION OF THE PROJECT.
 2. ALL ADAPTABLE SERVICES SHALL BE CONSTRUCTED TO THE STANDARDS Laid DOWN IN "SERVICES FOR ADAPTION" 7th EDITION, AND SOUTHERN WATER SPECIFICATIONS, WITH A VIEW TO ADOPTION UPON COMPLETION OF THE PROJECT.
 3. BEFORE CONNECTIONS ARE MADE TO EXISTING DRAINAGE, ITS LEVEL IS TO BE CHECKED AND CONFIRMED AGAINST DETAILS SHOWN ON THIS DRAWING AND THIS OFFICE INFORMED OF ANY SIGNIFICANT DIFFERENCE. **NO CONNECTIONS ARE TO BE MADE TO EXISTING PUBLIC SERVICES PRIOR TO A SLOE AGREEMENT WITH SOUTHERN WATER.**
 4. ALL SERVICES WITH LESS THAN 1.2m cover HAVE Laid BENEATH THE ROAD EITHER BY DITCH OR BY TRENCH IMMEDIATELY UP TO THE ROAD EDGE. ALL SERVICES Laid IN OTHER AREAS, SHALL BE PROTECTED WITH CONCRETE IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED (FOR RESIDING TYPE LOCATIONS, REFER TO SECTOR SECTIONS).
 5. THE MINIMUM SIZE OF PIPE CONNECTING LOCATIONS TO THE DRAINAGE SYSTEM SHALL BE 150mm DIA. LAD IN TO THE DRAINAGE SYSTEM AT 7.5% FALL.
 6. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF THE DRAINAGE SYSTEM, ALL ROAD AND TARDER GULLIES ARE TO BE "TRAPPED".
 7. THE DESIGN IS SUCH THAT WATER FROM PRIVATE AREAS DOES NOT SHED TO ADAPTABLE AREAS AND NEARBY AREAS.
 8. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SERVICES OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
 9. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
 10. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.

-
- KEY**
- Site Boundary
 - Existing Foul Drainage
 - Existing Surface Water Drainage
 - Proposed Surface Water Drainage
 - Proposed Foul Drainage
 - Main Foul Sewer Manhole - Type 2
 - Main Foul Sewer Manhole - Type 3
 - Main Surface Water Manhole - Type 2
 - Road Gully
 - Direction of Fall
 - Sewer Easement
 - Tactile Paved Crossing Point
 - Street Nameplate
 - Bollard
 - Plastic, reflective
 - 6m Lighting Column (Street Tubular)
 - 6m Lighting Column (Raise & Lower)
 - Root Protection Zone

11	OUTFALL SWALE/INLET/FLIGHTWAY MEASURES CALCULATION ADDED	24.02.22	DMS	ds
12	DESIGN UPDATES TO ACCOMMODATE WITH RECORDED GROUNDWATER LEVELS	09.12.21	DMS	ds
13	FORMING RECALCULATED TO SUIT EXTENDED KISSING MAIN LENGTH	27.08.21	DMS	ds
14	ALL FOLL SEVERE REGENERATED & BACKFILL ADDED TO STEEPER FOLL SEVERE WHERE PRACTICAL	11.06.21	DMS	ds
15	GENERAL COMMENTS IN ACCORDANCE WITH SITE LAYOUT 10-10-21 + ADD COMMENTS TO SUIT KCC'S OBSERVATIONS (20.06.18) & DMS FINAL SWS AGREEMENT COMMENTS	26.03.21	DMS	ds
16	OUTFALL SWALE ADJUSTED TO CONNECT TO APPROXIMATE LOCATION	15.05.20	DMS	ds
17	FLOOD MODEL DATA FROM OVERHEAD CABLES ADDED	31.03.20	DMS	ds
18	FORMING RECALCULATED TO SUIT KISSING MAIN	13.01.20	DMS	ds
19	ACCESS PAVED SURF GENERALLY ADJUSTED	07.01.20	DMS	ds
20	SMALL DESIGN DETAILS ADDED	16.12.19	DMS	ds
21	GROUNDWORKS TENDER ISSUE	06.12.19	DMS	ds
Rev	description	Date	Drawn	CHK

Status

Client



**BARRATT
HOMES**

Project

**PEBBLE WALK, SINNAH LAKE
HAYLING ISLAND, HANTS**

Title

**SURFACE WATER DRAINAGE
OUTFALL PLAN**

Date

NOVEMBER 2019

Scale & A0

1:500

Issue Layout Ref

CAD file ref.

Client Ref.

10162

 **gta** Civils & Transport

Glochester House, 66a Church Walk,
Burgess Hill, West Sussex, BN15 5AG
Tel:01484 871444 Web: www.gtacivils.co.uk

Drawing Number

10162/1016

Rev.

