Surface Water Drainage Manhole Schedule

	Cover Level (m)	Invert Level (m)	Existing Ground 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)
s1	4.580	3.980	-	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.980	100
soakaway 1	4.580	3.580	4.005	100	1.000	Cellular crate soakaway 2.000m (l) x 1.500 (m) x 0.400m (d)				3.880	100	-	-
s2	4.580	3.080	-	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.080	100
soakaway 2	4.580	3.580	3.980	100	1.000	Cellular crate soakaway 2.000m (l) x 5.000 (m) x 0.400m (d)				3.880	100	-	-
re1	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
re2	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s3	4.450	3.840	-	100	0.610	PPIC	450	B125	450Ø x 40	-	-	3.040	100
re3	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s4	4.450	3.775	-	100	0.675	PPIC	450	C250	450x450x75	-	-	3.775	100
re4	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s5	4.380	3.850	-	100	0.530	PPIC	450	C250	450x450x75	-	-	3.850	100
soakaway 3	4.450	3.450	4.150	100	1.000	Cellular crate soakaway 5.000m (l) x 2.000 (m) x 0.400m (d)				3.750	100	-	-
re5	4.405	3.955	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	3.955	100
s6	4.445	3.835	-	100	0.610	Mini PPIC	300	A15	300Ø x 40	-	-	3.835	100
s7	4.450	3.675	-	100	0.775	PPIC	450	B125	450Ø x 40	-	-	3.675	100
soakaway 4	4.470	3.360	4.375	100	1.110	Cellular crate soakaway 5.000m (l) x 1.000 (m) x 0.400m (d)				3.660	100	-	-
re6	4.550	4.100	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.100	100
s8	4.680	3.955	-	100	0.725	PPIC	450	B125	450Ø x 40	-	-	3.955	100
soakaway 5	4.640	3.640	4.500	100	1.000	Cellular crate soakaway 5.000m (l) x 1.000 (m) x 0.400m (d)				3.940	100	-	-
re7	4.425	3.975	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	3.975	100
s9	4.450	3.895	-	100	0.555	Mini PPIC	300	A15	300Ø x 40	-	-	3.895	100
re8	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s10	4.450	3.765	-	100	0.685	PPIC	450	B125	450Ø x 40	-	-	3.765	100
re9	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s11	4.450	3.725	-	100	0.725	PPIC	450	B125	450Ø x 40	-	-	3.725	100
s12	3.990	3.335	-	100	0.655	PPIC	450	B125	450Ø x 40	-	-	3.335	100
re10	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
re11	4.450	4.000	-	100	0.450	Rodding Eye	100	A15	110 Oval	-	-	4.000	100
s13	4.450	3.820	-	100	0.630	PPIC	450	B125	450Ø x 40	-	-	3.820	100
s14	4.473	3.333	-	100	1.140	PPIC	450	C250	450x450x75	-	-	3.333	100
soakaway 6	3.990	2.990	3.940	100	1.000	Cellular crate soakaway 8.000m (l) x 2.000 (m) x 0.400m (d)				3.290	100	-	-
s15	4.650	4.050	-	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	4.050	100
soakaway 7	4.260	3.260	4.040	100	1.000	Cellular crate soakaway 2.000m (l) x 1.500 (m) x 0.400m (d)				3.560	100	-	-
s16	4.650	4.050	-	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	4.050	100
soakaway 8	4.260	3.260	3.870	100	1.000	Cellular crate soakaway 2.000m (l) x 1.500 (m) x 0.400m (d)				3.560	100	-	-

