



LIDL GREAT BRITAIN LTD
OLDLANDS FARM
BOGNOR REGIS

AS-BUILT SURFACE WATER DRAINAGE,
CONDITION 10

NOVEMBER 2021

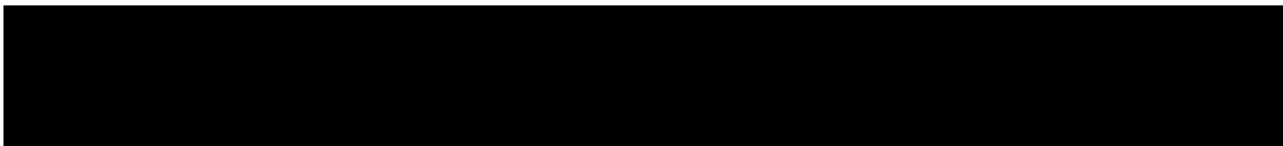


**LIDL GREAT BRITAIN LTD
OLDLANDS FARM
BOGNOR REGIS**

**AS-BUILT SURFACE WATER DRAINAGE,
CONDITION 10**

NOVEMBER 2021

Report Reference:	LIDLBOGNOR.10-DTN
Project Code:	SF/LIDLBOGNOR.10
Prepared by:	CG
Approved by:	SF
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Status:	1st Issue



**Lidl Great Britain Ltd
Oldlands Farm
Bognor Regis
As-Built Surface Water Drainage, Condition 10**

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1 Introduction

- 1.1 Mayer Brown Ltd (MBL) have been commissioned by Lidl Great Britain Ltd to undertake a review of the as-built surface water drainage at their recently completed new store at Oldlands Farm in Bognor Regis.
- 1.2 This report has been prepared by MBL, as an independent firm of Consulting Engineers, to carry out a comparison between the planning approved drainage strategy and the as-built drainage. The purpose is to confirm the scheme has been constructed in accordance with the approved drawings and is fit for purpose, which will enable the planning condition 10 to be discharged.

Planning Background

Condition 10 – As-Built Surface Water Drainage

- 1.3 The new store obtained planning permission from Arun District Council in March 2020 under planning reference **BE/126/19/PL**. Contained within this decision notice is **Condition 10** that relates to the as built surface water drainage design and reads as follows:

Condition 10

Immediately following implementation of the approved surface water drainage system and prior to occupation of any part of the development, the developer/applicant shall provide the local planning authority with as-built drawings of the implemented scheme together with a completion report prepared by an independent engineer that confirms that the scheme was built in accordance with the approved drawings and is fit for purpose. The scheme shall thereafter be maintained in perpetuity.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan.

Condition 6 – Planning Approved Surface Water Drainage

- 1.4 The approved store was accompanied by a drainage strategy compiled by Ramboll Consulting Engineers, who subsequently compiled a package of information to discharge the relevant surface water Condition 6 under Arun planning reference **BE/70/20/DOC**.

The decision notice and Ramboll drainage general arrangement are contained in Appendix C. (The full submission can be viewed on the Arun DC planning portal under planning reference BE/70/20/DOC)

As-built Surface Water Drainage

- 1.5 The new store and associated surface water drainage have been constructed by Adston Construction (AD - Main Contractor), who were commissioned by Lidl GB under a design and built contract.
- 1.6 AD appointed SDS Design Engineers (SDS) as their Consulting Engineers to progress the planning approved drawings into a civil, drainage and structural package of information so the new store could be constructed. Included in their design is the progression of the planning approved Ramboll surface water strategy.
- 1.7 The as-built drainage and associated calculations are contained in Appendices A & B respectively.

2 Approved Surface Water Strategy

- 2.1 This section provides an overview of the planning approved surface water strategy contained in **Appendix C**. The full submission to discharge planning condition 6 can be viewed on the Arun DC planning portal under planning reference BE/70/20/DOC.

Approved Strategy

Outfall Location

- 2.2 The new store will have a single outfall into the existing Oldlands Farm ditch approximately 140 metres to the north-east of the new store.

Peak Discharge Rate

- 2.3 Source control will be used in the form of a detention basin pond and hydro-brake to manage the flow discharging to Oldlands Farm ditch so that the drainage system replicates the natural drainage regime as closely as possible, thus reducing the impact on receiving watercourses.

- 2.4 The maximum discharge rate from impermeable areas shall be limited to **3.7 litres/second** as calculated from the ICP SuDS mean annual flood flow rate equation.

Attenuation & Flow Controls

- 2.5 The detention basin has been designed as a dry landscape feature that will attenuate most of the surface water for all storm events up to and including for the 1 in 100 year + 40% climate change event. The detention basin area, depth and side slopes and associated attenuation volume are all shown the approved drainage plan.
- 2.6 There is approximately 140 metres of 600mm diameter oversized pipe between the detention basin and the hydro-brake manhole that provides approximately 40m³ of attenuation.
- 2.7 There are two flow controls on the network:
- ✱ There is a 75mm orifice plate specified in the manhole immediately downstream of the detention basin, which slows the rate of surface water leaving the basin into the downstream 600mm oversized pipe.
 - ✱ There is a final hydro-brake manhole approximately 140 metres to the north-west restricting the final discharge to 3.7 litres/second.

