

SuDS & Foul Drainage Technical Note

Land East of Hurst Wickham Barn, College Lane, Hurstpierpoint

- 1.1 This Technical Note has been prepared to assist with the discharge of the following planning condition:

CONDITION RECOMMENDATION C18D-SINGLE DWELLING/UNIT

The development hereby permitted shall not commence unless and until details of the proposed foul and surface water drainage and means of disposal have been submitted to and approved in writing by the local planning authority. The development shall not be occupied until all the approved drainage works have been carried out in accordance with the agreed details.

- 1.2 This SuDS & Foul Drainage Technical Note should be read in conjunction with GTA Civils and Transport's supporting Drainage Technical Note, dated April 2020. The background information will not be repeated here.
- 1.3 Soakage Testing to BRE365 was undertaken in April 2020 – refer to the report in Appendix A. 3 tests were carried out in a pit whose dimensions were 1.0m x 0.3m x 0.7m deep. The 3rd test was the slowest with the rate calculated as 3.37×10^{-5} m/s.
- 1.4 Southern Water's sewer records are shown in Appendix B. a 300mm dia public foul sewer runs northwards under College Lane.
- 1.5 The drainage design layout is shown in Appendix C, together with the topographic survey and levels strategy layout. There are 4 distinct areas of impermeable driveway separated by concrete baffles. These cascade to the lowest area (#4). The dwelling and garage roofs' surface water is routed to 3 cellular soakaways (A B and C). An inset of the driveway's make up is shown on the drainage design layout.
- 1.6 Drainage calculations showing the storage volume needed are shown in Appendix C. None of the structures flood.
- 1.7 Foul drainage: the development's foul effluent is routed under gravity to the nearby 300mm dia public sewer in College Lane to the west. This connection will be subject to a Section 106 application to Southern Water, as the owner of the sewerage network.
- 1.8 It is contended that the drainage design conforms with local and national drainage policies.

- End of Technical Note -

Civil Engineering - Transport Planning - Flood Risk

Appendix A

BRE Digest 365 Soil Soakage Test Report

Ref: CS/C1379

Paul Templeton
Baobab Developments
14 Grand Parade
Brighton
BN2 9QB

23rd April 2020

Re: Hurstwickham Barn, College Lane, Hurstpierpoint – Soakaway Testing – Infiltration Test Result Summary

Dear Paul

The following investigation was carried out at the above location.

1. Site Works

The purpose of the investigation was to supply soakaway test data in general accordance with BRE document 365 (Soakaway Design) at one location which would be the approximate intended location for a possible shallow infiltration device to serve a single dwelling.

The appended drawing illustrates the position of the test pit. The BRE365 pit was excavated to a depth of 0.9m in line with the approximate depth of the proposed soakaways.

The testing commenced at 13:00 on 22nd April with three tests being undertaken in accordance with BRE 365.

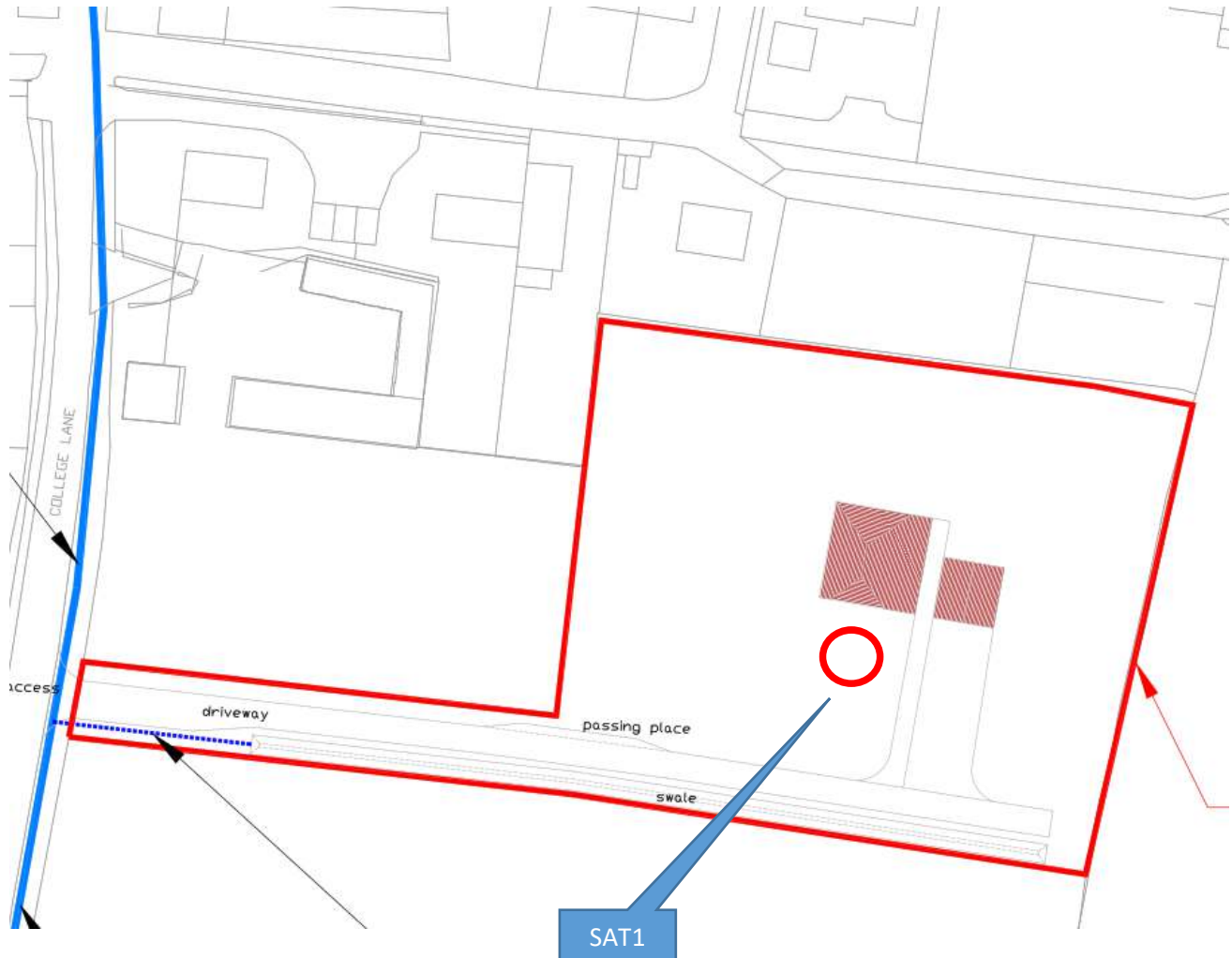
2. BRE 365 Soakaway Test Findings

Testing of the sub soils which was noted as silty sandy Clay at the base produced a BRE 365 design infiltration rate of **3.37x10⁻⁵m/s** at a depth of 0.70m. This rate was the slowest taken from all three tests. This is considered a moderate to good rate and will likely be suitable for most infiltration devices.

3. BRE 365 Soakaway Test Results

Test Pit No	Infiltration Rate (1-3 Tests)			Depth of Test	Soil Type
SAT1	4.72x10 ⁻⁵ m/s	3.93x10 ⁻⁵ m/s	3.37x10⁻⁵m/s	0.70m	Silty sandy clay

Appendix A – Soakaway Test Location Plan



Appendix B – Site Photographs





Consulting Civil Engineers

Appendix C – Soakaway Test Results



Job: College Lane, Hurstpierpoint - Test 1

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.7
Trial pit length	=	1

a_{p50} =

1.06

 m/squared

t_{p75-25} =

2100

 seconds

V_{p75-25} =

0.105

 m/cubed

F =

4.72E-05



Job: College Lane, Hurstpierpoint - Test 2

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.7
Trial pit length	=	1

a_{p50} =

1.06

 m/squared

t_{p75-25} =

2520

 seconds

V_{p75-25} =

0.105

 m/cubed

F =

3.93E-05



Job: College Lane, Hurstpierpoint - Test 3

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.7
Trial pit length	=	1

a_{p50} =

1.06

 m/squared

t_{p75-25} =

2940

 seconds

V_{p75-25} =

0.105

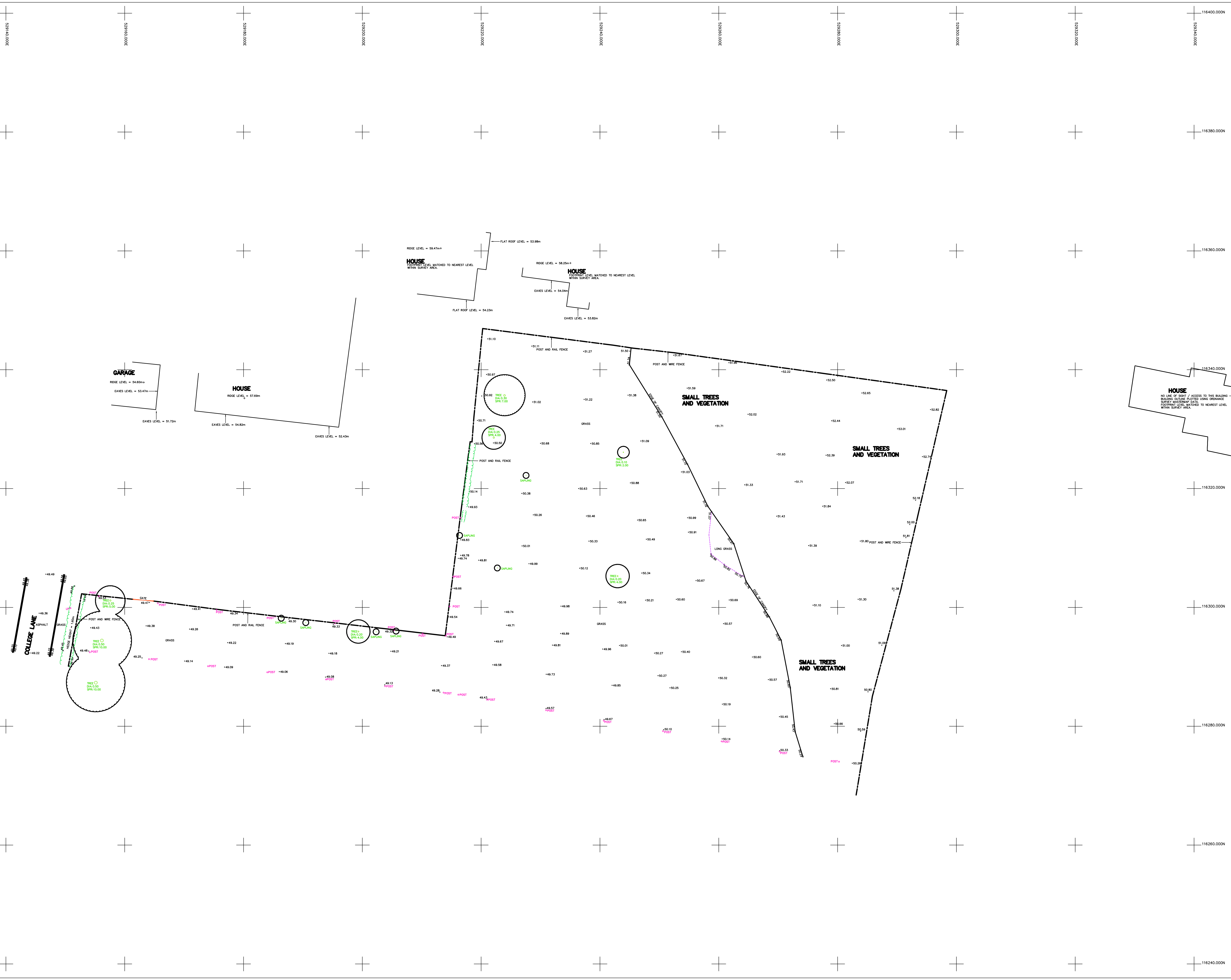
 m/cubed

F =

3.37E-05

Appendix B

Topographic Survey & Sewer Records



Topographical Abbreviations			
A/R	Assumed Route	MKR	Marker
BH	Borehole	MT	Mercury Telecom Cover
BOL	Bollard	OHC	Overhead Cable
BT	British Telecom Cover	OSP	Overhead Pipe
BW	Barbed Wire Fence	OSBM	Ordinance Survey Bench Mark
BWK	Brickwork	PB	Post Box
CATV	Cable TV Cover	PGM	Permanent Ground Marker
CB	Close Boarded Fence	PR	Post & Rail Fence
CCTV	Closed Circuit TV	PW	Post & Wire Fence
CHK	Chainlink Fence	PWM	Post & Wire Mesh Fence
CHPL	Chestnut Piling Fence	RE	Rodding Eye
CL	Cover Level	RG	Road Gully
CM	Cable Marker	RN	Road Name
CP	Catch Pit	RS	Road Sign
CPL	Catch Pit Base Level	RW	Retaining Wall
DIA	Diameter	RWP	Rain Water Pipe
DK	Drop Kerb	SAP	Sapling
DP	Down Pipe	SC	Stop Cock
ELB	Electricity Junction Box	SHR	Spread
EC	Electricity Cover	STA	Traverse Station
EP	Electricity Pole	SV	Stop Valve
ER	Earthing Rod	SVP	Soil Vent Pipe
FCL	Finished Ceiling Level	SW	Storm Water
PH	Fire Hydrant	TB	Telephone Box
FIG	Feed Into Ground	TBM	Temporary Bench Mark
FW	Foul Water	TFR	Token From Records
GU	Gully Valve	TJB	Telephone Junction Box
GV	Gas Valve	TPT	Trip Pit
H	Height	TL	Traffic Light
IC	Inspection Cover	TP	Telephone Pole
IL	Invert Level	UTL	Unable To Lift
IR	Iron Rolling Fence	UTL	Unable To Trace
KB	Kerb Outlet	VP	Vent Pipe
LB	Litter Bin	WCH	Water Key Hole
LC	Lamp Column	WM	Water Meter
LP	Lamp Post	WV	Water Valve
MH	Morphole		

