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Key

- Site Boundary
- Existing surface water manhole
- Existing surface water sewer / gully connection
- Surface water drainage - proposed
- Surface water drainage - rodding eye (re)
- Surface water drainage - rainwater downpipe (RWP)
- Surface water drainage - 450mm dia. PPIC (S)
- Surface water drainage - 1200mm dia. PPIC (S)
- Surface water drainage - channel drain
- Surface water drainage - gully (G)
- Existing foul water manhole
- Existing foul water sewer
- Foul water drainage - proposed
- Foul water drainage - soil and vent pipes (SVP)
- Foul water drainage - 300mm dia. Mini PPIC (f)
- Foul water drainage - 450mm dia. PPIC (f)
- Foul water drainage - 1200mm dia. PPIC (f)

Cellular crate attenuation tank 31.000m (l) x 4.000m (w) x 0.375m (d).

Cellular crate attenuation tank 13.500m (l) x 2.500m (w) x 0.375m (d).

New gully to outfall to existing gully.

Foul water effluent to discharge to Anglian Water foul water sewer utilising existing 150mm dia. foul water connection from the site.

Surface water runoff to discharge to surface water sewer utilising existing 150mm dia. surface water connection from the site.

Hydrobrake flow control device restricting surface water runoff to a peak discharge rate of 5.0l/s for all storm events up to and including 1 in 100 year + 30% climate change.

New gully to outfall to existing gully.

General Notes

1 - Do not scale from this drawing
2 - All dimensions quoted are in millimetres unless noted otherwise.
3 - All levels quoted are in metres above datum level.
4 - All setting out and levels to be finalised at site stage to suit existing structures.
5 - This drawing shall be read in conjunction with all other specialists drawings and specifications.
6 - The location of all services shall be identified prior to excavation or construction works and all appropriate measures taken to avoid damage to the same.
7 - The contractor is to comply with all relevant health and safety legislation to safeguard work force, the general public and all other parties.

Temporary Works

1 - The main contractor shall be responsible for all temporary works. A specialist subcontractor shall be appointed to design and install temporary works to adequately support all applied loads.
2 - The contractor shall take all appropriate measures to avoid causing instability or damage to adjacent structures, surfaces, finishes etc.

Drainage Notes

1 - All works shall comply with Building Regulations Part H - Drainage and Waste Disposal.
2 - No works shall commence on site until approval has been obtained from all relevant Agencies / Authorities.
3 - Drain runs which are situated in trafficked and hard paved areas where cover is less than 1.2m are to be constructed with a Type Z bed and surround. Drain runs which are situated in trafficked areas where cover is greater than 1.2m and soft landscaped areas are to be constructed with a Type S bed and surround.
4 - All pipework is to be laid with level soffits unless otherwise stated.
5 - Manhole covers are to comply with BS EN 124. A15 are to be used in pedestrian, cyclist and landscaped areas. B125 are to be used in car parks, pedestrian footways and private drives. C250 are to be used for gullies to kerbside. D400 are to be used in public roads, hard shoulders and parking areas for all types of road vehicles.
6 - 100mm Ø surface water runs are to be laid at gradients of at least 1 in 100. 150mm Ø surface water runs are to be laid at gradients of at least 1 in 150.
7 - All rainwater downpipes to be roddable at base of stack.
8 - 100mm Ø foul water runs to be laid at gradients of at least 1 in 80. 150mm Ø foul water runs are to be laid at gradients of at least 1 in 150.
9 - Below ground drainage for sinks to be 100mm Ø at a minimum fall of 1:40. Drains serving less than 5 WC's to be 100mm Ø at a minimum fall of 1:80.

