



DRAINAGE STRATEGY STATEMENT

**FOR
FORMER CHANDLERS BMW
WATER LANE
ANGMERING
BN16 4EH**

Client

McCarthy and Stone
Ringwood
BH24 1EU

Drainage Engineer

WFBA
The Old Hayloft
Pucknall Farm
Dores Lane
Romsey
Hampshire, SO51 0QJ

Project No.: 20105

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GENERAL NOTES

Where any data supplied by the Client or by other external sources have been used it has been assumed that the information is correct. No responsibility can be accepted by WFBA Consulting for inaccuracies within the data supplied by others.

This report has been provided to establish a sustainable design, based on an assessment of the information supplied.

1.0 Introduction

- 1.1** WFBA have been instructed by McCarthy and Stone to undertake a drainage review for a new development on land formerly known as Chandlers BMW and to provide a design strategy for new drainage requirements.
- 1.2** The development proposals include a two-storey building containing up to 33 self-contained flats and a 4000sqft premises currently propose to be used by a Tesco Express or similar. Also included within the proposals is associated parking areas.
- 1.3** The purpose of this report is to demonstrate how the proposed development will drain foul and surface water and describe the additional requirements for maintenance of the proposed SuDs elements of the drainage system.

2 Existing Drainage

- 2.1** The site frontage is located on Water Lane with the western boundary adjacent to High Street within the village of Angmering, West Sussex.
- 2.2** Much of the site is currently disused and was last used as a BMW garage, which provided new and used car sales, servicing, and accident repair services. A derelict two storey residential house and associated garden areas are located within the west of the site.
- 2.3** The local water authority is Southern Water who provide the sewerage services within this area. The Southern Water public sewer records indicate that there are no surface water sewers located within the area. **Appendix A**
- 2.4** A 1.05mØ culverted watercourse runs southwest along Water Lane. The culvert runs alongside the site boundary then flows under the village square before emerging behind the village hall. The culvert is considered an EA main river.
- 2.5** The sewer records show a 175mmØ VC foul sewer pipe runs southwest in Water Lane. There is also a 175mmØ VC foul sewer pipe which runs northwest in High Street connecting with the sewer in Water Lane.
- 2.6** The Groundscan survey would suggest that the surface water from the site currently drains into both the culvert and foul sewer beneath Water Lane immediately north of the site. **Appendix B.**
- 2.7** The existing foul drainage shows a 100mmØ lateral pipe connection from the site to the public foul sewer manhole reference number M/H 9401 in Water Lane. The invert level provided on Southern Water sewer records indicate the invert level to be at 2.83mAOD with the downstream pipe 175mmØ VC. This will allow for a gravity discharge from the site.
- 2.8** A CCTV survey should be carried out to determine the condition and levels of the existing connections to the public sewer and culvert for possible reused.

3 Proposed Development

- 3.1** The development proposals include a two-storey building containing up to 33 self-contained flats and a 4000sqft commercial premises currently proposed to be used by a Tesco Express or similar. Also included within the proposals are associated vehicle accesses and parking.
- 3.2** The new surface water network will be designed to accommodate a 1 in 100-year storm event + 40% for climate change.

- 3.3** The proposed surface water drainage scheme comprises a combination of permeable paving with Type 3 subbase storage and an attenuation tank beneath the rear garden. The permeable paving will act as a collection point for most of the carpark surface water with a gravity connection to the main attenuation tank. The attenuation tank will provide bulk storage of surface water allowing a pumped control discharge to the culvert located in Water Lane.
- 3.4** The attenuation tank has been located to the south of the site, at the rear of the development, to isolate it from the flood zone area located to the north of the site in Water Lane.
- 3.5** It is proposed to restrict the flows from the surface water drainage system to a 50% reduction of the brownfield runoff rate for a 1 year 60-minute storm. The current runoff rate is 19l/s. The proposed rate is 9.5l/s. During times of high rainfall, the current rate during a comparable 1 in 100-year storm is 59l/s. This represents a 84% reduction during times of high rainfall. **Appendix D.**
- 3.6** The pumped control will be duty/standby and will require a backup generator in the event of power outages.
- 3.7** The Duty/standby Pump system will have alarm and telemetry systems in place for pump failure.
- 3.8** An enquiry submission will be required to the Environment Agency to confirm an acceptable gravity surface water discharge rate from the site of 9.5l/s into the watercourse culvert located in Water Lane.
- 3.9** The current foul 100mmØ pipe lateral connection onto the public sewer will require replacing with a 150mmØ pipe at the proposed level for a gravity connection.
- 3.10** A developer enquiry submission to Southern Water to confirm a gravity foul water discharge rate from the site into manhole referenced 9401 located in Water Lane is required.
- 3.11** The proposed drainage strategy layout showing the locations for the foul and surface water connections into the foul public sewer and culvert is included within **Appendix C.**
- 3.12** The surface water attenuation tank details and network calculations are included within **Appendix E** of this report.

