



Project Name : Burndell Road, Yapton

Job No : 18-070

Note Title : Drainage Note

Author : LH

Checked : LP

Approved : LH

Date : May 2021

1.0 INTRODUCTION

1.1.1 This note has been prepared for Vistry Caterham to support the design change required to the means in which surface water is discharged to the north eastern part of the site.

1.1.2 This note aims to explain the background to the scheme, the outfall complications encountered on site during the construction process, and the design modifications carried out to enable surface water to be discharged to the existing ditch.

1.1.3 This note also demonstrates the negative implications a re-grading option would result in, should it be carried forward as a preferred solution.

2.0 DESIGN DEVELOPMENT

2.1 Background

2.1.1 The surface water drainage scheme was designed to provide a number of catchments / outfalls to the site. The catchment / outfall discussed as part of this report is the northern catchment which includes the link road and discharges to the north eastern ditch at the site's boundary.

2.1.2 It was originally intended for this catchment to drain via gravity from the head of the run, near the sites access, before being conveyed east, across the top of the site and to the outfall located at the existing ditch on the north eastern boundary.

LH/lh/18-070-08B



2.2 Build Programme

2.2.1 Due to the location that access to the site was gained, the building of sewers commenced at the site's access towards the north-western corner of the site and progressed from north to south along the link road. Once the initial site access works were completed, the sewers were constructed from west to east, starting with the head of the drainage runs and working towards the existing ditch / outfall.

2.2.2 The construction programme and sequencing was dictated to provide a site access from Burndell Road from the offset and to build the development from front to back to ensure properties could be built and completed throughout the duration of the project. This meant that drainage also had to be built in line with the construction sequencing starting at the front, or the roads would not have been able to be completed for the site access.

2.3 Topographical Survey

2.3.1 On construction of the outfall to the ditch located at the north-east corner of the site which serves the northern catchment, it was noted on site that the headwall appeared to be significantly lower than the invert of the existing ditch. Initially it was thought this may be due to a buildup of sediment, however after further investigation it was identified as being built in natural ground.

2.3.2 The surveyor was contacted to review topographical survey provided and it was established that the survey was completed with a datum error for the eastern ditch levels, resulting in incorrect levels being recorded for the ditch invert levels. This led to the design being completed with information suggesting that the ditch was lower than it actually was. The difference between the design, based on surveyed levels, and the actual invert level of the ditch is approximately 750mm which is a significant amount and something that could not have been anticipated or dealt with locally.

2.4 Design Alterations

2.4.1 Due to the level difference between the currently constructed surface water sewer system and the physical / correct invert level of the ditch a gravity connection was no longer achievable, due to the now surcharged outfall.

2.4.2 In order to accommodate the level difference, a surface water pump station was determined to be the most suitable option to enable the built sewer to remain and a headwall / outlet pipe to be set at or above the existing ditch invert level. This would allow the as-built sewer to discharge at the lower invert level before the surface water would be pumped up to a level reflecting the true invert level of the ditch.

LH/lh/18-070-08B



2.4.3 Discussions were held with Southern Water initially who advised that they would require a large pump station which could not be accommodated within the current site layout due to offset distances required for wet wells and its close proximity to residential dwellings.

2.4.4 Once it was deemed that Southern Water's requirements were unable to be met, subsequent discussions were held with ICOSA.

2.5 Reviews with ICOSA

2.5.1 The site / layout and space available was reviewed between the site's pump station designer and ICOSA and it was agreed that a surface water pump station arrangement could be provided to ICOSA adoptable standards, whilst also meeting the space constraints imposed by the site layout.

2.5.2 A final layout has been agreed with ICOSA and the redesign of the site's outfall for this system has been carried out and modified to suit.

2.6 Adoption

2.6.1 As a development can only have one adopting authority maintaining mains sewers, the entirety of the proposed foul and surface water sewer adoption and maintenance responsibilities are being put forward to ICOSA, rather than Southern Water as was the original intent.

2.6.2 Discussions with ICOSA are well progressed with the Technical Approval for the site's foul and surface water sewers, including the surface water pump station, now granted technical approval. The NAV agreement has also now been completed, with the amended application to connect the foul water sewer to Southern Water's existing network under review, with approval imminent.

2.7 Maintenance

2.7.1 The systems put forward to ICOSA for adoption will be maintained in accordance with their requirements / regimes and any remaining private areas will be maintained by a management company as per the original scheme. As such, there would be no rise in fees payable by residents with regards to management company fees as a result of this proposal.

2.7.2 If the drainage network was to remain unadopted, as would be the scenario should a pumping station approach not be accepted, then the network would instead fall to a management company to maintain and assume responsibility for. This would lead to an increase in costs to residents, charged by the management company, to account for the additional items maintainable.



3.0 IMPACT ON DEVELOPMENT

3.1 Existing Occupations

3.1.1 There are currently 17 occupied properties within the development, with a further 12 plots sold and awaiting completion. The proposal identified in this report has been deemed to cause the least disruption to existing residents. The installation of a pumping station can be largely completed without affecting the current residents of the site, with the works being contained within the north-eastern portion of the site. This would help limit the amount of additional noise and plant movements which would likely cause significant distress if the works were to spread out across the northern part of the site and towards the currently occupied properties.

3.1.2 If the re-grading of sewers and highways were to be implemented, it would cause significant disruption to the ongoing legal proceedings of the 12 plots currently sold and awaiting completion. The timelines for move in dates would need to be extended to accommodate the additional works required. This could in turn present difficult and costly scenarios for buyers with expected completion dates in the near future. This could be avoided through the implementation of the proposed strategy which has already been designed, and suppliers and labour put on standby, therefore able to commence these works at short notice.

3.1.3 If a more complex solution were to be implemented, such as re-grading of the constructed sewers, this would require sections of the highway to be closed which would impact resident's access to the occupied properties, as well as increase the extent of works to areas directly adjacent the occupied properties. The above will likely cause significant distress to current occupants of the site, and therefore it is proposed that this option is avoided in favor of a less disruptive resolution. Whilst it is appreciated that residents currently live on an active construction site, the majority of the ongoing works is not located within the immediate vicinity of the currently occupied properties. Residents will expect a certain level of disruption; however, this level of disruption will be significantly exacerbated if the more intensive and complex option is taken forward, with a much larger increase in the level and duration of works within the immediate vicinity of the plots.

3.2 Financial Considerations

3.2.1 The option proposed within this report has been determined as the most financially viable of the available resolutions. The installation of a pumping station will provide a working solution and



allow for the discharge of surface water for the site, whilst avoiding the need for the excessive costs associated with re-excavating constructed highways and re-laying drainage around services and constructed foul sewers. It is to be noted that Vistry Homes will be undertaking the cost for the implementation of the new drainage design and for the pump station itself.

3.2.2 As the newly proposed pumping station would be adopted and maintained by ICOSA, the arrangement would follow the same principles as the original proposal, where maintenance costs would not be passed onto the residents of the site, and all maintenance works would be done at the expense of ICOSA who would hold responsibility as the adopting authority of the sewer system.

3.2.3 Whilst financial considerations should not be the deciding factor when determining a resolution. It is important to acknowledge that there are significant cost differences between the resolution options, both of which would provide an adequate method of discharging the surface water from the site. It is also important to note that the developer has already put significant investment into the review of each option, and the subsequent design of the most suitable one.

3.3 Impact on Affordable Housing

3.3.1 After discussing the situation with the housing authority responsible for the affordable housing properties, they have advised that they are unable to complete any occupations within these properties until a resolution has been agreed and granted consent.

3.3.2 The timescale associated with the construction of the surface water pumping station is significantly less than the re-laying of the upstream sewers. As the pumping station has already been designed and has also been granted the approval of an alternative adopting body, implementation can commence quickly which would allow for the practical completion of the affordable housing properties. The re-design and re-laying of the as-installed sewer system would require extensive works due to the knock-on effect to the surface levels of the highway, the extent of which is covered later in this report.

3.3.3 By reducing the time taken to secure consent and adoption, it will release the affordable housing properties much quicker, and help to provide affordable housing the wider community.

3.4 Impact of Design Changes

3.4.1 Due to the surface water sewer design being reliant on minimum allowable gradients, raising of invert levels would need to be reflected on all upstream pipes. This would result in the re-grading of sewers from the ditch, through the site and up to the existing access junction. The full extent of sewer system required to be re-graded is shown on the appended plan **18-070/231**. Due

LH/lh/18-070-08B



to the low point immediately upstream of the ditch outfall, highway levels would need to be raised at this location to allow for sufficient cover to the soffit of the raised pipework. This raising of road would need to be repeated for several other manholes further upstream. The close proximity of these manholes results in a large swathe of highway requiring breaking out and reconstructing and re-grading. The highway cannot be raised locally due to the need for suitable 'K' transition values forming part of the vertical alignment of the highway. This results in a knock-on effect stretching from the outfall location to the proposed site access.

3.4.2 The raising of highway levels would also require the raising of foul water manhole covers to suit. The increase in cover depths of the foul water manholes may also lead to a requirement to re-build the foul water manholes due to a change in type required under Sewers for Adoption guidance. The manhole types specified in Sewers for Adoption are chosen based on minimum and maximum allowable cover depths, and therefore the raising of the highway would have a direct impact on these figures.

3.4.3 The potential extent of highway re-grading is shown on the appended plan **18-070/231**. In order to maintain a vertical profile similar to that of the previous design, the highway levels would need to be raised circa. 750mm. The resulting impact of raising highway levels would also affect the already constructed and largely occupied plots highlighted on the same plan. These plots would require demolishing, raising, and re-building in order to prevent these plots sitting significantly below the raised highway levels. If the plots were to remain as currently built, they would require multiple steps down the access, making them less friendly for mobility impaired residents, as well increasing the risk of surface water flooding or ponding water within three meters of the plot. This would contravene NHBC guidance and would therefore be deemed unacceptable and therefore not a viable solution.

3.4.4 The raising of plots would also require the demolition and re-building of all adjacent driveways to ensure they meet both the raised road levels, as well as the new access levels for the raised plots. This ultimately would lead to the complete demolition of the northern part of the site, causing untold financial and emotional stress to resident who currently occupy these properties. It is suggested that this approach is therefore avoided at all costs, in favour of the much less disruptive and considered approach proposed with the surface water pumping station.

3.4.5 The required raising of these plots would also require a regrade of the private drainage system in order to meet the newly raised invert levels of the adoptable drainage, as well as the surrounding cover levels.

3.4.6 A further consideration to be made around the raising of the plots is the negative impact it would have on the adjoining properties to the north. Raising properties close to the boundary could



lead to the existing properties to the north of the boundary feeling overlooked, and likely lead to complaints and discomfort from these residents.

3.4.7 The raising of road levels would be required around the location of the proposed access also. In order to maintain a suitable vertical profile, it is likely that a gradient steeper than 1:12 would be required in order to tie into the existing highway the site access fronts (Burndell Road). Increasing the gradient at this location is likely to pose safety concerns and increase the risks of side on collisions at the junction due vehicles overshooting the junction on approach.

3.4.8 It is currently proposed to provide an access to the adjoining land at the northern end of the access road. Raising road levels at this location would lead to this access no longer being viable due to the more significant level difference between the proposed and existing levels.

3.5 Ditch Re-grade Review

3.5.1 As part of the design option considerations, an option to regrade the watercourse the site discharges to was explored. The highest achievable outfall level maintaining the original design was 4.090m AOD. A minimum gradient of 1:1000 was applied in either direction of the ditch to check the feasibility of regrading the watercourse to a point where a positive fall could be achieved tying into existing levels. At no point along the extent of surveyed watercourse are the levels low enough to facilitate an upstream re-grade and tie in, due to the severity of change in levels required. Therefore, it was established that a re-grade and tie into an existing level of the ditch is not a feasible option. The extent of the gradient is across the full topographical survey, 240m downstream of the outfall including 115m south east of the site past the Crayfern site.

3.5.2 The only method of achieving a positive gravity fall along the watercourse, incorporating the outfall level, would be to deepen the entirety of the water course by varying amounts. However, it was deemed that this would not be an appropriate solution due to the large increase in width required to accommodate the additional depth whilst maintaining the already narrow base of the watercourse. This additional width would have severely negative impacts on the surrounding tree line and root protection zones, as well as any adjacent buildings – with the re-graded ditch extent likely to encroach on land belonging to private landowners.

3.6 Pump Station Design & Reliability Considerations

3.6.1 The surface water pump station has been designed in accordance with ICOSA's adoption guidelines and has been audited and given approval by ICOSA as the adopting authority. ICOSA Water are a NAV Company who have the same statutory rights as the water companies and have been approached because they are more proactive in dealing with applications and will take a more



considered approach in determining what is acceptable to them rather than the tick list approach Southern Water would take.

3.6.2 The pump station has been designed by a competent and experienced pumping station design specialist to ensure that it is of a suitable size and specification to operate under the proposed conditions.

3.6.3 The pump station outflow arrangement has been designed to include a high-level overflow pipe to protect the upstream network in the unlikely event the pump station does fail. This high-level overflow would provide a gravity outfall from the pump chamber of the pumping station to the watercourse. This would prevent the pump station backing up into the upstream network and flooding the site. The high-level overflow would only be used as an emergency feature in the event of failure, until any issues could be rectified. The overflow is set above the 100+cc max level. Calculations can be found in **Appendix C**.

3.6.4 The pump station would also be linked to the ICOSA telemetry system, allowing for the proactive monitoring and management of the pump station. This would also allow for a degree of remote interaction with the pump station to assist with operation if required.

3.6.5 Pump station wet well is positioned such that the offset requirements from the nearest point on a habitable building meets the Sewers for Adoption guidelines for a Type 2 Pump Station. These offsets have been determined by the water companies with noise in mind. The layout again meets SFA7 requirements.

3.6.6 The surface water pumping station energy usage is 152.31KWH Per Annum Pumping Power.

4.0 CONCLUSION

4.1.1 This report provides details for the northern drainage system and provides the reasoning for the modifications made in order to achieve an outfall solution once site works had commenced.

4.1.2 Details have been provided relating to the alterations made to the design as well as the change in adoption authority from Southern Water to ICOSA. The system still achieves an outfall to the existing ditch as per the principles of the original strategy.

4.1.3 The adoption process with ICOSA is well underway with technical approval granted.



4.1.4 This report highlights the benefits to both future and existing residents of the site, achieved by limiting the extent of remedial works required, whilst still achieving a drainage system which matches the design principles of the original strategy.

4.1.5 In short, the potential remediation methods of the identified issue can be divided into three categories.

- Regrade of upstream sewer system, including the raising of highway levels to provide adequate cover to the drainage system, as well as an appropriate vertical profile of the highway.
- Installation of a surface water pumping station at the location of the proposed outfall
- Lowering of the entire downstream section of the watercourse the outfall discharges to

4.1.6 The first option would require substantial regrading of both the sewer system and highway by approximately 750mm. This level of works would in turn affect a large portion of the northern section of the site. Raising the highway would require the raising of adjacent plots, some of which are already occupied, and have negative impacts to the site access, adjoining land access, and also the existing properties along the northern boundary of the site. The timescale for these works is much greater than the alternative option and would have an impact on a number of sold plots that are due for completion in the near future. It is considered that this option is not viable due to the far-reaching impact of the proposals, to both residents of the adjoining land, as well as the currently occupied properties of the development. The financial impact to the developer in this scenario would also be unsustainable, especially given that the initial works to facilitate a pumping station have already been paid for “out of pocket” by the developer.

4.1.7 The second option would concentrate works to the northeastern corner of the site, adjacent the outfall and could be completed within a much quicker timeframe. The impacts of this work on existing occupants would therefore be negligible. This option would allow the currently previously proposed levels and upstream drainage design to remain the same and would therefore not pose the same issues that the first option would to the site access, and access to the adjoining land to the north. The proposed pump station has been designed by an experienced, specialist designer, and has also been vetted and approved by the proposed adopting authority ICOSA. As ICOSA would be taking on responsibility for the sewers and pumping station, as opposed to a management company, maintenance costs would not be passed onto residents. A high-level overflow is proposed as part of the pump station specification to prevent any backing up and flooding of the upstream sewer system, to be used only in the unlikely event of failure as a temporary, emergency measure.