Surface Water Drainage Pipe Line Schedule

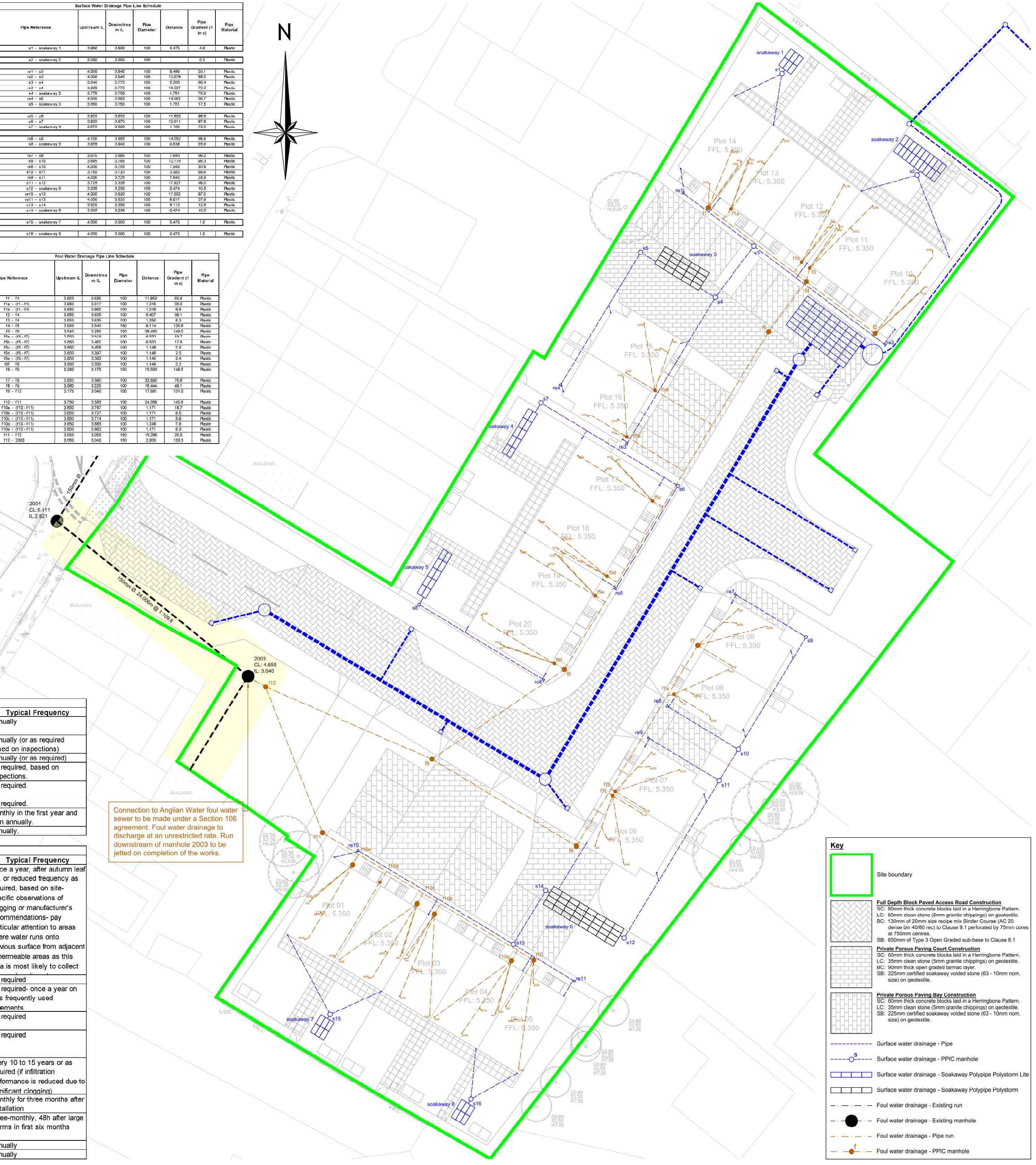
Pipe Reference	Upstream IL	Downstream IL	Pipe Diameter	Distance	Pipe Gradient (1 in x)	Pipe Material
s1 - soakaway 1	3.980	3.880	100	0.475	4.8	Plastic
s2 - soakaway 2	3.080	3.880	100		0.0	Plastic
re1 - s3	4.000	3.840	100	8.490	53.1	Plastic
re2 - s3	4.000	3.840	100	15.879	99.2	Plastic
s3 - s4	3.840	3.775	100	6.260	96.4	Plastic
re3 - s4	4.000	3.775	100	10.327	73.5	Plastic
s4 - soakaway 3	3.775	3.750	100	1.751	70.0	Plastic
re4 - s5	4.000	3.850	100	14.052	93.7	Plastic
s5 - soakaway 3	3.850	3.750	100	1.751	17.5	Plastic
re5 - s6	3.955	3.835	100	11.620	96.8	Plastic
s6 - s7	3.835	3.675	100	15.611	97.6	Plastic
s7 - soakaway 4	3.675	3.660	100	1.100	73.3	Plastic
re6 - s8	4.100	3.955	100	14.052	96.9	Plastic
s8 - soakaway 5	3.955	3.940	100	0.838	55.9	Plastic
re7 - s9	3.975	3.895	100	7.940	99.2	Plastic
s9 - s10	3.895	3.765	100	12.778	98.3	Plastic
re8 - s10	4.000	3.765	100	7.940	33.8	Plastic
s10 - s11	3.765	3.725	100	3.583	89.6	Plastic
re9 - s11	4.000	3.725	100	7.940	28.9	Plastic
s11 - s12	3.725	3.335	100	17.927	46.0	Plastic
s12 - soakaway 6	3.335	3.290	100	0.474	10.5	Plastic
re10 - s13	4.000	3.820	100	17.552	97.5	Plastic
re11 - s13	4.000	3.820	100	6.817	37.9	Plastic
s13 - s14	3.820	3.335	100	6.113	12.6	Plastic
s14 - soakaway 6	3.335	3.290	100	0.474	10.5	Plastic
s15 - soakaway 7	4.050	3.560	100	0.475	1.0	Plastic
s16 - soakaway 8	4.050	3.560	100	0.475	1.0	Plastic