4 Summary and Conclusions

- 4.1** WFBA have been instructed by McCarthy and Stone to undertake a drainage review of the proposed development adjacent to Water Lane - and provide detailed design services for the new drainage requirements.
- 4.2** The development comprises a two storey block residential flats along with a singular commercial premise at ground floor at the northern end with residential flats above.
- 4.3** It is proposed to provide surface water attenuation storage to accommodate all hardstand/roof areas from the proposed new development and discharge at an agreed rate into the culverted watercourse in Water Lane.
- 4.4** It is proposed to provide a new 150mmØ foul connection onto the foul public sewer at manhole referenced 9401 on the sewer records.
- 4.5** Confirmation of the existing invert levels and pipe diameters will be required before any new connection works commence.
- 4.6** Confirmation from Southern Water and the EA will be required for the foul and surface water proposed discharge rates.
- 4.7** A Southern Water Section 106 application will be required to make the connection into the foul public sewer.

Appendix A

Southern Water Sewer Records

104557



TQ0604SE

Date: 12/09/2020

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

[O-]C1CCC1

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SEWER RECORDS PAGE 2 OF 2

	Node	Cover	Invert	Size	Material	Shape
21	0201X	13.66		150	VC	CIRC
	0203X			UNK	UNK	CIRC
	0301X	13.06	10.04	175	VC	CIRC
	0302X			UNK	VC	CIRC
	0303X			UNK	UNK	CIRC
	0304X			UNK	UNK	CIRC
	0305X			UNK	UNK	CIRC
	0306X			UNK	UNK	CIRC
	031DX			175	VC	CIRC
	032DX			UNK	UNK	CIRC
	033DX			175	VC	CIRC
	034DX			150	VC	CIRC
	0401X	11.59	9.97	150	VC	CIRC
	0402X	12.17	9.54	150	VC	CIRC
	0403X	12.35	10.76	150	VC	CIRC
	0404X			100	VC	CIRC
	040DX			100	VC	CIRC
	041DX	11.62	10.49	100	VC	CIRC
	042DX	12.04	11.7	100	VC	CIRC
	043DX	12.46	11.15	100	VC	CIRC
	044DX	12.54		100	VC	CIRC
	0501X	12.42		100	VC	CIRC
	0501X	5.55	3.34	175	VC	CIRC
	0502X	6.27	4.31	150	VC	CIRC
	0503X	5.54	3.56	175	VC	CIRC
	0504X	6.59	3.74	150	VC	CIRC
	0505X	6.78	4.51	150	VC	CIRC
	0506X	7.1	5.41	150	VC	CIRC
	0507X	8.59	7.15	150	VC	CIRC
	0508X			100	VC	CIRC
	0510X			100	PF	CIRC
	0511X			100	PF	CIRC
	051BX			UNK	UNK	CIRC
	051DX			175	VC	CIRC
	052BX			175	VC	CIRC
	053BX			175	VC	CIRC
	053DX			UNK	UNK	CIRC
	054BX			UNK	UNK	CIRC
	05ABX			UNK	UNK	CIRC
	05DBX			150	VC	CIRC
05EBX			100	PF	CIRC	
1301X	13.34	10.54	175	VC	CIRC	
1302X	13.46	10.33	175	VC	CIRC	
1303X			100	VC	CIRC	
131DX			100	VC	CIRC	
132DX			100	VC	CIRC	
135DX			175	VC	CIRC	
1401X	12.65	11.05	150	VC	CIRC	
1504X	8.33	7.04	150	VC	CIRC	
152DX	10.26	9.11	150	VC	CIRC	
7207X	4.78	3.17	175	VC	CIRC	
7301Y	8.79	6.99	175	VC	CIRC	
7302X	4.72	3.09	175	VC	CIRC	
7303X	4.88	1.03	300	VC	CIRC	
7304X	4.8	0.86	300	VC	CIRC	
7305X			UNK	UNK	CIRC	
7306X			UNK	UNK	CIRC	
730DX			UNK	UNK	CIRC	
731DX			UNK	UNK	CIRC	
732DX			175	VC	CIRC	
733DX			UNK	UNK	CIRC	
734DX			UNK	UNK	CIRC	
7401X	11.06	8.24	175	VC	CIRC	
7402X	10.67	8.06	175	VC	CIRC	
7403X	11.8	8.66	150	VC	CIRC	
7404X	10.19	7.91	175	VC	CIRC	