4.1.8 The third option would have significant impacts downstream of the site, where the increased required width of the watercourse would impact tree root protection zones, as well as private properties. There is also the potential risk that such a large change to the watercourse could affect and disrupt the local ecology. In this situation the negative impacts and works required in private land result in a non-viable option.

4.1.9 The situation has now been reviewed against local and national planning policy. The considerations of which can be found in **Appendix B**.

4.1.10 This report concludes that a surface water discharge solution for the site is still provided, with the principles of the discharge and outfall broadly in line with the original proposals.

5.0 FURTHER QUERIES

5.1 Questions Raised from the Arun Engineering Services Manager with responses.

I assume that you will take out the flow control from S13? **Flow Control to remain to limit discharge to pump station** I would have thought you would remove the flow control, leaving the pump controls to do the work – with The pump station has a restricted discharge of 7l/s.

Pumps would provide a variable discharge depending on water level in the pump station. So if you selected pumps to do a maximum 7l/s when the attenuation is full, at lower levels then would discharge far less and you would have to remodel your storage and attenuation for the average

To provide a constant 7l/s the options are to install a hydrobrake upstream of the inlet manhole to let by at 7l/s. We will then select pumps to discharge this at duty pump start. So you have 7l/s in and 7l/s out and flows balance until such time the attenuation system is pumped down

Other option is to install variable speed pumps but this is more costly and you would have to incorporate a flowmeter into the system to monitor discharge and feed this back to the control panel to regulate the discharge.

Our design is of course based on the hydrobrake option. If you want to change now and opt for the variable speed design then this will have an implication on a number of things including cost

We do a number of these systems for various water companies and the use of the Hydrobrake is by far the most frequently used. a restricted inflow, the pumps may be cutting in and out more than necessary.



We feel that keeping the flow control is the better arrangement which doesn't alter the approved discharge rate.

Please supply the flood extent mapping for S23 – which shows in the calcs as FLOOD. This may not be a showstopper but we'd like to reassure ourselves. Assume this refers to pipe S23.005 which relates to SW39? If so, this manhole sits near the southern boundary of the site and is therefore not affected by any changes related to the SWPS. I realise this but not having examined the calcs personally previously, I was wondering why the FLOOD flag was there and what risk it would have. Any flooding in the 100 plus climate change is part of the southern drainage system which is flood routed within the road to the flood boundary ditch, this is not connected to the system of the surface water where the pump is located.

You mention that S6 is currently at the wrong height to get to the southern ditch – have you considered re-laying some, or all, of S1-4 and separating it from a re-laid S6-13? There may be enough fall to achieve gravity discharges without the upheaval envisaged by relaying a single the run to the eastern ditch. You will appreciate that we are most keen to avoid pumping surface water. The run from S1-S13 is all laid at minimum grade, therefore any changes made downstream would need to be reflected upstream. I.e. if the outfall level is raised then each element of this run will need to be raised to suit. In order to re-route S1-4 to S31, MH S4 IL would need to be raised by approx.. 1.1m to meet the invert level of S31. The run downstream of S31 leading to outfall is also laid at minimum grade, and therefore S31 would not be able to be lowered to remove the need to re-lay S1-4. Thank you for this clarification – as noted, I had not looked at the figures and wondered if this option had been fully explore.

APPENDIX A – Extent of Regrading Works Plan 18-070/231



NOTES

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LEGEND

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ODYSSEY

LAND SOUTH OF BURDELL ROAD, YAPTON

EXTENT OF REGRADING WORKS PLAN

VISTRY HOMES

18.070

18.070/231

APPENDIX B – Planning Policy Considerations

Planning Considerations relating to Surface Water matters in relation to the discharge of condition 5 of planning permission ref Y/19/16/OUT, Burndell Road Yapton

These comments are to read in conjunction with the report produced by Odyssey Consulting which accompanies this document and which provides sound reasons why a surface water pump solution for part of the site is justifiable

1.0 PLANNING POLICY CONSIDERATIONS

1.1 The National Planning Policy Framework was updated in 2019. *Chapter 2 Achieving Sustainable Development at para 8 states*

Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)

a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy

Paragraph 9 as amended goes on to state

For decision-taking this means:

c) approving development proposals that accord with an up-to-date development plan without delay;

or d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date⁷, granting permission unless:

- i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed⁶; or
- ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.

Chapter 14 Meeting the challenge of climate change, flooding and coastal change explains at paragraph 165 Planning and Flood Risk

Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems used should:

a) take account of advice from the lead local flood authority;

- b) have appropriate proposed minimum operational standards;*
- c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and*
- d) where possible, provide multifunctional benefits.*

1.2 In 2014 the Government published its **Planning Policy Guidance Note flood risk and coastal change**. Paragraph 085 was revised in March 2015 and states:

What about the operation and maintenance of a sustainable drainage system?

When planning a sustainable drainage system, developers need to ensure their design takes account of the construction, operation and maintenance requirements of both surface and subsurface components, allowing for any personnel, vehicle or machinery access required to undertake this work. Any sustainable drainage system should be designed so that the capacity takes account of the likely impacts of climate change and likely changes in impermeable area within the development over its lifetime and continues to provide effective drainage for properties. Whether maintenance and operation requirements are economically proportionate should be considered by reference to the costs that would be incurred by consumers for the use of an effective drainage system connecting directly to a public sewer.

1.3 In line with the above, again in March 2015 the government published the **Non Statutory Technical Standards for Sustainable Drainage Systems** with paragraph S12 *Designing for Maintenance considerations* stating

Pumping should only be used to facilitate those parts of the site where it is not reasonably practical to drain by gravity

1.4 The Flood Risk Assessment dated March 2016 by Odyssey Markides informed the Outline approval and is an approved document. Chapter 10 deals with the Surface Water Drainage Strategy and concludes:

Maintenance of SUDS Features

10.11 The onsite drainage system maintenance will be carried out by a private recognised management company through the implementation of an approved maintenance management plan to minimise the residual flood risk of drainage system blockage. The ditches receiving runoff from the site will also be regularly maintained.

10.12 The maintenance plan can be conditioned as part of the planning approval with a detailed maintenance regime which will be submitted as part of the detail design to clear the condition.

2.0 PLANNING COMMENTS

2.1 Whilst it is understandable that the local authority drainage engineers would wish to see the surface water drainage dealt with exclusively by gravity, the Odyssey Consulting report fully demonstrates that this insistence is at serious odds with the NPPF, in particular the three golden threads that underpins the documents sustainable development ethos. Firstly from an economic point of view existing dwellings cannot now be demolished nor whole sections of road dug up just to facilitate drainage dogma. Existing purchasers cannot be put at serious inconvenience, nor can agreed purchases fail to proceed because of it.

2.2 The social objectives are now compromised. The provision of much needed Affordable housing is already behind schedule which means that those people most in need of subsidised housing in Yapton are being denied a home. Indeed Vistrys RP partner will not accept the handover of any Affordable units until the matter is resolved. This is set against the backdrop of the proposal not causing any issues to the environmental objectives of the NPPF.

2.3 There is no technical reason why the pump solution as proposed cannot now be approved having assessed the economic and social impacts on the alternative as recited in the reason for refusing the initial request for condition discharge. There is nothing in the approved Flood Risk Assessment which precludes the use of a pump and the technical standards referred to at para 1.3 specifically allows for the use of a pump where it is not *reasonably practical* to drain by gravity. The councils drainage engineers fail to acknowledge that the error caused by the original topographical survey is simply rectified by an acceptable alternative, their view seemingly based being based on a negative experience elsewhere.

2.4 In accordance with para 165 of the NPPF, para S12 of the PPG relating to flood risk and Chapter 10 of the approved FRA, arrangements are in place to ensure the smooth management and maintenance of the pump and its immediate environs for the lifetime of the development In tandem with this the Odyssey report explains that there will be no on going maintenance costs which could burden the residents thus allaying fears that have previously been raised.

2.5 In accordance with para 9 of the NPPF there is no compelling reason why the condition cannot now be discharged. Vistry will not be put to the very considerable expense and long term delays caused by reverting to a gravity solution when a fully compliant policy alternative is being proposed. In short Vistry cannot agree to the request of the local authority's drainage engineers. The planning balance is very much in favour of the proposal and should be approved without further delay given that it is a pragmatic solution to an unfortunate situation.

APPENDIX C – Calculations for Storm Water

Odyssey Markides LLP		Page 1
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions Network 2020.1		

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW Network

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	1999
Site Location GB 498650 101750 SU 98650 01750	
C (1km)	-0.025
D1 (1km)	0.390
D2 (1km)	0.245
D3 (1km)	0.403
E (1km)	0.310
F (1km)	2.321
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for SW Network at outfall O_F (1) (pipe S1.009)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.326	4-8	0.371	8-12	0.013

Total Area Contributing (ha) = 0.710

Total Pipe Volume (m³) = 41.170

Time Area Diagram at outfall O_F (2) (pipe S23.007)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.458	4-8	0.712	8-12	0.001