Surface Water Network

- 2.8 The surface water drainage network will consist of trapped gullies, linear drains and underground pipes that will direct flow towards the detention basin where flow will then be conveyed to Oldlands Farm ditch at the restricted flow rate of 3.7 litres/second.
- 2.9 The approved plans show oversized 600mm diameter pipes flowing into and out of the detention basin, running approximately 140 metres to the hydro-brake chamber before finally discharging into Oldlands Farm ditch via a 150mm outfall.
- 2.10 The approved plans show the roof drainage is split so it drains evenly towards the back and front of the store building.

Water Quality

- 2.11 A fuel separator will be used to treat contaminants picked up within surface water runoff from the car park and vehicle circulation areas. This is in conjunction with trapped gulleys, catchpits and the detention basin provide sufficient surface water treatment before discharging to a watercourse.

Surcharged Outfall

- 2.12 The micro drainage calculations in the planning approved scheme were modelled with a surcharged outfall. A surcharged outfall assumes the receiving watercourse is flooded and the outfall is under water, therefore making it more difficult for the on-site drainage network to empty. The surcharged water level in the calculation is 1.0m AOD.

Proposed Levels

- 2.1 The new store finished floor level is at 3.0m AOD, the ground level at the detention basin is 2.83m AOD.
- 2.2 The car park falls away from the store towards the north-western boundary where the levels range from 3.05m AOD to 2.83m AOD.

3 As-built Surface Water Drainage

- 3.1 SDS Design Engineers progressed the planning approved drawings into a civils, drainage and structural package of information so the new store could be constructed.
- 3.2 Adston Construction implement the SDS design and the resulting as-built surface water drainage and associated calculations are contained in Appendices A & B respectively
- 3.3 This section provides a review of the as-built surface water drainage network and how it compares to the planning approved drainage network described in section 2 of this report. (the planning approved drainage network will be referred to as the “approved scheme”)

As-built Surface Water Drainage

Outfall Location

- 3.4 The as-built design has a single outfall into the existing Oldlands Farm ditch approximately 140 metres to the north-east of the new store, which matches the approved scheme.

Peak Discharge Rate

- 3.5 The as-built design has a maximum discharge rate of 3.7 litres/second, which matches the approved scheme.

Attenuation & Flow Controls

- 3.6 The as-built detention basin area, depth and side slopes and associated attenuation volume all match the approved scheme.
- 3.7 The 600mm diameter oversized pipe between the detention basin and the hydro-brake manhole is included in the as-built system, providing approximately 40m³ of storage.
- 3.8 There are two areas of additional attenuation in the as-built network:
- » The delivery ramp. The bottom of the delivery ramp is a 1.8mAOD, which is 1.2 metres below the store finished floor level. (The 1.2m level difference allows delivery trucks to achieve a flush interface between the truck and the store floor level)
 - » Customer Car Park. There is attenuation in the northern corner of the customer car park that is created by forming a 56 metre long berm set at a top level of 2.4m AOD. See paragraphs 3.16 to 3.19 below.

- 3.9 The two flow controls on the as-built network match the approved scheme.
- ✦ A 75mm orifice plate is located the manhole immediately downstream of the detention basin.
 - ✦ A final hydro-brake manhole restricting the final discharge to 3.7 litres/second is located just upstream of the final outfall.

Surface Water Network

- 3.10 The as-built network design follows the design principles set out in the approved scheme. However, the exact configuration of the drainage elements has been amended to suit the more accurate information that comes about while undertaking a detailed civils and drainage design. The differences are as follows:
- ✦ The roof of the store falls towards the rear, whereas the approved scheme split its evenly between front and rear.
 - ✦ The proposed car park levels design has altered so the gully positions, pipe layouts and diameters upstream of the detention basin have been amended.
 - ✦ The as-built final outfall into Oldlands Farm ditch is 150mm higher than the approved scheme, which has amended the final levels and gradients of the 600mm pipes downstream of the basin. This makes negligible difference to how the overall network operates.
- 3.11 Although the pipe runs do not exactly match the approved scheme, the pipe configuration, diameters and gradients for the as-built design network are acceptable.

Water Quality

- 3.12 The as-built design has specified a fuel separator to treat contaminants picked up within surface water runoff from the car park and vehicle circulation areas. This works in conjunction with trapped gullies, catchpits and the detention basin to provide a sufficient surface water treatment train for discharge to a watercourse.
- 3.13 The above matches the approved scheme.

Surcharged Outfall

- 3.14 The micro drainage calculations that informed the as-built design have matched the approved scheme by modelling a surcharged outfall. The surcharged water level in the calculations is also 1.0m AOD.