[illegible]

Appendix B

Existing Services Layout



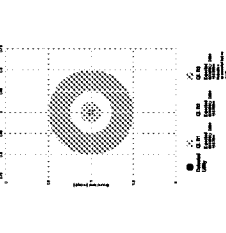
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TYPE 9 - DETENTION	9
TYPE 10 - DETENTION	10



ABBREVIATIONS	DESCRIPTION
AC	ASBESTOS
AD	ADDITIONAL DETAIL
AE	ADDITIONAL EVIDENCE
AF	ADDITIONAL FINDINGS
AG	ADDITIONAL GROUND
AH	ADDITIONAL HAZARD
AI	ADDITIONAL INFORMATION
AL	ADDITIONAL LINES
AM	ADDITIONAL MATERIAL
AN	ADDITIONAL NOTATION
AO	ADDITIONAL OBJECTS
AP	ADDITIONAL PLANT
AQ	ADDITIONAL QUANTITIES
AR	ADDITIONAL RECORDS
AS	ADDITIONAL SURVEILLANCE
AT	ADDITIONAL TRENCHES
AV	ADDITIONAL VEHICLES
AW	ADDITIONAL WORK
AX	ADDITIONAL X-RAYS
AY	ADDITIONAL Y-AXIS
AZ	ADDITIONAL Z-AXIS
BA	BACKLASH
BB	BALANCE
BC	BALANCE CHECK
BD	BALANCE DISCREPANCY
BE	BALANCE ERROR
BF	BALANCE FACTOR
BG	BALANCE GAIN
BH	BALANCE HYSTeresis
BI	BALANCE INTERFERENCE
BJ	BALANCE JITTER
BK	BALANCE KICK
BL	BALANCE LAG
BM	BALANCE MEASUREMENT
BN	BALANCE NOISE
BO	BALANCE OFFSET
BP	BALANCE POINT
BQ	BALANCE RANGE
BR	BALANCE REPEAT
BS	BALANCE SENSITIVITY
BT	BALANCE TOLERANCE
BU	BALANCE UNBALANCE
BV	BALANCE VARIATION
BW	BALANCE WEIGHT
BX	BALANCE ZERO
BY	BALANCE ZERO POINT
BZ	BALANCE ZERO POINT ERROR

LEGEND	DESCRIPTION
+	BOREHOLE PROPOSED
○	LOCATION
—	CABLE TV CATV
—	CLOSED CIRCUIT TV
—	COAXIAL CABLE
—	EARTH
—	EMERGENCY LIGHT
—	FIRE OPTICS
—	GAUGE LINES
—	GROUNDWATER
—	ELECTRICITY
—	FUEL LINES
—	OFFSET FILL
—	PIPE
—	PLUMBING
—	GAS
—	WATER
—	COMPRESSED AIR
—	RADIATION
—	RAILWAY
—	SEWER
—	DRAINAGE SURFACE
—	END OF TRACE
—	END OF TRAIL
—	SURVEYED AREA