Total Area Contributing (ha) = 1.170

Total Pipe Volume (m³) = 58.412

Network Design Table for SW Network

« - Indicates pipe capacity < flow

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Tuscany House White Hart Lane Basingstoke RG21 4AF						Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX						Designed by SG Checked by LH						
XP Solutions						Network 2020.1						
<u>Network Design Table for SW Network</u>												
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	
S1.000	23.258	0.139	167.3	0.015	4.00	0.0	0.600	o	225	Pipe/Conduit		
S1.001	35.092	0.211	166.3	0.040	0.00	0.0	0.600	o	225	Pipe/Conduit		
S1.002	57.745	0.243	237.6	0.049	0.00	0.0	0.600	o	300	Pipe/Conduit		
S1.003	12.182	0.031	393.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit		
S2.000	5.000	0.010	500.0	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit		
S2.001	7.655	1.259	6.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S3.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit		
S3.001	7.043	1.159	6.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S4.000	5.000	0.010	500.0	0.024	4.00	0.0	0.600	o	150	Pipe/Conduit		
S4.001	7.655	0.959	8.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
S5.000	10.197	0.602	16.9	0.031	4.00	0.0	0.600	o	225	Pipe/Conduit		
S1.004	55.100	0.143	385.0	0.061	0.00	0.0	0.600	o	450	Pipe/Conduit		
S6.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit		
S6.001	8.420	0.428	19.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S7.000	4.995	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit		
S7.001	10.012	0.378	26.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
<u>Network Results Table</u>												
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)		
S1.000	50.00	4.38	5.580	0.015	0.0	0.0	0.0	1.01	40.1	2.0		
S1.001	50.00	4.96	5.441	0.055	0.0	0.0	0.0	1.01	40.2	7.4		
S1.002	50.00	5.91	5.155	0.104	0.0	0.0	0.0	1.02	71.8	14.1		
S1.003	50.00	6.11	4.762	0.104	0.0	0.0	0.0	1.02	162.1	14.1		
S2.000	50.00	4.25	6.350	0.009	0.0	0.0	0.0	0.34	2.7	1.2		
S2.001	50.00	4.29	6.340	0.009	0.0	0.0	0.0	3.16	24.8	1.2		
S3.000	50.00	4.25	6.250	0.019	0.0	0.0	0.0	0.34	2.7	2.6		
S3.001	50.00	4.28	6.240	0.019	0.0	0.0	0.0	3.16	24.8	2.6		
S4.000	50.00	4.19	6.000	0.024	0.0	0.0	0.0	0.44	7.8	3.2		
S4.001	50.00	4.22	5.990	0.024	0.0	0.0	0.0	3.59	63.4	3.2		
S5.000	50.00	4.05	5.558	0.031	0.0	0.0	0.0	3.20	127.0	4.2		
S1.004	48.60	7.00	4.731	0.248	0.0	0.0	0.0	1.03	163.8	32.6		
S6.000	50.00	4.25	6.650	0.011	0.0	0.0	0.0	0.34	2.7	1.5		
S6.001	50.00	4.33	6.640	0.011	0.0	0.0	0.0	1.75	13.7	1.5		
S7.000	50.00	4.25	6.600	0.011	0.0	0.0	0.0	0.34	2.7	1.5		
S7.001	50.00	4.36	6.590	0.011	0.0	0.0	0.0	1.51	11.8	1.5		
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(mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>S8.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.009</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S8.001</td><td>4.667</td><td>0.278</td><td>16.8</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S9.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.014</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S9.001</td><td>3.333</td><td>0.128</td><td>26.0</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S6.002</td><td>18.846</td><td>1.274</td><td>14.8</td><td>0.028</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S10.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.019</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S10.001</td><td>6.862</td><td>1.552</td><td>4.4</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S11.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.028</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S11.001</td><td>9.596</td><td>1.552</td><td>6.2</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S12.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.017</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S12.001</td><td>4.482</td><td>1.452</td><td>3.1</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S13.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.014</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S13.001</td><td>3.330</td><td>1.302</td><td>2.6</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.005</td><td>67.722</td><td>0.176</td><td>384.8</td><td>0.033</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr></table> <u>Network Results Table</u> <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>S8.000</td><td>50.00</td><td>4.25</td><td>6.500</td><td>0.009</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.2</td></tr><tr><td>S8.001</td><td>50.00</td><td>4.29</td><td>6.490</td><td>0.009</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.89</td><td>14.9</td><td>1.2</td></tr><tr><td>S9.000</td><td>50.00</td><td>4.25</td><td>6.350</td><td>0.014</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.9</td></tr><tr><td>S9.001</td><td>50.00</td><td>4.28</td><td>6.340</td><td>0.014</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.52</td><td>11.9</td><td>1.9</td></tr><tr><td>S6.002</td><td>50.00</td><td>4.48</td><td>6.162</td><td>0.073</td><td>0.0</td><td>0.0</td><td>0.0</td><td>2.63</td><td>46.5</td><td>9.9</td></tr><tr><td>S10.000</td><td>50.00</td><td>4.25</td><td>6.500</td><td>0.019</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>2.6</td></tr><tr><td>S10.001</td><td>50.00</td><td>4.28</td><td>6.490</td><td>0.019</td><td>0.0</td><td>0.0</td><td>0.0</td><td>3.70</td><td>29.1</td><td>2.6</td></tr><tr><td>S11.000</td><td>50.00</td><td>4.19</td><td>6.450</td><td>0.028</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.44</td><td>7.8</td><td>3.8</td></tr><tr><td>S11.001</td><td>50.00</td><td>4.23</td><td>6.440</td><td>0.028</td><td>0.0</td><td>0.0</td><td>0.0</td><td>4.08</td><td>72.1</td><td>3.8</td></tr><tr><td>S12.000</td><td>50.00</td><td>4.25</td><td>6.400</td><td>0.017</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>2.3</td></tr><tr><td>S12.001</td><td>50.00</td><td>4.26</td><td>6.390</td><td>0.017</td><td>0.0</td><td>0.0</td><td>0.0</td><td>4.44</td><td>34.8</td><td>2.3</td></tr><tr><td>S13.000</td><td>50.00</td><td>4.25</td><td>6.250</td><td>0.014</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.9</td></tr><tr><td>S13.001</td><td>50.00</td><td>4.26</td><td>6.240</td><td>0.014</td><td>0.0</td><td>0.0</td><td>0.0</td><td>4.87</td><td>38.3</td><td>1.9</td></tr><tr><td>S1.005</td><td>44.36</td><td>8.10</td><td>4.588</td><td>0.432</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.03</td><td>163.9</td><td>51.9</td></tr></table>												PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	S8.000	5.000	0.010	500.0	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit		S8.001	4.667	0.278	16.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S9.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit		S9.001	3.333	0.128	26.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S6.002	18.846	1.274	14.8	0.028	0.00	0.0	0.600	o	150	Pipe/Conduit		S10.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit		S10.001	6.862	1.552	4.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S11.000	5.000	0.010	500.0	0.028	4.00	0.0	0.600	o	150	Pipe/Conduit		S11.001	9.596	1.552	6.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		S12.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit		S12.001	4.482	1.452	3.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S13.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit		S13.001	3.330	1.302	2.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S1.005	67.722	0.176	384.8	0.033	0.00	0.0	0.600	o	450	Pipe/Conduit		PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	S8.000	50.00	4.25	6.500	0.009	0.0	0.0	0.0	0.34	2.7	1.2	S8.001	50.00	4.29	6.490	0.009	0.0	0.0	0.0	1.89	14.9	1.2	S9.000	50.00	4.25	6.350	0.014	0.0	0.0	0.0	0.34	2.7	1.9	S9.001	50.00	4.28	6.340	0.014	0.0	0.0	0.0	1.52	11.9	1.9	S6.002	50.00	4.48	6.162	0.073	0.0	0.0	0.0	2.63	46.5	9.9	S10.000	50.00	4.25	6.500	0.019	0.0	0.0	0.0	0.34	2.7	2.6	S10.001	50.00	4.28	6.490	0.019	0.0	0.0	0.0	3.70	29.1	2.6	S11.000	50.00	4.19	6.450	0.028	0.0	0.0	0.0	0.44	7.8	3.8	S11.001	50.00	4.23	6.440	0.028	0.0	0.0	0.0	4.08	72.1	3.8	S12.000	50.00	4.25	6.400	0.017	0.0	0.0	0.0	0.34	2.7	2.3	S12.001	50.00	4.26	6.390	0.017	0.0	0.0	0.0	4.44	34.8	2.3	S13.000	50.00	4.25	6.250	0.014	0.0	0.0	0.0	0.34	2.7	1.9	S13.001	50.00	4.26	6.240	0.014	0.0	0.0	0.0	4.87	38.3	1.9	S1.005	44.36	8.10	4.588	0.432	0.0	0.0	0.0	1.03	163.9	51.9
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design																																																																																																																																																																																																																																																																																																																																																									
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S9.000	50.00	4.25	6.350	0.014	0.0	0.0	0.0	0.34	2.7	1.9																																																																																																																																																																																																																																																																																																																																																										
S9.001	50.00	4.28	6.340	0.014	0.0	0.0	0.0	1.52	11.9	1.9																																																																																																																																																																																																																																																																																																																																																										
S6.002	50.00	4.48	6.162	0.073	0.0	0.0	0.0	2.63	46.5	9.9																																																																																																																																																																																																																																																																																																																																																										
S10.000	50.00	4.25	6.500	0.019	0.0	0.0	0.0	0.34	2.7	2.6																																																																																																																																																																																																																																																																																																																																																										
S10.001	50.00	4.28	6.490	0.019	0.0	0.0	0.0	3.70	29.1	2.6																																																																																																																																																																																																																																																																																																																																																										
S11.000	50.00	4.19	6.450	0.028	0.0	0.0	0.0	0.44	7.8	3.8																																																																																																																																																																																																																																																																																																																																																										
S11.001	50.00	4.23	6.440	0.028	0.0	0.0	0.0	4.08	72.1	3.8																																																																																																																																																																																																																																																																																																																																																										
S12.000	50.00	4.25	6.400	0.017	0.0	0.0	0.0	0.34	2.7	2.3																																																																																																																																																																																																																																																																																																																																																										
S12.001	50.00	4.26	6.390	0.017	0.0	0.0	0.0	4.44	34.8	2.3																																																																																																																																																																																																																																																																																																																																																										
S13.000	50.00	4.25	6.250	0.014	0.0	0.0	0.0	0.34	2.7	1.9																																																																																																																																																																																																																																																																																																																																																										
S13.001	50.00	4.26	6.240	0.014	0.0	0.0	0.0	4.87	38.3	1.9																																																																																																																																																																																																																																																																																																																																																										
S1.005	44.36	8.10	4.588	0.432	0.0	0.0	0.0	1.03	163.9	51.9																																																																																																																																																																																																																																																																																																																																																										
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Odyssey Markides LLP										Page 4	
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH						
XP Solutions					Network 2020.1						
Network Design Table for SW Network											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S14.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S14.001	9.808	1.453	6.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S15.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit	
S15.001	5.470	1.303	4.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S16.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S16.001	12.229	1.303	9.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S14.002	17.458	0.175	99.8	0.024	0.00	0.0	0.600	o	150	Pipe/Conduit	
S17.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S17.001	4.927	1.278	3.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S18.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S18.001	3.331	1.078	3.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.006	30.144	0.078	386.5	0.025	0.00	0.0	0.600	o	450	Pipe/Conduit	
S19.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S19.001	8.789	1.306	6.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S20.000	5.000	0.010	500.0	0.023	4.00	0.0	0.600	o	150	Pipe/Conduit	
Network Results Table											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
S14.000	50.00	4.19	6.350	0.020	0.0	0.0	0.0	0.44	7.8	2.7	
S14.001	50.00	4.23	6.340	0.020	0.0	0.0	0.0	3.90	69.0	2.7	
S15.000	50.00	4.25	6.250	0.011	0.0	0.0	0.0	0.34	2.7	1.5	
S15.001	50.00	4.27	6.240	0.011	0.0	0.0	0.0	3.80	29.9	1.5	
S16.000	50.00	4.25	6.250	0.010	0.0	0.0	0.0	0.34	2.7	1.4	
S16.001	50.00	4.33	6.240	0.010	0.0	0.0	0.0	2.54	19.9	1.4	
S14.002	50.00	4.62	4.887	0.065	0.0	0.0	0.0	1.01	17.8	8.9	
S17.000	50.00	4.19	6.000	0.020	0.0	0.0	0.0	0.44	7.8	2.7	
S17.001	50.00	4.20	5.990	0.020	0.0	0.0	0.0	5.17	91.4	2.7	
S18.000	50.00	4.25	5.850	0.019	0.0	0.0	0.0	0.34	2.7	2.6	
S18.001	50.00	4.26	5.840	0.019	0.0	0.0	0.0	4.43	34.8	2.6	
S1.006	42.76	8.59	4.412	0.562	0.0	0.0	0.0	1.03	163.5	65.0	
S19.000	50.00	4.25	6.000	0.013	0.0	0.0	0.0	0.34	2.7	1.8	
S19.001	50.00	4.30	5.990	0.013	0.0	0.0	0.0	3.00	23.6	1.8	
S20.000	50.00	4.19	5.800	0.023	0.0	0.0	0.0	0.44	7.8	3.1	
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Odyssey Markides LLP										Page 5	
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH						
XP Solutions					Network 2020.1						
Network Design Table for SW Network											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S20.001	7.013	1.156	6.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S21.000	4.661	0.116	40.2	0.020	4.00	0.0	0.600	o	450	Pipe/Conduit	
S1.007	21.970	0.059	372.4	0.032	0.00	0.0	0.600	o	450	Pipe/Conduit	
S22.000	4.998	0.010	499.8	0.027	4.00	0.0	0.600	o	150	Pipe/Conduit	
S22.001	4.924	0.584	8.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S22.002	13.744	1.131	12.2	0.034	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.008	5.222	0.055	94.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.009	5.239	0.052	100.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S23.000	4.998	0.010	499.8	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S23.001	6.863	0.450	15.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S24.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S24.001	4.482	0.250	17.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S25.000	5.000	0.010	500.0	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S25.001	3.330	0.250	13.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.002	48.237	0.846	57.0	0.061	0.00	0.0	0.600	o	150	Pipe/Conduit	
Network Results Table											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
S20.001	50.00	4.22	5.790	0.023	0.0	0.0	0.0	4.12	72.8	3.1	
S21.000	50.00	4.02	4.450	0.020	0.0	0.0	0.0	3.22	511.3	2.7	
S1.007	41.70	8.94	4.334	0.650	0.0	0.0	0.0	1.05	166.6	73.4	
S22.000	50.00	4.19	6.300	0.027	0.0	0.0	0.0	0.44	7.8	3.7	
S22.001	50.00	4.21	6.290	0.027	0.0	0.0	0.0	3.49	61.7	3.7	
S22.002	50.00	4.27	5.631	0.061	0.0	0.0	0.0	3.77	150.1	8.2	
S1.008	41.46	9.02	4.275	0.710	0.0	0.0	0.0	1.03	18.2«	79.8	
S1.009	41.21	9.11	4.220	0.710	0.0	0.0	0.0	1.00	17.8«	79.8	
S23.000	50.00	4.25	6.700	0.016	0.0	0.0	0.0	0.34	2.7	2.2	
S23.001	50.00	4.30	6.690	0.016	0.0	0.0	0.0	1.99	15.6	2.2	
S24.000	50.00	4.25	6.500	0.010	0.0	0.0	0.0	0.34	2.7	1.4	
S24.001	50.00	4.29	6.490	0.010	0.0	0.0	0.0	1.83	14.4	1.4	
S25.000	50.00	4.25	6.500	0.016	0.0	0.0	0.0	0.34	2.7	2.2	
S25.001	50.00	4.27	6.490	0.016	0.0	0.0	0.0	2.13	16.7	2.2	
S23.002	50.00	4.91	6.190	0.103	0.0	0.0	0.0	1.33	23.6	13.9	
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Odyssey Markides LLP										Page 6	
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH						
XP Solutions					Network 2020.1						
<u>Network Design Table for SW Network</u>											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S26.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S26.001	5.603	0.445	12.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S27.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S27.001	2.528	0.245	10.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S28.000	4.983	0.010	500.0	0.124	4.00	0.0	0.600	o	100	Pipe/Conduit	
S28.001	6.694	0.245	27.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S26.002	36.074	0.216	167.0	0.053	0.00	0.0	0.600	o	225	Pipe/Conduit	
S29.000	5.000	0.010	500.0	0.026	4.00	0.0	0.600	o	150	Pipe/Conduit	
S29.001	10.271	0.261	39.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S26.003	7.439	0.045	167.0	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
S30.000	5.000	0.010	500.0	0.048	4.00	0.0	0.600	o	100	Pipe/Conduit	
S30.001	6.507	0.606	10.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S26.004	7.565	0.045	167.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S31.000	5.023	0.010	502.3	0.022	4.00	0.0	0.600	o	150	Pipe/Conduit	
<u>Network Results Table</u>											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
S26.000	50.00	4.19	6.350	0.020	0.0	0.0	0.0	0.44	7.8	2.7	
S26.001	50.00	4.22	6.340	0.020	0.0	0.0	0.0	2.85	50.4	2.7	
S27.000	50.00	4.25	6.200	0.013	0.0	0.0	0.0	0.34	2.7	1.8	
S27.001	50.00	4.26	6.190	0.013	0.0	0.0	0.0	2.42	19.0	1.8	
S28.000	50.00	4.25	6.200	0.124	0.0	0.0	0.0	0.34	2.7«	16.8	
S28.001	50.00	4.32	6.190	0.124	0.0	0.0	0.0	1.48	11.6«	16.8	
S26.002	50.00	4.92	5.820	0.210	0.0	0.0	0.0	1.01	40.1	28.4	
S29.000	50.00	4.19	5.950	0.026	0.0	0.0	0.0	0.44	7.8	3.5	
S29.001	50.00	4.29	5.940	0.026	0.0	0.0	0.0	1.61	28.4	3.5	
S26.003	50.00	5.04	5.604	0.250	0.0	0.0	0.0	1.01	40.1	33.9	
S30.000	50.00	4.25	6.300	0.048	0.0	0.0	0.0	0.34	2.7«	6.5	
S30.001	50.00	4.29	6.290	0.048	0.0	0.0	0.0	2.37	18.6	6.5	
S26.004	50.00	5.17	5.559	0.298	0.0	0.0	0.0	1.01	40.1«	40.4	
S31.000	50.00	4.19	6.250	0.022	0.0	0.0	0.0	0.44	7.8	3.0	
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Odyssey Markides LLP										Page 7	
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH						
XP Solutions					Network 2020.1						
Network Design Table for SW Network											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S31.001	3.305	0.651	5.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S32.000	5.000	0.010	500.0	0.020	4.00	0.0	0.600	o	150	Pipe/Conduit	
S32.001	4.481	0.601	7.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S26.005	58.355	0.245	238.2	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	
S33.000	4.999	0.010	499.9	0.026	4.00	0.0	0.600	o	150	Pipe/Conduit	
S33.001	7.886	0.796	9.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S34.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S34.001	3.330	0.396	8.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S23.003	27.089	0.070	387.0	0.039	0.00	0.0	0.600	o	450	Pipe/Conduit	
S35.000	5.000	0.010	500.0	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit	
S35.001	8.153	0.390	20.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S36.000	5.000	0.010	500.0	0.007	4.00	0.0	0.600	o	100	Pipe/Conduit	
S36.001	6.282	0.340	18.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S37.000	5.000	0.010	500.0	0.028	4.00	0.0	0.600	o	150	Pipe/Conduit	
S37.001	5.520	0.340	16.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Network Results Table											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
S31.001	50.00	4.20	6.240	0.022	0.0	0.0	0.0	4.50	79.6	3.0	
S32.000	50.00	4.19	6.200	0.020	0.0	0.0	0.0	0.44	7.8	2.7	
S32.001	50.00	4.21	6.190	0.020	0.0	0.0	0.0	3.71	65.6	2.7	
S26.005	50.00	6.12	5.439	0.375	0.0	0.0	0.0	1.01	71.7	50.8	
S33.000	50.00	4.19	6.150	0.026	0.0	0.0	0.0	0.44	7.8	3.5	
S33.001	50.00	4.23	6.140	0.026	0.0	0.0	0.0	3.22	56.9	3.5	
S34.000	50.00	4.25	5.800	0.013	0.0	0.0	0.0	0.34	2.7	1.8	
S34.001	50.00	4.27	5.790	0.013	0.0	0.0	0.0	2.68	21.1	1.8	
S23.003	50.00	6.56	5.044	0.556	0.0	0.0	0.0	1.03	163.4	75.3	
S35.000	50.00	4.25	6.250	0.016	0.0	0.0	0.0	0.34	2.7	2.2	
S35.001	50.00	4.33	6.240	0.016	0.0	0.0	0.0	1.70	13.3	2.2	
S36.000	50.00	4.25	6.200	0.007	0.0	0.0	0.0	0.34	2.7	0.9	
S36.001	50.00	4.30	6.190	0.007	0.0	0.0	0.0	1.81	14.2	0.9	
S37.000	50.00	4.19	6.150	0.028	0.0	0.0	0.0	0.44	7.8	3.8	
S37.001	50.00	4.22	6.140	0.028	0.0	0.0	0.0	2.51	44.4	3.8	
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Odyssey Markides LLP										Page 8		
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton							
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH							
XP Solutions					Network 2020.1							
Network Design Table for SW Network												
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section	Type	Auto Design
S35.002	45.251	0.190	238.2	0.020	0.00	0.0	0.600	o	300	Pipe/Conduit		
S38.000	5.000	0.010	500.0	0.015	4.00	0.0	0.600	o	100	Pipe/Conduit		
S38.001	8.613	0.280	30.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S39.000	4.999	0.010	499.9	0.016	4.00	0.0	0.600	o	100	Pipe/Conduit		
S39.001	6.870	0.230	29.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S40.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit		
S40.001	6.179	0.230	26.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S35.003	27.325	0.114	239.7	0.051	0.00	0.0	0.600	o	300	Pipe/Conduit		
S35.004	12.022	0.051	235.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S35.005	12.930	0.054	238.0	0.013	0.00	0.0	0.600	o	300	Pipe/Conduit		
S41.000	5.004	0.010	500.4	0.009	4.00	0.0	0.600	o	100	Pipe/Conduit		
S41.001	5.506	0.749	7.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
S35.006	11.368	0.048	238.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		
S42.000	5.000	0.010	500.0	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit		
S42.001	5.464	0.597	9.2	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		
Network Results Table												
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)		
S35.002	50.00	5.07	5.650	0.071	0.0	0.0	0.0	1.01	71.7	9.6		
S38.000	50.00	4.25	5.950	0.015	0.0	0.0	0.0	0.34	2.7	2.0		
S38.001	50.00	4.35	5.940	0.015	0.0	0.0	0.0	1.40	11.0	2.0		
S39.000	50.00	4.25	5.900	0.016	0.0	0.0	0.0	0.34	2.7	2.2		
S39.001	50.00	4.33	5.890	0.016	0.0	0.0	0.0	1.42	11.1	2.2		
S40.000	50.00	4.25	5.900	0.017	0.0	0.0	0.0	0.34	2.7	2.3		
S40.001	50.00	4.32	5.890	0.017	0.0	0.0	0.0	1.49	11.7	2.3		
S35.003	50.00	5.52	5.460	0.170	0.0	0.0	0.0	1.01	71.5	23.0		
S35.004	50.00	5.72	5.346	0.170	0.0	0.0	0.0	1.02	72.1	23.0		
S35.005	50.00	5.93	5.295	0.183	0.0	0.0	0.0	1.01	71.7	24.8		
S41.000	50.00	4.25	6.200	0.009	0.0	0.0	0.0	0.34	2.6	1.2		
S41.001	50.00	4.28	6.190	0.009	0.0	0.0	0.0	2.87	22.5	1.2		
S35.006	50.00	6.12	5.241	0.192	0.0	0.0	0.0	1.01	71.7	26.0		
S42.000	50.00	4.25	6.000	0.008	0.0	0.0	0.0	0.34	2.7	1.1		
S42.001	50.00	4.28	5.990	0.008	0.0	0.0	0.0	2.57	20.2	1.1		
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Odyssey Markides LLP										Page 9																																																																																																																																																																																																																																																																																																																																																										
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<u>Network Design Table for SW Network</u> <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>S43.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.011</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S43.001</td><td>3.343</td><td>0.397</td><td>8.4</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S35.007</td><td>17.921</td><td>0.047</td><td>385.0</td><td>0.021</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S35.008</td><td>7.799</td><td>0.022</td><td>354.5</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S23.004</td><td>10.873</td><td>0.028</td><td>388.3</td><td>0.007</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S44.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.011</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S44.001</td><td>4.383</td><td>0.494</td><td>8.9</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S23.005</td><td>8.998</td><td>0.029</td><td>310.3</td><td>0.032</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S45.000</td><td>5.002</td><td>0.010</td><td>500.2</td><td>0.018</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S45.001</td><td>6.193</td><td>0.330</td><td>18.8</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S46.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.010</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S46.001</td><td>5.420</td><td>0.330</td><td>16.4</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S45.002</td><td>28.743</td><td>0.172</td><td>167.1</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>225</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S47.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.017</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr></table> <u>Network Results Table</u> <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>S43.000</td><td>50.00</td><td>4.25</td><td>5.800</td><td>0.011</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.5</td></tr><tr><td>S43.001</td><td>50.00</td><td>4.27</td><td>5.790</td><td>0.011</td><td>0.0</td><td>0.0</td><td>0.0</td><td>2.68</td><td>21.1</td><td>1.5</td></tr><tr><td>S35.007</td><td>50.00</td><td>6.41</td><td>5.043</td><td>0.231</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.03</td><td>163.8</td><td>31.3</td></tr><tr><td>S35.008</td><td>50.00</td><td>6.53</td><td>4.996</td><td>0.231</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.07</td><td>170.8</td><td>31.3</td></tr><tr><td>S23.004</td><td>49.77</td><td>6.74</td><td>4.974</td><td>0.794</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.03</td><td>163.1</td><td>107.1</td></tr><tr><td>S44.000</td><td>50.00</td><td>4.25</td><td>5.800</td><td>0.011</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.5</td></tr><tr><td>S44.001</td><td>50.00</td><td>4.27</td><td>5.790</td><td>0.011</td><td>0.0</td><td>0.0</td><td>0.0</td><td>2.61</td><td>20.5</td><td>1.5</td></tr><tr><td>S23.005</td><td>49.17</td><td>6.87</td><td>4.946</td><td>0.838</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.15</td><td>182.7</td><td>111.6</td></tr><tr><td>S45.000</td><td>50.00</td><td>4.25</td><td>6.450</td><td>0.018</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>2.4</td></tr><tr><td>S45.001</td><td>50.00</td><td>4.30</td><td>6.440</td><td>0.018</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.79</td><td>14.1</td><td>2.4</td></tr><tr><td>S46.000</td><td>50.00</td><td>4.25</td><td>6.450</td><td>0.010</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>1.4</td></tr><tr><td>S46.001</td><td>50.00</td><td>4.29</td><td>6.440</td><td>0.010</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.92</td><td>15.0</td><td>1.4</td></tr><tr><td>S45.002</td><td>50.00</td><td>4.78</td><td>5.985</td><td>0.028</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.01</td><td>40.1</td><td>3.8</td></tr><tr><td>S47.000</td><td>50.00</td><td>4.25</td><td>6.350</td><td>0.017</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.34</td><td>2.7</td><td>2.3</td></tr></table>												PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	S43.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit		S43.001	3.343	0.397	8.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S35.007	17.921	0.047	385.0	0.021	0.00	0.0	0.600	o	450	Pipe/Conduit		S35.008	7.799	0.022	354.5	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit		S23.004	10.873	0.028	388.3	0.007	0.00	0.0	0.600	o	450	Pipe/Conduit		S44.000	5.000	0.010	500.0	0.011	4.00	0.0	0.600	o	100	Pipe/Conduit		S44.001	4.383	0.494	8.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S23.005	8.998	0.029	310.3	0.032	0.00	0.0	0.600	o	450	Pipe/Conduit		S45.000	5.002	0.010	500.2	0.018	4.00	0.0	0.600	o	100	Pipe/Conduit		S45.001	6.193	0.330	18.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S46.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit		S46.001	5.420	0.330	16.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S45.002	28.743	0.172	167.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		S47.000	5.000	0.010	500.0	0.017	4.00	0.0	0.600	o	100	Pipe/Conduit		PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	S43.000	50.00	4.25	5.800	0.011	0.0	0.0	0.0	0.34	2.7	1.5	S43.001	50.00	4.27	5.790	0.011	0.0	0.0	0.0	2.68	21.1	1.5	S35.007	50.00	6.41	5.043	0.231	0.0	0.0	0.0	1.03	163.8	31.3	S35.008	50.00	6.53	4.996	0.231	0.0	0.0	0.0	1.07	170.8	31.3	S23.004	49.77	6.74	4.974	0.794	0.0	0.0	0.0	1.03	163.1	107.1	S44.000	50.00	4.25	5.800	0.011	0.0	0.0	0.0	0.34	2.7	1.5	S44.001	50.00	4.27	5.790	0.011	0.0	0.0	0.0	2.61	20.5	1.5	S23.005	49.17	6.87	4.946	0.838	0.0	0.0	0.0	1.15	182.7	111.6	S45.000	50.00	4.25	6.450	0.018	0.0	0.0	0.0	0.34	2.7	2.4	S45.001	50.00	4.30	6.440	0.018	0.0	0.0	0.0	1.79	14.1	2.4	S46.000	50.00	4.25	6.450	0.010	0.0	0.0	0.0	0.34	2.7	1.4	S46.001	50.00	4.29	6.440	0.010	0.0	0.0	0.0	1.92	15.0	1.4	S45.002	50.00	4.78	5.985	0.028	0.0	0.0	0.0	1.01	40.1	3.8	S47.000	50.00	4.25	6.350	0.017	0.0	0.0	0.0	0.34	2.7	2.3
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design																																																																																																																																																																																																																																																																																																																																																									
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S43.001	3.343	0.397	8.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
S35.007	17.921	0.047	385.0	0.021	0.00	0.0	0.600	o	450	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
S35.008	7.799	0.022	354.5	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
S23.004	10.873	0.028	388.3	0.007	0.00	0.0	0.600	o	450	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
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S44.001	4.383	0.494	8.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
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S46.001	5.420	0.330	16.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
S45.002	28.743	0.172	167.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit																																																																																																																																																																																																																																																																																																																																																										
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PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)																																																																																																																																																																																																																																																																																																																																																										
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S35.007	50.00	6.41	5.043	0.231	0.0	0.0	0.0	1.03	163.8	31.3																																																																																																																																																																																																																																																																																																																																																										
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S44.001	50.00	4.27	5.790	0.011	0.0	0.0	0.0	2.61	20.5	1.5																																																																																																																																																																																																																																																																																																																																																										
S23.005	49.17	6.87	4.946	0.838	0.0	0.0	0.0	1.15	182.7	111.6																																																																																																																																																																																																																																																																																																																																																										
S45.000	50.00	4.25	6.450	0.018	0.0	0.0	0.0	0.34	2.7	2.4																																																																																																																																																																																																																																																																																																																																																										
S45.001	50.00	4.30	6.440	0.018	0.0	0.0	0.0	1.79	14.1	2.4																																																																																																																																																																																																																																																																																																																																																										
S46.000	50.00	4.25	6.450	0.010	0.0	0.0	0.0	0.34	2.7	1.4																																																																																																																																																																																																																																																																																																																																																										
S46.001	50.00	4.29	6.440	0.010	0.0	0.0	0.0	1.92	15.0	1.4																																																																																																																																																																																																																																																																																																																																																										
S45.002	50.00	4.78	5.985	0.028	0.0	0.0	0.0	1.01	40.1	3.8																																																																																																																																																																																																																																																																																																																																																										
S47.000	50.00	4.25	6.350	0.017	0.0	0.0	0.0	0.34	2.7	2.3																																																																																																																																																																																																																																																																																																																																																										
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Odyssey Markides LLP		Page 10
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	