Notes		
The Grid is related to OS by GPS		
All Levels are related to OS by GPS		
All dimensions are in metres unless otherwise specified		
S	-	-
4	-	-
3	-	-
2	-	-
1	-	-
0	BF	First Complete Issue
Prelim	-	Preliminary - Not Complete
Rev	QA	Check
Check	-	Description
		Date

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SURVEYED	TO	Baobab Developments
DRAWN	TO	
SCALE	1: 200	

Hurst Wickham Barn

TOPOGRAPHICAL SURVEY

JOB No	DRAWING NUMBER
S616/0312	S616/0312/P/0001

A0 Sheet - 1,189mm X 841mm

SEWER RECORDS PAGE 1 OF 2

116552



115975

528709

O.S. REF.

TQ2916SW

Title: 232482_Hurst Wickham Barn, Col

Drawn by: yadavs

Scale: 1:2500

Date: 19/01/2017

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy.
The actual positions should be determined on site.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

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Southern Water

529649

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0001X	49.91	46.77	225	VC	CIRC	8102X	56.59	53.85	150	PF	CIRC												
0002X	49.65	46.63	225	VC	CIRC	8103X	56.64	54.75	150	PF	CIRC												
0003X	50.21	48.13	150	VC	CIRC	8104X	57.97	56.04	150	PF	CIRC												
0004X	50.97	49.3	150	VC	CIRC	8201X	56.71	54.64	150	VC	CIRC												
0101X	52.03	48.57	150	VC	CIRC	8202X	56.11	54.77	150	VC	CIRC												
0102X	50.99	49.18	150	VC	CIRC	8301X	53.94	52.24	150	VC	CIRC												
0103X	51.19	49.34	150	VC	CIRC	8302X	52.84	52.44	150	VC	CIRC												
0104X	51.31	49.74	150	VC	CIRC	831PX			75	PVC	UNK												
0105X			UNK	UNK	CIRC	9101X	55.12	52.83	150	PF	CIRC												
0106X			UNK	UNK	CIRC	9102X	55.17	52.99	150	PF	CIRC												
0107X			UNK	UNK	CIRC	9201X	55.77	53.88	150	VC	CIRC												
010DX			150	VC	CIRC	9301X	55.26	52.61	150	VC	CIRC												
011DX			UNK	UNK	CIRC	9302X	55.04	52.87	150	VC	CIRC												
011LX	48.58	46.04	225	VC	CIRC	9903X	53.44	51.78	150	PF	CIRC												
013DX			UNK	UNK	CIRC																		
0201X	50.82	47.55	150	VC	CIRC																		
0202X	52.95	48.1	150	VC	CIRC																		
0203X	51.24	49.26	150	VC	CIRC																		
0301X	52.94	50.49	150	VC	CIRC																		
0302X	53.65	50.89	150	VC	CIRC																		
0303X	56.5	51.69	150	VC	CIRC																		
1101X	47.78	45.31	300	VC	CIRC																		
1102X	47.79	45.26	300	VC	CIRC																		
1201X	48.35	45.11	300	VC	CIRC																		
1202X	48.89	46.9	150	VC	CIRC																		
121LY	49.03	45.05	300	VC	CIRC																		
1301X	51.03	44.81	300	VC	CIRC																		
1302X	51.19	50.12	150	VC	CIRC																		
1303X			150	VC	CIRC																		
131DX			150	VC	CIRC																		
132DX			300	VC	CIRC																		
133DX			150	VC	CIRC																		
1401X	51.68	44.58	300	VC	CIRC																		
1402X			100	UNK	CIRC																		
141DX			100	UNK	CIRC																		
141LX	51.29	44.72	300	VC	CIRC																		
142DX			300	VC	CIRC																		
142LX	51.12	44.51	300	VC	CIRC																		
1501X	50.14	44.36	300	VC	CIRC																		
1502X			UNK	UNK	CIRC																		
1503X			UNK	UNK	CIRC																		
1504X			UNK	UNK	CIRC																		
150DX			300	VC	CIRC																		
6401X	49.64	49.64	200	VC	CIRC																		
7101X			UNK	UNK	CIRC																		
7102X			UNK	UNK	CIRC																		
7103X			UNK	UNK	CIRC																		
7104X			UNK	UNK	CIRC																		
7105X			UNK	UNK	CIRC																		
710DX			300	VC	CIRC																		
711DX			UNK	UNK	CIRC																		
711LX	53.7	53.7	300	VC	CIRC																		
713DX			300	VC	CIRC																		
71ADX			UNK	UNK	CIRC																		
7201X	59.17	53.82	150	VC	CIRC																		
7202X	58.52	54.29	150	VC	CIRC																		
720DX			UNK	UNK	CIRC																		
8001X	56.99	54.3	300	VC	CIRC																		
8002X	55.43	53.97	300	VC	CIRC																		
8003X			UNK	UNK	CIRC																		
8004X			UNK	UNK	CIRC																		
800DX			300	VC	CIRC																		
801DX			300	VC	CIRC																		
802DX			UNK	UNK	CIRC																		
8101X	55.82	53.58	150	PF	CIRC																		

LINE STYLES / COLOURS

Brown	---	Foal
Red	---	Foal Syphon Sewer
Red	---	Foal Vacuum Main
Red	---	Foal Ribs Main
Orange	---	Combined Syphon Sewer
Orange	---	Combined Ribs Main
Dark Blue	---	Treated Effluent
Purple	---	Budge
Purple	---	Sewer Catchment
Light Blue	---	Section 104 Area
Light Blue	---	Surface Water
Yellow	---	Surface Water Ribs Main
Green	---	Private
Green	---	Access Shaft
Green	---	Decommissioned

MATERIALS

AK	Alumina
BAC	Bonded Adhesive Cement
BRC	BRC (Common)
BRE	BRC (Engineering)
CC	Concrete Box Culvert
CI	Cast Iron
CO	Concrete (In-Situ)
CP	Concrete (Pre-Cast)
CSB	Concrete Segments (Bored)
CSU	Concrete Segments (Unbored)
DI	Ductile Iron
GRP	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
MAC	Masonry in regular Courses
WAR	Masonry in random Courses
PE	Polyethylene
PP	Polypropylene
PVC	Polyvinyl Chloride
RPR	Reinforced Plastic Mastic
SI	Spun Iron
ST	Steel
VC	Victrol Clay
XXX	Other
ZZZ	Unknown

Manhole (SW)	
Manhole (F&C)	
Lamp hole (SW)	
Lamp hole (F&C)	
Pumping Station (SW)	
Pumping Station (F&C)	
Side entry manhole (SW)	
Side entry manhole (F&C)	
Blind shut (SW)	
Blind shut (F&C)	
Ejector station (SW)	
Ejector station (F&C)	
Waterlight door (SW)	
Waterlight door (F&C)	
Flushing ch. Man (SW)	
Flushing ch. Man (F&C)	
Flushing ch. Man (SW)	
Flushing ch. Man (F&C)	
Damascene Chamber	

Washout (SW)	
Washout (F&C)	
Rodding Eye (SW)	
Rodding Eye (F&C)	
Gauging point (SW)	
Gauging point (F&C)	
Interest chamber (SW)	
Interest chamber (F&C)	
Storm Tank (SW)	
Storm Tank (F&C)	
Valve chamber (SW)	
Valve chamber (F&C)	
Hatch box (SW)	
Hatch box (F&C)	
Label offset	
Dummy/324 manhole	
Outlet	
Penstock chamber	
Damboards	
Storm Overflow	
Backdrop manhole	

Other (S)	
Other	
Change in sewer (S)	
Change in sewer	
Reflex valve	
Flap valve	
Cascade	
Anode	
Valve	
Close Valve	
AK Valve	
Valve chamber (SW)	
Valve chamber (F&C)	
Hatch box (SW)	
Hatch box (F&C)	
Direction arrow	
Emptying valve	
Catchpit	
Soakaway	
Inlet	
Blanking Pond	

Wastewater treatment works	
Machine treatment works	
Outlet headworks	
Vent	
Vent column	
Third storage tank	
Blank end	
Head of Public Sewer	
Micro Pumping Station	

SHAPES (S)	
A	Arch
B	Barrel
C	Circular
E	Egg
H	Horseshoe
R	Rectangular
S	Square
T	Trapezoidal
U	U Shape
X	Other

NODE REFERENCING SYSTEM	
1st digit	hundred metre numbering identifier
2nd digit	hundred metre numbering identifier
3rd digit	50m Foot Contour
4th digit	next sequential node

Drawn by: yadavs

Title: 232482_Hurst Wickham Barn, Col

Date: 19/01/2017



Appendix C

Drainage Design Layout, Levels Strategy Layout & Drainage Calculation Sheets

SPECIFICATION NOTES

All drainage shall be constructed and commissioned in accordance with BS EN 295 & BS EN752, Building Regulations Doc. H and any particular requirements of the Building Control Officer.

Drainage pipelines shall be in PVC-u below ground as Marley or similar approved, or vitrified clay.
All sewer pipelines to be VC only.

This drawing shall be read in conjunction with all other relevant drainage drawings, architectural drawings and structural drawings.

For manhole details, gully details, bedding etc, refer to gta detail sheets.

All foul water drain runs shall have a fall of 1:40 or steeper, unless noted otherwise.

All cement used for concrete drainage installations shall be sulphate resistant to class 3 of BRE Digest 363. (Grade ST5)

The use of short radius or 90° bends for changes in direction is not permitted, only long or medium radius 45° bends shall be used. All junctions shall be 45°.

All drains shall have granular bed and surround as class 'S' bedding, unless noted otherwise.

All drainage works shall commence from the upstream end first unless agreed otherwise. Outfall level to be checked by contractor prior to any works commencing and any discrepancy identified to engineer prior to laying and drainage.

DESIGN NOTES

1. CELLULAR SOAKAWAY&SWALE DESIGN BASED ON 1 IN 100 YR STORM + 40% AND MEASURED INFILTRATION RATE OF 3.37 x 10-5M/S - CGS CIVILS BRE 365 TESTING DATED 23.04.20.

2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.

3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.

4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.