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Bristol Road,
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Client: McCarthy & Stone
Project: Churches BMW Site
Drawn: 15/09/20
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Appendix C

Drainage Strategy Layout

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT, ENGINEER & SPECIALIST DRAWINGS & THE SPECIFICATION.
2. IN THE CASE OF A DISCREPANCY BETWEEN WFBA DRAWINGS, A LACK OF DIMENSIONS OR UN-CLEAR INFORMATION WFBA LIMITED MUST BE CONSULTED IMMEDIATELY BEFORE WORK PROCEEDS.
3. ALL LAYOUT DIMENSIONS ARE IN METRES, DETAIL DIMENSIONS IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE. ALL COORDINATES ARE TO OS GRID AND ALL LEVELS ARE TO OS DATUM UNLESS NOTED OTHERWISE.
4. THE EXISTING PUBLIC SEWER MAINS FROM SEWERS ON SITE HAS BEEN EXTENDED TO THE EXACT LEVEL AT POINT OF CONNECTION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORT TO THE ENGINEER IMMEDIATELY.
5. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH BUILDING REGULATIONS.
6. ALL ADAPTABLE DRAINAGE TO BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION, TOGETHER WITH ANY REQUIREMENTS FROM THE LOCAL DRAINAGE AUTHORITY.
7. UNLESS NOTED OTHERWISE ALL DRAINAGE PIPES TO BE 100mmØ. ALL GULLY LEADS TO BE 150mmØ.
8. UNLESS NOTED OTHERWISE ALL MANHOLE COVERS SHALL BE 600mmØ.
9. ALL EXTERNAL WORKS TO HAVE RODDING ACCESS.
10. ALL HIGHWAY WORKS TO BE IN ACCORDANCE WITH THE DTP SPECIFICATION FOR HIGHWAYS WORKS, TOGETHER WITH PARTICULAR REQUIREMENTS OF THE LOCAL HIGHWAYS AUTHORITY.
11. THE LOCATION OF KNOWN EXISTING PUBLIC UTILITY SERVICES IS AS PROVIDED BY THE STATUTORY UNDERTAKERS. NO GUARANTEE CAN BE GIVEN AS TO THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR IS TO ASCERTAIN THE EXACT LOCATION PRIOR TO THE COMMENCEMENT OF WORKS.
12. ALL DUCTS TO BE LAID AT DEPTHS TO SUIT THE RELEVANT STATUTORY UNDERTAKER.
13. SERVICES EXISTING AT THE SITE ARE TO BE CHECKED AGAINST ARCHITECTS DRAWINGS PRIOR TO DUCT LAYING AND ANY DISCREPANCIES REPORTED WFBA IMMEDIATELY.
14. ALL RWP & SWP LOCATIONS TO BE CONFIRMED BY THE ARCHITECT PRIOR TO CONSTRUCTION.
15. ALL CONNECTIONS TO EXISTING DRAINAGE TO BE CHECKED AND VERIFIED ON SITE PRIOR TO CONSTRUCTION STAGE.
16. SITE SETTING OUT IS BASED OFF OF TOPOGRAPHICAL SURVEY PROVIDED.
17. ANY DISCREPANCY FOUND BETWEEN OVERLAID THIRD-PARTY DRAWINGS & LATEST THIRD-PARTY DRAWINGS MUST BE RAISED WITH WFBA IMMEDIATELY.