Network Design Table for SW Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S47.001	7.936	0.402	19.7	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S48.000	5.000	0.010	500.0	0.015	4.00	0.0	0.600	o	100	Pipe/Conduit	
S48.001	6.040	0.302	20.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S49.000	4.992	0.010	499.2	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S49.001	5.271	0.302	17.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S45.003	52.563	0.315	166.9	0.041	0.00	0.0	0.600	o	225	Pipe/Conduit	
S50.000	5.000	0.010	500.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit	
S50.001	8.947	0.367	24.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S45.004	8.967	0.038	238.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S45.005	10.913	0.046	238.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S51.000	5.000	0.010	500.0	0.007	4.00	0.0	0.600	o	100	Pipe/Conduit	
S51.001	5.665	0.301	18.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S45.006	10.494	0.044	238.5	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	
S52.000	5.000	0.010	500.0	0.010	4.00	0.0	0.600	o	100	Pipe/Conduit	
S52.001	7.810	0.595	13.1	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S47.001	50.00	4.32	6.340	0.017	0.0	0.0	0.0	1.75	13.7	2.3
S48.000	50.00	4.25	6.250	0.015	0.0	0.0	0.0	0.34	2.7	2.0
S48.001	50.00	4.30	6.240	0.015	0.0	0.0	0.0	1.73	13.6	2.0
S49.000	50.00	4.25	6.250	0.013	0.0	0.0	0.0	0.34	2.7	1.8
S49.001	50.00	4.29	6.240	0.013	0.0	0.0	0.0	1.86	14.6	1.8
S45.003	50.00	5.65	5.813	0.114	0.0	0.0	0.0	1.01	40.1	15.5
S50.000	50.00	4.25	6.000	0.014	0.0	0.0	0.0	0.34	2.7	1.9
S50.001	50.00	4.34	5.990	0.014	0.0	0.0	0.0	1.57	12.3	1.9
S45.004	50.00	5.79	5.423	0.128	0.0	0.0	0.0	1.01	71.7	17.4
S45.005	50.00	5.97	5.385	0.128	0.0	0.0	0.0	1.01	71.7	17.4
S51.000	50.00	4.25	5.850	0.007	0.0	0.0	0.0	0.34	2.7	0.9
S51.001	50.00	4.30	5.840	0.007	0.0	0.0	0.0	1.79	14.0	0.9
S45.006	50.00	6.15	5.339	0.164	0.0	0.0	0.0	1.01	71.7	22.3
S52.000	50.00	4.25	6.100	0.010	0.0	0.0	0.0	0.34	2.7	1.4
S52.001	50.00	4.31	6.090	0.010	0.0	0.0	0.0	2.14	16.8	1.4