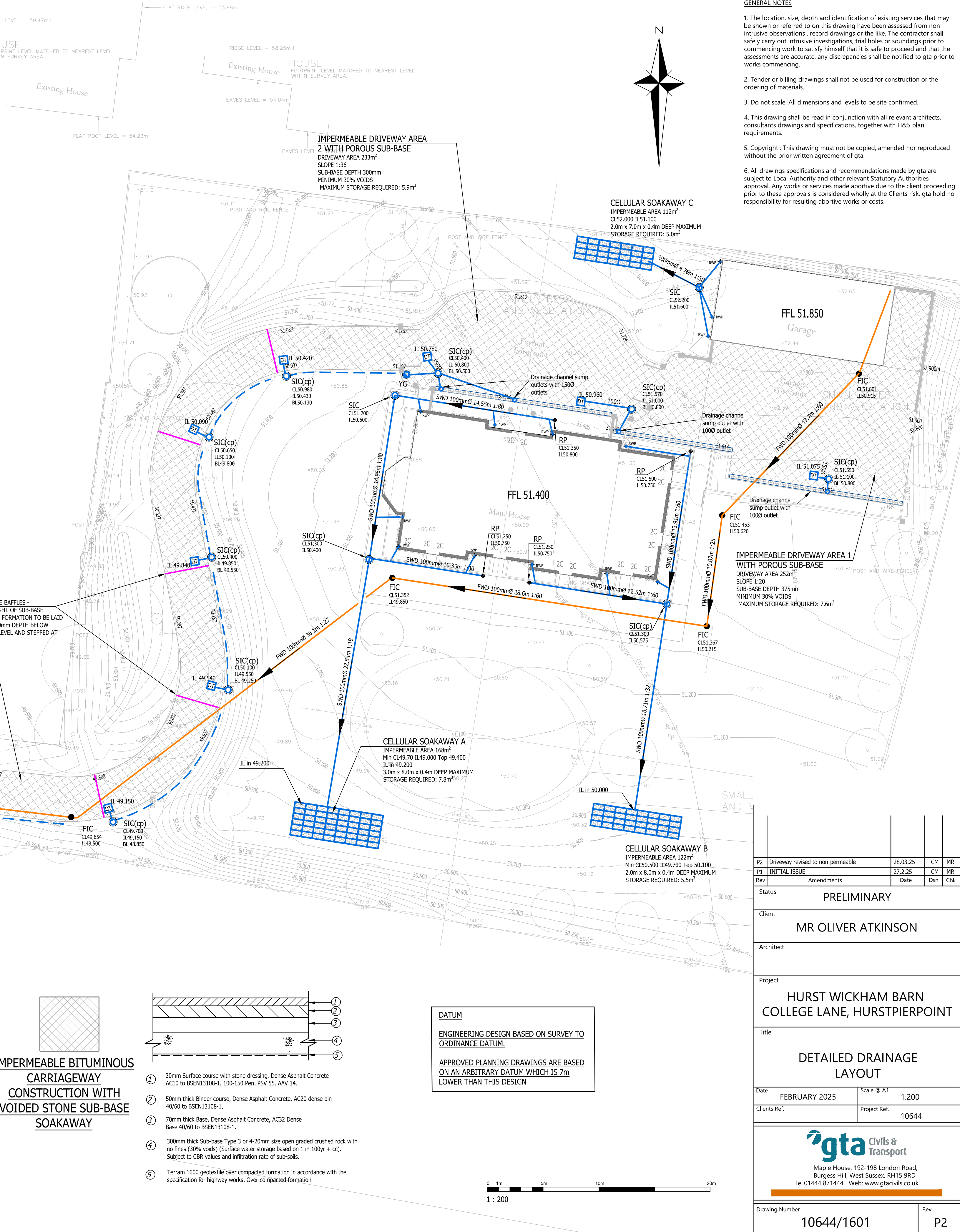
5. APPROVAL TO BE GAINED FROM SOUTHERN WATER FOR CONNECTION TO FOUL SEWER UNDER SECTION 106 APPLICATION

ABBREVIATIONS

D307.0 DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET
FD FOUL DRAIN
SWD SURFACE WATER DRAIN
FWS ADAPTABLE FOUL WATER SEWER
SWS ADAPTABLE SURFACE WATER SEWER
MH MANHOLE
IC INSPECTION CHAMBER
SA SOAKAWAY
FIC 450mm DIA. FOUL INSPECTION CHAMBER - D202.6
SIC 450mm DIA. SURFACE WATER INSPECTION CHAMBER - D202.6
FAC 300mm DIA. FOUL ACCESS CHAMBER - D202.18
SAC 300mm DIA. SURFACE WATER ACCESS CHAMBER - D202.18
CI CAST IRON
VC VITRIFIED CLAY
CONC CONCRETE
PVC-U POLY(VINYL CHLORIDE - UNPLASTICISED)
G SMALL GULLY - D209.0
YG YARD GULLY - D209.2
RG ROAD GULLY - D208.1
CPG CAR PARK GULLY - D208.2
DP BELOW GROUND DRAIN POINT
SVP SOIL VENT PIPE DROP
SS STUB STACK OR DIRECT DRAIN CONNECTION
BP EXTERNAL RODDING POINT - D213.1
DT SURFACE WATER DISTRIBUTION TANK
FFL FINISHED FLOOR LEVEL
SSL STRUCTURAL SLAB LEVEL
GL GROUND LEVEL
CL COVER LEVEL
IL INVERT LEVEL
SL SUMP LEVEL
BL BASE LEVEL
HL HIGH LEVEL
BD BACKDROP
CBS CONCRETE BED & SURROUND
CLASS S GRANULAR BED & SURROUND
CLASS B GRANULAR BED

KEY

Existing surface water drain
Existing foul water drain
Private surface water drain
Private foul drain
Foul drain point D307.0
SW Drain point for RWP D203.5
Drainage channel
Foul Plastic Inspection Chamber - D202.6
Surface Water Plastic Inspection Chamber - D202.6
300mm diameter Surface Water Access Chamber - D202.18
300mm diameter Foul Water Access Chamber - D202.18
Private Yard gully
Roddng point
Distribution/ collection tank in permeable paving sub-base
Concrete baffle in sub-base
Swale with land drain under



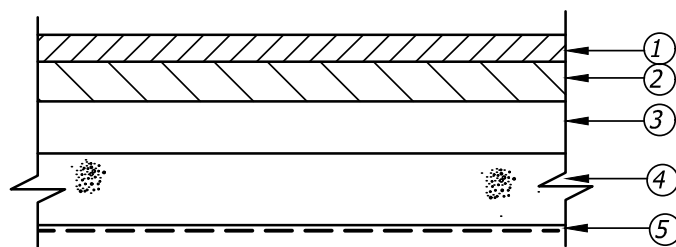
GENERAL NOTES

- The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.
- Tender or billing drawings shall not be used for construction or the ordering of materials.
- Do not scale. All dimensions and levels to be site confirmed.
- This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
- Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
- All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.

SPECIFICATION NOTES

- ALL DRAINAGE SHALL BE CONSTRUCTED AND COMMISSIONED IN ACCORDANCE WITH BS EN 295 & BS EN752, BUILDING REGULATIONS DOC. H AND ANY PARTICULAR REQUIREMENTS OF THE BUILDING CONTROL OFFICER.
- DRAIN BEDDING IS TO BE PROVIDED AS D200AB, D200.1 and D200.2 AS SHOWN ON THE DRAINAGE DETAILS SHEETS.
- 'EFFECTIVE COVER' IS THE MINIMUM DEPTH OF COVER OVER THE PIPE CROWN AT ANY TIME DURING THE CONSTRUCTION PROCESS.
- ALL CONCRETE PIPEWORK, MANHOLES AND FITTINGS SHALL BE TO BS 5911 (ALL RELEVANT PARTS). ALL CONCRETE PIPEWORK TO BE TO HIGH STRENGTH
- WHERE CONNECTIONS ARE TO BE MADE TO EXISTING MANHOLES/SEWERS, INVERT LEVELS, PIPE SIZES & ORIENTATION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY. WORK TO COMMENCE AT DOWNSTREAM END WHEREVER POSSIBLE.
- WHERE PIPELINES CROSS, EACH IS TO BE SURROUNDED WITH GRADE ST4 MASS CONCRETE FOR A DISTANCE NOT LESS THAN 1m CENTRED ON THE CROSSING POINT. LENGTH OF SURROUND TO BE EXTENDED AS NECESSARY TO WITHIN 150mm OF THE NEXT NEAREST FLEXIBLE JOINTS.
- THE CONTRACTOR IS TO ENSURE THAT PROTECTIVE MEASURES ARE TAKEN TO ENSURE THAT DRAINAGE PIPEWORK AND FITTINGS ARE NOT DAMAGED BY SITE TRAFFIC PRIOR TO OVERSITE FILLING OPERATIONS BEING COMPLETED AROUND BUILDINGS.
- ALL PRIVATE DRAINAGE PIPEWORK SHALL BE PVC-U, ALL ADOPTED DRAINAGE TO BE VC, ALL UNDERBUILDING DRAINS TO BE LAID AT A GRADIENT OF 1:40
- WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, FLEXIBLE PIPE JOINTS ARE TO PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE AND WITHIN A FURTHER 600mm TO FORM A ROCKER PIPE.
- WHERE PIPES PASS THROUGH SCREEN WALLS, FOOTINGS OR RETAINING WALLS, LINTELS ARE TO BE PROVIDED.
- WHERE PIPELINES PASS WITHIN 1m OF BUILDINGS OR WALLS THE FOUNDATIONS ARE TO BE TAKEN DOWN BELOW THE BOTTOM OF THE TRENCH
- 450mm DIA. INSPECTION CHAMBERS (FIC/SIC) MAY BE USED:
 - WITH 350mm REDUCED OPENING WHERE THE DEPTH FROM COVER TO INVERT EXCEEDS 1000mm.
- 300mm DIA. POLYPROPYLENE ACCESS CHAMBERS (FAC/SAC) MAY BE USED
 - WHERE THE DEPTH FROM COVER TO INVERT DOES NOT EXCEED 600mm AND WHERE THE PIPE SIZE DOES NOT EXCEED 100mm DIA.
- STEEL COVERS WITHIN PROPERTY BOUNDARIES SHALL BE:
 - (UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
 - ON PRIVATE DRIVEWAYS: FACTA GRADE B (BS EN ISO 1461: 1999)
 - ON PRIVATE PATHWAYS, VERGES OR ON GARDENS: FACTA GRADE A (BS EN ISO 1461: 1999)
- DUCTILE IRON COVERS OUTSIDE PROPERTY BOUNDARIES SHALL BE:
 - (UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
 - ON ACCESS ROADS AND CAR PARKS: GRADE D400 (BS EN 124:1994)
 - ON SHARED PATHWAYS, VERGES: GRADE A15 (BS EN 124:1994)
- COVER LEVELS SHOWN 'CL' AND INVERT LEVELS SHOWN 'IL' ARE IN METRES ABOVE ORDNANCE DATUM.
- ALL DRAINS TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE
- ALL DRAINS MARKED 'FWS' OR 'SWS' ARE PROPOSED ADOPTED SEWERS AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH 'SEWERAGE SECTOR GUIDANCE' (SSG)

IMPERMEABLE BITUMINOUS CARRIAGEWAY CONSTRUCTION WITH VOIDED STONE SUB-BASE SOAKAWAY



DATUM

ENGINEERING DESIGN BASED ON SURVEY TO ORDNANCE DATUM.

APPROVED PLANNING DRAWINGS ARE BASED ON AN ARBITRARY DATUM WHICH IS 7m LOWER THAN THIS DESIGN

0 1m 5m 10m 20m
1 : 200

P2	Driveway revised to non-permeable	28.03.25	CM	MR
P1	INITIAL ISSUE	27.2.25	CM	MR
Rev	Amendments	Date	Dsn	Chk
Status	PRELIMINARY			
Client	MR OLIVER ATKINSON			
Architect				
Project	HURST WICKHAM BARN COLLEGE LANE, HURSTPIERPOINT			
Title	DETAILED DRAINAGE LAYOUT			
Date	FEBRUARY 2025	Scale @ A1	1:200	
Clients Ref		Project Ref.	10644	
 Civils & Transport Maple House, 192-198 London Road, Burgess Hill, West Sussex, RH15 9RD Tel.01444 871444 Web: www.gtacivils.co.uk				
Drawing Number		Rev.		
10644/1601		P2		

SPECIFICATION NOTES

All drainage shall be constructed and commissioned in accordance with BS EN 295 & BS EN 752, Building Regulations Doc. H and any particular requirements of the Building Control Office.

Drainage pipelines shall be in PVC-u below ground as Manley or similar approved, or vitrified clay.
All sewer pipelines to be VC only.

This drawing shall be read in conjunction with all other relevant drainage drawings, architectural drawings and structural drawings.
For manhole details, gully details, bedding etc, refer to gta detail sheets.

All foul water drain runs shall have a fall of 1:40 or steeper, unless noted otherwise.