Foul Water Drainage Manhole Schedule

Manhole Number	Cover Level (m)	Invert Level (m)	Major Pipe Diameter (mm)	Depth to Invert (m)	Manhole Type	Manhole Diameter (mm)	Manhole Cover		Pipe In		Pipe Out	
							Load Class	Size (mm) (l) x (w) x (d)	Invert Level (m)	Pipe Diameter (mm)	Invert Level (m)	Pipe Diameter (mm)
f1	3.150	2.490	100	0.660	PPIC	450	A15	4500 x 40	2.490	100	2.490	100
f1a	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f1b	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f2	3.145	2.323	100	0.822	PPIC	450	A15	4500 x 40	2.323	100	2.323	100
f2a	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f2b	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f3	3.305	2.053	100	1.252	PPIC	450	A15	4500 x 40	2.053	100	2.053	100
f3a	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f3b	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f4	3.300	1.802	100	1.498	PPIC	450	A15	4500 x 40	1.802	100	1.802	100
f4a	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f5	3.300	2.700	100	0.600	PPIC	450	A15	4500 x 40	-	-	2.700	100
f5a	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f6	3.150	2.550	100	0.600	PPIC	450	A15	4500 x 40	-	-	2.550	100
f6a	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f7	3.150	2.462	100	0.688	PPIC	450	A15	4500 x 40	2.462	100	2.462	100
f8	3.250	2.371	100	0.879	PPIC	450	A15	4500 x 40	2.371	100	2.371	100
f9	3.300	2.700	100	0.600	PPIC	450	A15	4500 x 40	-	-	2.700	100
f9a	3.300	2.700	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.700	100
f10	3.150	2.550	100	0.600	PPIC	450	A15	4500 x 40	2.550	100	2.550	100
f11	3.150	2.496	100	0.655	PPIC	450	A15	4500 x 40	2.496	100	2.496	100
f11a	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f11b	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f12	3.150	2.421	100	0.729	PPIC	450	A15	4500 x 40	2.421	100	2.421	100
f12a	3.150	2.550	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.550	100
f13	3.250	2.194	100	1.097	PPIC	450	A15	4500 x 40	2.194	100	2.194	100
f14	3.210	1.636	100	1.574	PPIC	450	A15	4500 x 40	1.636	100	1.636	100
f15	3.450	2.850	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.850	100
f16	3.450	2.781	100	0.669	Mini PPIC	300	A15	3000 x 40	2.781	100	2.781	100
f16a	3.450	2.850	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.850	100
f16b	3.450	2.850	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.850	100
f17	3.450	1.593	100	1.857	PCC	1200	D400	600x600x100	1.593	100	1.593	100
f17a	3.450	2.850	100	0.600	Mini PPIC	300	A15	3000 x 40	-	-	2.850	100
f18	3.450	1.515	150	1.935	PCC	1200	D400	600x600x100	1.565	100	1.515	150
Ex. F	3.325	1.400	225	1.925	Existing manhole				1.475	150	1.400	225

Foul Water Drainage Pipe Line Schedule

Pipe Reference	Upstream IL	Downstream IL	Pipe Diameter	Distance	Pipe Gradient (1 in x)	Pipe Material
f1 - f2	2.490	2.323	100	13.380	80.0	Plastic
f1a - f1	2.550	2.490	100	4.560	76.0	Plastic
f1b (f1 - f2)	2.550	2.462	100	2.100	23.3	Plastic
f2 - f3	2.323	2.053	100	21.560	80.0	Plastic
f2a (f2 - f3)	2.700	2.238	100	1.720	3.7	Plastic
f2b (f2 - f3)	2.700	2.198	100	1.720	3.4	Plastic
f3 - f4	2.053	1.802	100	14.920	59.5	Plastic
f3a (f3 - f4)	2.700	1.937	100	1.150	1.5	Plastic
f3b (f3 - f4)	2.700	1.869	100	1.150	1.4	Plastic
f4 - f14	1.802	1.636	100	13.340	80.0	Plastic
f4a - f4	2.700	1.802	100	6.000	6.7	Plastic
f5 - f7	2.700	2.462	100	7.730	32.5	Plastic
f5a (f5 - f7)	2.700	2.555	100	2.920	20.1	Plastic
f6 - f7	2.550	2.462	100	7.050	80.0	Plastic
f6a (f6 - f7)	2.550	2.487	100	3.090	48.9	Plastic
f7 - f8	2.462	2.371	100	7.290	80.0	Plastic
f8 - f13	2.371	2.194	100	14.180	80.0	Plastic
f9 - f10	2.700	2.550	100	7.720	51.5	Plastic
f9a (f9 - f10)	2.700	2.629	100	3.110	44.1	Plastic
f10 - f11	2.550	2.496	100	4.360	80.0	Plastic
f11 - f12	2.496	2.421	100	5.990	80.0	Plastic
f11a - f11	2.550	2.496	100	1.680	30.8	Plastic
f11b - f11	2.550	2.496	100	1.760	32.3	Plastic
f12 - f13	2.421	2.194	100	8.510	37.5	Plastic
f12a - f12	2.550	2.421	100	1.760	13.6	Plastic
f13 - f14	2.194	1.636	100	20.270	36.3	Plastic
f14 - f17	1.636	1.593	100	3.410	80.0	Plastic
f15 - f16	2.850	2.781	100	5.500	80.0	Plastic
f16 - f17	2.781	1.593	100	16.140	13.6	Plastic
f16a - f16	2.850	2.781	100	2.040	29.7	Plastic
f16b (f16 - f17)	2.850	2.451	100	2.620	6.6	Plastic
f17 - f18	1.593	1.565	100	2.240	80.0	Plastic
f17a - f17	2.850	1.593	100	1.900	1.5	Plastic
f18 - Ex. F	1.515	1.400	150	5.520	48.0	Plastic