Odyssey Markides LLP										Page 11	
Tuscany House White Hart Lane Basingstoke RG21 4AF					Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX					Designed by SG Checked by LH						
XP Solutions					Network 2020.1						
Network Design Table for SW Network											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S53.000	5.000	0.010	500.0	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit	
S53.001	10.296	0.545	18.9	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S54.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S54.001	5.831	0.495	11.8	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S55.000	5.000	0.010	500.0	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
S55.001	5.000	0.345	14.5	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S56.000	5.000	0.010	500.0	0.019	4.00	0.0	0.600	o	100	Pipe/Conduit	
S56.001	5.482	0.245	22.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S45.007	69.027	0.179	385.0	0.026	0.00	0.0	0.600	o	450	Pipe/Conduit	
S57.000	10.506	0.114	92.2	0.000	4.00	0.0	0.600	o	450	Pipe/Conduit	
S45.008	9.072	0.024	385.0	0.027	0.00	0.0	0.600	o	450	Pipe/Conduit	
S45.009	9.664	0.025	385.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S58.000	9.673	0.133	72.7	0.000	4.00	0.0	0.600	o	450	Pipe/Conduit	
S23.006	21.017	0.055	382.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
Network Results Table											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
S53.000	50.00	4.25	6.050	0.008	0.0	0.0	0.0	0.34	2.7	1.1	
S53.001	50.00	4.34	6.040	0.008	0.0	0.0	0.0	1.79	14.0	1.1	
S54.000	50.00	4.25	6.000	0.019	0.0	0.0	0.0	0.34	2.7	2.6	
S54.001	50.00	4.29	5.990	0.019	0.0	0.0	0.0	2.26	17.8	2.6	
S55.000	50.00	4.25	5.850	0.013	0.0	0.0	0.0	0.34	2.7	1.8	
S55.001	50.00	4.29	5.840	0.013	0.0	0.0	0.0	2.04	16.0	1.8	
S56.000	50.00	4.25	5.750	0.019	0.0	0.0	0.0	0.34	2.7	2.6	
S56.001	50.00	4.30	5.740	0.019	0.0	0.0	0.0	1.64	12.9	2.6	
S45.007	47.49	7.26	5.145	0.259	0.0	0.0	0.0	1.03	163.8	33.3	
S57.000	50.00	4.08	5.080	0.000	0.0	0.0	0.0	2.12	336.9	0.0	
S45.008	46.90	7.41	4.966	0.287	0.0	0.0	0.0	1.03	163.8	36.4	
S45.009	46.28	7.57	4.942	0.287	0.0	0.0	0.0	1.03	163.8	36.4	
S58.000	50.00	4.07	5.050	0.000	0.0	0.0	0.0	2.39	379.5	0.0	
S23.006	45.03	7.91	4.917	1.124	0.0	0.0	0.0	1.03	164.4	137.1	
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Odyssey Markides LLP										Page 12																																																																																													
Tuscany House White Hart Lane Basingstoke RG21 4AF						Land South of Burndell Road, Yapton																																																																																																	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX						Designed by SG Checked by LH																																																																																																	
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<u>Network Design Table for SW Network</u> <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>S59.000</td><td>5.000</td><td>0.010</td><td>500.0</td><td>0.046</td><td>4.00</td><td>0.0</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S59.001</td><td>17.573</td><td>0.828</td><td>21.2</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S23.007</td><td>14.150</td><td>0.037</td><td>385.0</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>450</td><td>Pipe/Conduit</td><td></td></tr></table> <u>Network Results Table</u> <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>S59.000</td><td>50.00</td><td>4.19</td><td>6.000</td><td>0.046</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.44</td><td>7.8</td><td>6.2</td></tr><tr><td>S59.001</td><td>50.00</td><td>4.32</td><td>5.990</td><td>0.046</td><td>0.0</td><td>0.0</td><td>0.0</td><td>2.20</td><td>38.8</td><td>6.2</td></tr><tr><td>S23.007</td><td>44.23</td><td>8.13</td><td>4.862</td><td>1.170</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.03</td><td>163.8</td><td>140.2</td></tr></table>												PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	S59.000	5.000	0.010	500.0	0.046	4.00	0.0	0.600	o	150	Pipe/Conduit		S59.001	17.573	0.828	21.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		S23.007	14.150	0.037	385.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit		PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	S59.000	50.00	4.19	6.000	0.046	0.0	0.0	0.0	0.44	7.8	6.2	S59.001	50.00	4.32	5.990	0.046	0.0	0.0	0.0	2.20	38.8	6.2	S23.007	44.23	8.13	4.862	1.170	0.0	0.0	0.0	1.03	163.8	140.2
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design																																																																																												
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Odyssey Markides LLP				Page 13		
Tuscany House White Hart Lane Basingstoke RG21 4AF			Land South of Burndell Road, Yapton			
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX			Designed by SG Checked by LH			
XP Solutions			Network 2020.1			
Area Summary for SW Network						
Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.006	0.006	0.006
	User	-	100	0.009	0.009	0.015
1.001	User	-	100	0.008	0.008	0.008
	User	-	100	0.013	0.013	0.020
	User	-	100	0.007	0.007	0.028
	User	-	100	0.012	0.012	0.040
1.002	User	-	100	0.012	0.012	0.012
	User	-	100	0.015	0.015	0.027
	User	-	100	0.008	0.008	0.035
	User	-	100	0.014	0.014	0.049
1.003	-	-	100	0.000	0.000	0.000
2.000	-	-	100	0.009	0.009	0.009
2.001	-	-	100	0.000	0.000	0.000
3.000	-	-	100	0.019	0.019	0.019
3.001	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.024	0.024	0.024
4.001	-	-	100	0.000	0.000	0.000
5.000	User	-	100	0.013	0.013	0.013
	User	-	100	0.012	0.012	0.024
	User	-	100	0.007	0.007	0.031
1.004	User	-	100	0.007	0.007	0.007
	User	-	100	0.011	0.011	0.018
	User	-	100	0.014	0.014	0.032
	User	-	100	0.017	0.017	0.049
	User	-	100	0.011	0.011	0.061
6.000	-	-	100	0.011	0.011	0.011
6.001	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.011	0.011	0.011
7.001	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.009	0.009	0.009
8.001	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.014	0.014	0.014
9.001	-	-	100	0.000	0.000	0.000
6.002	User	-	100	0.014	0.014	0.014
	User	-	100	0.006	0.006	0.020
	User	-	100	0.008	0.008	0.028
10.000	-	-	100	0.019	0.019	0.019
10.001	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.028	0.028	0.028
11.001	-	-	100	0.000	0.000	0.000
12.000	-	-	100	0.017	0.017	0.017
12.001	-	-	100	0.000	0.000	0.000
13.000	-	-	100	0.014	0.014	0.014
13.001	-	-	100	0.000	0.000	0.000
1.005	User	-	100	0.015	0.015	0.015
	User	-	100	0.018	0.018	0.033
14.000	-	-	100	0.020	0.020	0.020
14.001	-	-	100	0.000	0.000	0.000
15.000	-	-	100	0.011	0.011	0.011
15.001	-	-	100	0.000	0.000	0.000
16.000	-	-	100	0.010	0.010	0.010
16.001	-	-	100	0.000	0.000	0.000
14.002	User	-	100	0.006	0.006	0.006
	User	-	100	0.008	0.008	0.014
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Odyssey Markides LLP			Page 14			
Tuscany House White Hart Lane Basingstoke RG21 4AF		Land South of Burndell Road, Yapton				
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX		Designed by SG Checked by LH				
XP Solutions		Network 2020.1				
Area Summary for SW Network						
Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.011	0.011	0.024
17.000	-	-	100	0.020	0.020	0.020
17.001	-	-	100	0.000	0.000	0.000
18.000	-	-	100	0.019	0.019	0.019
18.001	-	-	100	0.000	0.000	0.000
1.006	User	-	100	0.014	0.014	0.014
	User	-	100	0.011	0.011	0.025
19.000	-	-	100	0.013	0.013	0.013
19.001	-	-	100	0.000	0.000	0.000
20.000	-	-	100	0.023	0.023	0.023
20.001	-	-	100	0.000	0.000	0.000
21.000	User	-	100	0.020	0.020	0.020
1.007	User	-	100	0.014	0.014	0.014
	User	-	100	0.018	0.018	0.032
22.000	-	-	100	0.027	0.027	0.027
22.001	-	-	100	0.000	0.000	0.000
22.002	User	-	100	0.008	0.008	0.008
	User	-	100	0.014	0.014	0.022
	User	-	100	0.005	0.005	0.026
	User	-	100	0.007	0.007	0.034
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.016	0.016	0.016
23.001	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.010	0.010	0.010
24.001	-	-	100	0.000	0.000	0.000
25.000	-	-	100	0.016	0.016	0.016
25.001	-	-	100	0.000	0.000	0.000
23.002	User	-	100	0.017	0.017	0.017
	User	-	100	0.004	0.004	0.022
	User	-	100	0.013	0.013	0.035
	User	-	100	0.016	0.016	0.050
	User	-	100	0.011	0.011	0.061
26.000	-	-	100	0.020	0.020	0.020
26.001	-	-	100	0.000	0.000	0.000
27.000	-	-	100	0.013	0.013	0.013
27.001	-	-	100	0.000	0.000	0.000
28.000	-	-	100	0.124	0.124	0.124
28.001	-	-	100	0.000	0.000	0.000
26.002	User	-	100	0.015	0.015	0.015
	User	-	100	0.014	0.014	0.029
	User	-	100	0.011	0.011	0.040
	User	-	100	0.013	0.013	0.053
29.000	-	-	100	0.026	0.026	0.026
29.001	-	-	100	0.000	0.000	0.000
26.003	User	-	100	0.012	0.012	0.012
	User	-	100	0.003	0.003	0.014
30.000	-	-	100	0.048	0.048	0.048
30.001	-	-	100	0.000	0.000	0.000
26.004	-	-	100	0.000	0.000	0.000
31.000	-	-	100	0.022	0.022	0.022
31.001	-	-	100	0.000	0.000	0.000
32.000	-	-	100	0.020	0.020	0.020
32.001	-	-	100	0.000	0.000	0.000
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Odyssey Markides LLP			Page 15			
Tuscany House White Hart Lane Basingstoke RG21 4AF		Land South of Burndell Road, Yapton				
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX		Designed by SG Checked by LH				
XP Solutions		Network 2020.1				
<u>Area Summary for SW Network</u>						
Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
26.005	User	-	100	0.010	0.010	0.010
	User	-	100	0.009	0.009	0.018
	User	-	100	0.008	0.008	0.026
	User	-	100	0.009	0.009	0.035
33.000	-	-	100	0.026	0.026	0.026
33.001	-	-	100	0.000	0.000	0.000
34.000	-	-	100	0.013	0.013	0.013
34.001	-	-	100	0.000	0.000	0.000
23.003	User	-	100	0.009	0.009	0.009
	User	-	100	0.016	0.016	0.025
	User	-	100	0.014	0.014	0.039
35.000	-	-	100	0.016	0.016	0.016
35.001	-	-	100	0.000	0.000	0.000
36.000	-	-	100	0.007	0.007	0.007
36.001	-	-	100	0.000	0.000	0.000
37.000	-	-	100	0.028	0.028	0.028
37.001	-	-	100	0.000	0.000	0.000
35.002	User	-	100	0.009	0.009	0.009
	User	-	100	0.011	0.011	0.020
38.000	-	-	100	0.015	0.015	0.015
38.001	-	-	100	0.000	0.000	0.000
39.000	-	-	100	0.016	0.016	0.016
39.001	-	-	100	0.000	0.000	0.000
40.000	-	-	100	0.017	0.017	0.017
40.001	-	-	100	0.000	0.000	0.000
35.003	User	-	100	0.010	0.010	0.010
	User	-	100	0.011	0.011	0.021
	User	-	100	0.013	0.013	0.035
	User	-	100	0.016	0.016	0.051
35.004	-	-	100	0.000	0.000	0.000
35.005	User	-	100	0.006	0.006	0.006
	User	-	100	0.007	0.007	0.013
41.000	-	-	100	0.009	0.009	0.009
41.001	-	-	100	0.000	0.000	0.000
35.006	-	-	100	0.000	0.000	0.000
42.000	-	-	100	0.008	0.008	0.008
42.001	-	-	100	0.000	0.000	0.000
43.000	-	-	100	0.011	0.011	0.011
43.001	-	-	100	0.000	0.000	0.000
35.007	User	-	100	0.010	0.010	0.010
	User	-	100	0.011	0.011	0.021
35.008	-	-	100	0.000	0.000	0.000
23.004	User	-	100	0.007	0.007	0.007
44.000	-	-	100	0.011	0.011	0.011
44.001	-	-	100	0.000	0.000	0.000
23.005	User	-	100	0.016	0.016	0.016
	User	-	100	0.017	0.017	0.032
45.000	-	-	100	0.018	0.018	0.018
45.001	-	-	100	0.000	0.000	0.000
46.000	-	-	100	0.010	0.010	0.010
46.001	-	-	100	0.000	0.000	0.000
45.002	-	-	100	0.000	0.000	0.000
47.000	-	-	100	0.017	0.017	0.017
47.001	-	-	100	0.000	0.000	0.000
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Odyssey Markides LLP		Page 16
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions		
Network 2020.1		

Area Summary for SW Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
48.000	-	-	100	0.015	0.015	0.015
48.001	-	-	100	0.000	0.000	0.000
49.000	-	-	100	0.013	0.013	0.013
49.001	-	-	100	0.000	0.000	0.000
45.003	User	-	100	0.014	0.014	0.014
	User	-	100	0.017	0.017	0.031
	User	-	100	0.004	0.004	0.034
	User	-	100	0.007	0.007	0.041
50.000	-	-	100	0.014	0.014	0.014
50.001	-	-	100	0.000	0.000	0.000
45.004	-	-	100	0.000	0.000	0.000
45.005	-	-	100	0.000	0.000	0.000
51.000	-	-	100	0.007	0.007	0.007
51.001	-	-	100	0.000	0.000	0.000
45.006	User	-	100	0.018	0.018	0.018
	User	-	100	0.011	0.011	0.029
52.000	-	-	100	0.010	0.010	0.010
52.001	-	-	100	0.000	0.000	0.000
53.000	-	-	100	0.008	0.008	0.008
53.001	-	-	100	0.000	0.000	0.000
54.000	-	-	100	0.019	0.019	0.019
54.001	-	-	100	0.000	0.000	0.000
55.000	-	-	100	0.013	0.013	0.013
55.001	-	-	100	0.000	0.000	0.000
56.000	-	-	100	0.019	0.019	0.019
56.001	-	-	100	0.000	0.000	0.000
45.007	User	-	100	0.013	0.013	0.013
	User	-	100	0.013	0.013	0.026
57.000	-	-	100	0.000	0.000	0.000
45.008	User	-	100	0.014	0.014	0.014
	User	-	100	0.014	0.014	0.027
45.009	-	-	100	0.000	0.000	0.000
58.000	-	-	100	0.000	0.000	0.000
23.006	-	-	100	0.000	0.000	0.000
59.000	-	-	100	0.046	0.046	0.046
59.001	-	-	100	0.000	0.000	0.000
23.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				1.881	1.881	1.881

Free Flowing Outfall Details for SW Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.009	O_F (1)	6.992	4.168	0.000	0	0

Odyssey Markides LLP		Page 18
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	
<u>Online Controls for SW Network</u> <u>Orifice Manhole: ORI_108, DS/PN: S2.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.340 <u>Orifice Manhole: ORI_3-4, DS/PN: S3.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_1-2, DS/PN: S4.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_80, DS/PN: S6.001, Volume (m³): 1.1</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.640 <u>Orifice Manhole: ORI_75, DS/PN: S7.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.590 <u>Orifice Manhole: ORI_76, DS/PN: S8.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490 <u>Orifice Manhole: ORI_79, DS/PN: S9.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.340 <u>Orifice Manhole: ORI_7-8, DS/PN: S10.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490 <u>Orifice Manhole: ORI_5-6, DS/PN: S11.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.440 <u>Orifice Manhole: ORI_9-10, DS/PN: S12.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.390 <u>Orifice Manhole: ORI_11-12, DS/PN: S13.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_51, DS/PN: S14.001, Volume (m³): 1.2</u> Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 6.340		
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Odyssey Markides LLP		Page 19																																																																
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH																																																																	
XP Solutions Network 2020.1																																																																		
<u>Orifice Manhole: ORI_54, DS/PN: S15.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_55, DS/PN: S16.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_13-14, DS/PN: S17.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_15, DS/PN: S18.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.840 <u>Orifice Manhole: ORI_19-53, DS/PN: S19.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_18, DS/PN: S20.001, Volume (m³): 1.2</u> Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 5.790 <u>Orifice Manhole: ORI_20-21, DS/PN: S22.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.290 <u>Hydro-Brake® Optimum Manhole: S13, DS/PN: S1.008, Volume (m³): 7.6</u> <table><tr><td>Unit Reference</td><td>MD-SHE-0106-7000-2250-7000</td></tr><tr><td>Design Head (m)</td><td>2.250</td></tr><tr><td>Design Flow (l/s)</td><td>7.0</td></tr><tr><td>Flush-Flo™</td><td>Calculated</td></tr><tr><td>Objective</td><td>Minimise upstream storage</td></tr><tr><td>Application</td><td>Surface</td></tr><tr><td>Sump Available</td><td>Yes</td></tr><tr><td>Diameter (mm)</td><td>106</td></tr><tr><td>Invert Level (m)</td><td>4.275</td></tr><tr><td>Minimum Outlet Pipe Diameter (mm)</td><td>150</td></tr><tr><td>Suggested Manhole Diameter (mm)</td><td>1200</td></tr></table> <table><tr><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td></tr><tr><td>Design Point (Calculated)</td><td>2.250</td><td>7.0</td><td>Kick-Flo®</td><td>0.944</td><td>4.7</td></tr><tr><td>Flush-Flo™</td><td>0.458</td><td>5.9</td><td>Mean Flow over Head Range</td><td>-</td><td>5.6</td></tr></table> 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 <table><tr><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td></tr><tr><td>0.100</td><td>3.6</td><td>0.300</td><td>5.7</td><td>0.500</td><td>5.9</td><td>0.800</td><td>5.4</td></tr><tr><td>0.200</td><td>5.2</td><td>0.400</td><td>5.9</td><td>0.600</td><td>5.8</td><td>1.000</td><td>4.8</td></tr></table>			Unit Reference	MD-SHE-0106-7000-2250-7000	Design Head (m)	2.250	Design Flow (l/s)	7.0	Flush-Flo™	Calculated	Objective	Minimise upstream storage	Application	Surface	Sump Available	Yes	Diameter (mm)	106	Invert Level (m)	4.275	Minimum Outlet Pipe Diameter (mm)	150	Suggested Manhole Diameter (mm)	1200	Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	2.250	7.0	Kick-Flo®	0.944	4.7	Flush-Flo™	0.458	5.9	Mean Flow over Head Range	-	5.6	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	3.6	0.300	5.7	0.500	5.9	0.800	5.4	0.200	5.2	0.400	5.9	0.600	5.8	1.000	4.8
Unit Reference	MD-SHE-0106-7000-2250-7000																																																																	
Design Head (m)	2.250																																																																	
Design Flow (l/s)	7.0																																																																	
Flush-Flo™	Calculated																																																																	
Objective	Minimise upstream storage																																																																	
Application	Surface																																																																	
Sump Available	Yes																																																																	
Diameter (mm)	106																																																																	
Invert Level (m)	4.275																																																																	
Minimum Outlet Pipe Diameter (mm)	150																																																																	
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Design Point (Calculated)	2.250	7.0	Kick-Flo®	0.944	4.7																																																													
Flush-Flo™	0.458	5.9	Mean Flow over Head Range	-	5.6																																																													
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																											
0.100	3.6	0.300	5.7	0.500	5.9	0.800	5.4																																																											
0.200	5.2	0.400	5.9	0.600	5.8	1.000	4.8																																																											
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Odyssey Markides LLP		Page 20
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions Network 2020.1		

