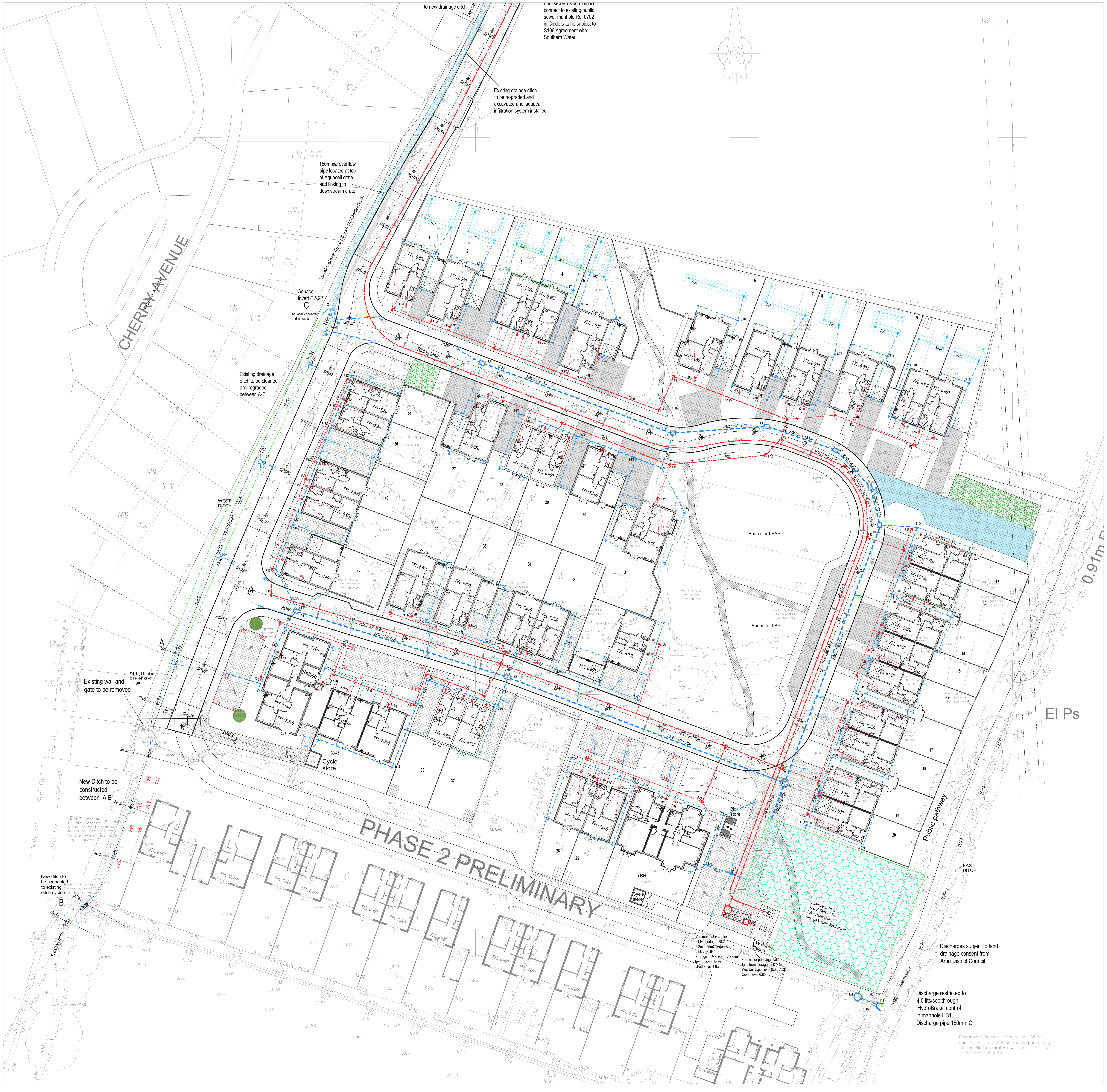
CHERRY AVENUE
to new drainage ditch
Foul sewer rising main to connect to existing public sewer manhole Ref 0702 in Cinders Lane subject to S106 Agreement with Southern Water
Existing drainage ditch to be re-graded and excavated and 'aquacell' infiltration system installed
150mmØ overflow pipe located at top of Aquacell crate and linking to downstream crate
Aquacell Soakaway (D) 1.0 x 23.5 x 0.47 (Effective Depth)
Aquacell Invert F 5.22
C
Aquacell connected to ditch outfall
Existing drainage ditch to be cleaned and regraded between A-C
WEST DITCH
A
Existing filled ditch to be re-instated as agreed
Existing wall and gate to be removed
Refuse
Cycle store
New Ditch to be constructed between A-B
New ditch to be connected to existing ditch system
B
Existing ditch
PHASE 2 PRELIMINARY
Rising Main
ROAD 1
ROAD 2
Space for LEAP
Space for LAP
Bin Store
Cycle store
FW Pump Station
Volume of storage for 24 Hr. period = 28.2m³
Storage in wet well = 7.785m³
Foul water pumping station inlet from storage tank
Attenuation Tank
Public pathway
EAST DITCH
Discharges subject to land drainage consent from Arun District Council
Discharge restricted to 4.0 lits/sec through 'HydroBrake' control in manhole HB1. Discharge pipe 150mm Ø
H1
El Ps
0.91m