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PRELIMINARY S2

Project Name
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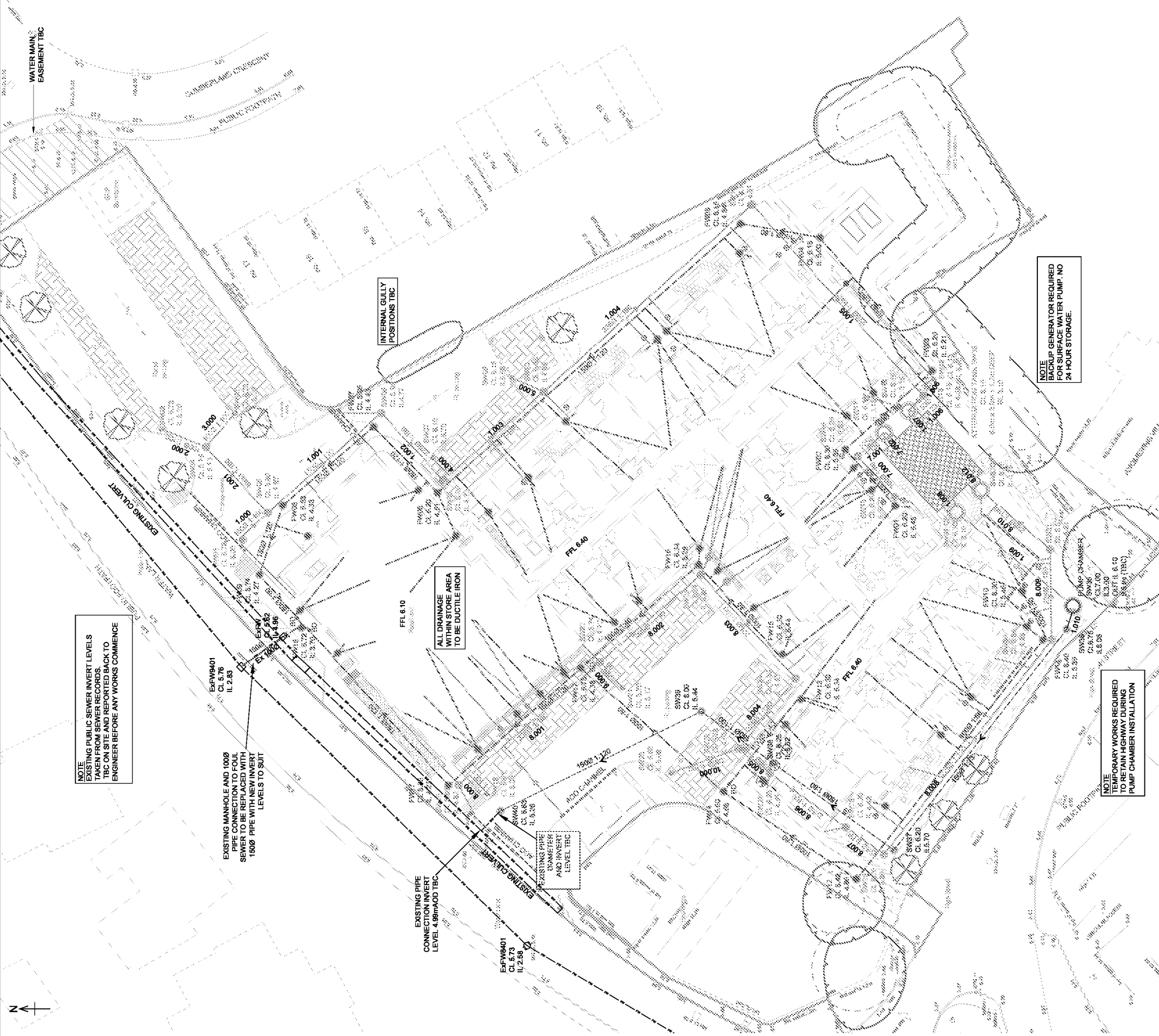
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SO-2729-03-DE-0500 P01

WFBA DRAINAGE LEGEND

- STORM WATER - PRIVATE DRAIN
- STORM WATER - PRIVATE FROM PUMP CHAMBER
- FOUL WATER - PRIVATE DRAIN
- STORM WATER - EXISTING DRAIN / SEWER
- FOUL WATER - EXISTING DRAIN / SEWER
- DRAIN / SEWER TO BE ABANDONED
- RIISING MAIN (PUMPED)
- MANHOLE WITH BACKDROP INLET
- GULLY / RODDING EYE
- PERFORATED PIPE
- DRAINAGE CHANNEL
- PROPOSED ATTENUATION TANK
- PERMEABLE AREA
- SITE BOUNDARY
- INSPECTION CHAMBERS