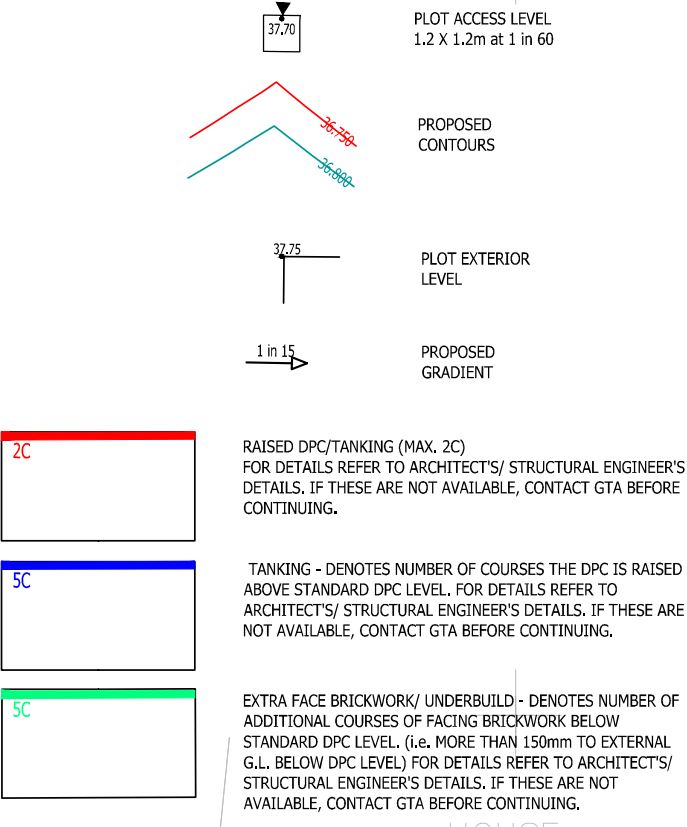
All cement used for concrete drainage installations shall be sulphate resistant to class 3 of BRE Digest 363. (Grade ST5)

The use of short radius or 90° bends for changes in direction is not permitted, only long or medium radius 45° bends shall be used. All junctions shall be 45°.

All drains shall have granular bed and surround as class 'S' bedding, unless noted otherwise.

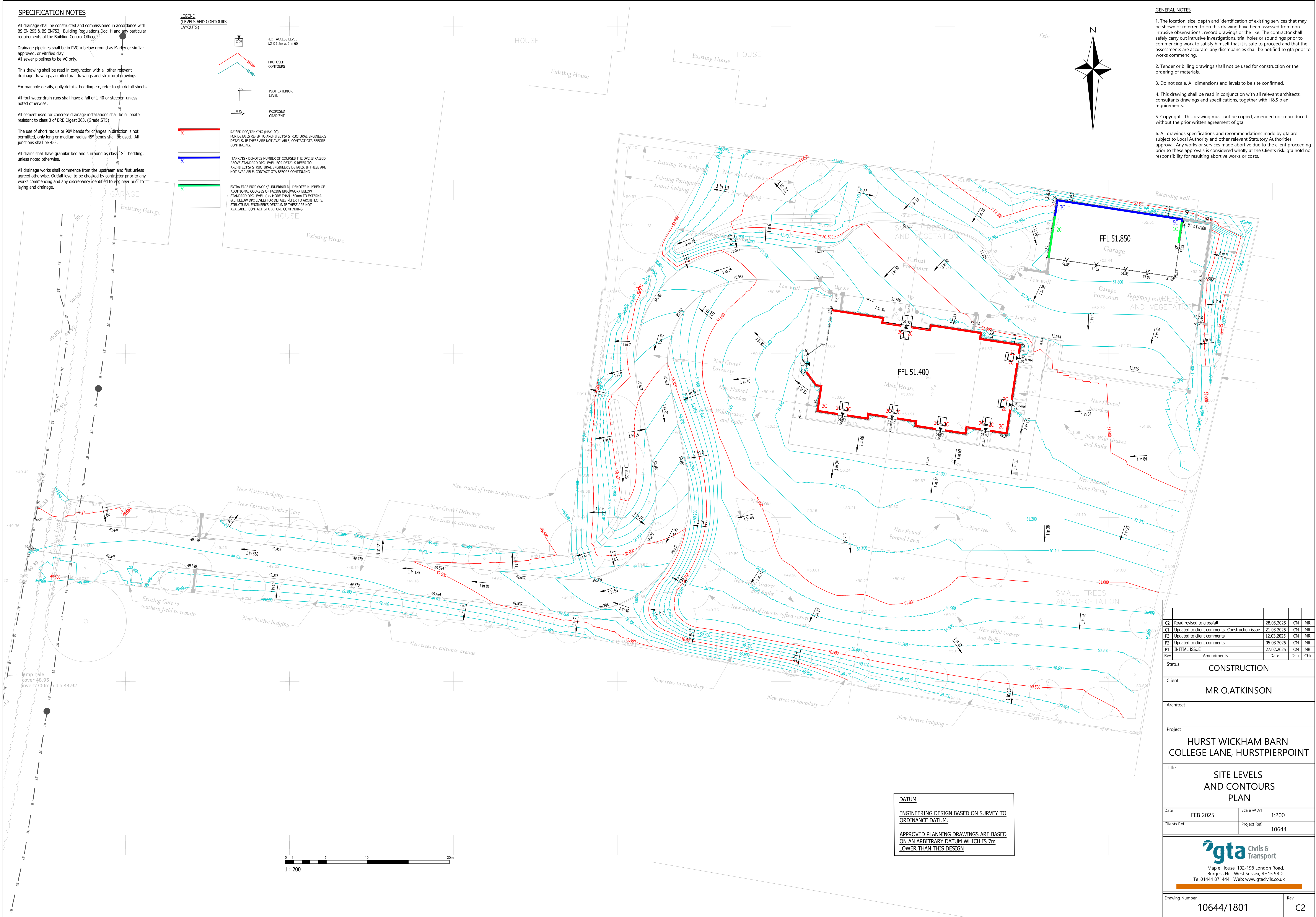
All drainage works shall commence from the upstream end first unless agreed otherwise. Outfall level to be checked by contractor prior to any works commencing and any discrepancy identified to engineer prior to laying and drainage.

LEGEND
(LEVELS AND CONTOURS
LAYOUTS)



GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.
2. Tender or billing drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
5. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.



C2	Road revised to crossfall	28.03.2025	CM	MR
C1	Updated to client comments- Construction issue	21.03.2025	CM	MR
P3	Updated to client comments	12.03.2025	CM	MR
P2	Updated to client comments	05.03.2025	CM	MR
P1	INITIAL ISSUE	27.02.2025	CM	MR
Rev	Amendments	Date	Dis	Chk

Status	CONSTRUCTION		
Client	MR O. ATKINSON		
Architect			
Project	HURST WICKHAM BARN COLLEGE LANE, HURSTPIERPOINT		
Title	SITE LEVELS AND CONTOURS PLAN		
Date	FEB 2025	Scale @ A1	1:200
Clients Ref.		Project Ref.	10644
 Civils & Transport Maple House, 192-198 London Road, Burgess Hill, West Sussex, RH15 9RD Tel 01444 871444 Web: www.gtacivils.co.uk			
Drawing Number	10644/1801		Rev. C2