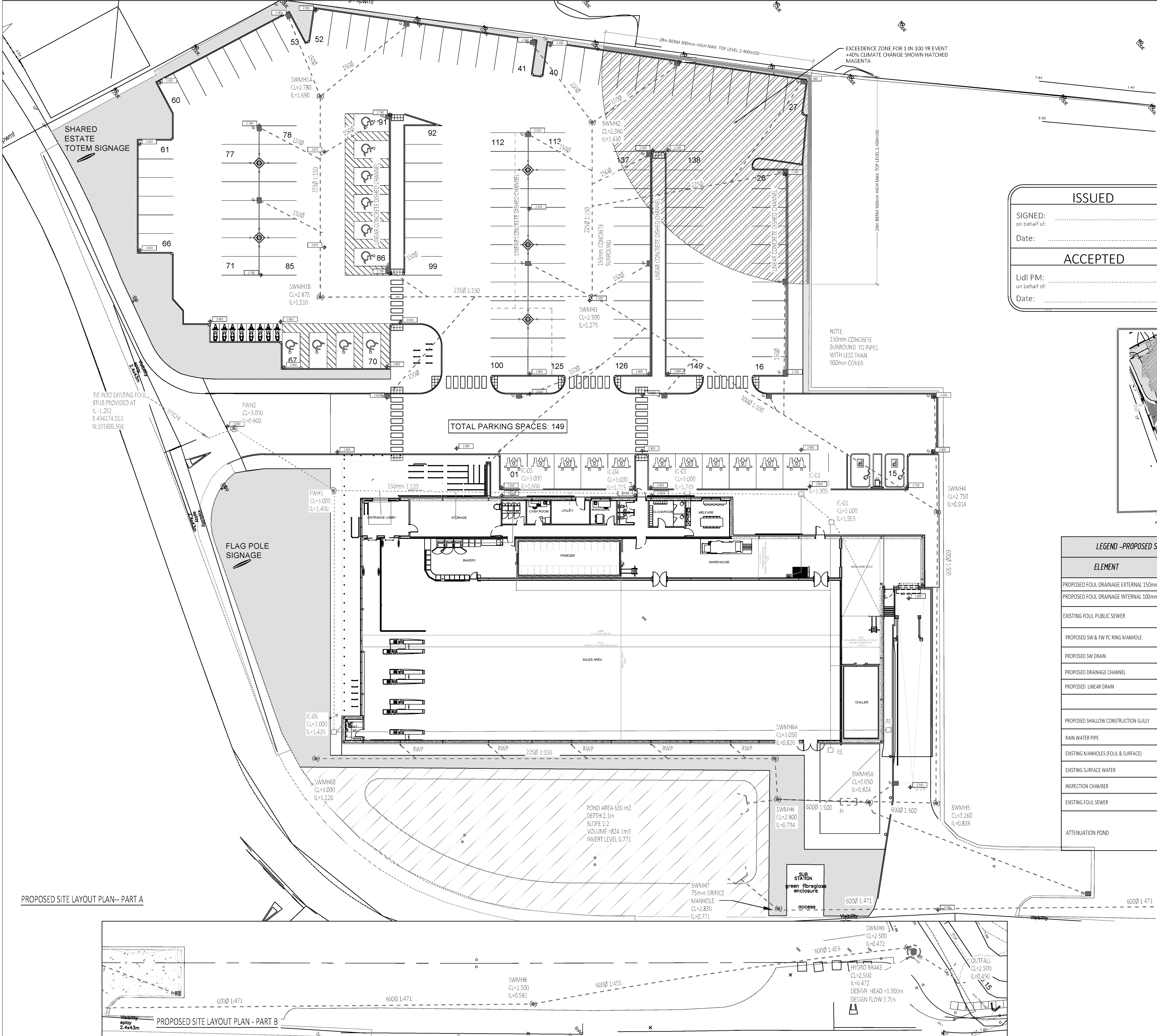
As-built Levels & Modelled Top Water Level

- 3.15 The as-built store finished floor level and ground level at the detention basin match the planning approved layout.
- 3.16 The as-built car park also falls away from the store towards the north-west boundary, but the finished levels are lower than the approved scheme and range from 2.90m AOD to 1.99m AOD.
- 3.17 The northern corner of the car park with a level of 1.99m AOD is the lowest point of the store car park, which was constructed at this level to tie in with the existing ground level at the site boundary
- 3.18 This low point of 1.99m AOD is below the simulated top water level in the detention basin and drainage network during the critical 1in100 year storm event (including climate change). Therefore, a 56 metre long berm was constructed on the perimeter of this section of the car park to ensure surface water run-off is contained on site. The top of the berm is set at 2.40m AOD, which is above the critical water level for the 1in100yr+CC storm. The berm is shown on the as-built drawing in Appendix A
- 3.19 The final discharge rate is quite low at 3.7 litres/second so the critical duration storm for establishing attenuation volume and the top water level in the system is the long duration 1440 minute storm. The modelled critical water levels for this storm duration are as follows:
- ✦ Critical 1in2yr Storm: 1.45m AOD
 - ✦ Critical 1in30yr Storm: 1.73m AOD
 - ✦ Critical 1in100yr Storm: 1.96m AOD
 - ✦ Critical 1in100yr+40%CC Storm: 2.33m AOD
- 3.20 The above simulated figures show the following:
- ✦ The drainage network will not flood for up to the 1in30year storm.
 - ✦ Minor flooding (160mm) is simulated in the bottom of the delivery ramp for the 1in100yr event, which increases to 530mm when 40% climate change is added.
 - ✦ The car park will not flood for the 1in100yr event but does flood to a depth of 410mm when 40% climate change is added.