Surface Water Drainage Manhole Schedule

Manhole Number	Cover Level (m)	Invert Level (m)	Major Pipe Diameter (mm)	Depth to Invert (m)	Manhole Type	Manhole Diameter (mm)	Manhole Cover		Pipe In		Pipe Out	
							Load Class	Size (mm) (l) x (w) x (d)	Invert Level (m)	Pipe Diameter (mm)	Invert Level (m)	Pipe Diameter (mm)
re1	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s1	3.150	2.610	150	0.540	PPIC	450	A15	4500 x 40	2.610	100	2.610	150
s2	3.300	2.850	100	0.450	PPIC	450	A15	4500 x 40	2.850	100	2.850	100
s3	3.300	2.765	100	0.535	PPIC	450	A15	4500 x 40	2.765	100	2.765	100
s4	3.300	2.850	100	0.450	PPIC	450	A15	4500 x 40	2.850	100	2.850	100
s5	3.300	2.665	100	0.635	PPIC	450	A15	4500 x 40	2.665	100	2.665	100
s6	3.110	2.490	100	0.620	PPIC	450	C250	450x450x75	2.490	100	2.490	100
s7	3.240	2.270	150	0.970	Polypipe silt trap manhole	450	C250	450x450x75	2.320	100	2.270	150
Attenuation Tank	3.250	2.260	150	0.990	13.500m (l) x 2.500m (w) x 0.375m (d) cellular crate attenuation tank				2.260	150	2.260	150
re2	3.300	2.850	100	0.450	Rodding Eye	100	A15	110 Oval	2.850	100	2.850	100
s8	3.300	2.805	100	0.495	PPIC	450	A15	4500 x 40	2.805	100	2.805	100
s9	3.300	2.290	100	1.010	Polypipe silt trap manhole	450	A15	4500 x 40	2.290	100	2.290	100
s10	3.265	2.240	150	1.025	PPIC	450	C250	450x450x75	2.240	150	2.240	150
re3	3.300	2.850	100	0.450	Rodding Eye	100	A15	110 Oval	2.850	100	2.850	100
s11	3.300	2.795	100	0.505	PPIC	450	A15	4500 x 40	2.795	100	2.795	100
s12	3.150	2.760	100	0.390	PPIC	450	A15	4500 x 40	2.760	100	2.760	100
re4	3.300	2.850	100	0.450	Rodding Eye	100	A15	110 Oval	2.850	100	2.850	100
s13	3.150	2.675	100	0.475	PPIC	450	A15	4500 x 40	2.675	100	2.675	100
re5	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s14	3.150	2.585	100	0.565	PPIC	450	A15	4500 x 40	2.585	100	2.585	100
re6	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s15	3.150	2.485	100	0.665	PPIC	450	B125	4500 x 40	2.485	100	2.485	100
re7	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s16	3.150	2.600	100	0.550	PPIC	450	A15	4500 x 40	2.600	100	2.600	100
re8	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s17	3.150	2.490	100	0.660	PPIC	450	A15	4500 x 40	2.490	100	2.490	100
re9	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s18	3.150	2.440	100	0.710	PPIC	450	A15	4500 x 40	2.440	100	2.440	100
re10	3.150	2.700	100	0.450	Rodding Eye	100	A15	110 Oval	2.700	100	2.700	100
s19	3.300	2.585	100	0.715	PPIC	450	A15	4500 x 40	2.585	100	2.585	100
s20	3.300	2.390	100	0.910	PPIC	450	B125	4500 x 40	2.390	100	2.390	100
s21	3.150	2.205	150	0.950	PCC - Constructed with 300mm sump	1200	D400	600x600x100	2.205	100	2.205	150
Attenuation Tank	3.185	2.182	150	1.003	31.000m (l) x 4.000m (w) x 0.375m (d) cellular crate attenuation tank				2.182	150	2.182	150
re11	3.450	3.000	100	0.450	Rodding Eye	100	A15	110 Oval	3.000	100	3.000	100
s22	3.450	2.900	100	0.550	PPIC	450	A15	4500 x 40	2.900	100	2.900	100
re12	3.450	3.000	100	0.450	Rodding Eye	100	A15	110 Oval	3.000	100	3.000	100
s23	3.450	2.790	100	0.660	PPIC	450	A15	4500 x 40	2.790	100	2.790	100
re13	3.450	3.000	100	0.450	Rodding Eye	100	A15	110 Oval	3.000	100	3.000	100
re14	3.450	3.000	100	0.450	Rodding Eye	100	A15	110 Oval	3.000	100	3.000	100
s24	3.450	2.910	100	0.540	PPIC	450	A15	4500 x 40	2.910	100	2.910	100
s25	3.450	2.715	100	0.735	PPIC	450	A15	4500 x 40	2.715	100	2.715	100
s26	3.450	2.546	100	0.904	PPIC	450	A15	4500 x 40	2.546	100	2.546	100
s27	3.240	2.156	150	1.084	Flow control chamber	1500	D400	1220x675x100	2.156	150	2.156	150
									2.206	100		
Ex. S	3.270	1.870	300	1.400	Existing manhole				2.020	150	1.870	300