GTA Civils Ltd				Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 130 minutes. <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>49.188</td><td>0.188</td><td>0.5</td><td>4.3</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>49.243</td><td>0.243</td><td>0.5</td><td>5.5</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>49.287</td><td>0.287</td><td>0.5</td><td>6.5</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>49.295</td><td>0.295</td><td>0.5</td><td>6.7</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>49.293</td><td>0.293</td><td>0.5</td><td>6.7</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>49.287</td><td>0.287</td><td>0.5</td><td>6.6</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>49.272</td><td>0.272</td><td>0.5</td><td>6.2</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>49.256</td><td>0.256</td><td>0.5</td><td>5.8</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>49.239</td><td>0.239</td><td>0.5</td><td>5.5</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>49.223</td><td>0.223</td><td>0.5</td><td>5.1</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>49.193</td><td>0.193</td><td>0.5</td><td>4.4</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>49.144</td><td>0.144</td><td>0.5</td><td>3.3</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>49.092</td><td>0.092</td><td>0.4</td><td>2.1</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>49.060</td><td>0.060</td><td>0.4</td><td>1.4</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>49.042</td><td>0.042</td><td>0.4</td><td>1.0</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>49.035</td><td>0.035</td><td>0.3</td><td>0.8</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>49.030</td><td>0.030</td><td>0.3</td><td>0.7</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>49.026</td><td>0.026</td><td>0.2</td><td>0.6</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>49.024</td><td>0.024</td><td>0.2</td><td>0.5</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>49.212</td><td>0.212</td><td>0.5</td><td>4.8</td><td>0 K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>106</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>138</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>170</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>240</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>308</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>376</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>442</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>570</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>822</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1168</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1500</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2204</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>5040</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>18</td></tr></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	49.188	0.188	0.5	4.3	0 K	30 min Summer	49.243	0.243	0.5	5.5	0 K	60 min Summer	49.287	0.287	0.5	6.5	0 K	120 min Summer	49.295	0.295	0.5	6.7	0 K	180 min Summer	49.293	0.293	0.5	6.7	0 K	240 min Summer	49.287	0.287	0.5	6.6	0 K	360 min Summer	49.272	0.272	0.5	6.2	0 K	480 min Summer	49.256	0.256	0.5	5.8	0 K	600 min Summer	49.239	0.239	0.5	5.5	0 K	720 min Summer	49.223	0.223	0.5	5.1	0 K	960 min Summer	49.193	0.193	0.5	4.4	0 K	1440 min Summer	49.144	0.144	0.5	3.3	0 K	2160 min Summer	49.092	0.092	0.4	2.1	0 K	2880 min Summer	49.060	0.060	0.4	1.4	0 K	4320 min Summer	49.042	0.042	0.4	1.0	0 K	5760 min Summer	49.035	0.035	0.3	0.8	0 K	7200 min Summer	49.030	0.030	0.3	0.7	0 K	8640 min Summer	49.026	0.026	0.2	0.6	0 K	10080 min Summer	49.024	0.024	0.2	0.5	0 K	15 min Winter	49.212	0.212	0.5	4.8	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	18	30 min Summer	97.551	0.0	32	60 min Summer	62.215	0.0	62	120 min Summer	37.050	0.0	106	180 min Summer	27.401	0.0	138	240 min Summer	22.123	0.0	170	360 min Summer	16.346	0.0	240	480 min Summer	13.183	0.0	308	600 min Summer	11.158	0.0	376	720 min Summer	9.738	0.0	442	960 min Summer	7.857	0.0	570	1440 min Summer	5.839	0.0	822	2160 min Summer	4.356	0.0	1168	2880 min Summer	3.540	0.0	1500	4320 min Summer	2.641	0.0	2204	5760 min Summer	2.149	0.0	2936	7200 min Summer	1.832	0.0	3672	8640 min Summer	1.610	0.0	4400	10080 min Summer	1.446	0.0	5040	15 min Winter	145.495	0.0	18
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GTA Civils Ltd			Page 2		
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurstwickham Barn Cellular Soakaway A			
Date 24/02/2025 06:15 File 10644 Cellular		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	49.275	0.275	0.5	6.3	0 K
60 min Winter	49.328	0.328	0.5	7.5	0 K
120 min Winter	49.341	0.341	0.5	7.8	0 K
180 min Winter	49.336	0.336	0.5	7.7	0 K
240 min Winter	49.329	0.329	0.5	7.5	0 K
360 min Winter	49.306	0.306	0.5	7.0	0 K
480 min Winter	49.280	0.280	0.5	6.4	0 K
600 min Winter	49.254	0.254	0.5	5.8	0 K
720 min Winter	49.229	0.229	0.5	5.2	0 K
960 min Winter	49.184	0.184	0.5	4.2	0 K
1440 min Winter	49.112	0.112	0.4	2.6	0 K
2160 min Winter	49.051	0.051	0.4	1.2	0 K
2880 min Winter	49.042	0.042	0.4	0.9	0 K
4320 min Winter	49.031	0.031	0.3	0.7	0 K
5760 min Winter	49.026	0.026	0.2	0.6	0 K
7200 min Winter	49.022	0.022	0.2	0.5	0 K
8640 min Winter	49.019	0.019	0.2	0.4	0 K
10080 min Winter	49.017	0.017	0.1	0.4	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	32		
60 min Winter	62.215	0.0	60		
120 min Winter	37.050	0.0	116		
180 min Winter	27.401	0.0	146		
240 min Winter	22.123	0.0	184		
360 min Winter	16.346	0.0	260		
480 min Winter	13.183	0.0	334		
600 min Winter	11.158	0.0	406		
720 min Winter	9.738	0.0	476		
960 min Winter	7.857	0.0	608		
1440 min Winter	5.839	0.0	852		
2160 min Winter	4.356	0.0	1128		
2880 min Winter	3.540	0.0	1472		
4320 min Winter	2.641	0.0	2204		
5760 min Winter	2.149	0.0	2944		
7200 min Winter	1.832	0.0	3560		
8640 min Winter	1.610	0.0	4336		
10080 min Winter	1.446	0.0	5072		
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GTA Civils Ltd		Page 3																		
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Hurstwickham Barn Cellular Soakaway A																			
Date 24/02/2025 06:15 File 10644 Cellular	Designed by CM Checked by MR																			
XP Solutions		Source Control 2020.1.3																		
Model Details Storage is Online Cover Level (m) 49.700 Cellular Storage Structure Invert Level (m) 49.000 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.12132 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.12132 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>24.0</td><td>24.0</td><td>0.500</td><td>0.0</td><td>32.8</td></tr><tr><td>0.400</td><td>24.0</td><td>32.8</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	24.0	24.0	0.500	0.0	32.8	0.400	24.0	32.8			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	24.0	24.0	0.500	0.0	32.8															
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GTA Civils Ltd			Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 138 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>49.899</td><td>0.199</td><td>0.3</td><td>3.0</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>49.957</td><td>0.257</td><td>0.4</td><td>3.9</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>50.003</td><td>0.303</td><td>0.4</td><td>4.6</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>50.011</td><td>0.311</td><td>0.4</td><td>4.7</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>50.009</td><td>0.309</td><td>0.4</td><td>4.7</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>50.003</td><td>0.303</td><td>0.4</td><td>4.6</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>49.988</td><td>0.288</td><td>0.4</td><td>4.4</td><td>0 K</td></tr><tr><td>480 min 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Summer</td><td>49.728</td><td>0.028</td><td>0.2</td><td>0.4</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>49.725</td><td>0.025</td><td>0.1</td><td>0.4</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>49.925</td><td>0.225</td><td>0.3</td><td>3.4</td><td>0 K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>104</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>136</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>170</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>238</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>308</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>374</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>442</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>570</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>822</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1172</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1504</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2204</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>5040</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>18</td></tr></tbody></table>					Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	49.899	0.199	0.3	3.0	0 K	30 min Summer	49.957	0.257	0.4	3.9	0 K	60 min Summer	50.003	0.303	0.4	4.6	0 K	120 min Summer	50.011	0.311	0.4	4.7	0 K	180 min Summer	50.009	0.309	0.4	4.7	0 K	240 min Summer	50.003	0.303	0.4	4.6	0 K	360 min Summer	49.988	0.288	0.4	4.4	0 K	480 min Summer	49.970	0.270	0.4	4.1	0 K	600 min Summer	49.953	0.253	0.4	3.9	0 K	720 min Summer	49.937	0.237	0.3	3.6	0 K	960 min Summer	49.906	0.206	0.3	3.1	0 K	1440 min Summer	49.856	0.156	0.3	2.4	0 K	2160 min Summer	49.801	0.101	0.3	1.5	0 K	2880 min Summer	49.767	0.067	0.3	1.0	0 K	4320 min Summer	49.744	0.044	0.3	0.7	0 K	5760 min Summer	49.736	0.036	0.2	0.6	0 K	7200 min Summer	49.731	0.031	0.2	0.5	0 K	8640 min Summer	49.728	0.028	0.2	0.4	0 K	10080 min Summer	49.725	0.025	0.1	0.4	0 K	15 min Winter	49.925	0.225	0.3	3.4	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	18	30 min Summer	97.551	0.0	32	60 min Summer	62.215	0.0	62	120 min Summer	37.050	0.0	104	180 min Summer	27.401	0.0	136	240 min Summer	22.123	0.0	170	360 min Summer	16.346	0.0	238	480 min Summer	13.183	0.0	308	600 min Summer	11.158	0.0	374	720 min Summer	9.738	0.0	442	960 min Summer	7.857	0.0	570	1440 min Summer	5.839	0.0	822	2160 min Summer	4.356	0.0	1172	2880 min Summer	3.540	0.0	1504	4320 min Summer	2.641	0.0	2204	5760 min Summer	2.149	0.0	2936	7200 min Summer	1.832	0.0	3672	8640 min Summer	1.610	0.0	4400	10080 min Summer	1.446	0.0	5040	15 min Winter	145.495	0.0	18
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GTA Civils Ltd			Page 2		
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurstwickham Barn Cellular Soakaway B			
Date 24/02/2025 06:26 File 10644 Cellular		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	49.991	0.291	0.4	4.4	0 K
60 min Winter	50.046	0.346	0.4	5.3	0 K
120 min Winter	50.059	0.359	0.4	5.5	0 K
180 min Winter	50.054	0.354	0.4	5.4	0 K
240 min Winter	50.046	0.346	0.4	5.3	0 K
360 min Winter	50.022	0.322	0.4	4.9	0 K
480 min Winter	49.995	0.295	0.4	4.5	0 K
600 min Winter	49.969	0.269	0.4	4.1	0 K
720 min Winter	49.943	0.243	0.4	3.7	0 K
960 min Winter	49.897	0.197	0.3	3.0	0 K
1440 min Winter	49.824	0.124	0.3	1.9	0 K
2160 min Winter	49.757	0.057	0.3	0.9	0 K
2880 min Winter	49.743	0.043	0.2	0.7	0 K
4320 min Winter	49.733	0.033	0.2	0.5	0 K
5760 min Winter	49.727	0.027	0.2	0.4	0 K
7200 min Winter	49.723	0.023	0.1	0.3	0 K
8640 min Winter	49.720	0.020	0.1	0.3	0 K
10080 min Winter	49.718	0.018	0.1	0.3	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	32		
60 min Winter	62.215	0.0	60		
120 min Winter	37.050	0.0	114		
180 min Winter	27.401	0.0	144		
240 min Winter	22.123	0.0	182		
360 min Winter	16.346	0.0	258		
480 min Winter	13.183	0.0	332		
600 min Winter	11.158	0.0	404		
720 min Winter	9.738	0.0	474		
960 min Winter	7.857	0.0	606		
1440 min Winter	5.839	0.0	852		
2160 min Winter	4.356	0.0	1168		
2880 min Winter	3.540	0.0	1472		
4320 min Winter	2.641	0.0	2196		
5760 min Winter	2.149	0.0	2912		
7200 min Winter	1.832	0.0	3672		
8640 min Winter	1.610	0.0	4392		
10080 min Winter	1.446	0.0	5120		
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GTA Civils Ltd		Page 3																		
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Model Details Storage is Online Cover Level (m) 50.400 Cellular Storage Structure Invert Level (m) 49.700 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.12132 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.12132 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>16.0</td><td>16.0</td><td>0.500</td><td>0.0</td><td>24.0</td></tr><tr><td>0.400</td><td>16.0</td><td>24.0</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	16.0	16.0	0.500	0.0	24.0	0.400	16.0	24.0			
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Summer</td><td>51.388</td><td>0.288</td><td>0.3</td><td>3.8</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>51.371</td><td>0.271</td><td>0.3</td><td>3.6</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>51.354</td><td>0.254</td><td>0.3</td><td>3.4</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>51.322</td><td>0.222</td><td>0.3</td><td>3.0</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>51.270</td><td>0.170</td><td>0.3</td><td>2.3</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>51.213</td><td>0.113</td><td>0.3</td><td>1.5</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>51.175</td><td>0.075</td><td>0.3</td><td>1.0</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>51.146</td><td>0.046</td><td>0.2</td><td>0.6</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>51.138</td><td>0.038</td><td>0.2</td><td>0.5</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>51.133</td><td>0.033</td><td>0.2</td><td>0.4</td><td>0 K</td></tr><tr><td>8640 min 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min Summer</td><td>11.158</td><td>0.0</td><td>376</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>442</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>576</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>824</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1188</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1528</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2204</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>5136</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>18</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	51.309	0.209	0.3	2.8	0 K	30 min Summer	51.370	0.270	0.3	3.6	0 K	60 min Summer	51.419	0.319	0.3	4.2	0 K	120 min Summer	51.428	0.328	0.3	4.4	0 K	180 min Summer	51.426	0.326	0.3	4.3	0 K	240 min Summer	51.421	0.321	0.3	4.3	0 K	360 min Summer	51.405	0.305	0.3	4.1	0 K	480 min Summer	51.388	0.288	0.3	3.8	0 K	600 min Summer	51.371	0.271	0.3	3.6	0 K	720 min Summer	51.354	0.254	0.3	3.4	0 K	960 min Summer	51.322	0.222	0.3	3.0	0 K	1440 min Summer	51.270	0.170	0.3	2.3	0 K	2160 min Summer	51.213	0.113	0.3	1.5	0 K	2880 min Summer	51.175	0.075	0.3	1.0	0 K	4320 min Summer	51.146	0.046	0.2	0.6	0 K	5760 min Summer	51.138	0.038	0.2	0.5	0 K	7200 min Summer	51.133	0.033	0.2	0.4	0 K	8640 min Summer	51.129	0.029	0.1	0.4	0 K	10080 min Summer	51.126	0.026	0.1	0.3	0 K	15 min Winter	51.336	0.236	0.3	3.1	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	18	30 min Summer	97.551	0.0	32	60 min Summer	62.215	0.0	62	120 min Summer	37.050	0.0	106	180 min Summer	27.401	0.0	136	240 min Summer	22.123	0.0	170	360 min Summer	16.346	0.0	240	480 min Summer	13.183	0.0	308	600 min Summer	11.158	0.0	376	720 min Summer	9.738	0.0	442	960 min Summer	7.857	0.0	576	1440 min Summer	5.839	0.0	824	2160 min Summer	4.356	0.0	1188	2880 min Summer	3.540	0.0	1528	4320 min Summer	2.641	0.0	2204	5760 min Summer	2.149	0.0	2936	7200 min Summer	1.832	0.0	3672	8640 min Summer	1.610	0.0	4400	10080 min Summer	1.446	0.0	5136	15 min Winter	145.495	0.0	18
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GTA Civils Ltd			Page 2		
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurstwickham Barn Cellular Soakaway C			
Date 24/02/2025 06:14 File 10644 Cellular		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	51.405	0.305	0.3	4.1	0 K
60 min Winter	51.464	0.364	0.3	4.8	0 K
120 min Winter	51.479	0.379	0.4	5.0	0 K
180 min Winter	51.474	0.374	0.3	5.0	0 K
240 min Winter	51.467	0.367	0.3	4.9	0 K
360 min Winter	51.443	0.343	0.3	4.6	0 K
480 min Winter	51.416	0.316	0.3	4.2	0 K
600 min Winter	51.389	0.289	0.3	3.8	0 K
720 min Winter	51.363	0.263	0.3	3.5	0 K
960 min Winter	51.315	0.215	0.3	2.9	0 K
1440 min Winter	51.240	0.140	0.3	1.9	0 K
2160 min Winter	51.166	0.066	0.3	0.9	0 K
2880 min Winter	51.145	0.045	0.2	0.6	0 K
4320 min Winter	51.134	0.034	0.2	0.5	0 K
5760 min Winter	51.128	0.028	0.1	0.4	0 K
7200 min Winter	51.124	0.024	0.1	0.3	0 K
8640 min Winter	51.121	0.021	0.1	0.3	0 K
10080 min Winter	51.119	0.019	0.1	0.2	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	32		
60 min Winter	62.215	0.0	60		
120 min Winter	37.050	0.0	114		
180 min Winter	27.401	0.0	144		
240 min Winter	22.123	0.0	182		
360 min Winter	16.346	0.0	260		
480 min Winter	13.183	0.0	334		
600 min Winter	11.158	0.0	406		
720 min Winter	9.738	0.0	476		
960 min Winter	7.857	0.0	608		
1440 min Winter	5.839	0.0	864		
2160 min Winter	4.356	0.0	1188		
2880 min Winter	3.540	0.0	1472		
4320 min Winter	2.641	0.0	2208		
5760 min Winter	2.149	0.0	2936		
7200 min Winter	1.832	0.0	3584		
8640 min Winter	1.610	0.0	4408		
10080 min Winter	1.446	0.0	5120		
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GTA Civils Ltd		Page 3																		
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Hurstwickham Barn Cellular Soakaway C																			
Date 24/02/2025 06:14 File 10644 Cellular	Designed by CM Checked by MR																			
XP Solutions		Source Control 2020.1.3																		
Model Details Storage is Online Cover Level (m) 52.000 Cellular Storage Structure Invert Level (m) 51.100 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.12132 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.12132 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>14.0</td><td>14.0</td><td>0.500</td><td>0.0</td><td>21.2</td></tr><tr><td>0.400</td><td>14.0</td><td>21.2</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	14.0	14.0	0.500	0.0	21.2	0.400	14.0	21.2			
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©1982-2020 Innovyze																				