4 Conclusion

- 4.1 Having completed a review of the as-built surface water drainage it is evident the design principles are generally the same as those agreed to discharge planning condition 6.
- 4.2 The only change to the design principles is the utilisation of flood storage in the delivery ramp and the customer car park for the extreme rainfall event, which was unavoidable because the car park levels in the northern corner needed to be lower than on the approved scheme.
- 4.3 Lidl (the Applicant) accept this flooding would have a negligible operational impact on the store because it occurs in an area that is remote from the main vehicular access and the store building. The delivery ramp also remains operational if the worst case (+40%CC) flood depth occurs.
- 4.4 Although the car park levels have changed the as-built system has been constructed to ensure water will be contained within the surface water drainage network for all events up to and including the critical 1 in 30 year event. Water is also safely contained on site for all events up to and including the 100 year plus climate change event.
- 4.5 The other changes in the as-built system such as the different configuration of pipes and gullies car park and slightly higher outfall into Oldlands Farms Ditch are minor changes resulting from the detailed design, as opposed to major changes to the design principles, and do not affect the overall suitability and safety of the drainage design.
- 4.6 Having completed this review it is MBL's recommendation that planning condition 10 can be discharged because the as-built drainage design at the Lidl site in Bognor Regis follows the design principles agreed at planning. Therefore, the as-built surface water drainage system is fit for purpose because it will be safe for the lifetime of the store without increasing the risk of flooding to itself or downstream/surrounding properties.

APPENDIX A: As Built Drainage Drawing



MANHOLE SCHEDULE				
MANHOLE / INSPECTION CHAMBER NUMBER	COVER LEVEL	INVERT LEVEL	TYPE	DIAMETER
SWMH1A	2.780	1.690	MANHOLE	1.05m
SWMH1B	2.875	1.510	MANHOLE	1.05m
SWMH2	2.380	1.430	MANHOLE	1.05m
SWMH3	2.500	1.275	MANHOLE	1.05m
SWMH4	2.750	0.914	MANHOLE	1.20m
SWMH5	3.260	0.836	MANHOLE	1.20m
SWMH5A	3.050	0.824	MANHOLE	1.20m
SWMH6	2.800	0.794	MANHOLE	1.20m
SWMH6A	3.000	0.820	MANHOLE	1.20m
SWMH6B	3.000	1.120	MANHOLE	1.20m
SWMH7	2.830	0.771	MANHOLE	1.20m
SWMH8	2.500	0.581	MANHOLE	1.20m
SWMH9	2.500	0.472	MANHOLE	1.20m
I/C 01	3.000	1.955	MANHOLE	1.05m
I/C 02	3.000	1.905	MANHOLE	1.05m
I/C 03	3.000	1.785	MANHOLE	1.05m
I/C 04	3.000	1.715	MANHOLE	1.05m
I/C 05	3.000	1.600	MANHOLE	1.05m
FWH 01	3.000	1.400	MANHOLE	1.05m
FWH 02	3.000	0.600	MANHOLE	1.05m