FOUL DRAINAGE MANHOLE SCHEDULE

REFERENCE	Cover Level (m)	Invert Level (m)	Depth to Soffit (m)	Size (mm)	Type	Cover Grade
FA	6.50	TBA	TBA	TBA	TBA	D400
F1	6.75	6.00	0.650	450 diameter	3	B125
F2	6.85	5.75/5.70	1.00	450 diameter	3	B125
F3	6.90	5.48	1.27	450 diameter	3	B125
F4	6.30	5.43	0.72	450 diameter	3	B125
F5	6.65	5.275	1.225	450 diameter	3	B125
F6	6.65	5.65	0.90	450 diameter	3	B125
F7	6.65	5.90	0.500	450 diameter	3	B125
F8	6.55	5.00	1.40	450 diameter	3	D400
F9	6.85	6.10	0.65	450 diameter	3	B125
F10	6.80	5.90/5.85	0.80	450 diameter	3	B125
F11	6.80	5.65	1.00	450 diameter	3	B125
F12	6.75	5.45	0.700	450 diameter	3	B125
F13	6.60	5.60	0.90	450 diameter	3	B125
F14	6.45	5.30	1.05	450 diameter	3	B125
F15	6.35	4.76	1.49	450 diameter	3	B125
F16	6.20	4.70/4.65	1.40	450 diameter	3	D400
F17	6.60	4.40/4.35	2.10	450 diameter	3	D400
F18	6.50	5.825	0.575	450 diameter	3	B125
F19	6.55	5.40	1.05	450 diameter	3	B125
F20	6.60	5.50	1.00	450 diameter	3	B125
F21	6.815	6.215	0.50	450 diameter	3	B125
F22	6.85	4.05/5.50	2.65	450 diameter	3	D400
F23	6.70	5.00	1.55	450 diameter	3	B125
F24	6.60	5.25	1.30	450 diameter	3	B125
F25	6.60	5.35	1.10	450 diameter	3	B125
F26	6.55	5.55/5.50	0.85	450 diameter	3	B125
F27	6.45	5.65	0.70	450 diameter	3	B125
F28	6.30	5.813	0.39	450 diameter	3	B125
F29	6.85	5.90/5.85	0.850	450 diameter	3	B125
F30	6.85	6.20	0.550	450 diameter	3	B125
F31	6.50	4.91	1.44	450 diameter	3	D400
F32	6.50	4.85	1.50	450 diameter	3	D400
F33	6.50	4.62	1.73	450 diameter	3	D400
F34	6.60	5.65	0.85	450 diameter	3	B125
F35	6.60	5.80	0.70	450 diameter	3	B125
F36	6.70	6.00	0.60	450 diameter	3	B125
F37	6.75	3.975/5.65	2.625	450 diameter	3	D400
F38	6.85	5.75	1.00	450 diameter	3	B125
F39	6.75	6.00	0.65	450 diameter	3	B125
F40	6.85	6.25	0.50	450 diameter	3	B125
F1/1	6.65	6.05	0.500	250 diameter	4	B125
F1/2	6.65	6.05	0.500	250 diameter	4	B125
F1/3	6.65	6.05	0.500	250 diameter	4	B125
F2/1	6.80	6.20	0.450	250 diameter	4	B125
F2/2	6.80	6.20	0.500	250 diameter	4	B125
F2/3	6.80	6.20	0.500	250 diameter	4	B125
F2/4	6.80	6.20	0.500	250 diameter	4	B125
F2/5	6.85	6.25	0.500	250 diameter	4	B125
F2/6	6.85	6.25	0.500	250 diameter	4	B125
F4/1	6.90	6.30	0.500	250 diameter	4	B125
F4/2	6.65	6.05	0.500	250 diameter	4	B125
F4/3	6.65	6.05	0.500	250 diameter	4	B125
F5/1	6.65	6.05	0.500	250 diameter	4	B125
F5/2	6.65	6.05	0.500	250 diameter	4	B125
F6/1	6.65	6.05	0.500	250 diameter	4	B125
F6/2	6.65	6.05	0.500	250 diameter	4	B125