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	4.450	3.850	100	0.600	PPIC	450	B125	450Ø x 40	-	-	3.850	100
f1a	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f1b	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f2	4.450	3.850	100	0.600	PPIC	450	B125	450Ø x 40	-	-	3.850	100
f3	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f4	4.450	3.585	150	0.865	PPIC	450	B125	450Ø x 40	3.635	100	3.585	150
f5	4.300	3.540	150	0.760	PPIC	450	C250	450x450x75	3.540	150	3.540	150
f5a	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f5b	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f5c	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f5d	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f5e	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f5f	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f6	4.425	3.280	150	1.145	PPIC	450	B125	450Ø x 40	3.280 3.330	150 100	3.280	150
f7	4.450	3.850	100	0.600	PPIC	450	B125	450Ø x 40	-	-	3.850	100
f8	4.450	3.560	100	0.890	PPIC	450	C250	450x450x75	3.510	150	3.560	100
f9	4.600	3.175	150	1.425	PPIC	450	B125	450Ø x 40	3.175 3.225	150 100	3.175	150
f10	4.450	3.750	150	0.700	PPIC	450	B125	450Ø x 40	-	-	3.750	150
f10a	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f10b	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f10c	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f10d	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f10e	4.450	3.850	100	0.600	Mini PPIC	300	A15	300Ø x 40	-	-	3.850	100
f11	4.450	3.585	150	0.865	PPIC	450	B125	450Ø x 40	3.585	150	3.585	150
f12	4.685	3.055	150	1.630	PPIC	450	B125	450Ø x 40	3.055	150	3.055	150
2003	4.655	3.040	150	1.615	Existing Anglian Water manhole. Cover level to be raised to suit new ground levels.				3.040	150	3.040	150

Foul Water Drainage Pipe Line Schedule

Pipe Reference	Upstream IL	Downstream IL	Pipe Diameter	Distance	Pipe Gradient (1 in x)	Pipe Material
f1 - f4	3.850	3.635	100	11.953	55.6	Plastic
f1a - (f1 - f4)	3.850	3.817	100	1.246	38.0	Plastic
f1b - (f1 - f4)	3.850	3.662	100	1.246	6.6	Plastic
f2 - f4	3.850	3.635	100	8.407	39.1	Plastic
f3 - f4	3.850	3.635	100	1.350	6.3	Plastic
f4 - f5	3.585	3.540	150	6.114	135.9	Plastic
f5 - f6	3.540	3.280	150	38.490	148.0	Plastic
f5a - (f5 - f7)	3.850	3.518	100	6.533	19.7	Plastic
f5b - (f5 - f7)	3.850	3.482	100	6.533	17.8	Plastic
f5c - (f5 - f7)	3.850	3.455	100	1.146	2.9	Plastic
f5d - (f5 - f7)	3.850	3.397	100	1.146	2.5	Plastic
f5e - (f5 - f7)	3.850	3.382	100	1.146	2.4	Plastic
f5f - f6	3.850	3.330	100	1.146	2.2	Plastic
f6 - f9	3.280	3.175	150	15.593	148.5	Plastic
f7 - f8	3.850	3.560	100	22.892	78.9	Plastic
f8 - f9	3.560	3.225	100	16.444	49.1	Plastic
f9 - f12	3.175	3.040	150	17.691	131.0	Plastic
f10 - f11	3.750	3.585	150	24.056	145.8	Plastic
f10a - (f10 - f11)	3.850	3.787	100	1.171	18.7	Plastic
f10b - (f10 - f11)	3.850	3.727	100	1.171	9.5	Plastic
f10c - (f10 - f11)	3.850	3.714	100	1.171	8.6	Plastic
f10d - (f10 - f11)	3.850	3.685	100	1.246	7.6	Plastic
f10e - (f10 - f11)	3.850	3.663	100	1.171	6.3	Plastic
f11 - f12	3.585	3.055	150	15.266	28.8	Plastic
f12 - 2003	3.055	3.040	150	2.000	133.3	Plastic



Connection to Anglian Water foul water sewer to be made under a Section 106 agreement. Foul water drainage to discharge at an unrestricted rate. Run downstream of manhole 2003 to be jetted on completion of the works.