ISSUED

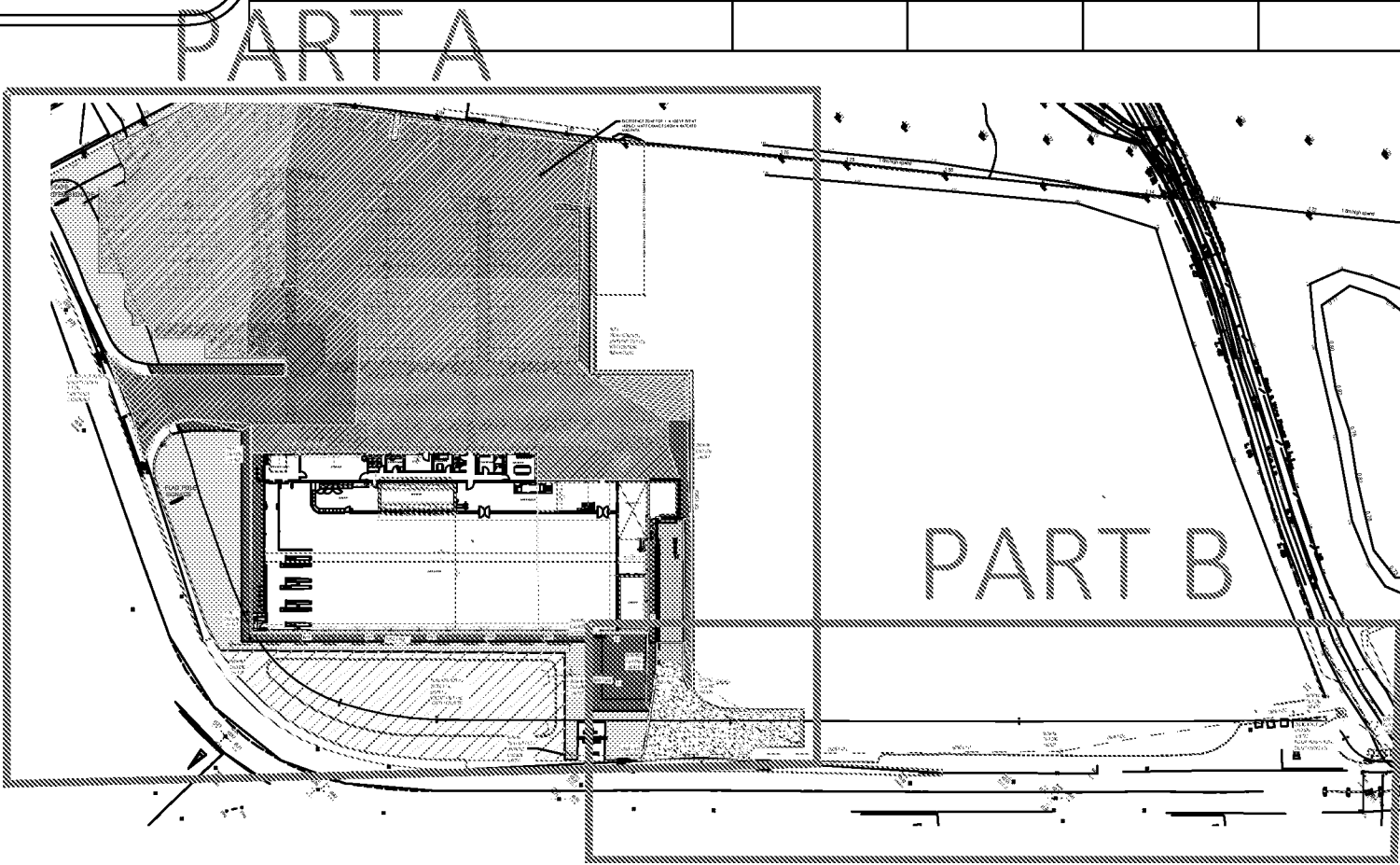
SIGNED:
on behalf of: _____

Date: _____

ACCEPTED

Lidl PM:
on behalf of: _____

Date: _____



LEGEND - PROPOSED SITE DRAINAGE	
ELEMENT	SHOWN AS
PROPOSED FOUL DRAINAGE EXTERNAL 150mm Ø	-----
PROPOSED FOUL DRAINAGE INTERNAL 100mm Ø	-----
EXISTING FOUL PUBLIC SEWER	-----
PROPOSED SW & FW PC RING MANHOLE	● ●
PROPOSED SW DRAIN	-----
PROPOSED DRAINAGE CHANNEL	=====
PROPOSED LINEAR DRAIN	-----
PROPOSED SHALLOW CONSTRUCTION GULLY	G
RAIN WATER PIPE	RWP
EXISTING MANHOLES (FOUL & SURFACE)	● ●
EXISTING SURFACE WATER	-----
INSPECTION CHAMBER	□
EXISTING FOUL SEWER	-----
ATTENUATION POND	-----

AS BUILT
DRAWING

REV.	DATE	BY	DESCRIPTION
AB2	26.02.2021	JR	ISSUED AS BUILT
AB1	25.02.2021	JR	ISSUED AS BUILT
SDS-UK (Structural Design Solutions) Ltd, BRIDGE HOUSE, 25-27 THE BRIDGE, WEALDSTONE, HARROW, HA3 5AB. Tel: +353 (0)94-9034914 Fax: +353 (0)94-9034998 info@structuraldesign.ie www.structuraldesign.ie SDS-UK (Structural Design Solutions) Ltd.			

Client: ADSTON CONSTRUCTION			
Project Title: PROPOSED NEW LIDL FOODSTORE AT OLDLANDS FARM, STEYING WAY, BOGNOR REGIS, PO22 9NN			
Drawing Title: SITE LAYOUT SURFACE WATER & FOUL DRAINAGE			
Scale: 1:250	Page Size: @ A1	Drawn: ASBUILT	
Des. By: JR	Checked: MM	Date: FEB 2021	
Project No: 20144	Drawing No: 3021	Rev: AB2	