F7/1	6.65	6.05	0.500	250 diameter	4	B125
F7/2	6.65	6.05	0.500	250 diameter	4	B125
F9/1	NOT USED					
F9/2	6.70	6.10	0.500	250 diameter	4	B125
F9/3	6.80	6.20	0.500	250 diameter	4	B125
F9/4	6.75	6.15	0.500	250 diameter	4	B125
F10/1	6.80	6.20	0.500	250 diameter	4	B125
F10/2	6.85	6.25	0.500	250 diameter	4	B125
F11/1	6.70	6.10	0.500	250 diameter	4	B125
F13/1	6.45	5.85	0.500	250 diameter	4	B125
F13/2	6.45	5.85	0.500	250 diameter	4	B125
F13/3	6.45	5.85	0.500	250 diameter	4	B125
F13/4	6.30	5.70	0.500	250 diameter	4	B125
F14/1	6.30	5.70	0.500	250 diameter	4	B125
F14/2	6.30	5.70	0.600	250 diameter	4	B125
F14/3	6.25	5.65	0.500	250 diameter	4	B125
F14/4	6.25	5.65	0.500	250 diameter	4	B125
F18/1	6.425	5.825	0.500	250 diameter	4	B125
F18/2	6.425	5.825	0.500	250 diameter	4	B125
F18/3	6.425	5.825	0.500	250 diameter	4	B125
F19/1	6.60	6.00	0.500	250 diameter	4	B125
F19/2	6.60	6.00	0.500	250 diameter	4	B125
F19/3	6.60	6.00	0.500	250 diameter	4	B125
F21/1	6.815	6.125	0.500	250 diameter	4	B125
F23/1	6.70	6.10	0.500	250 diameter	4	B125
F23/2	6.70	6.10	0.600	250 diameter	4	B125
F23/3	6.70	6.10	0.500	250 diameter	4	B125
F23/4	6.70	6.10	0.500	250 diameter	4	B125
F25/1	6.55	5.95	0.500	250 diameter	4	B125
F25/2	6.55	5.95	0.500	250 diameter	4	B125
F26/1	6.55	5.95	0.500	250 diameter	4	B125
F28/1	6.55	5.95	0.500	250 diameter	4	B125
F28/2	6.55	5.95	0.500	250 diameter	4	B125
F29/1	6.85	6.25	0.500	250 diameter	4	B125
F29/2	6.85	6.25	0.500	250 diameter	4	B125
F29/3	6.85	6.25	0.500	250 diameter	4	B125
F29/4	6.85	6.25	0.500	250 diameter	4	B125
F29/5	6.85	6.25	0.500	250 diameter	4	B125
F29/6	6.85	6.25	0.500	250 diameter	4	B125
F30/1	6.85	6.25	0.500	250 diameter	4	B125
F34/1	6.60	6.00	0.500	250 diameter	4	B125
F34/2	6.70	6.10	0.500	250 diameter	4	B125
F34/3	6.70	6.10	0.500	250 diameter	4	B125
F34/4	6.60	5.95	0.550	250 diameter	4	B125
F34/5	6.70	6.05	0.550	250 diameter	4	B125
F34/6	6.85	6.10	0.650	250 diameter	4	B125
F34/7	6.85	6.10	0.650	250 diameter	4	B125
F34/8	6.85	6.10	0.650	250 diameter	4	B125
F35/1	6.60	6.00	0.500	250 diameter	4	B125
F35/2	6.60	5.95	0.550	250 diameter	4	B125
F35/3	6.75	6.00	0.650	250 diameter	4	B125
F35/4	6.75	6.00	0.650	250 diameter	4	B125
F38/1	6.85	6.25	0.500	250 diameter	4	B125
F38/2	6.80	6.20	0.500	250 diameter	4	B125
F39/1	6.80	6.20	0.500	250 diameter	4	B125
F39/2	6.80	6.20	0.500	250 diameter	4	B125
F39/3	6.85	6.25	0.500	250 diameter	4	B125
F39/4	6.85	6.25	0.500	250 diameter	4	B125