NOTE
EXISTING PUBLIC SEWER INVERT LEVELS
TAKEN FROM SEWER RECORDS.
TBC ON SITE AND REPORTED BACK TO
ENGINEER BEFORE ANY WORKS COMMENCE

EXISTING MANHOLE AND 100Ø
PIPE CONNECTION TO FOUL
SEWER TO BE REPLACED WITH
150Ø PIPE WITH NEW INVERT
LEVELS TO SUIT

EXISTING PIPE
CONNECTION INVERT
LEVEL 4.98m AOD TBC

EXISTING PIPE
DIAMETER
AND INVERT
LEVEL TBC

INTERNAL GULLY
POSITIONS TBC

ALL DRAINAGE
WITHIN STORE AREA
TO BE DUCTILE IRON

NOTE
BACKUP GENERATOR REQUIRED
FOR SURFACE WATER PUMP. NO
24 HOUR STORAGE.

NOTE
TEMPORARY WORKS REQUIRED
TO RETAIN HIGHWAY DURING
PUMP CHAMBER INSTALLATION



Appendix D

Brownfield runoff rates

20105 - Angmering
Surface Water Runoff Calculations
r = 0.4

Key
Peak Flow
DO NOT EDIT

Pre Development

1:1yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M1-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	0.62	4.46	53.57	78.81
10min	0.17	0.378	1.00	0.51	10.20	0.61	6.22	37.33	54.92
15min	0.25	0.378	1.00	0.62	12.40	0.61	7.56	30.26	44.51
30min	0.50	0.378	1.00	0.79	15.80	0.62	9.80	19.59	28.82
1h	1.00	0.378	1.00	1.00	20.00	0.64	12.80	12.80	18.83
2h	2.00	0.378	1.00	1.22	24.40	0.66	16.10	8.05	11.85
4h	4.00	0.378	1.00	1.49	29.80	0.68	20.26	5.07	7.45
6h	6.00	0.378	1.00	1.69	33.80	0.69	23.32	3.89	5.72

1:2yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M2-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	0.79	5.69	68.26	100.42
10min	0.17	0.378	1.00	0.51	10.20	0.79	8.06	48.35	71.13
15min	0.25	0.378	1.00	0.62	12.40	0.79	9.80	39.18	57.65
30min	0.50	0.378	1.00	0.79	15.80	0.80	12.64	25.28	37.19
1h	1.00	0.378	1.00	1.00	20.00	0.81	16.20	16.20	23.83
2h	2.00	0.378	1.00	1.22	24.40	0.82	20.01	10.00	14.72
4h	4.00	0.378	1.00	1.49	29.80	0.83	24.73	6.18	9.10
6h	6.00	0.378	1.00	1.69	33.80	0.83	28.05	4.68	6.88

1:5yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M5-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	1.02	7.34	88.13	129.65
10min	0.17	0.378	1.00	0.51	10.20	1.03	10.51	63.04	92.74
15min	0.25	0.378	1.00	0.62	12.40	1.03	12.77	51.09	75.16
30min	0.50	0.378	1.00	0.79	15.80	1.03	16.27	32.55	47.88
1h	1.00	0.378	1.00	1.00	20.00	1.03	20.60	20.60	30.31
2h	2.00	0.378	1.00	1.22	24.40	1.03	25.13	12.57	18.49
4h	4.00	0.378	1.00	1.49	29.80	1.03	30.69	7.67	11.29
6h	6.00	0.378	1.00	1.69	33.80	1.03	34.81	5.80	8.54

1:10yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M10-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	1.21	8.71	104.54	153.80
10min	0.17	0.378	1.00	0.51	10.20	1.22	12.44	74.66	109.84
15min	0.25	0.378	1.00	0.62	12.40	1.23	15.25	61.01	89.75
30min	0.50	0.378	1.00	0.79	15.80	1.23	19.43	38.87	57.18
1h	1.00	0.378	1.00	1.00	20.00	1.24	24.80	24.80	36.49
2h	2.00	0.378	1.00	1.22	24.40	1.24	30.26	15.13	22.26
4h	4.00	0.378	1.00	1.49	29.80	1.24	36.95	9.24	13.59
6h	6.00	0.378	1.00	1.69	33.80	1.23	41.57	6.93	10.19