Surface Water Drainage Pipe Line Schedule

Pipe Reference	Upstream IL	Downstream IL	Pipe Diameter	Distance	Pipe Gradient (1 in x)	Pipe Material
re1 - s1	2.700	2.610	100	9.970	99.7	Plastic
s1 - s6	2.610	2.490	100	7.810	63.4	Plastic
s2 - s3	2.850	2.765	100	8.220	96.7	Plastic
s3 - s5	2.765	2.665	100	9.850	98.5	Plastic
s4 - s5	2.850	2.665	100	8.220	44.4	Plastic
s5 - s6	2.665	2.490	100	3.260	18.6	Plastic
s6 - s7	2.490	2.270	100	16.720	76.0	Plastic
s7 - Attenuation Tank	2.270	2.260	150	1.240	122.0	Plastic
Attenuation Tank - s10	2.260	2.240	150	2.800	140.0	Plastic
re2 - s8	2.850	2.805	100	4.460	99.8	Plastic
s8 - s9	2.805	2.290	100	9.500	18.4	Plastic
s9 - Attenuation Tank	2.290	2.260	100	3.750	91.7	Plastic
s10 - s27	2.240	2.156	150	12.630	150.4	Plastic
re3 - s11	2.850	2.795	100	5.050	91.8	Plastic
s11 - s12	2.795	2.760	100	3.020	86.3	Plastic
s12 - s13	2.760	2.675	100	8.220	96.7	Plastic
re4 - s13	2.850	2.675	100	7.540	43.1	Plastic
s13 - s21	2.675	2.255	100	6.660	15.8	Plastic
re5 - s14	2.700	2.585	100	11.170	97.1	Plastic
s14 - s15	2.585	2.485	100	9.630	96.3	Plastic
re6 - s15	2.700	2.485	100	11.170	52.9	Plastic
s15 - s21	2.485	2.255	100	4.080	17.7	Plastic
re7 - s16	2.700	2.600	100	9.760	97.6	Plastic
s16 - s17	2.600	2.490	100	10.530	95.7	Plastic
re8 - s17	2.700	2.490	100	9.760	46.5	Plastic
s17 - s18	2.490	2.440	100	4.520	90.4	Plastic
re9 - s18	2.700	2.440	100	11.170	43.0	Plastic
s18 - s20	2.440	2.390	100	4.910	98.2	Plastic
re10 - s19	2.700	2.585	100	11.170	97.1	Plastic
s19 - s20	2.585	2.390	100	4.720	24.2	Plastic
s20 - s21	2.390	2.255	100	10.370	76.6	Plastic
s21 - Attenuation Tank	2.205	2.182	150	3.380	150.0	Plastic
Attenuation Tank - s27	2.182	2.156	150	3.900	150.0	Plastic
re11 - s22	3.000	2.900	100	9.760	97.6	Plastic
s22 - s23	2.900	2.790	100	10.530	95.7	Plastic
re12 - s23	3.000	2.790	100	9.760	46.5	Plastic
s23 - s25	2.790	2.715	100	7.200	96.0	Plastic
re13 - s24	3.000	2.910	100	8.940	99.3	Plastic
re14 - s24	3.000	2.910	100	1.380	15.3	Plastic
s24 - s25	2.910	2.715	100	10.300	52.8	Plastic
s25 - s26	2.715	2.546	100	10.620	62.8	Plastic
s26 - s27	2.546	2.206	100	3.420	10.1	Plastic
s27 - Ex. S	2.156	2.020	150	12.960	95.3	Plastic

Revision	Details	Date
C	*Site layout plan revised. Foul and surface water drainage layout and manhole schedules revised to suit layout. Attenuation revised in line with suppliers details.*	*10.08.2018*
B	*Gullies and ACO channel drain added.*	*10.05.2018*
A	*Foul and surface water drainage layout updated.*	*01.05.2018*

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Project	Residential Development Former Dairy Site Pennyfield Pinchbeck		
Client	Lindum Homes		
Title	Proposed Foul and Surface Water Drainage Layout		
Date	March 2018	*Scale*	1:200
Number	4771/011C	*Status*	Preliminary