Hydro-Brake® Optimum Manhole: S13, DS/PN: S1.008, Volume (m³): 7.6

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
1.200	5.2	2.400	7.2	5.000	10.2	8.000	12.7
1.400	5.6	2.600	7.5	5.500	10.7	8.500	13.1
1.600	6.0	3.000	8.0	6.000	11.1	9.000	13.5
1.800	6.3	3.500	8.6	6.500	11.5	9.500	13.8
2.000	6.6	4.000	9.2	7.000	12.0		
2.200	6.9	4.500	9.7	7.500	12.4		

Orifice Manhole: ORI_81-82, DS/PN: S23.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.690

Orifice Manhole: ORI_83, DS/PN: S24.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_84-85, DS/PN: S25.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.490

Orifice Manhole: ORI_49-50, DS/PN: S26.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.340

Orifice Manhole: ORI_48, DS/PN: S27.001, Volume (m³): 1.3

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

Orifice Manhole: ORI_56-78, DS/PN: S28.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

Orifice Manhole: ORI_46-47, DS/PN: S29.001, Volume (m³): 1.2

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.940

Orifice Manhole: ORI_41-45, DS/PN: S30.001, Volume (m³): 1.2

Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.290

Orifice Manhole: ORI_37-38, DS/PN: S31.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240

Orifice Manhole: ORI_39-40, DS/PN: S32.001, Volume (m³): 1.2

Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.190

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Odyssey Markides LLP		Page 21
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	
<u>Orifice Manhole: ORI_86-87, DS/PN: S33.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 6.140 <u>Orifice Manhole: ORI_88, DS/PN: S34.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.790 <u>Orifice Manhole: ORI_107, DS/PN: S35.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_106, DS/PN: S36.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.190 <u>Orifice Manhole: ORI_105, DS/PN: S37.001, Volume (m³): 1.2</u> Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 6.140 <u>Orifice Manhole: ORI_103-104, DS/PN: S38.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.940 <u>Orifice Manhole: ORI_102, DS/PN: S39.001, Volume (m³): 1.2</u> Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 5.890 <u>Orifice Manhole: ORI_100-101, DS/PN: S40.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.890 <u>Orifice Manhole: ORI_99, DS/PN: S41.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.190 <u>Orifice Manhole: ORI_89, DS/PN: S42.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_91, DS/PN: S43.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.790 <u>Orifice Manhole: ORI_92, DS/PN: S44.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.790 <u>Orifice Manhole: ORI_22-23, DS/PN: S45.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.440		
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Odyssey Markides LLP		Page 22
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	
<u>Orifice Manhole: ORI_24, DS/PN: S46.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.440 <u>Orifice Manhole: ORI_25-26, DS/PN: S47.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.340 <u>Orifice Manhole: ORI_27, DS/PN: S48.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_28, DS/PN: S49.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 6.240 <u>Orifice Manhole: ORI_29, DS/PN: S50.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_30, DS/PN: S51.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 5.840 <u>Orifice Manhole: ORI_33, DS/PN: S52.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.090 <u>Orifice Manhole: ORI_32, DS/PN: S53.001, Volume (m³): 1.2</u> Diameter (m) 0.010 Discharge Coefficient 0.600 Invert Level (m) 6.040 <u>Orifice Manhole: ORI_34-35, DS/PN: S54.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Orifice Manhole: ORI_36, DS/PN: S55.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.840 <u>Orifice Manhole: ORI_31, DS/PN: S56.001, Volume (m³): 1.2</u> Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 5.740 <u>Orifice Manhole: ORI_90-98, DS/PN: S59.001, Volume (m³): 1.2</u> Diameter (m) 0.015 Discharge Coefficient 0.600 Invert Level (m) 5.990 <u>Hydro-Brake® Optimum Manhole: S42, DS/PN: S23.007, Volume (m³): 6.2</u> Unit Reference MD-SHE-0097-5000-1600-5000 Design Head (m) 1.600		
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Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																																																																																													
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Storage Structures for SW Network Porous Car Park Manhole: PP_108, DS/PN: S2.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.5</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>5.0</td></tr><tr><td>Max Percolation (l/s)</td><td>4.9</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.350</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> Porous Car Park Manhole: PP_3-4, DS/PN: S3.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> Porous Car Park Manhole: PP_1-2, DS/PN: S4.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> Porous Car Park Manhole: PP_80, DS/PN: S6.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>15.0</td></tr><tr><td>Max Percolation (l/s)</td><td>12.5</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.650</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> Porous Car Park Manhole: PP_75, DS/PN: S7.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>4.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.5</td></tr><tr><td>Max Percolation (l/s)</td><td>9.4</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.600</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> Porous Car Park Manhole: PP_76, DS/PN: S8.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Invert Level (m)</td><td>6.500</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Max Percolation (l/s)</td><td>10.4</td><td>Length (m)</td><td>12.5</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Porosity</td><td>0.30</td><td>Depression Storage (mm)</td><td>5</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.5	Membrane Percolation (mm/hr)	1000	Length (m)	5.0	Max Percolation (l/s)	4.9	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.350	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	15.0	Max Percolation (l/s)	12.5	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.650	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0	Membrane Percolation (mm/hr)	1000	Length (m)	8.5	Max Percolation (l/s)	9.4	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.600	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	6.500	Membrane Percolation (mm/hr)	1000	Width (m)	3.0	Max Percolation (l/s)	10.4	Length (m)	12.5	Safety Factor	2.0	Slope (1:X)	500.0	Porosity	0.30	Depression Storage (mm)	5
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<u>Porous Car Park Manhole: PP_76, DS/PN: S8.000</u> Evaporation (mm/day) 3 Membrane Depth (mm) 300 <u>Porous Car Park Manhole: PP_79, DS/PN: S9.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.5</td></tr><tr><td>Max Percolation (l/s)</td><td>10.4</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.350</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_7-8, DS/PN: S10.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.500</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_5-6, DS/PN: S11.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.450</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_9-10, DS/PN: S12.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.400</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_11-12, DS/PN: S13.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage 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(mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.500	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.450	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.400	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation 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Invert Level (m)	6.400	Membrane Depth (mm)	300																																																																																																																																							
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																							
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																							
Max Percolation (l/s)	20.0	Slope (1:X)	500.0																																																																																																																																							
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																							
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																							
Invert Level (m)	6.250	Membrane Depth (mm)	300																																																																																																																																							
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30																																																																																																																																							
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.350																																																																																																																																							
Max Percolation (l/s)	10.0	Width (m)	3.0																																																																																																																																							
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Odyssey Markides LLP		Page 26																																																																																																																																				
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<u>Porous Car Park Manhole: PP_51, DS/PN: S14.000</u> Slope (1:X) 500.0 Evaporation (mm/day) 3 Depression Storage (mm) 5 Membrane Depth (mm) 300 <u>Porous Car Park Manhole: PP_54, DS/PN: S15.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.5</td></tr><tr><td>Max Percolation (l/s)</td><td>10.4</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_55, DS/PN: S16.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.5</td></tr><tr><td>Max Percolation (l/s)</td><td>7.1</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_13-14, DS/PN: S17.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_15, DS/PN: S18.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.5</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.5</td></tr><tr><td>Max Percolation (l/s)</td><td>13.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.850</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_19-53, DS/PN: S19.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>15.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.8</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_18, DS/PN: S20.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Safety Factor</td><td>2.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Porosity</td><td>0.30</td></tr><tr><td>Max Percolation (l/s)</td><td>10.8</td><td>Invert Level (m)</td><td>5.800</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.5	Max Percolation (l/s)	10.4	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	8.5	Max Percolation (l/s)	7.1	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.5	Membrane Percolation (mm/hr)	1000	Length (m)	8.5	Max Percolation (l/s)	13.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.850	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	15.0	Max Percolation (l/s)	20.8	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0	Membrane Percolation (mm/hr)	1000	Porosity	0.30	Max Percolation (l/s)	10.8	Invert Level (m)	5.800
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Odyssey Markides LLP		Page 27
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Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions Network 2020.1		

Porous Car Park Manhole: PP_18, DS/PN: S20.000

Width (m)	3.0	Depression Storage (mm)	5
Length (m)	13.0	Evaporation (mm/day)	3
Slope (1:X)	500.0	Membrane Depth (mm)	300

Cellular Storage Manhole: S11a, DS/PN: S21.000

Invert Level (m)	4.450	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	132.0	0.0	0.975	132.0	0.0
0.163	132.0	0.0	1.138	132.0	0.0
0.325	132.0	0.0	1.300	132.0	0.0
0.488	132.0	0.0	1.463	132.0	0.0
0.650	132.0	0.0	1.625	132.0	0.0
0.813	132.0	0.0	1.626	0.0	0.0

Porous Car Park Manhole: PP_20-21, DS/PN: S22.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	19.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.300	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_81-82, DS/PN: S23.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	9.5
Max Percolation (l/s)	13.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.700	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_83, DS/PN: S24.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	8.0
Max Percolation (l/s)	6.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

Porous Car Park Manhole: PP_84-85, DS/PN: S25.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	12.0
Max Percolation (l/s)	21.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.500	Membrane Depth (mm)	300

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<u>Porous Car Park Manhole: PP_49-50, DS/PN: S26.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>17.4</td></tr><tr><td>Max Percolation (l/s)</td><td>29.0</td><td>Slope (1:X)</td><td>723.8</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.350</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_48, DS/PN: S27.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>17.3</td></tr><tr><td>Max Percolation (l/s)</td><td>14.4</td><td>Slope (1:X)</td><td>719.6</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.200</td><td>Cap Volume Depth (m)</td><td>0.700</td></tr></table> <u>Porous Car Park Manhole: PP_56-78, DS/PN: S28.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>14.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>50.0</td></tr><tr><td>Max Percolation (l/s)</td><td>194.4</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.200</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_46-47, DS/PN: S29.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.950</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_41-45, DS/PN: S30.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>13.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>20.0</td></tr><tr><td>Max Percolation (l/s)</td><td>72.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.300</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_37-38, DS/PN: S31.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>11.5</td></tr><tr><td>Max Percolation (l/s)</td><td>19.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	17.4	Max Percolation (l/s)	29.0	Slope (1:X)	723.8	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.350	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	17.3	Max Percolation (l/s)	14.4	Slope (1:X)	719.6	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.200	Cap Volume Depth (m)	0.700	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.0	Membrane Percolation (mm/hr)	1000	Length (m)	50.0	Max Percolation (l/s)	194.4	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.200	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.950	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.0	Membrane Percolation (mm/hr)	1000	Length (m)	20.0	Max Percolation (l/s)	72.2	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.300	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	11.5	Max Percolation (l/s)	19.2	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300
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Invert Level (m)	6.350	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	17.3																																																																																																																																															
Max Percolation (l/s)	14.4	Slope (1:X)	719.6																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.200	Cap Volume Depth (m)	0.700																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	50.0																																																																																																																																															
Max Percolation (l/s)	194.4	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.200	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																															
Max Percolation (l/s)	20.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.950	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	20.0																																																																																																																																															
Max Percolation (l/s)	72.2	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.300	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	11.5																																																																																																																																															
Max Percolation (l/s)	19.2	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.250	Membrane Depth (mm)	300																																																																																																																																															
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Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																																																																																																	
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XP Solutions	Network 2020.1																																																																																																																																																	
<u>Porous Car Park Manhole: PP_39-40, DS/PN: S32.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>11.5</td></tr><tr><td>Max Percolation (l/s)</td><td>19.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.200</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_86-87, DS/PN: S33.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.150</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_88, DS/PN: S34.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.0</td></tr><tr><td>Max Percolation (l/s)</td><td>6.7</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.800</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_107, DS/PN: S35.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.5</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>7.0</td></tr><tr><td>Max Percolation (l/s)</td><td>12.6</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_106, DS/PN: S36.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>10.0</td></tr><tr><td>Max Percolation (l/s)</td><td>8.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.200</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_105, DS/PN: S37.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>6.5</td></tr><tr><td>Max Percolation (l/s)</td><td>9.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.150</td><td>Membrane Depth (mm)</td><td>300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	11.5	Max Percolation (l/s)	19.2	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.200	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.150	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	8.0	Max Percolation (l/s)	6.7	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.800	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5	Membrane Percolation (mm/hr)	1000	Length (m)	7.0	Max Percolation (l/s)	12.6	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	8.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.200	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	6.5	Max Percolation (l/s)	9.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.150	Membrane Depth (mm)	300
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	11.5																																																																																																																																															
Max Percolation (l/s)	19.2	Slope (1:X)	500.0																																																																																																																																															
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Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
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Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																															
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Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.150	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	8.0																																																																																																																																															
Max Percolation (l/s)	6.7	Slope (1:X)	500.0																																																																																																																																															
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Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
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Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.5																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	7.0																																																																																																																																															
Max Percolation (l/s)	12.6	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.250	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	10.0																																																																																																																																															
Max Percolation (l/s)	8.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.200	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	6.5																																																																																																																																															
Max Percolation (l/s)	9.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.150	Membrane Depth (mm)	300																																																																																																																																															
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Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																																																																																																	
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<u>Porous Car Park Manhole: PP_103-104, DS/PN: S38.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.5</td></tr><tr><td>Max Percolation (l/s)</td><td>20.8</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.950</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_102, DS/PN: S39.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>2.5</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>8.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.900</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_100-101, DS/PN: S40.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>10.0</td></tr><tr><td>Max Percolation (l/s)</td><td>13.9</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.900</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_99, DS/PN: S41.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>5.0</td></tr><tr><td>Max Percolation (l/s)</td><td>6.9</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.200</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_89, DS/PN: S42.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>6.5</td></tr><tr><td>Max Percolation (l/s)</td><td>9.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_91, DS/PN: S43.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>5.5</td></tr><tr><td>Max Percolation (l/s)</td><td>7.6</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.800</td><td>Membrane Depth (mm)</td><td>300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.5	Max Percolation (l/s)	20.8	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.950	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	2.5	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	8.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.900	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	13.9	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.900	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	5.0	Max Percolation (l/s)	6.9	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.200	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	6.5	Max Percolation (l/s)	9.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	5.5	Max Percolation (l/s)	7.6	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.800	Membrane Depth (mm)	300
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.5																																																																																																																																															
Max Percolation (l/s)	20.8	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.950	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	2.5																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																															
Max Percolation (l/s)	8.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.900	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	10.0																																																																																																																																															
Max Percolation (l/s)	13.9	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.900	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	5.0																																																																																																																																															
Max Percolation (l/s)	6.9	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.200	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	6.5																																																																																																																																															
Max Percolation (l/s)	9.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.000	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	5.5																																																																																																																																															
Max Percolation (l/s)	7.6	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.800	Membrane Depth (mm)	300																																																																																																																																															
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Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																																																																																																	
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<u>Porous Car Park Manhole: PP_92, DS/PN: S44.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>6.0</td></tr><tr><td>Max Percolation (l/s)</td><td>8.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.800</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_22-23, DS/PN: S45.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>13.0</td></tr><tr><td>Max Percolation (l/s)</td><td>21.7</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.450</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_24, DS/PN: S46.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>11.0</td></tr><tr><td>Max Percolation (l/s)</td><td>9.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.450</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_25-26, DS/PN: S47.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>20.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.350</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_27, DS/PN: S48.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.5</td></tr><tr><td>Max Percolation (l/s)</td><td>14.2</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.250</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_28, DS/PN: S49.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>10.0</td></tr><tr><td>Max Percolation (l/s)</td><td>8.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	6.0	Max Percolation (l/s)	8.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.800	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	13.0	Max Percolation (l/s)	21.7	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.450	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	11.0	Max Percolation (l/s)	9.2	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.450	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	20.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.350	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	8.5	Max Percolation (l/s)	14.2	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.250	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	8.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	6.0																																																																																																																																															
Max Percolation (l/s)	8.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.800	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	13.0																																																																																																																																															
Max Percolation (l/s)	21.7	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.450	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	11.0																																																																																																																																															
Max Percolation (l/s)	9.2	Slope (1:X)	500.0																																																																																																																																															
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Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																															
Max Percolation (l/s)	20.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.350	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	8.5																																																																																																																																															
Max Percolation (l/s)	14.2	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.250	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	10.0																																																																																																																																															
Max Percolation (l/s)	8.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
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Invert Level (m)	6.000	Membrane Depth (mm)	300																																																																																																																																															
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Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton																																																																																																																																																	
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<u>Porous Car Park Manhole: PP_29, DS/PN: S50.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>10.0</td></tr><tr><td>Max Percolation (l/s)</td><td>8.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_30, DS/PN: S51.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>4.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>10.0</td></tr><tr><td>Max Percolation (l/s)</td><td>11.1</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>5.850</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_33, DS/PN: S52.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>3.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.0</td></tr><tr><td>Max Percolation (l/s)</td><td>10.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.100</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_32, DS/PN: S53.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>8.0</td></tr><tr><td>Max Percolation (l/s)</td><td>11.1</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.050</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_34-35, DS/PN: S54.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>5.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>11.0</td></tr><tr><td>Max Percolation (l/s)</td><td>15.3</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table> <u>Porous Car Park Manhole: PP_36, DS/PN: S55.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>6.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>6.0</td></tr><tr><td>Max Percolation (l/s)</td><td>10.0</td><td>Slope (1:X)</td><td>500.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>6.000</td><td>Membrane Depth (mm)</td><td>300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	8.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	11.1	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	5.850	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	10.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.100	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	8.0	Max Percolation (l/s)	11.1	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.050	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0	Membrane Percolation (mm/hr)	1000	Length (m)	11.0	Max Percolation (l/s)	15.3	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0	Membrane Percolation (mm/hr)	1000	Length (m)	6.0	Max Percolation (l/s)	10.0	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	6.000	Membrane Depth (mm)	300
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	10.0																																																																																																																																															
Max Percolation (l/s)	8.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.000	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	10.0																																																																																																																																															
Max Percolation (l/s)	11.1	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	5.850	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	12.0																																																																																																																																															
Max Percolation (l/s)	10.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.100	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	8.0																																																																																																																																															
Max Percolation (l/s)	11.1	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.050	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	11.0																																																																																																																																															
Max Percolation (l/s)	15.3	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.000	Membrane Depth (mm)	300																																																																																																																																															
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0																																																																																																																																															
Membrane Percolation (mm/hr)	1000	Length (m)	6.0																																																																																																																																															
Max Percolation (l/s)	10.0	Slope (1:X)	500.0																																																																																																																																															
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																															
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																															
Invert Level (m)	6.000	Membrane Depth (mm)	300																																																																																																																																															
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Odyssey Markides LLP		Page 33
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions Network 2020.1		