1:30yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M30-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	1.46	10.51	126.14	185.58
10min	0.17	0.378	1.00	0.51	10.20	1.49	15.20	91.19	134.15
15min	0.25	0.378	1.00	0.62	12.40	1.51	18.72	74.90	110.19
30min	0.50	0.378	1.00	0.79	15.80	1.53	24.17	48.35	71.13
1h	1.00	0.378	1.00	1.00	20.00	1.54	30.80	30.80	45.31
2h	2.00	0.378	1.00	1.22	24.40	1.53	37.33	18.67	27.46
4h	4.00	0.378	1.00	1.49	29.80	1.51	45.00	11.25	16.55
6h	6.00	0.378	1.00	1.69	33.80	1.48	50.02	8.34	12.27

1:100yr	hrs	Area (ha)	% Impermeable	Z1	M5-X (mm)	Z2	M100-X (mm)	I (mm/hr)	Q (l/s)
5min	0.08	0.378	1.00	0.36	7.20	1.85	13.32	159.84	235.15
10min	0.17	0.378	1.00	0.51	10.20	1.91	19.48	116.89	171.97
15min	0.25	0.378	1.00	0.62	12.40	1.95	24.18	96.72	142.29
30min	0.50	0.378	1.00	0.79	15.80	1.99	31.44	62.88	92.51
1h	1.00	0.378	1.00	1.00	20.00	2.03	40.60	40.60	59.73
2h	2.00	0.378	1.00	1.22	24.40	2.01	49.04	24.52	36.08
4h	4.00	0.378	1.00	1.49	29.80	1.97	58.71	14.68	21.59
6h	6.00	0.378	1.00	1.69	33.80	1.94	65.57	10.93	16.08

Appendix E

Attenuation Tank and Network Calculations

The Old Hayloft		Page 1
Pucknall Farm	20105-WFB-XX-XX-CA-C-001_P01	
Romsey	Angmering, West Sussex	
Hampshire SO51 0QJ	Full Surface Water Network	
Date 13/05/2021 19:30	Designed by KD	
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XP Solutions	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	19.000	Add Flow / Climate Change (%)	0
Ratio R	0.350	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	550	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.500
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	200

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.018	4-8	0.271	8-12	0.028

Total Area Contributing (ha) = 0.317

Total Pipe Volume (m³) = 10.308

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	3.993	0.033	121.0	0.032	4.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	7.362	0.074	100.0	0.012	4.00	0.0	0.600	o	100	Pipe/Conduit	
3.000	7.361	0.074	100.0	0.022	4.00	0.0	0.600	o	100	Pipe/Conduit	
2.001	9.069	0.091	100.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
1.001	14.727	0.123	120.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	8.879	0.047	190.0	0.023	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	52.78	4.07	5.000	0.032	0.0	0.0	0.0	0.91	16.1	4.5
2.000	52.36	4.16	5.200	0.012	0.0	0.0	0.0	0.77	6.0	1.7
3.000	52.36	4.16	5.200	0.022	0.0	0.0	0.0	0.77	6.0	3.2
2.001	51.43	4.36	5.126	0.034	0.0	0.0	0.0	0.77	6.0	4.8
1.001	50.23	4.62	4.967	0.066	0.0	0.0	0.0	0.92	16.2	9.0
1.002	49.56	4.78	4.769	0.089	0.0	0.0	0.0	0.95	37.6	12.0

The Old Hayloft		Page 2
Pucknall Farm Romsey Hampshire SO51 0QJ	20105-WFB-XX-XX-CA-C-001_P01 Angmering, West Sussex Full Surface Water Network	
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XP Solutions	Network 2019.1	