SURFACE WATER DRAINAGE MANHOLE SCHEDULE

REFERENCE	Cover Level (m)	Invert Level (m)	Depth to Soffit (m)	Size (mm)	Type	Cover Grade
ExSA	7.75	6.575	1.025	Existing Manhole		
S1	6.20	5.618/5.543	0.432	900x675	D	D400
S2	6.62	5.411/5.336	1.059	1240x675	C	D400
S3	NOT USED					
S4	NOT USED					
S5	6.75	5.684	0.841	900x675	D	D400
S6	6.70	5.494	0.881	900x675	D	D400
S7	6.57	5.405	0.941	900x675	D	D400
S8	6.50	5.336	0.939	900x675	D	D400
S9	6.45	5.290	0.935	900x675	D	D400
S10	6.45	5.260	0.965	900x675	D	D400
S11	NOT USED					
S12	6.80	4.958/4.883	1.617	1200 diameter	7	D400
S13	6.665	6.100	0.415	900x675 with 400mm sump	D	D400
S1/1	6.25	5.585	0.515	450 diameter	3	B125
S1/2	6.30	5.745	0.405	450 diameter	3	B125
S1/3	6.45	5.858	0.442	450 diameter	3	B125
S1/4	6.50	5.945/5.995	0.405	450 diameter	3	B125
S1/5	6.55	5.645	0.755	450 diameter	3	B125
S2/1	6.60	5.60	0.90	450 diameter	3	B125
S2/2	6.60	5.68	0.82	450 diameter	3	B125
S2/3	6.425	5.80	0.525	450 diameter	3	B125
S2/4	6.65	5.74	0.81	450 diameter	3	B125
S2/5	6.60	5.80	0.70	450 diameter	3	B125
S2/6	6.80	5.90	0.80	450 diameter	3	B125
S2/7	6.70	5.365/5.44	1.11	600 diameter	3	B125
S2/8	6.60	5.54	0.91	450 diameter	3	B125
S2/9	6.60	5.627/5.577	0.873	450 diameter	3	B125
S2/10	6.65	5.90	0.65	450 diameter	3	B125
S4/1	6.85	5.70/5.65	1.05	450 diameter	3	B125
S4/2	6.85	5.87	0.88	450 diameter	3	B125
S4/3	NOT USED					
S4/4	6.85	6.00	0.75	450 diameter	3	B125
S4/5	6.85	5.50	1.20	450 diameter	3	B125
S6/1	6.75	5.90	0.70	450 diameter	3	B125
S6/2	6.70	6.20	0.40	450 diameter	3	B125
S6/3	6.75	5.96	0.69	450 diameter	3	B125
S6/4	6.80	6.08	0.62	450 diameter	3	B125
S6/5	6.80	6.20	0.50	450 diameter	3	B125
S10/1	6.60	5.60	0.90	450 diameter	3	B125
S10/2	6.60	5..80	0.70	450 diameter	3	B125
S10/3	6.60	6.10	0.40	450 diameter	3	B125
S11/1	6.80	5.60	1.10	450 diameter	3	B125
S11/2	6.80	5.90	0.80	450 diameter	3	B125
ST1	6.65	6.10	0.45	450 diameter	5	B125
ST2	6.65	6.10	0.45	450 diameter	5	B125
ST3	6.80	6.25	0.45	450 diameter	5	B125
ST4	6.80	6.25	0.45	450 diameter	5	B125
ST5	6.85	6.28	0.47	450 diameter	5	B125
ST6	6.90	6.25	0.55	450 diameter	5	B125
ST7	6.65	6.08	0.47	450 diameter	5	B125
ST8	6.65	6.09	0.46	450 diameter	5	B125
ST9	6.65	6.08	0.47	450 diameter	5	B125
ST10	6.65	6.10	0.45	450 diameter	5	B125
ST11	6.65	6.10	0.45	450 diameter	5	B125
ST12	6.90	5.20	1.60	450 diameter	5	B125
ST13	6.85	5.10	1.60	450 diameter	5	B125
HB1	6.70	4.625	Base level 4.125	1500 diameter	Hydro Brake Manhole See Drg 501-04 for details	