Porous Car Park Manhole: PP_31, DS/PN: S56.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.0
Membrane Percolation (mm/hr)	1000	Length (m)	7.0
Max Percolation (l/s)	11.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	5.750	Membrane Depth (mm)	300

Cellular Storage Manhole: S23a, DS/PN: S57.000

Invert Level (m)	5.080	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	264.0	264.0	0.751	0.0	329.6
0.750	264.0	329.6			

Cellular Storage Manhole: S40a, DS/PN: S58.000

Invert Level (m)	5.050	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	208.0	208.0	1.001	0.0	276.0
1.000	208.0	276.0			

Porous Car Park Manhole: PP_90-98, DS/PN: S59.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	55.6	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	6.000	Membrane Depth (mm)	300

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Odyssey Markides LLP				Page 34			
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton			
Date 02/12/2020 15:39				Designed by SG			
File 18-070 SW Network (DD).MDX				Checked by LH			
XP Solutions				Network 2020.1			
Summary of Critical Results by Maximum Level (Rank 1) for SW Network							
Simulation Criteria							
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000							
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000							
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800							
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000							
Foul Sewage per hectare (l/s) 0.000							
Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0							
Number of Online Controls 56 Number of Storage Structures 57 Number of Real Time Controls 0							
Synthetic Rainfall Details							
Rainfall Model FEH							
FEH Rainfall Version 1999							
Site Location GB 498650 101750 SU 98650 01750							
C (1km) -0.025							
D1 (1km) 0.390							
D2 (1km) 0.245							
D3 (1km) 0.403							
E (1km) 0.310							
F (1km) 2.321							
Cv (Summer) 0.750							
Cv (Winter) 0.840							
Margin for Flood Risk Warning (mm) 300.0							
Analysis Timestep 2.5 Second Increment (Extended)							
DTS Status OFF							
DVD Status ON							
Inertia Status ON							
Profile(s) Summer and Winter							
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080							
Return Period(s) (years) 1, 30, 100							
Climate Change (%) 0, 0, 40							

Odyssey Markides LLP		Page 35
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions		Network 2020.1

Summary of Critical Results by Maximum Level (Rank 1) for SW Network

PN	US/MH Name	Surcharged Flooded		Half Drain		Pipe	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	
S1.000	S1	0.787	0.000	0.05			1.8	SURCHARGED
S1.001	S2	0.926	0.000	0.15			5.9	SURCHARGED
S1.002	S3	1.136	0.000	0.15			10.0	FLOOD RISK
S1.003	S4	1.377	0.000	0.21			21.6	FLOOD RISK
S2.000	PP_108	0.405	0.000	0.13		144	0.4	SURCHARGED
S2.001	ORI_108	0.413	0.000	0.01			0.3	SURCHARGED
S3.000	PP_3-4	0.507	0.000	0.05		883	0.2	SURCHARGED
S3.001	ORI_3-4	0.516	0.000	0.01			0.2	SURCHARGED
S4.000	PP_1-2	0.523	0.000	0.04		447	0.4	SURCHARGED
S4.001	ORI_1-2	0.533	0.000	0.01			0.4	SURCHARGED
S5.000	S5	0.806	0.000	0.05			5.0	SURCHARGED
S1.004	S6	1.407	0.000	0.12			17.8	FLOOD RISK
S6.000	PP_80	0.350	0.000	0.05		600	0.2	SURCHARGED
S6.001	ORI_80	0.359	0.000	0.01			0.1	SURCHARGED

Odyssey Markides LLP						Page 36			
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton					
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX				Designed by SG Checked by LH					
XP Solutions				Network 2020.1					
Summary of Critical Results by Maximum Level (Rank 1) for SW Network									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	
S7.000	PP_75	600 Winter	100	+40%	30/15 Summer				
S7.001	ORI_75	600 Winter	100	+40%	30/15 Summer				
S8.000	PP_76	600 Winter	100	+40%	30/30 Summer				
S8.001	ORI_76	600 Winter	100	+40%	30/15 Winter				
S9.000	PP_79	360 Winter	100	+40%	30/15 Summer				
S9.001	ORI_79	360 Winter	100	+40%	30/15 Summer				
S6.002	S7	480 Winter	100	+40%	100/360 Winter				
S10.000	PP_7-8	720 Winter	100	+40%	1/480 Winter				
S10.001	ORI_7-8	720 Winter	100	+40%	1/360 Winter				
S11.000	PP_5-6	360 Winter	100	+40%	30/15 Winter				
S11.001	ORI_5-6	360 Winter	100	+40%	30/15 Summer				
S12.000	PP_9-10	720 Winter	100	+40%	30/15 Winter				
S12.001	ORI_9-10	720 Winter	100	+40%	1/600 Winter				
S13.000	PP_11-12	720 Winter	100	+40%	30/30 Winter				
S13.001	ORI_11-12	720 Winter	100	+40%	30/30 Summer				
S1.005	S8	480 Winter	100	+40%	30/180 Winter				
S14.000	PP_51	120 Winter	100	+40%	30/15 Summer				
S14.001	ORI_51	120 Winter	100	+40%	30/15 Summer				
S15.000	PP_54	600 Winter	100	+40%	30/15 Summer				
S15.001	ORI_54	600 Winter	100	+40%	30/15 Summer				
S16.000	PP_55	240 Winter	100	+40%	30/15 Summer				
S16.001	ORI_55	240 Winter	100	+40%	30/15 Summer				
S14.002	S9	480 Winter	100	+40%	30/180 Winter				
S17.000	PP_13-14	720 Winter	100	+40%	30/30 Winter				
S17.001	ORI_13-14	720 Winter	100	+40%	30/30 Winter				
S18.000	PP_15	600 Winter	100	+40%	30/15 Summer				
S18.001	ORI_15	600 Winter	100	+40%	1/180 Winter				
S1.006	S10	480 Winter	100	+40%	30/15 Summer				
S19.000	PP_19-53	720 Winter	100	+40%	30/60 Summer				
S19.001	ORI_19-53	720 Winter	100	+40%	30/30 Winter				
S20.000	PP_18	600 Winter	100	+40%	30/15 Summer				
S20.001	ORI_18	600 Winter	100	+40%	30/15 Summer				
S21.000	S11a	480 Winter	100	+40%	30/60 Winter				
S1.007	S11	480 Winter	100	+40%	30/15 Summer				
S22.000	PP_20-21	360 Winter	100	+40%	30/15 Winter				
S22.001	ORI_20-21	360 Winter	100	+40%	30/15 Summer				
S22.002	S12	480 Winter	100	+40%	100/180 Winter				
S1.008	S13	480 Winter	100	+40%	1/15 Summer				
S1.009	SWPS	480 Winter	100	+40%					
S23.000	PP_81-82	360 Winter	100	+40%	30/15 Summer				
S23.001	ORI_81-82	360 Winter	100	+40%	30/15 Summer				
S24.000	PP_83	180 Winter	100	+40%	30/15 Summer				
S24.001	ORI_83	180 Winter	100	+40%	30/15 Summer				
S25.000	PP_84-85	720 Winter	100	+40%	30/30 Summer				
S25.001	ORI_84-85	720 Winter	100	+40%	30/15 Winter				
S23.002	S29	15 Winter	100	+40%	100/15 Summer	100/15 Summer			
S26.000	PP_49-50	720 Winter	100	+40%	30/120 Winter				
S26.001	ORI_49-50	720 Winter	100	+40%	30/120 Summer				
S27.000	PP_48	360 Winter	100	+40%	30/15 Winter				
S27.001	ORI_48	360 Winter	100	+40%	30/15 Summer				
S28.000	PP_56-78	1440 Winter	100	+40%	1/180 Winter				
S28.001	ORI_56-78	1440 Winter	100	+40%	1/120 Winter				
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Odyssey Markides LLP						Page 37			
Tuscany House White Hart Lane Basingstoke RG21 4AF			Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX			Designed by SG Checked by LH						
XP Solutions			Network 2020.1						
Summary of Critical Results by Maximum Level (Rank 1) for SW Network									
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S7.000	PP_75	7.143	0.443	0.000	0.05		530	0.2	SURCHARGED
S7.001	ORI_75	7.142	0.452	0.000	0.01			0.2	SURCHARGED
S8.000	PP_76	6.904	0.304	0.000	0.05		499	0.2	SURCHARGED
S8.001	ORI_76	6.904	0.314	0.000	0.01			0.1	SURCHARGED
S9.000	PP_79	6.869	0.419	0.000	0.11		273	0.4	SURCHARGED
S9.001	ORI_79	6.867	0.427	0.000	0.03			0.3	SURCHARGED
S6.002	S7	6.591	0.279	0.000	0.06			2.8	SURCHARGED
S10.000	PP_7-8	7.090	0.490	0.000	0.05		871	0.2	SURCHARGED
S10.001	ORI_7-8	7.089	0.499	0.000	0.01			0.2	SURCHARGED
S11.000	PP_5-6	7.048	0.448	0.000	0.07		280	0.7	SURCHARGED
S11.001	ORI_5-6	7.046	0.456	0.000	0.01			0.6	SURCHARGED
S12.000	PP_9-10	6.927	0.427	0.000	0.05		820	0.2	SURCHARGED
S12.001	ORI_9-10	6.927	0.437	0.000	0.01			0.2	SURCHARGED
S13.000	PP_11-12	6.696	0.346	0.000	0.04		748	0.1	SURCHARGED
S13.001	ORI_11-12	6.695	0.355	0.000	0.00			0.1	SURCHARGED
S1.005	S8	6.587	1.549	0.000	0.14			21.5	SURCHARGED
S14.000	PP_51	6.929	0.429	0.000	0.12		97	1.1	SURCHARGED
S14.001	ORI_51	6.927	0.437	0.000	0.02			1.0	SURCHARGED
S15.000	PP_54	6.779	0.429	0.000	0.05		480	0.2	SURCHARGED
S15.001	ORI_54	6.779	0.439	0.000	0.01			0.1	SURCHARGED
S16.000	PP_55	6.704	0.354	0.000	0.11		180	0.4	SURCHARGED
S16.001	ORI_55	6.702	0.362	0.000	0.02			0.3	SURCHARGED
S14.002	S9	6.587	1.550	0.000	0.60			10.0	SURCHARGED
S17.000	PP_13-14	6.676	0.526	0.000	0.02		946	0.2	SURCHARGED
S17.001	ORI_13-14	6.676	0.536	0.000	0.00			0.2	SURCHARGED
S18.000	PP_15	6.707	0.757	0.000	0.12		383	0.4	FLOOD RISK
S18.001	ORI_15	6.706	0.766	0.000	0.01			0.4	FLOOD RISK
S1.006	S10	6.584	1.722	0.000	0.22			30.3	SURCHARGED
S19.000	PP_19-53	6.456	0.356	0.000	0.04		797	0.1	SURCHARGED
S19.001	ORI_19-53	6.456	0.366	0.000	0.01			0.1	SURCHARGED
S20.000	PP_18	6.626	0.676	0.000	0.12		166	1.1	FLOOD RISK
S20.001	ORI_18	6.625	0.685	0.000	0.02			1.1	FLOOD RISK
S21.000	S11a	6.582	1.682	0.000	0.19		788	37.3	FLOOD RISK
S1.007	S11	6.582	1.798	0.000	0.24			33.3	FLOOD RISK
S22.000	PP_20-21	6.884	0.434	0.000	0.07		282	0.7	SURCHARGED
S22.001	ORI_20-21	6.883	0.443	0.000	0.01			0.6	SURCHARGED
S22.002	S12	6.580	0.724	0.000	0.05			5.9	SURCHARGED
S1.008	S13	6.579	2.154	0.000	0.48			7.0	SURCHARGED
S1.009	SWPS	4.294	-0.076	0.000	0.49			7.0	OK
S23.000	PP_81-82	7.212	0.412	0.000	0.11		307	0.4	SURCHARGED
S23.001	ORI_81-82	7.210	0.420	0.000	0.02			0.3	SURCHARGED
S24.000	PP_83	6.971	0.371	0.000	0.12		167	0.4	SURCHARGED
S24.001	ORI_83	6.970	0.380	0.000	0.03			0.3	SURCHARGED
S25.000	PP_84-85	6.955	0.355	0.000	0.05		820	0.2	SURCHARGED
S25.001	ORI_84-85	6.955	0.365	0.000	0.01			0.1	SURCHARGED
S23.002	S29	7.547	1.207	0.529	1.44			33.1	FLOOD
S26.000	PP_49-50	6.816	0.316	0.000	0.02		1085	0.2	SURCHARGED
S26.001	ORI_49-50	6.816	0.326	0.000	0.00			0.1	SURCHARGED
S27.000	PP_48	6.581	0.281	0.000	0.09		284	0.3	SURCHARGED
S27.001	ORI_48	6.579	0.289	0.000	0.02			0.3	SURCHARGED
S28.000	PP_56-78	6.770	0.470	0.000	0.10			0.3	SURCHARGED
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Odyssey Markides LLP						Page 38			
Tuscany House White Hart Lane Basingstoke RG21 4AF			Land South of Burndell Road, Yapton						
Date 02/12/2020 15:39			Designed by SG						
File 18-070 SW Network (DD).MDX			Checked by LH						
XP Solutions			Network 2020.1						
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>									
		Water	Surcharged	Flooded		Half Drain	Pipe		
PN	US/MH Name	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Status
S28.001	ORI_56-78	6.768	0.478	0.000	0.03			0.3	SURCHARGED

Odyssey Markides LLP		Page 39
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>		
	</	