Operation and Maintenance Requirements for Soakaways

Maintenance Schedule	Required Action	Typical 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 gutter and any filters on downpipes.	Annually (or as required based on inspections)
	Trimming of gutter and any filters on downpipes	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. Replacement of clogged geotextile (will require reconstruction of soakaway)	As required. 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 occuring.	Annually.

Operation and Maintenance Requirements for Pervious Pavements

Maintenance Schedule	Required Action	Typical 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 areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosphate applied directly into the weeds by an applicator rather than spraying	As required- once a year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial Inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth- if required, take remedial action	Three-monthly, 48h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Key

🟩	Site boundary
▨	**Full Depth Block Paved Access Road Construction** SC: 80mm thick concrete blocks laid in a Herringbone Pattern. LC: 50mm clean stone (5mm granite chippings) on geotextile. BC: 130mm of 20mm size recipe mix Binder Course (AC 20 dense bin 40/60 rec) to Clause 9.1 perforated by 75mm cores at 750mm centres. SB: 650mm of Type 3 Open Graded sub-base to Clause 8.1
▨	**Private Porous Paving Court Construction** SC: 60mm thick concrete blocks laid in a Herringbone Pattern. LC: 35mm clean stone (5mm granite chippings) on geotextile. BC: 90mm thick open graded tarmac layer. SB: 225mm certified soakaway voided stone (63 - 10mm nom. size) on geotextile.
▨	**Private Porous Paving Bay Construction** SC: 60mm thick concrete blocks laid in a Herringbone Pattern. LC: 35mm clean stone (5mm granite chippings) on geotextile. SB: 225mm certified soakaway voided stone (63 - 10mm nom. size) on geotextile.
------------	Surface water drainage - Pipe
----○---- s	Surface water drainage - PPIC manhole
▭	Surface water drainage - Soakaway Polypipe Polystorm Lite
▭	Surface water drainage - Soakaway Polypipe Polystorm
— · — · —	Foul water drainage - Existing run
— ● —	Foul water drainage - Existing manhole
— · — · —	Foul water drainage - Pipe run
— ● — f	Foul water drainage - PPIC manhole

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General Notes

1. Do not scale this drawing.
2. All dimensions are in millimeters unless stated otherwise.
3. This drawing is to be read in conjunction with all other relevant drawings & specifications.
4. All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations.
5. No works shall commence on site until approval has been obtained from all relevant Agencies / Authorities.
6. All dimensions referred to in this drawing must be verified.

Lincolnshire County Council Highways Notes

1. The specification in all respects shall be in accordance with the current Development Road and Sustainable Drainage Specification and Construction publication in force in the county at the time of construction.
2. The minimum longitudinal fall for highways, without channel blocks shall be 1 in 150, and with channel blocks 1 in 250. See Clause 10.1 of the Development Road and Sustainable Drainage Specification and Construction. In addition, ensure that the first section of any side road falls away from the road from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.
3. General deterioration of the existing highway/footway/verges created through construction of the new Section 38 Development will be reinstated to the Development Road and Sustainable Drainage Specification and Construction at the developers' own cost at the agreement of the inspecting Highway and Flood Authority Officer.
4. No Private surface water shall discharge onto the adoptable highway.
5. No private structural features shall overhang the adoptable highway.
6. No private retaining walls exceeding 1.37 metres shall be within 3.66 metres of the highway boundary.

NOTE
ALL SOAKAWAYS TO BE INSTALLED WITHIN THE VIRGIN GROUND AS THE MANHOLE SCHEDULE.

Revision	Description	Date
P8	Highways drainage added. Existing ground level added to soakaways. Noted added with regards soakaways.	03.06.2021
P7	Foul water drainage layout revised to discharge to onsite Anglian Water manhole. Manhole schedule revised to suit. Carriageway shown to discharge to soakaways via permeable surfacing.	11.05.2020
P6	Access track adjacent soakaways shown.	13.09.2019
P5	Surface water drainage revised. Soakaway 2 revised.	22.05.2019
P4	Section 38 surface water drainage added. Key revised.	05.05.2019
P3	Foul and surface water drainage revised. Manhole schedules added.	30.04.2019
P2	Site layout plan revised. Drainage layout revised to suit.	18.02.2019
P1	First Issue	15.02.2019

PRELIMINARY

G30 CONSULTING

59 Springfield Road, Sheffield, South Yorkshire, S7 2GG
W: www.g30consulting.com
E: enquiries@g30consulting.com
T: 0114 349 2720

Project
Burmor Construction Limited
Willow Walk, Spalding,
Lincolnshire

Title
Domestic Drainage Layout Plan

Drawn by	Checked by	Paper Size
SG	SG	A1

Drawing Number	Revision	Scale	Date
07-0123-007	P8	1:200	30.04.2019