Headwall Ref	Ground Level	Outfall invert	Ditch Bed Level	Outfall dia (mm)	Headwall Type
H1	6.30	4.60	4.450	150	Tracey Concrete precast small headwall
H4	6.50	5.22	5.220	150	Tracey Concrete precast small headwall
HA	6.55	5.70	5.220	150	Tracey Concrete precast small headwall
HB	6.55	5.70	5.200	150	Tracey Concrete precast small headwall
HC	6.50	5.60	5.166	150	Tracey Concrete precast small headwall
HD	6.30	5.50	5.111	150	Tracey Concrete precast small headwall
HE	6.10	5.40	5.056	150	Tracey Concrete precast small headwall
HF	6.00	5.30	5.001	150	Tracey Concrete precast small headwall

DOMESTIC SOAKAWAY DETAILS-Trench Soakaways
(Based on in-situ tests)

Soakaway Ref	Area Draining m^2 (inc 10% UC)	Width m	Length m	Ground level	Invert level incoming pipe	Soakaway base Invert	Infiltration Zone
So1	85	1.40	14.50	6.70	6.05	5.750	1
So2	93	1.40	14.50	6.70	6.05	5.750	1
So3	60	1.0	13.0	6.70	6.20	5.80	2
So4	60	1.0	13.0	6.70	6.20	5.80	2
So5	98	1.40	14.20	6.80	6.20	5.80	2
So6	103	1.40	12.0	6.80	6.20	5.70	3
So7	92	1.40	12.0	6.70	6.04	5.60	3
So8	61	1.40	12.0	6.70	6.04	5.80	3
So9	98	1.40	14.0	6.60	6.03	5.65	3
So10	57	1.50	8.0	6.50	6.05	5.60	3
So11	57	1.50	8.0	6.50	6.05	5.60	3

Infiltration Rates

Infiltration Zone	Soakage Rate (m/s)	Soakage Rate (m/hr)
1	2.015 E-06	0.007254
2	2.505 E-06	0.009018
3	3.767 E-06	0.013561

Infiltration rates have been confirmed by in-situ tests.

Notes:

1.All levels are to local Datum.
2.All Highway work's on or adjacent to existing public highway shall be executed in accordance with the Traffic Safety Code for Roadwork's and Chapter 8 of the Traffic Signs Manual.
3.At the commencement of works on site the contractor is to carry out trial pits and liaise with Utility Companies in order to establish the exact position of all existing statutory utility plant in the vicinity of works and take adequate precautions or their protection.
4.The Contractor is to comply fully with the CDM Regulations in the course of constructing the works.
5.Highways in the vicinity of the works must be kept free from mud, debris and dust falling from vehicles or the wheels of vehicles connected with the works.
6.All drain and sewer pipes to be laid soffit to soffit, unless shown otherwise.
7.Minimum gradient for 100Ø SW is 1:100 and 100Ø FW is 1:80 with one WC connected otherwise 1:40. Bedding for domestic drainage Class B. All pipe runs near buildings to comply with the Building Regulations 2010 Part H1.
8.Position of soil pipes, standing wastes, wc outlets etc. are shown on the Architect's working drawings. Rainwater downpipe positions are to be checked against Architects details to ensure compatibility. Rainwater downpipes to have rodding access facilities where surface water drainage passes under buildings.
9.All concrete and concrete products to be in accordance with BRE 363 for sulphates.
10.All slab levels shown are for guidance only and may need to be adjusted on site, subject to approval by the engineer.
11.Do not scale from this drawing, work only from stated dimensions or setting out details.
12.Refer to tables for manhole schedules
13. Where paths falls towards the front door use suitable linear/slot drainage sysytem connected to surface water system as per architects details.
14. All plots to have gardens sloping away from properties otherwise interceptor drains to be installed.
15. Surface water drainage connected to catchit manhole prior to discharge to soakaway
16. Soakaways to be minimum 5.0m from dwelling foundations and 2.0m from boundary wall foundations. Boundary walls within 2.0m of soakaways to have reinforced foundations. Prior to construction of soakaways trial holes to be dug to the invert of base to establish ground water level.
17. This drawing is to be read in conjunction with all relevent engineering drawings issued by Escher Silverman and Crayfern Homes for this site only.
18. NOTE: No part of any headwall shall encroach into the profile of the receiving ditch.