Odyssey Markides LLP						Page 40		
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton				
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX				Designed by SG Checked by LH				
XP Solutions				Network 2020.1				
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>								
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S26.002	S25	720 Winter	100	+40%	100/15 Summer			
S29.000	PP_46-47	720 Winter	100	+40%	30/15 Winter			
S29.001	ORI_46-47	720 Winter	100	+40%	30/15 Winter			
S26.003	S26	720 Winter	100	+40%	100/15 Summer			
S30.000	PP_41-45	960 Winter	100	+40%	1/480 Winter			
S30.001	ORI_41-45	960 Winter	100	+40%	1/360 Winter			
S26.004	S27	720 Winter	100	+40%	100/15 Summer			
S31.000	PP_37-38	600 Winter	100	+40%	30/30 Winter			
S31.001	ORI_37-38	600 Winter	100	+40%	30/30 Summer			
S32.000	PP_39-40	480 Winter	100	+40%	30/30 Winter			
S32.001	ORI_39-40	480 Winter	100	+40%	30/30 Winter			
S26.005	S28	720 Winter	100	+40%	100/15 Summer			
S33.000	PP_86-87	360 Winter	100	+40%	30/15 Winter			
S33.001	ORI_86-87	360 Winter	100	+40%	30/15 Winter			
S34.000	PP_88	960 Winter	100	+40%	30/15 Summer			
S34.001	ORI_88	960 Winter	100	+40%	30/15 Summer			
S23.003	S30	720 Winter	100	+40%	30/15 Summer			
S35.000	PP_107	360 Winter	100	+40%	30/15 Summer			
S35.001	ORI_107	360 Winter	100	+40%	30/15 Summer			
S36.000	PP_106	720 Winter	100	+40%	30/30 Winter			
S36.001	ORI_106	720 Winter	100	+40%	30/30 Summer			
S37.000	PP_105	30 Winter	100	+40%	30/15 Summer			
S37.001	ORI_105	30 Winter	100	+40%	30/15 Summer			
S35.002	S31	720 Winter	100	+40%	100/15 Summer			
S38.000	PP_103-104	720 Winter	100	+40%	30/30 Winter			
S38.001	ORI_103-104	720 Winter	100	+40%	30/30 Summer			
S39.000	PP_102	960 Winter	100	+40%	30/15 Summer			
S39.001	ORI_102	960 Winter	100	+40%	30/15 Summer			
S40.000	PP_100-101	720 Winter	100	+40%	1/240 Winter			
S40.001	ORI_100-101	720 Winter	100	+40%	1/180 Winter			
S35.003	S32	720 Winter	100	+40%	100/15 Summer			
S35.004	S33	720 Winter	100	+40%	100/15 Summer			
S35.005	S34	720 Winter	100	+40%	100/15 Summer			
S41.000	PP_99	480 Winter	100	+40%	30/15 Summer			
S41.001	ORI_99	480 Winter	100	+40%	30/15 Summer			
S35.006	S35	720 Winter	100	+40%	30/15 Winter			
S42.000	PP_89	720 Winter	100	+40%	30/30 Winter			
S42.001	ORI_89	720 Winter	100	+40%	30/15 Winter			
S43.000	PP_91	720 Winter	100	+40%	30/15 Summer			
S43.001	ORI_91	720 Winter	100	+40%	1/240 Winter			
S35.007	S36	720 Winter	100	+40%	30/15 Winter			
S35.008	S37	720 Winter	100	+40%	30/15 Summer			
S23.004	S38	720 Winter	100	+40%	30/15 Summer			
S44.000	PP_92	960 Winter	100	+40%	30/15 Summer			
S44.001	ORI_92	960 Winter	100	+40%	30/15 Summer			
S23.005	S39	720 Winter	100	+40%	30/15 Summer	100/720 Winter		
S45.000	PP_22-23	720 Winter	100	+40%	30/15 Winter			
S45.001	ORI_22-23	720 Winter	100	+40%	1/600 Winter			
S46.000	PP_24	600 Winter	100	+40%	30/15 Summer			
S46.001	ORI_24	600 Winter	100	+40%	30/15 Summer			
S45.002	S15	960 Winter	100	+40%	100/480 Winter			
S47.000	PP_25-26	720 Winter	100	+40%	30/15 Winter			
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Odyssey Markides LLP							Page 41		
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton					
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX				Designed by SG Checked by LH					
XP Solutions				Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>									
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S26.002	S25	6.524	0.479	0.000	0.10			3.7	SURCHARGED
S29.000	PP_46-47	6.531	0.431	0.000	0.07		648	0.6	SURCHARGED
S29.001	ORI_46-47	6.531	0.441	0.000	0.02			0.6	SURCHARGED
S26.003	S26	6.522	0.693	0.000	0.45			13.6	SURCHARGED
S30.000	PP_41-45	6.843	0.443	0.000	0.05			0.2	SURCHARGED
S30.001	ORI_41-45	6.842	0.452	0.000	0.01			0.2	SURCHARGED
S26.004	S27	6.521	0.737	0.000	0.42			12.6	SURCHARGED
S31.000	PP_37-38	6.811	0.411	0.000	0.04		513	0.4	SURCHARGED
S31.001	ORI_37-38	6.810	0.420	0.000	0.01			0.4	SURCHARGED
S32.000	PP_39-40	6.703	0.353	0.000	0.04		457	0.3	SURCHARGED
S32.001	ORI_39-40	6.702	0.362	0.000	0.01			0.3	SURCHARGED
S26.005	S28	6.520	0.781	0.000	0.12			8.3	SURCHARGED
S33.000	PP_86-87	6.699	0.399	0.000	0.07		269	0.6	SURCHARGED
S33.001	ORI_86-87	6.697	0.407	0.000	0.01			0.6	SURCHARGED
S34.000	PP_88	6.522	0.622	0.000	0.14		612	0.5	FLOOD RISK
S34.001	ORI_88	6.522	0.632	0.000	0.02			0.4	FLOOD RISK
S23.003	S30	6.517	1.023	0.000	0.15			20.2	SURCHARGED
S35.000	PP_107	6.777	0.427	0.000	0.11		303	0.4	SURCHARGED
S35.001	ORI_107	6.775	0.435	0.000	0.03			0.3	SURCHARGED
S36.000	PP_106	6.564	0.264	0.000	0.04		522	0.1	SURCHARGED
S36.001	ORI_106	6.564	0.274	0.000	0.01			0.1	SURCHARGED
S37.000	PP_105	6.739	0.439	0.000	0.48		25	4.3	SURCHARGED
S37.001	ORI_105	6.731	0.441	0.000	0.11			3.9	SURCHARGED
S35.002	S31	6.520	0.570	0.000	0.05			3.6	SURCHARGED
S38.000	PP_103-104	6.450	0.400	0.000	0.04		1173	0.1	SURCHARGED
S38.001	ORI_103-104	6.450	0.410	0.000	0.01			0.1	SURCHARGED
S39.000	PP_102	6.522	0.522	0.000	0.18		495	0.6	SURCHARGED
S39.001	ORI_102	6.522	0.532	0.000	0.06			0.6	SURCHARGED
S40.000	PP_100-101	6.717	0.717	0.000	0.06		1038	0.2	FLOOD RISK
S40.001	ORI_100-101	6.716	0.726	0.000	0.02			0.2	FLOOD RISK
S35.003	S32	6.520	0.760	0.000	0.23			14.6	SURCHARGED
S35.004	S33	6.519	0.873	0.000	0.19			11.1	FLOOD RISK
S35.005	S34	6.518	0.923	0.000	0.20			11.7	SURCHARGED
S41.000	PP_99	6.726	0.426	0.000	0.06		452	0.2	SURCHARGED
S41.001	ORI_99	6.725	0.435	0.000	0.01			0.2	SURCHARGED
S35.006	S35	6.517	0.976	0.000	0.25			14.1	SURCHARGED
S42.000	PP_89	6.465	0.365	0.000	0.04		766	0.1	SURCHARGED
S42.001	ORI_89	6.465	0.375	0.000	0.01			0.1	SURCHARGED
S43.000	PP_91	6.560	0.660	0.000	0.06		961	0.2	FLOOD RISK
S43.001	ORI_91	6.559	0.669	0.000	0.01			0.2	FLOOD RISK
S35.007	S36	6.517	1.024	0.000	0.13			16.4	SURCHARGED
S35.008	S37	6.516	1.070	0.000	0.18			18.4	FLOOD RISK
S23.004	S38	6.516	1.092	0.000	0.38			38.8	FLOOD RISK
S44.000	PP_92	6.453	0.553	0.000	0.09		718	0.3	SURCHARGED
S44.001	ORI_92	6.453	0.563	0.000	0.02			0.3	SURCHARGED
S23.005	S39	6.515	1.119	6.210	0.33			40.6	FLOOD
S45.000	PP_22-23	6.971	0.421	0.000	0.05		875	0.2	SURCHARGED
S45.001	ORI_22-23	6.970	0.430	0.000	0.01			0.2	SURCHARGED
S46.000	PP_24	6.947	0.397	0.000	0.05		498	0.2	SURCHARGED
S46.001	ORI_24	6.947	0.407	0.000	0.01			0.1	SURCHARGED
S45.002	S15	6.518	0.308	0.000	0.02			0.6	SURCHARGED
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Odyssey Markides LLP						Page 42			
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton					
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX				Designed by SG Checked by LH					
XP Solutions				Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>									
		Water	Surcharged	Flooded		Half Drain	Pipe		
PN	US/MH	Level	Depth	Volume	Flow /	Overflow	Time	Flow	Status
	Name	(m)	(m)	(m³)	Cap.	(l/s)	(mins)	(l/s)	
S47.000	PP_25-26	6.873	0.423	0.000	0.05		837	0.2	SURCHARGED

Odyssey Markides LLP		Page 43
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>		
PN	US/MH Name	Level Exceeded
S23.005	S39	2
S45.000	PP_22-23	
S45.001	ORI_22-23	
S46.000	PP_24	
S46.001	ORI_24	
S45.002	S15	
S47.000	PP_25-26	
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Odyssey Markides LLP								Page 44	
Tuscany House White Hart Lane Basingstoke RG21 4AF				Land South of Burndell Road, Yapton					
Date 02/12/2020 15:39				Designed by SG					
File 18-070 SW Network (DD).MDX				Checked by LH					
XP Solutions				Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for SW Network</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S47.001	ORI_25-26	720 Winter	100	+40%	1/600 Winter				6.873
S48.000	PP_27	720 Winter	100	+40%	30/15 Summer				6.840
S48.001	ORI_27	720 Winter	100	+40%	1/360 Winter				6.839
S49.000	PP_28	480 Winter	100	+40%	30/240 Winter				6.690
S49.001	ORI_28	480 Winter	100	+40%	30/180 Winter				6.688
S45.003	S16	720 Winter	100	+40%	100/360 Winter				6.519
S50.000	PP_29	120 Winter	100	+40%	30/15 Summer				6.501
S50.001	ORI_29	120 Winter	100	+40%	30/15 Summer				6.498
S45.004	S18	960 Winter	100	+40%	100/15 Summer				6.526
S45.005	S19	960 Winter	100	+40%	100/15 Summer				6.524
S51.000	PP_30	960 Winter	100	+40%	30/60 Winter				6.316
S51.001	ORI_30	960 Winter	100	+40%	30/60 Winter				6.316
S45.006	S20	720 Winter	100	+40%	100/15 Summer				6.527
S52.000	PP_33	720 Winter	100	+40%	30/15 Winter				6.594
S52.001	ORI_33	720 Winter	100	+40%	30/15 Summer				6.594
S53.000	PP_32	720 Winter	100	+40%	30/60 Summer				6.448
S53.001	ORI_32	720 Winter	100	+40%	30/30 Winter				6.448
S54.000	PP_34-35	720 Winter	100	+40%	30/15 Summer				6.575
S54.001	ORI_34-35	720 Winter	100	+40%	30/15 Summer				6.575
S55.000	PP_36	960 Winter	100	+40%	1/15 Summer				6.466
S55.001	ORI_36	960 Winter	100	+40%	1/15 Summer				6.466
S56.000	PP_31	960 Winter	100	+40%	30/15 Summer				6.510
S56.001	ORI_31	960 Winter	100	+40%	30/15 Summer				6.510
S45.007	S21	720 Winter	100	+40%	100/15 Summer				6.535
S57.000	S23a	720 Winter	100	+40%	100/60 Winter				6.546
S45.008	S23	720 Winter	100	+40%	30/15 Winter				6.544
S45.009	S24	720 Winter	100	+40%	30/15 Summer				6.547
S58.000	S40a	720 Winter	100	+40%	30/480 Winter				6.560
S23.006	S40	720 Winter	100	+40%	30/15 Summer				6.558
S59.000	PP_90-98	720 Winter	100	+40%	30/60 Summer				6.599
S59.001	ORI_90-98	720 Winter	100	+40%	30/30 Winter				6.600
S23.007	S42	720 Winter	100	+40%	30/15 Summer				6.590
PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S47.001	ORI_25-26	0.433	0.000	0.01			0.2	SURCHARGED	
S48.000	PP_27	0.490	0.000	0.05		712	0.2	SURCHARGED	
S48.001	ORI_27	0.499	0.000	0.01			0.2	SURCHARGED	
S49.000	PP_28	0.340	0.000	0.10		406	0.3	SURCHARGED	
S49.001	ORI_28	0.348	0.000	0.02			0.3	SURCHARGED	
S45.003	S16	0.481	0.000	0.08			3.1	SURCHARGED	
S50.000	PP_29	0.401	0.000	0.22		115	0.7	SURCHARGED	
S50.001	ORI_29	0.408	0.000	0.05			0.6	SURCHARGED	
S45.004	S18	0.803	0.000	0.30			16.4	FLOOD RISK	
S45.005	S19	0.839	0.000	0.25			14.5	FLOOD RISK	
S51.000	PP_30	0.366	0.000	0.03		868	0.1	SURCHARGED	
S51.001	ORI_30	0.376	0.000	0.01			0.1	SURCHARGED	
S45.006	S20	0.888	0.000	0.28			15.6	FLOOD RISK	
S52.000	PP_33	0.394	0.000	0.05		665	0.2	SURCHARGED	
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Odyssey Markides LLP		Page 45
Tuscany House White Hart Lane Basingstoke RG21 4AF	Land South of Burndell Road, Yapton	
Date 02/12/2020 15:39 File 18-070 SW Network (DD).MDX	Designed by SG Checked by LH	
XP Solutions	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for SW Network

PN	US/MH Name	Surcharged		Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow	Overflow						
S52.001	ORI_33	0.404	0.000	0.01					0.1	SURCHARGED	
S53.000	PP_32	0.298	0.000	0.04				761	0.1	SURCHARGED	
S53.001	ORI_32	0.308	0.000	0.01					0.1	SURCHARGED	
S54.000	PP_34-35	0.475	0.000	0.11				643	0.4	SURCHARGED	
S54.001	ORI_34-35	0.485	0.000	0.02					0.3	SURCHARGED	
S55.000	PP_36	0.516	0.000	0.10				574	0.3	SURCHARGED	
S55.001	ORI_36	0.526	0.000	0.02					0.3	SURCHARGED	
S56.000	PP_31	0.660	0.000	0.16				744	0.5	FLOOD RISK	
S56.001	ORI_31	0.670	0.000	0.05					0.5	FLOOD RISK	
S45.007	S21	0.940	0.000	0.07					10.2	FLOOD RISK	
S57.000	S23a	1.016	0.000	0.17					32.7	FLOOD RISK	
S45.008	S23	1.128	0.000	0.29					29.0	FLOOD RISK	
S45.009	S24	1.155	0.000	0.22					21.5	FLOOD RISK	
S58.000	S40a	1.060	0.000	0.23				2191	47.1	FLOOD RISK	
S23.006	S40	1.191	0.000	0.39					51.9	FLOOD RISK	
S59.000	PP_90-98	0.449	0.000	0.04				1298	0.4	SURCHARGED	
S59.001	ORI_90-98	0.460	0.000	0.01					0.3	SURCHARGED	
S23.007	S42	1.278	0.000	0.05					5.0	FLOOD RISK	