APPENDIX B: As Built Drainage Calculations

Mayer Brown Limited										Page 1	
Lion House Oriental Road Woking, GU22 8AR					Lidl Bognor Regis						
Date 23/11/2021 08:14					Designed by ED						
File 20144-Simulation - MBL ...					Checked by CD						
Innovyze					Network 2020.1						
<u>Existing Network Details for Storm</u>											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type		
1.000	26.700	0.178	150.0	0.110	1.00	0.001	o	225	Pipe/Conduit		
1.001	36.800	0.245	150.2	0.063	0.00	0.001	o	225	Pipe/Conduit		
2.000	23.200	0.155	149.7	0.158	1.00	0.001	o	225	Pipe/Conduit		
1.002	37.000	0.364	101.6	0.130	0.00	0.001	o	300	Pipe/Conduit		
1.003	39.500	0.079	500.0	0.052	0.00	0.001	o	600	Pipe/Conduit		
1.004	8.700	0.017	511.8	0.000	0.00	0.001	o	600	Pipe/Conduit		
1.005	12.000	0.024	500.0	0.014	0.00	0.001	o	600	Pipe/Conduit		
3.000	60.000	0.400	150.0	0.170	1.00	0.001	o	225	Pipe/Conduit		
3.001	5.600	0.112	50.0	0.000	0.00	0.001	o	225	Pipe/Conduit		
1.006	2.500	0.005	500.0	0.100	0.00	0.001	o	600	Pipe/Conduit		
1.007	90.000	0.191	471.2	0.000	0.00	0.001	o	600	Pipe/Conduit		
1.008	51.000	0.112	455.4	0.000	0.00	0.001	o	600	Pipe/Conduit		
1.009	6.500	0.065	100.0	0.000	0.00	0.001	o	225	Pipe/Conduit		
PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)		
1.000	1A	2.780	1.690	0.865	2.875	1.512	1.138		1200		
1.001	1B	2.875	1.512	1.138	2.500	1.267	1.008		1200		
2.000	2	2.360	1.430	0.705	2.500	1.275	1.000		1200		
1.002	3	2.500	1.275	0.925	2.750	0.911	1.539		1200		
1.003	4	2.750	0.914	1.236	3.260	0.835	1.825		1500		
1.004	5	3.260	0.836	1.824	3.050	0.819	1.631		1500		
1.005	5A	3.050	0.824	1.626	2.800	0.800	1.400		1500		
3.000	6B	3.000	1.120	1.655	3.000	0.720	2.055		1200		
3.001	6A	3.000	0.820	1.955	2.800	0.708	1.867		1200		
1.006	6	2.800	0.794	1.406	2.830	0.789	1.441		1500		
1.007	7	2.830	0.771	1.459	2.500	0.580	1.320	Orifice	1500		
1.008	8	2.500	0.581	1.319	2.500	0.469	1.431		1500		
1.009	9	2.500	0.469	1.806	2.500	0.404	1.871	Hydro-Brake®	1500		
<u>Surcharged Outfall Details for Storm</u>											
Outfall Pipe Number		Outfall Name		C. Level (m)		I. Level (m)		Min I. Level (m)	D,L (mm)	W (mm)	
1.009		SWOutfall		2.500		0.404		0.000	0	0	
Datum (m) 0.000 Offset (mins) 0											
Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	1.000	240	1.000	420	1.000	600	1.000	780	1.000	960	1.000
120	1.000	300	1.000	480	1.000	660	1.000	840	1.000	1020	1.000
180	1.000	360	1.000	540	1.000	720	1.000	900	1.000	1080	1.000
										1140	1.000
										1200	1.000
										1260	1.000
										1320	1.000
										1380	1.000
										1440	1.000
©1982-2020 Innovyze											

Mayer Brown Limited		Page 2
Lion House Oriental Road Woking, GU22 8AR	Lidl Bognor Regis	
Date 23/11/2021 08:14	Designed by ED	
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Innovyze	Network 2020.1	

Online Controls for Storm

Orifice Manhole: SW7, DS/PN: 1.007, Volume (m³): 3.9

Diameter (m) 0.075 Discharge Coefficient 0.600 Invert Level (m) 0.771

Hydro-Brake® Optimum Manhole: SW9, DS/PN: 1.009, Volume (m³): 17.6

Unit Reference	MD-SHE-0079-3700-1950-3700
Design Head (m)	1.950
Design Flow (l/s)	3.7
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	79
Invert Level (m)	0.469
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

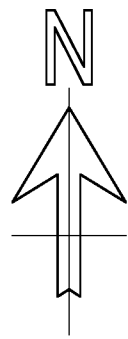
Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.950	3.7	Kick-Flo®	0.702	2.3
Flush-Flo™	0.343	2.9	Mean Flow over Head Range	-	2.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.3	0.800	2.5	2.000	3.7	4.000	5.2	7.000	6.7
0.200	2.7	1.000	2.7	2.200	3.9	4.500	5.5	7.500	7.0
0.300	2.9	1.200	3.0	2.400	4.1	5.000	5.7	8.000	7.2
0.400	2.9	1.400	3.2	2.600	4.2	5.500	6.0	8.500	7.4
0.500	2.8	1.600	3.4	3.000	4.5	6.000	6.3	9.000	7.6
0.600	2.7	1.800	3.6	3.500	4.9	6.500	6.5	9.500	7.8

Mayer Brown Limited		Page 3
Lion House Oriental Road Woking, GU22 8AR	Lidl Bognor Regis	
Date 23/11/2021 08:14 File 20144-Simulation - MBL ...	Designed by ED Checked by CD	
Innovyze	Network 2020.1	
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APPENDIX C: Planning Approved Drainage GA & Decision Notice



REFER TO THE FOLLOWING WEST SUSSEX COUNTRY COUNCIL SECTION 278/38 HIGHWAY AGREEMENT STANDARD DETAILS.