GTA Civils Ltd					Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 34 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>51.312</td><td>0.287</td><td>1.8</td><td>4.7</td><td>Flood Risk</td></tr><tr><td>30 min Summer</td><td>51.348</td><td>0.323</td><td>2.1</td><td>6.0</td><td>Flood Risk</td></tr><tr><td>60 min Summer</td><td>51.368</td><td>0.343</td><td>2.2</td><td>6.7</td><td>Flood Risk</td></tr><tr><td>120 min Summer</td><td>51.362</td><td>0.337</td><td>2.2</td><td>6.5</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>51.349</td><td>0.324</td><td>2.1</td><td>6.0</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>51.336</td><td>0.311</td><td>2.0</td><td>5.5</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>51.309</td><td>0.284</td><td>1.8</td><td>4.6</td><td>Flood Risk</td></tr><tr><td>480 min 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Summer</td><td>51.075</td><td>0.050</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>51.073</td><td>0.048</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>51.334</td><td>0.309</td><td>2.0</td><td>5.4</td><td>Flood Risk</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>16</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>28</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>44</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>78</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>112</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>144</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>208</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>270</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>330</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>390</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>510</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>750</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1104</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3664</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4328</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>5064</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>16</td></tr></tbody></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	51.312	0.287	1.8	4.7	Flood Risk	30 min Summer	51.348	0.323	2.1	6.0	Flood Risk	60 min Summer	51.368	0.343	2.2	6.7	Flood Risk	120 min Summer	51.362	0.337	2.2	6.5	Flood Risk	180 min Summer	51.349	0.324	2.1	6.0	Flood Risk	240 min Summer	51.336	0.311	2.0	5.5	Flood Risk	360 min Summer	51.309	0.284	1.8	4.6	Flood Risk	480 min Summer	51.287	0.262	1.7	3.9	0 K	600 min Summer	51.268	0.243	1.6	3.4	0 K	720 min Summer	51.252	0.227	1.5	2.9	0 K	960 min Summer	51.226	0.201	1.3	2.3	0 K	1440 min Summer	51.189	0.164	1.1	1.5	0 K	2160 min Summer	51.156	0.131	0.8	1.0	0 K	2880 min Summer	51.134	0.109	0.7	0.7	0 K	4320 min Summer	51.108	0.083	0.5	0.4	0 K	5760 min Summer	51.092	0.067	0.4	0.3	0 K	7200 min Summer	51.082	0.057	0.4	0.2	0 K	8640 min Summer	51.075	0.050	0.3	0.1	0 K	10080 min Summer	51.073	0.048	0.3	0.1	0 K	15 min Winter	51.334	0.309	2.0	5.4	Flood Risk	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	16	30 min Summer	97.551	0.0	28	60 min Summer	62.215	0.0	44	120 min Summer	37.050	0.0	78	180 min Summer	27.401	0.0	112	240 min Summer	22.123	0.0	144	360 min Summer	16.346	0.0	208	480 min Summer	13.183	0.0	270	600 min Summer	11.158	0.0	330	720 min Summer	9.738	0.0	390	960 min Summer	7.857	0.0	510	1440 min Summer	5.839	0.0	750	2160 min Summer	4.356	0.0	1104	2880 min Summer	3.540	0.0	1468	4320 min Summer	2.641	0.0	2200	5760 min Summer	2.149	0.0	2936	7200 min Summer	1.832	0.0	3664	8640 min Summer	1.610	0.0	4328	10080 min Summer	1.446	0.0	5064	15 min Winter	145.495	0.0	16
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GTA Civils Ltd					Page 2	
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB						
Date 24/02/2025 07:00		Designed by cmoore				
File 10644 PP Driveway 1.SRCX		Checked by				
XP Solutions			Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
30 min Winter	51.372	0.347	2.2	6.9	Flood Risk	
60 min Winter	51.390	0.365	2.3	7.6	Flood Risk	
120 min Winter	51.377	0.352	2.3	7.0	Flood Risk	
180 min Winter	51.356	0.331	2.1	6.3	Flood Risk	
240 min Winter	51.336	0.311	2.0	5.5	Flood Risk	
360 min Winter	51.299	0.274	1.8	4.3	0 K	
480 min Winter	51.269	0.244	1.6	3.4	0 K	
600 min Winter	51.245	0.220	1.4	2.8	0 K	
720 min Winter	51.225	0.200	1.3	2.3	0 K	
960 min Winter	51.194	0.169	1.1	1.6	0 K	
1440 min Winter	51.155	0.130	0.8	1.0	0 K	
2160 min Winter	51.123	0.098	0.6	0.6	0 K	
2880 min Winter	51.105	0.080	0.5	0.4	0 K	
4320 min Winter	51.085	0.060	0.4	0.2	0 K	
5760 min Winter	51.074	0.049	0.3	0.1	0 K	
7200 min Winter	51.070	0.045	0.3	0.1	0 K	
8640 min Winter	51.068	0.043	0.2	0.1	0 K	
10080 min Winter	51.065	0.040	0.2	0.1	0 K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
30 min Winter	97.551	0.0	29			
60 min Winter	62.215	0.0	46			
120 min Winter	37.050	0.0	84			
180 min Winter	27.401	0.0	120			
240 min Winter	22.123	0.0	152			
360 min Winter	16.346	0.0	218			
480 min Winter	13.183	0.0	280			
600 min Winter	11.158	0.0	340			
720 min Winter	9.738	0.0	398			
960 min Winter	7.857	0.0	518			
1440 min Winter	5.839	0.0	750			
2160 min Winter	4.356	0.0	1104			
2880 min Winter	3.540	0.0	1468			
4320 min Winter	2.641	0.0	2188			
5760 min Winter	2.149	0.0	2888			
7200 min Winter	1.832	0.0	3672			
8640 min Winter	1.610	0.0	4264			
10080 min Winter	1.446	0.0	5128			
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GTA Civils Ltd		Page 3																								
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB																										
Date 24/02/2025 07:00	Designed by cmoore																									
File 10644 PP Driveway 1.SRCX	Checked by																									
XP Solutions	Source Control 2020.1.3																									
Model Details Storage is Online Cover Level (m) 51.600 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.12132</td><td>Width (m)</td><td>19.0</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>63.3</td><td>Slope (1:X)</td><td>20.0</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>51.025</td><td>Membrane Depth (m)</td><td>0</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	19.0	Membrane Percolation (mm/hr)	1000	Length (m)	12.0	Max Percolation (l/s)	63.3	Slope (1:X)	20.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	51.025	Membrane Depth (m)	0
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GTA Civils Ltd					Page 1																																																																																																																																																																																																																			
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Summer</td><td>51.184</td><td>0.134</td><td>1.9</td><td>2.2</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>51.171</td><td>0.121</td><td>1.7</td><td>1.8</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>51.161</td><td>0.111</td><td>1.5</td><td>1.5</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>51.145</td><td>0.095</td><td>1.3</td><td>1.1</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>51.125</td><td>0.075</td><td>1.0</td><td>0.7</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>51.108</td><td>0.058</td><td>0.8</td><td>0.4</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>51.099</td><td>0.049</td><td>0.7</td><td>0.3</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>51.092</td><td>0.042</td><td>0.5</td><td>0.2</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>51.088</td><td>0.038</td><td>0.4</td><td>0.2</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>51.085</td><td>0.035</td><td>0.3</td><td>0.2</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>51.083</td><td>0.033</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>51.081</td><td>0.031</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>51.241</td><td>0.191</td><td>2.7</td><td>4.5</td><td>Flood Risk</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>15</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>24</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>42</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>74</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>106</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>138</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>200</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>260</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>320</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>378</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>500</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>736</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2184</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2912</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3592</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4368</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>4968</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>16</td></tr></tbody></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	51.227	0.177	2.5	3.9	Flood Risk	30 min Summer	51.248	0.198	2.8	4.8	Flood Risk	60 min Summer	51.256	0.206	2.9	5.3	Flood Risk	120 min Summer	51.245	0.195	2.7	4.7	Flood Risk	180 min Summer	51.232	0.182	2.5	4.1	Flood Risk	240 min Summer	51.220	0.170	2.4	3.6	Flood Risk	360 min Summer	51.200	0.150	2.1	2.8	0 K	480 min Summer	51.184	0.134	1.9	2.2	0 K	600 min Summer	51.171	0.121	1.7	1.8	0 K	720 min Summer	51.161	0.111	1.5	1.5	0 K	960 min Summer	51.145	0.095	1.3	1.1	0 K	1440 min Summer	51.125	0.075	1.0	0.7	0 K	2160 min Summer	51.108	0.058	0.8	0.4	0 K	2880 min Summer	51.099	0.049	0.7	0.3	0 K	4320 min Summer	51.092	0.042	0.5	0.2	0 K	5760 min Summer	51.088	0.038	0.4	0.2	0 K	7200 min Summer	51.085	0.035	0.3	0.2	0 K	8640 min Summer	51.083	0.033	0.3	0.1	0 K	10080 min Summer	51.081	0.031	0.3	0.1	0 K	15 min Winter	51.241	0.191	2.7	4.5	Flood Risk	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	15	30 min Summer	97.551	0.0	24	60 min Summer	62.215	0.0	42	120 min Summer	37.050	0.0	74	180 min Summer	27.401	0.0	106	240 min Summer	22.123	0.0	138	360 min Summer	16.346	0.0	200	480 min Summer	13.183	0.0	260	600 min Summer	11.158	0.0	320	720 min Summer	9.738	0.0	378	960 min Summer	7.857	0.0	500	1440 min Summer	5.839	0.0	736	2160 min Summer	4.356	0.0	1100	2880 min Summer	3.540	0.0	1468	4320 min Summer	2.641	0.0	2184	5760 min Summer	2.149	0.0	2912	7200 min Summer	1.832	0.0	3592	8640 min Summer	1.610	0.0	4368	10080 min Summer	1.446	0.0	4968	15 min Winter	145.495	0.0	16
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GTA Civils Ltd				Page 2	
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurst Wickham Barn Permeable Driveway Area 2			
Date 24/02/2025 06:57 File 10644 PP Driveway 2.SRCX		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	51.261	0.211	2.9	5.5	Flood Risk
60 min Winter	51.267	0.217	3.0	5.9	Flood Risk
120 min Winter	51.248	0.198	2.8	4.9	Flood Risk
180 min Winter	51.229	0.179	2.5	4.0	Flood Risk
240 min Winter	51.212	0.162	2.3	3.3	Flood Risk
360 min Winter	51.186	0.136	1.9	2.3	0 K
480 min Winter	51.166	0.116	1.6	1.7	0 K
600 min Winter	51.152	0.102	1.4	1.3	0 K
720 min Winter	51.140	0.090	1.3	1.0	0 K
960 min Winter	51.124	0.074	1.0	0.7	0 K
1440 min Winter	51.106	0.056	0.8	0.4	0 K
2160 min Winter	51.096	0.046	0.6	0.3	0 K
2880 min Winter	51.091	0.041	0.5	0.2	0 K
4320 min Winter	51.086	0.036	0.4	0.2	0 K
5760 min Winter	51.082	0.032	0.3	0.1	0 K
7200 min Winter	51.080	0.030	0.2	0.1	0 K
8640 min Winter	51.078	0.028	0.2	0.1	0 K
10080 min Winter	51.076	0.026	0.2	0.1	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	25		
60 min Winter	62.215	0.0	44		
120 min Winter	37.050	0.0	80		
180 min Winter	27.401	0.0	112		
240 min Winter	22.123	0.0	144		
360 min Winter	16.346	0.0	204		
480 min Winter	13.183	0.0	264		
600 min Winter	11.158	0.0	324		
720 min Winter	9.738	0.0	384		
960 min Winter	7.857	0.0	500		
1440 min Winter	5.839	0.0	736		
2160 min Winter	4.356	0.0	1080		
2880 min Winter	3.540	0.0	1456		
4320 min Winter	2.641	0.0	2180		
5760 min Winter	2.149	0.0	2912		
7200 min Winter	1.832	0.0	3592		
8640 min Winter	1.610	0.0	4280		
10080 min Winter	1.446	0.0	5096		
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GTA Civils Ltd		Page 3																								
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Hurst Wickham Barn Permeable Driveway Area 2																									
Date 24/02/2025 06:57 File 10644 PP Driveway 2.SRCX	Designed by CM Checked by MR																									
XP Solutions																										
Source Control 2020.1.3																										
Model Details Storage is Online Cover Level (m) 51.500 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.12132</td><td>Width (m)</td><td>23.0</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>63.9</td><td>Slope (1:X)</td><td>36.0</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>51.050</td><td>Membrane Depth (m)</td><td>0</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	23.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.0	Max Percolation (l/s)	63.9	Slope (1:X)	36.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	51.050	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	23.0																							
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Invert Level (m)	51.050	Membrane Depth (m)	0																							
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GTA Civils Ltd				Page 1																																																																																																																																																																																																																			