LEGEND:

Foul Water Drainage Legend:

Existing foul water sewer (sited in Bilsham Road)
Domestic foul water sewer and manholes
Foul sewer rising main
Foul water pumping station (not adopted)
F1 Type 2 - 1200mm Ø
F4 Type 3 - 450mm or 600mm Ø
F4/1 Type 4 Shallow PPIC inspection chamber - 250mm Ø. Invert 750mm lower than FFL unless noted otherwise

Surface Water Drainage Legend:

S10 Type 2 - 1200mm Ø
ST Type 6 - silt trap manhole
Type C 1240 x 675 (see schedule)
Type D 900 x 675 (see schedule)
Domestic surface water drain with rodding eye.
S1 TYPE 3 - 450mm
ST3 Type 5 - 450mm Silt Trap
G Unadopted highway gully
yg Unadopted highway gully
Aco drainage channel (installed at all garage entrances)
So1 Domestic trench soakaways. Sizing determined by in-situ infiltration testing. Soakaways designed in accordance with Environment Agency criteria for 1 in 100years storm return +40% climate change and sited a minimum of 5.0m from new dwellings.
Existing drainage ditch replaced with 'Aquacell' Prime infiltration/swale system adjacent to Cinders Lane. Inspection access points at 25 metre intervals. 150 mm dia overflow at high level as indicated.
AV 'Aquacell' Core attenuation tank with air valve
H1 Headwall discharge to ditch, Tracey Concrete pre-fabricated headwall or similar approved

Surfacing Legend:

Block paved domestic drive
Permeable block paved domestic drive Depth of sub base - 225mm
Permeable block paved shared drive Depth of sub base - 320mm
Permeable block paved access entrance Depth of sub base - 385mm
Reinforced grass parking construction
Flexible construction footpath/bridleway

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION
CDM Regulations 2015

In addition to the hazards/risks normally associated with the type of work detailed on this drawing note should be made of the following:

- Working in vicinity of live highway
- Services to be located prior to any excavation work being undertaken
- Deep excavations
- Working on live foul sewers

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement. Contractor is not relieved of any of his obligations under all applicable health and safety regulations.

Rev.	Date	Details	Initials
K	28.04.20	Plot 17 side path added, gate position amended	KN
J	27.04.20	Headwall information added, Plot 17 (Phase 2) fence amended	KN
H	06.03.20	HB1 reference details added	KN
G	28.02.20	Drawing extended to cover Ph2 and ditch re-connection, headwall information added	KN
F	22.01.20	Pipe connecting ditches removed, attenuation and drainage amended	KN
E	11.11.19	S13 & H4 added, bridleway amended to flexible construction minor domestic drainage adjustments	KN
D	23.10.19	Amendements to drainage, Plots 25/26 adjusted	KN
C	13.08.19	Aquacell overflows added as requested by ADC drainage engineer	KN
B	29.07.19	Issued for Tender	KN
A	27.06.19	First issue	KN

Drawing Status
CONSTRUCTION

Project
CINDERS NURSERY
YAPTON

Client
Crayfern
HOMES

KAZYS NARBUTAS CONSULTING
Civil Engineering Consultant
Unit 5B, Tanners Court, Tanners Lane, East Wellow, Romsey, Hants. SO51 6DP
Telephone: 01794 522903 Email: kazys.n@knc.email

Drawing Title
Engineering Details
Drainage Layout

Drawn	Checked	Scales	Paper Size	Date
KN		1:250	A0	12.18

Job No.	Drawing No.	Revision
KNC1826	502-01	K

ARUN DISTRICT COUNCIL Y/114/19/DOC

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Dimensions should be checked and verified on site and any discrepancies should be reported to Kazys Narbutas Consulting as soon as possible.