- DRAINAGE TYPE B CATCHPIT - S278/38/13 (EXCEPT FOR SWMH7 - REFER TO DRAWING RAM-0500-01A-D-CR-20102)
- DRAINAGE ROAD GULLY - S278/38/11
- OUTFALL TO SIDE OF DITCH - S278/38/23
- DRAINAGE PIPE BEDDING DETAILS - S278/38/33

REFER TO DRAWING RAM-0500-01A-D-CR-20102 TO 20103 FOR THE FOLLOWING STANDARD DETAILS

- TYPE 2 FOUL MANHOLE
- CLASS 1 FULL RETENTION INTERCEPTOR
- ORIFICE MANHOLE
- VORTEX FLOW CONTROL TYPE B MANHOLE

NO PART OF HEADWALL STRUCTURE TO ENCR OACH INTO THE PROFILE OF THE DITCH. HEADWALL TO BE AS WSCC DRAWING S278/83/23 'SIDE DITCH VERSION', SURFACE LEVEL OF CONCRETE BAGWORK APRON TO BE 200mm BELOW EXISTING DITCH LEVEL. PIPE TO BE RAISED 250mm ABOVE DITCH INVERT.

HYDRO BRAKE
CL:2.500
IL:0.322
DESIGN HEAD = 1.950m
DESIGN FLOW = 3.7l/s

SWMH9
TYPE B WITH HYDROBRAKE
CL:2.500
IL:0.322
150mm DIA. OVERFLOW PROVIDED @ 2.24 IL (ABOVE 1 IN 100 +40%
WATER LEVEL AS REFERENCED BY WSCC DRAWING S278/38/14)

FINISHED CAR PARK LEVELS TO BE SET LOCALLY TO FALLS TOWARDS GULLY DOWN POINTS

SWMH2
TYPE B
CL:2.830
IL:1.401

SWMH1C
TYPE B
CL:3.050
IL:1.604

SWMH1B
TYPE B
CL:3.050
IL:1.661

SWMH1A
TYPE B
CL:3.050
IL:1.728

SWMH1
TYPE B
CL:3.050
IL:1.850

SWMH10
TYPE B
CL:3.000
IL:1.700

SWMH3
TYPE B
CL:2.830
IL:1.060

SWMH4
TYPE B
CL:2.750
IL:1.024

SWMH5
TYPE B
CL:2.750
IL:0.946

SWMH8
TYPE B
CL:2.500
IL:0.431

FMH1
TYPE 2
CL:2.950
IL:1.600

SWMH11
TYPE B
CL:2.950
IL:1.500

FMH2
TYPE 2
CL:2.950
IL:1.100

FMH3
TYPE 2
CL:3.000
IL:0.600

EXFMH13
CL:3.420
IL:-1.258

SWMH6
TYPE B
CL:2.830
IL:0.796

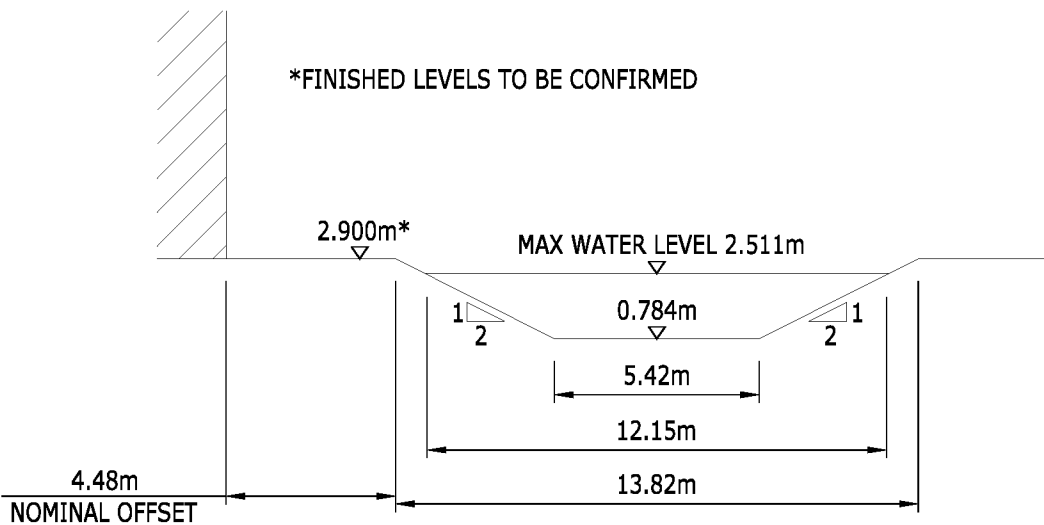
PETROL INTERCEPTOR
UNIT REF: NSFA175
INLET IL: 0.920
OUTLET IL: 0.820
DRAINAGE AREA: 9725m²
SILT CAPACITY: 17500L
BY KLARGESTER OR SIMILAR APPROVED
100mm FALL ACROSS UNIT