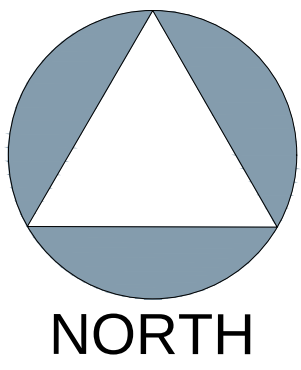
T11

Appendix B

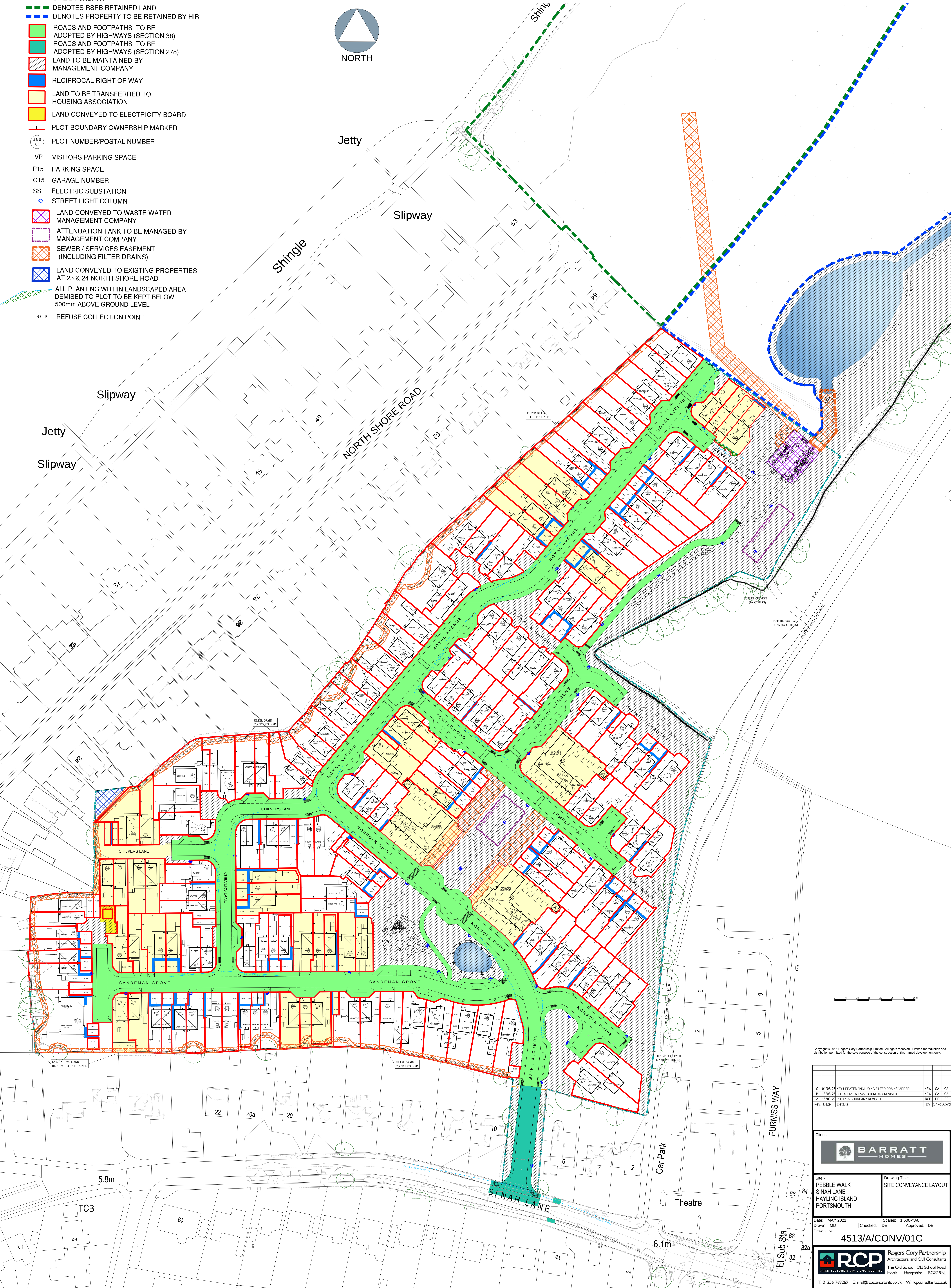
Site Conveyance Plan

KEY

- SITE BOUNDARY
- DENOTES RSPB RETAINED LAND
- DENOTES PROPERTY TO BE RETAINED BY HIB
- ROADS AND FOOTPATHS TO BE ADOPTED BY HIGHWAYS (SECTION 38)
- ROADS AND FOOTPATHS TO BE ADOPTED BY HIGHWAYS (SECTION 278)
- LAND TO BE MAINTAINED BY MANAGEMENT COMPANY
- RECIPROCAL RIGHT OF WAY
- LAND TO BE TRANSFERRED TO HOUSING ASSOCIATION
- LAND CONVEYED TO ELECTRICITY BOARD
- PLOT BOUNDARY OWNERSHIP MARKER
- PLOT NUMBER/POSTAL NUMBER
- VP VISITORS PARKING SPACE
- P15 PARKING SPACE
- G15 GARAGE NUMBER
- SS ELECTRIC SUBSTATION
- STREET LIGHT COLUMN
- LAND CONVEYED TO WASTE WATER MANAGEMENT COMPANY
- ATTENUATION TANK TO BE MANAGED BY MANAGEMENT COMPANY
- SEWER / SERVICES EASEMENT (INCLUDING FILTER DRAINS)
- LAND CONVEYED TO EXISTING PROPERTIES AT 23 & 24 NORTH SHORE ROAD
- ALL PLANTING WITHIN LANDSCAPED AREA DEMISED TO PLOT TO BE KEPT BELOW 500mm ABOVE GROUND LEVEL
- RCP REFUSE COLLECTION POINT



SITE CONVEYANCE LAYOUT



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C	04/05/23	KEY UPDATED 'INCLUDING FILTER DRAINS' ADDED.	KRW	CA	CA
B	13/03/23	PLOTS 11-16 & 17-22 BOUNDARY REVISED	KRW	CA	CA
A	16/09/22	PLOT 195 BOUNDARY REVISED	RCP	DE	DE
Rev.	Date	Details			By: [Checked/Approved]

Client:

Site:

PEBBLE WALK
SINAH LANE
HAYLING ISLAND
PORTSMOUTH

Drawing Title:

SITE CONVEYANCE LAYOUT

Date: MAY 2021

Drawn: MD

Drawing No:

Scales: 1:500@A0

Checked: DE

Approved: DE

4513/A/CONV/01C

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