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 13 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>49.151</td><td>0.051</td><td>5.6</td><td>5.1</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>49.163</td><td>0.063</td><td>5.6</td><td>6.3</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>49.167</td><td>0.067</td><td>5.6</td><td>6.6</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>49.154</td><td>0.054</td><td>5.6</td><td>5.4</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>49.146</td><td>0.046</td><td>5.2</td><td>4.6</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>49.140</td><td>0.040</td><td>4.5</td><td>4.0</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>49.133</td><td>0.033</td><td>3.7</td><td>3.3</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>49.128</td><td>0.028</td><td>3.1</td><td>2.8</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>49.124</td><td>0.024</td><td>2.7</td><td>2.4</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>49.122</td><td>0.022</td><td>2.4</td><td>2.1</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>49.118</td><td>0.018</td><td>2.0</td><td>1.8</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>49.114</td><td>0.014</td><td>1.5</td><td>1.4</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>49.110</td><td>0.010</td><td>1.1</td><td>1.0</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>49.109</td><td>0.009</td><td>1.0</td><td>0.8</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>49.106</td><td>0.006</td><td>0.7</td><td>0.6</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>49.105</td><td>0.005</td><td>0.6</td><td>0.5</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>49.105</td><td>0.005</td><td>0.5</td><td>0.5</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>49.104</td><td>0.004</td><td>0.4</td><td>0.4</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>49.104</td><td>0.004</td><td>0.4</td><td>0.4</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>49.160</td><td>0.060</td><td>5.6</td><td>5.9</td><td>0 K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>14</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>22</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>40</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>70</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>100</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>130</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>192</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>252</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>312</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>370</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>492</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>736</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1456</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2928</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3648</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4408</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>5064</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>15</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	49.151	0.051	5.6	5.1	0 K	30 min Summer	49.163	0.063	5.6	6.3	0 K	60 min Summer	49.167	0.067	5.6	6.6	0 K	120 min Summer	49.154	0.054	5.6	5.4	0 K	180 min Summer	49.146	0.046	5.2	4.6	0 K	240 min Summer	49.140	0.040	4.5	4.0	0 K	360 min Summer	49.133	0.033	3.7	3.3	0 K	480 min Summer	49.128	0.028	3.1	2.8	0 K	600 min Summer	49.124	0.024	2.7	2.4	0 K	720 min Summer	49.122	0.022	2.4	2.1	0 K	960 min Summer	49.118	0.018	2.0	1.8	0 K	1440 min Summer	49.114	0.014	1.5	1.4	0 K	2160 min Summer	49.110	0.010	1.1	1.0	0 K	2880 min Summer	49.109	0.009	1.0	0.8	0 K	4320 min Summer	49.106	0.006	0.7	0.6	0 K	5760 min Summer	49.105	0.005	0.6	0.5	0 K	7200 min Summer	49.105	0.005	0.5	0.5	0 K	8640 min Summer	49.104	0.004	0.4	0.4	0 K	10080 min Summer	49.104	0.004	0.4	0.4	0 K	15 min Winter	49.160	0.060	5.6	5.9	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	14	30 min Summer	97.551	0.0	22	60 min Summer	62.215	0.0	40	120 min Summer	37.050	0.0	70	180 min Summer	27.401	0.0	100	240 min Summer	22.123	0.0	130	360 min Summer	16.346	0.0	192	480 min Summer	13.183	0.0	252	600 min Summer	11.158	0.0	312	720 min Summer	9.738	0.0	370	960 min Summer	7.857	0.0	492	1440 min Summer	5.839	0.0	736	2160 min Summer	4.356	0.0	1100	2880 min Summer	3.540	0.0	1456	4320 min Summer	2.641	0.0	2200	5760 min Summer	2.149	0.0	2928	7200 min Summer	1.832	0.0	3648	8640 min Summer	1.610	0.0	4408	10080 min Summer	1.446	0.0	5064	15 min Winter	145.495	0.0	15
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60 min Summer	49.167	0.067	5.6	6.6	0 K																																																																																																																																																																																																																		
120 min Summer	49.154	0.054	5.6	5.4	0 K																																																																																																																																																																																																																		
180 min Summer	49.146	0.046	5.2	4.6	0 K																																																																																																																																																																																																																		
240 min Summer	49.140	0.040	4.5	4.0	0 K																																																																																																																																																																																																																		
360 min Summer	49.133	0.033	3.7	3.3	0 K																																																																																																																																																																																																																		
480 min Summer	49.128	0.028	3.1	2.8	0 K																																																																																																																																																																																																																		
600 min Summer	49.124	0.024	2.7	2.4	0 K																																																																																																																																																																																																																		
720 min Summer	49.122	0.022	2.4	2.1	0 K																																																																																																																																																																																																																		
960 min Summer	49.118	0.018	2.0	1.8	0 K																																																																																																																																																																																																																		
1440 min Summer	49.114	0.014	1.5	1.4	0 K																																																																																																																																																																																																																		
2160 min Summer	49.110	0.010	1.1	1.0	0 K																																																																																																																																																																																																																		
2880 min Summer	49.109	0.009	1.0	0.8	0 K																																																																																																																																																																																																																		
4320 min Summer	49.106	0.006	0.7	0.6	0 K																																																																																																																																																																																																																		
5760 min Summer	49.105	0.005	0.6	0.5	0 K																																																																																																																																																																																																																		
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8640 min Summer	49.104	0.004	0.4	0.4	0 K																																																																																																																																																																																																																		
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15 min Winter	49.160	0.060	5.6	5.9	0 K																																																																																																																																																																																																																		
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																				
15 min Summer	145.495	0.0	14																																																																																																																																																																																																																				
30 min Summer	97.551	0.0	22																																																																																																																																																																																																																				
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480 min Summer	13.183	0.0	252																																																																																																																																																																																																																				
600 min Summer	11.158	0.0	312																																																																																																																																																																																																																				
720 min Summer	9.738	0.0	370																																																																																																																																																																																																																				
960 min Summer	7.857	0.0	492																																																																																																																																																																																																																				
1440 min Summer	5.839	0.0	736																																																																																																																																																																																																																				
2160 min Summer	4.356	0.0	1100																																																																																																																																																																																																																				
2880 min Summer	3.540	0.0	1456																																																																																																																																																																																																																				
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5760 min Summer	2.149	0.0	2928																																																																																																																																																																																																																				
7200 min Summer	1.832	0.0	3648																																																																																																																																																																																																																				
8640 min Summer	1.610	0.0	4408																																																																																																																																																																																																																				
10080 min Summer	1.446	0.0	5064																																																																																																																																																																																																																				
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GTA Civils Ltd					Page 2
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurst Wickham Barn Permeable Driveway Area 3			
Date 25/02/2025 07:49		Designed by CM			
File 10644 PP Driveway 3.SRCX		Checked by MR			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	49.171	0.071	5.6	7.1	0 K
60 min Winter	49.171	0.071	5.6	7.0	0 K
120 min Winter	49.150	0.050	5.6	5.0	0 K
180 min Winter	49.141	0.041	4.6	4.1	0 K
240 min Winter	49.135	0.035	3.9	3.5	0 K
360 min Winter	49.127	0.027	3.0	2.7	0 K
480 min Winter	49.122	0.022	2.5	2.2	0 K
600 min Winter	49.119	0.019	2.1	1.9	0 K
720 min Winter	49.117	0.017	1.9	1.6	0 K
960 min Winter	49.114	0.014	1.5	1.3	0 K
1440 min Winter	49.110	0.010	1.1	1.0	0 K
2160 min Winter	49.108	0.008	0.9	0.7	0 K
2880 min Winter	49.106	0.006	0.7	0.6	0 K
4320 min Winter	49.105	0.005	0.5	0.4	0 K
5760 min Winter	49.104	0.004	0.4	0.4	0 K
7200 min Winter	49.103	0.003	0.4	0.3	0 K
8640 min Winter	49.103	0.003	0.3	0.3	0 K
10080 min Winter	49.103	0.003	0.3	0.3	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	24		
60 min Winter	62.215	0.0	42		
120 min Winter	37.050	0.0	72		
180 min Winter	27.401	0.0	104		
240 min Winter	22.123	0.0	134		
360 min Winter	16.346	0.0	194		
480 min Winter	13.183	0.0	252		
600 min Winter	11.158	0.0	316		
720 min Winter	9.738	0.0	370		
960 min Winter	7.857	0.0	498		
1440 min Winter	5.839	0.0	730		
2160 min Winter	4.356	0.0	1104		
2880 min Winter	3.540	0.0	1424		
4320 min Winter	2.641	0.0	2296		
5760 min Winter	2.149	0.0	2872		
7200 min Winter	1.832	0.0	3616		
8640 min Winter	1.610	0.0	4328		
10080 min Winter	1.446	0.0	4912		
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GTA Civils Ltd		Page 3																								
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Hurst Wickham Barn Permeable Driveway Area 3																									
Date 25/02/2025 07:49 File 10644 PP Driveway 3.SRCX	Designed by CM Checked by MR																									
XP Solutions																										
Source Control 2020.1.3																										
Model Details Storage is Online Cover Level (m) 49.500 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.12132</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>82.8</td></tr><tr><td>Max Percolation (l/s)</td><td>92.0</td><td>Slope (1:X)</td><td>0.0</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>49.100</td><td>Cap Volume Depth (m)</td><td>0.300</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	4.0	Membrane Percolation (mm/hr)	1000	Length (m)	82.8	Max Percolation (l/s)	92.0	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	49.100	Cap Volume Depth (m)	0.300
Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	4.0																							
Membrane Percolation (mm/hr)	1000	Length (m)	82.8																							
Max Percolation (l/s)	92.0	Slope (1:X)	0.0																							
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Porosity	0.30	Evaporation (mm/day)	3																							
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GTA Civils Ltd				Page 1																																																																																																																																																																																																																			
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurst Wickham Barn Permeable Driveway Area 4																																																																																																																																																																																																																					
Date 24/02/2025 07:36 File 10644 PP Driveway 4.SRCX		Designed by CM Checked by MR																																																																																																																																																																																																																					
XP Solutions		Source Control 2020.1.3																																																																																																																																																																																																																					
Summary of Results for 100 year Return Period (+40%) Half Drain Time : 12 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>49.001</td><td>0.101</td><td>3.2</td><td>2.8</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>49.012</td><td>0.112</td><td>3.2</td><td>3.5</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>49.013</td><td>0.113</td><td>3.2</td><td>3.6</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>48.999</td><td>0.099</td><td>3.1</td><td>2.7</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>48.988</td><td>0.088</td><td>2.8</td><td>2.2</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>48.980</td><td>0.080</td><td>2.5</td><td>1.8</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>48.967</td><td>0.067</td><td>2.1</td><td>1.3</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>48.958</td><td>0.058</td><td>1.8</td><td>0.9</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>48.952</td><td>0.052</td><td>1.6</td><td>0.8</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>48.948</td><td>0.048</td><td>1.5</td><td>0.7</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>48.944</td><td>0.044</td><td>1.2</td><td>0.5</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>48.938</td><td>0.038</td><td>0.9</td><td>0.4</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>48.933</td><td>0.033</td><td>0.7</td><td>0.3</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>48.929</td><td>0.029</td><td>0.5</td><td>0.2</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>48.925</td><td>0.025</td><td>0.4</td><td>0.2</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>48.923</td><td>0.023</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>48.921</td><td>0.021</td><td>0.3</td><td>0.1</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>48.920</td><td>0.020</td><td>0.2</td><td>0.1</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>48.919</td><td>0.019</td><td>0.2</td><td>0.1</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>49.009</td><td>0.109</td><td>3.2</td><td>3.3</td><td>0 K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>145.495</td><td>0.0</td><td>14</td></tr><tr><td>30 min Summer</td><td>97.551</td><td>0.0</td><td>22</td></tr><tr><td>60 min Summer</td><td>62.215</td><td>0.0</td><td>40</td></tr><tr><td>120 min Summer</td><td>37.050</td><td>0.0</td><td>70</td></tr><tr><td>180 min Summer</td><td>27.401</td><td>0.0</td><td>102</td></tr><tr><td>240 min Summer</td><td>22.123</td><td>0.0</td><td>132</td></tr><tr><td>360 min Summer</td><td>16.346</td><td>0.0</td><td>192</td></tr><tr><td>480 min Summer</td><td>13.183</td><td>0.0</td><td>250</td></tr><tr><td>600 min Summer</td><td>11.158</td><td>0.0</td><td>308</td></tr><tr><td>720 min Summer</td><td>9.738</td><td>0.0</td><td>368</td></tr><tr><td>960 min Summer</td><td>7.857</td><td>0.0</td><td>488</td></tr><tr><td>1440 min Summer</td><td>5.839</td><td>0.0</td><td>734</td></tr><tr><td>2160 min Summer</td><td>4.356</td><td>0.0</td><td>1092</td></tr><tr><td>2880 min Summer</td><td>3.540</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.641</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>2.149</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.832</td><td>0.0</td><td>3584</td></tr><tr><td>8640 min Summer</td><td>1.610</td><td>0.0</td><td>4352</td></tr><tr><td>10080 min Summer</td><td>1.446</td><td>0.0</td><td>4968</td></tr><tr><td>15 min Winter</td><td>145.495</td><td>0.0</td><td>15</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	49.001	0.101	3.2	2.8	0 K	30 min Summer	49.012	0.112	3.2	3.5	0 K	60 min Summer	49.013	0.113	3.2	3.6	0 K	120 min Summer	48.999	0.099	3.1	2.7	0 K	180 min Summer	48.988	0.088	2.8	2.2	0 K	240 min Summer	48.980	0.080	2.5	1.8	0 K	360 min Summer	48.967	0.067	2.1	1.3	0 K	480 min Summer	48.958	0.058	1.8	0.9	0 K	600 min Summer	48.952	0.052	1.6	0.8	0 K	720 min Summer	48.948	0.048	1.5	0.7	0 K	960 min Summer	48.944	0.044	1.2	0.5	0 K	1440 min Summer	48.938	0.038	0.9	0.4	0 K	2160 min Summer	48.933	0.033	0.7	0.3	0 K	2880 min Summer	48.929	0.029	0.5	0.2	0 K	4320 min Summer	48.925	0.025	0.4	0.2	0 K	5760 min Summer	48.923	0.023	0.3	0.1	0 K	7200 min Summer	48.921	0.021	0.3	0.1	0 K	8640 min Summer	48.920	0.020	0.2	0.1	0 K	10080 min Summer	48.919	0.019	0.2	0.1	0 K	15 min Winter	49.009	0.109	3.2	3.3	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	145.495	0.0	14	30 min Summer	97.551	0.0	22	60 min Summer	62.215	0.0	40	120 min Summer	37.050	0.0	70	180 min Summer	27.401	0.0	102	240 min Summer	22.123	0.0	132	360 min Summer	16.346	0.0	192	480 min Summer	13.183	0.0	250	600 min Summer	11.158	0.0	308	720 min Summer	9.738	0.0	368	960 min Summer	7.857	0.0	488	1440 min Summer	5.839	0.0	734	2160 min Summer	4.356	0.0	1092	2880 min Summer	3.540	0.0	1468	4320 min Summer	2.641	0.0	2200	5760 min Summer	2.149	0.0	2936	7200 min Summer	1.832	0.0	3584	8640 min Summer	1.610	0.0	4352	10080 min Summer	1.446	0.0	4968	15 min Winter	145.495	0.0	15
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																		
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4320 min Summer	2.641	0.0	2200																																																																																																																																																																																																																				
5760 min Summer	2.149	0.0	2936																																																																																																																																																																																																																				
7200 min Summer	1.832	0.0	3584																																																																																																																																																																																																																				
8640 min Summer	1.610	0.0	4352																																																																																																																																																																																																																				
10080 min Summer	1.446	0.0	4968																																																																																																																																																																																																																				
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurst Wickham Barn Permeable Driveway Area 4			
Date 24/02/2025 07:36 File 10644 PP Driveway 4.SRCX		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	49.020	0.120	3.2	3.9	0 K
60 min Winter	49.017	0.117	3.2	3.8	0 K
120 min Winter	48.995	0.095	3.0	2.6	0 K
180 min Winter	48.981	0.081	2.5	1.8	0 K
240 min Winter	48.970	0.070	2.2	1.4	0 K
360 min Winter	48.955	0.055	1.7	0.9	0 K
480 min Winter	48.948	0.048	1.5	0.6	0 K
600 min Winter	48.944	0.044	1.2	0.5	0 K
720 min Winter	48.941	0.041	1.1	0.5	0 K
960 min Winter	48.937	0.037	0.9	0.4	0 K
1440 min Winter	48.932	0.032	0.7	0.3	0 K
2160 min Winter	48.928	0.028	0.5	0.2	0 K
2880 min Winter	48.925	0.025	0.4	0.2	0 K
4320 min Winter	48.922	0.022	0.3	0.1	0 K
5760 min Winter	48.919	0.019	0.2	0.1	0 K
7200 min Winter	48.918	0.018	0.2	0.1	0 K
8640 min Winter	48.917	0.017	0.2	0.1	0 K
10080 min Winter	48.916	0.016	0.2	0.1	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	97.551	0.0	24		
60 min Winter	62.215	0.0	42		
120 min Winter	37.050	0.0	74		
180 min Winter	27.401	0.0	104		
240 min Winter	22.123	0.0	134		
360 min Winter	16.346	0.0	194		
480 min Winter	13.183	0.0	248		
600 min Winter	11.158	0.0	308		
720 min Winter	9.738	0.0	370		
960 min Winter	7.857	0.0	480		
1440 min Winter	5.839	0.0	728		
2160 min Winter	4.356	0.0	1084		
2880 min Winter	3.540	0.0	1464		
4320 min Winter	2.641	0.0	2180		
5760 min Winter	2.149	0.0	2936		
7200 min Winter	1.832	0.0	3736		
8640 min Winter	1.610	0.0	4360		
10080 min Winter	1.446	0.0	5016		
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Hurst Wickham Barn Permeable Driveway Area 4																									
Date 24/02/2025 07:36 File 10644 PP Driveway 4.SRCX	Designed by CM Checked by MR																									
XP Solutions																										
Source Control 2020.1.3																										
Model Details Storage is Online Cover Level (m) 49.400 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.12132</td><td>Width (m)</td><td>46.8</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>4.0</td></tr><tr><td>Max Percolation (l/s)</td><td>52.0</td><td>Slope (1:X)</td><td>40.0</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>48.900</td><td>Membrane Depth (m)</td><td>0</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.12132	Width (m)	46.8	Membrane Percolation (mm/hr)	1000	Length (m)	4.0	Max Percolation (l/s)	52.0	Slope (1:X)	40.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	48.900	Membrane Depth (m)	0
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Invert Level (m)	48.900	Membrane Depth (m)	0																							
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Hurst Wickham Barn Permeable Driveway Area 4			
Date 24/02/2025 07:45 File 10644 PP Driveway		Designed by CM Checked by MR			
XP Solutions		Source Control 2020.1.3			
<u>Cascade Summary of Results for 10644 PP Driveway 4.SRCX</u>					
Upstream Structures		Outflow To Overflow To			
10644 PP Driveway 3.SRCX		(None)		(None)	
10644 PP Driveway 2.SRCX					
10644 PP Driveway 1.SRCX					
Half Drain Time : 12 minutes.					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	49.001	0.101	3.2	2.8	0 K
30 min Summer	49.012	0.112	3.2	3.5	0 K
60 min Summer	49.013	0.113	3.2	3.6	0 K
120 min Summer	48.999	0.099	3.1	2.7	0 K
180 min Summer	48.988	0.088	2.8	2.2	0 K
240 min Summer	48.980	0.080	2.5	1.8	0 K
360 min Summer	48.967	0.067	2.1	1.3	0 K
480 min Summer	48.958	0.058	1.8	0.9	0 K
600 min Summer	48.952	0.052	1.6	0.8	0 K
720 min Summer	48.948	0.048	1.5	0.7	0 K
960 min Summer	48.944	0.044	1.2	0.5	0 K
1440 min Summer	48.938	0.038	0.9	0.4	0 K
2160 min Summer	48.933	0.033	0.7	0.3	0 K
2880 min Summer	48.929	0.029	0.5	0.2	0 K
4320 min Summer	48.925	0.025	0.4	0.2	0 K
5760 min Summer	48.923	0.023	0.3	0.1	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
15 min Summer	145.495	0.0	14		
30 min Summer	97.551	0.0	22		
60 min Summer	62.215	0.0	40		
120 min Summer	37.050	0.0	70		
180 min Summer	27.401	0.0	102		
240 min Summer	22.123	0.0	132		
360 min Summer	16.346	0.0	192		
480 min Summer	13.183	0.0	250		
600 min Summer	11.158	0.0	308		
720 min Summer	9.738	0.0	368		
960 min Summer	7.857	0.0	488		
1440 min Summer	5.839	0.0	734		
2160 min Summer	4.356	0.0	1092		
2880 min Summer	3.540	0.0	1468		
4320 min Summer	2.641	0.0	2200		
5760 min Summer	2.149	0.0	2936		
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB			Hurst Wickham Barn Permeable Driveway Area 4			
Date 24/02/2025 07:45 File 10644 PP Driveway			Designed by CM Checked by MR			
XP Solutions			Source Control 2020.1.3			
<u>Cascade Summary of Results for 10644 PP Driveway 4.SRCX</u>						
	Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
	7200 min Summer	48.921	0.021	0.3	0.1	0 K
	8640 min Summer	48.920	0.020	0.2	0.1	0 K
	10080 min Summer	48.919	0.019	0.2	0.1	0 K
	15 min Winter	49.009	0.109	3.2	3.3	0 K
	30 min Winter	49.020	0.120	3.2	3.9	0 K
	60 min Winter	49.017	0.117	3.2	3.8	0 K
	120 min Winter	48.995	0.095	3.0	2.6	0 K
	180 min Winter	48.981	0.081	2.5	1.8	0 K
	240 min Winter	48.970	0.070	2.2	1.4	0 K
	360 min Winter	48.955	0.055	1.7	0.9	0 K
	480 min Winter	48.948	0.048	1.5	0.6	0 K
	600 min Winter	48.944	0.044	1.2	0.5	0 K
	720 min Winter	48.941	0.041	1.1	0.5	0 K
	960 min Winter	48.937	0.037	0.9	0.4	0 K
	1440 min Winter	48.932	0.032	0.7	0.3	0 K
	2160 min Winter	48.928	0.028	0.5	0.2	0 K
	2880 min Winter	48.925	0.025	0.4	0.2	0 K
	4320 min Winter	48.922	0.022	0.3	0.1	0 K
	5760 min Winter	48.919	0.019	0.2	0.1	0 K
	7200 min Winter	48.918	0.018	0.2	0.1	0 K
	8640 min Winter	48.917	0.017	0.2	0.1	0 K
	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
	7200 min Summer	1.832	0.0	3584		
	8640 min Summer	1.610	0.0	4352		
	10080 min Summer	1.446	0.0	4968		
	15 min Winter	145.495	0.0	15		
	30 min Winter	97.551	0.0	24		
	60 min Winter	62.215	0.0	42		
	120 min Winter	37.050	0.0	74		
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Civil Engineering - Transport Planning - Flood Risk

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