SWMH7
TYPE B
75mm ORIFICE MANHOLE
CL:2.830
IL:0.621

POND AREA 630m²
DEPTH 2.1m
SLOPE 1:2
VOLUME = 824.1m³

EXTERNAL GULLY LOCATIONS AND COVER LEVELS SHOWN ARE INDICATIVE SUBJECT TO DEVELOPMENT OF EXTERNAL LEVELS PROPOSALS

*FINISHED LEVELS TO BE CONFIRMED



SECTION A-A
SCALE 1:200

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NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE METRES UNLESS OTHERWISE STATED.
3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE STATED.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
5. RAIN WATER PIPE AND FOUL CONNECTIONS FROM BUILDING TO CONNECT TO NEAREST MANHOLE VIA INSPECTION CHAMBER. POSITIONS TO BE CONFIRMED AT DETAILED DESIGN STAGE.
6. ALLOWANCE TO BE MADE FOR 8NO. INSPECTION CHAMBERS (4500 POLYPROPYLENE INSPECTION CHAMBER) FOR FOUL CONNECTIONS PER BUILDING AND ASSOCIATES UNDER SLAB PIPE WORK (CAST IRON)
7. ALL SURFACE WATER PIPES TO BE MADE FROM POLYPROPYLENE TWIN WALL PLASTIC.
8. ALL FOUL WATER PIPES TO BE MADE FROM VITRIFIED CLAY.
9. ALL MANHOLE COVERS WITHIN THE CARRIAGEWAY TO BE CLASS D400 TO BS EN 124 AND ALL OTHER COVERS TO BE B125 LOAD RATING.

- SURFACE WATER DRAINAGE
- PERFORATED SURFACE WATER PIPE
- FOUL WATER DRAINAGE
- MANHOLE (SURFACE WATER)
- MANHOLE (FOUL WATER)
- GULLY
- L.C. LINEAR CONCRETE DISHED CHANNEL
- PETROL INTERCEPTOR
- ⊕ HYDRO-BRAKE
- ⌒ HEADWALL AS S278/38/23 CONCRETE BAGWORK
- EXISTING FOUL WATER DRAINAGE

Rev	Description	Date	By	App
P08	PRELIMINARY - LEVELS & PIPE SIZES UPDATED TO MATCH SIMULATION MODEL	28/09 2020	SC	MRD
P07	PRELIMINARY	27/08 2020	SC	MRD
P06	PRELIMINARY	11/08 2020	CL	MRD
P05	PRELIMINARY	29/07 2020	CL	MRD
P04	PRELIMINARY	09/09 2019	CL	MRD
P03	PRELIMINARY	30/08 2019	BW	MRD
P02	PRELIMINARY	02/07 2019	BW	MRD
P01	PRELIMINARY	28/06 2019	BW	MRD

PRELIMINARY

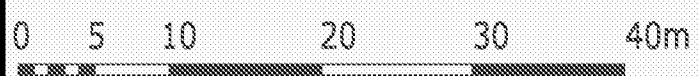
OLDLANDS FARM BOGNOR REGIS

RAMBOLL

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www.ramboll.co.uk

PHASE 1A - LIDL SITE DRAINAGE LAYOUT

Project No: 1620003993	Scale (@A1): 1:500	Drawn: BW	Date: JUN.19
Drawing No: RAM-0500-01A-DR-CR-20001	Rev: P08		



SCALE 1:500

Lidl GB
Foxes Park
Brownhill Way
Nursling
SO16 0AW

Date: 16th October 2020

Please ask for: Raymond Cole
Tel: 01903 737598

Your Ref:

Our Ref: BE/70/20/DOC

Dear Mrs Burton,

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Application for details reserved by condition imposed under BE/126/19/PL relating to conditions 6-surface water drainage; 7-discharge of flows to watercourses or for the culverting, diversion, infilling or obstruction of any water course on our adjacent to site; 8-maintenance & management of surface water drainage system; 12-foul water & sewage disposal & 14-Construction Management Plan.

Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN

Notification regarding the above application:

Condition Number 6

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

Decision:

Arun District Council have decided to **APPROVE details reserved by this condition**

This condition is discharged in so far as it relates to:

Drainage Strategy 3993-H-RP-1A-0500-201 Rev P03

Attenuation Pond Detail 1620003993-RAM-0500-01A-D-CR-20101-P04
Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20102-P02
Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20103-P01
Drainage Layout 1620003993-RAM-0500-01A-DR-CR-20001-P08
Drainage Catchment Layout 1620003993-RAM-0500-01A-DR-CR-20002-P04
MD Simulation Oldlands Farm 29.09.20
Drainage and SUDS Operation & Maintenance Strategy 1620010196-RAM-H-RP-1A-0500-002 Rev
P03
Drainage Gully A - Pre-Cast Concrete S278-38-11 Rev D
Drainage Type B Catchpit S278-38-13 Rev E
Vortex Flow Control Type B Manhole S278-38-14 Rev C
Headwall Detail for pipe sizes up to 600 diam Concrete Bagwork S278-38-23 Rev A
Drainage Pipe Bedding Details S278-38-33 Rev A

Please do not hesitate to contact the above officer if you require any further assistance.

Yours sincerely



Neil Crowther
Group Head of Planning