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
4.000	4.235	0.042	100.8	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit	
1.003	14.521	0.076	190.0	0.027	0.00	0.0	0.600	o	225	Pipe/Conduit	
5.000	3.897	0.039	99.9	0.002	4.00	0.0	0.600	o	100	Pipe/Conduit	
1.004	25.545	0.134	190.0	0.018	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.005	24.081	0.127	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
6.000	1.816	0.023	80.0	0.003	4.00	0.0	0.600	o	100	Pipe/Conduit	
1.006	2.011	0.011	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.007	5.543	0.000	0.0	0.005	0.00	0.0	0.600	oo	150	Double Pipe	
7.000	5.528	0.069	80.0	0.008	4.00	0.0	0.600	o	100	Pipe/Conduit	
7.001	3.537	0.044	80.0	0.009	0.00	0.0	0.600	o	100	Pipe/Conduit	
7.002	5.380	0.000	0.0	0.000	0.00	0.0	0.600	oo	150	Double Pipe	
8.000	2.141	0.011	190.0	0.037	4.00	0.0	0.600	o	225	Pipe/Conduit	
9.000	4.160	0.042	99.0	0.014	4.00	0.0	0.600	o	100	Pipe/Conduit	
8.001	16.073	0.085	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
10.000	3.726	0.037	100.7	0.012	4.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL Σ (m)	I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
4.000	52.68	4.09	5.570	0.008	0.0	0.0	0.0	0.77	6.0	1.1
1.003	48.50	5.04	4.723	0.124	0.0	0.0	0.0	0.95	37.6	16.2
5.000	52.72	4.08	5.562	0.002	0.0	0.0	0.0	0.77	6.0	0.3
1.004	46.77	5.49	4.646	0.144	0.0	0.0	0.0	0.95	37.6	18.2
1.005	45.26	5.91	4.512	0.144	0.0	0.0	0.0	0.95	37.6	18.2
6.000	52.96	4.04	5.650	0.003	0.0	0.0	0.0	0.86	6.8	0.4
1.006	45.14	5.95	4.385	0.147	0.0	0.0	0.0	0.95	37.6	18.2
1.007	42.03	6.94	3.150	0.152	0.0	0.0	0.0	0.09	3.3	18.2
7.000	52.61	4.11	5.700	0.008	0.0	0.0	0.0	0.86	6.8	1.1
7.001	52.28	4.18	5.631	0.017	0.0	0.0	0.0	0.86	6.8	2.4
7.002	48.08	5.14	3.150	0.017	0.0	0.0	0.0	0.09	3.3	2.4
8.000	52.95	4.04	4.820	0.037	0.0	0.0	0.0	0.95	37.6	5.3
9.000	52.70	4.09	5.081	0.014	0.0	0.0	0.0	0.77	6.1	2.0
8.001	51.35	4.37	4.809	0.051	0.0	0.0	0.0	0.95	37.6	7.1
10.000	52.74	4.08	5.170	0.012	0.0	0.0	0.0	0.77	6.0	1.7

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Date 13/05/2021 19:30	Designed by KD	
File 20105-WFB-XX-XX-CA-C-001 Surfa...	Checked by PT	
XP Solutions	Network 2019.1	

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
8.002	13.088	0.069	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.003	14.280	0.075	190.0	0.028	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.004	8.760	0.046	190.4	0.006	0.00	0.0	0.600	o	225	Pipe/Conduit	
11.000	7.445	0.067	111.1	0.013	4.00	0.0	0.600	o	100	Pipe/Conduit	
8.005	3.780	0.020	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.006	8.929	0.089	100.0	0.002	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.007	4.864	0.026	190.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.008	26.583	0.140	190.0	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.009	8.861	0.047	190.0	0.002	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.010	8.848	0.047	190.0	0.002	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.011	5.645	0.000	0.0	0.005	0.00	0.0	0.600	oo	150	Double Pipe	
1.008	5.439	0.000	0.0	0.000	0.00	0.0	0.600	oo	150	Double Pipe	
1.009	15.443	0.081	190.7	0.008	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.010	29.676	0.198	149.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL E (m)	I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
8.002	50.32	4.60	4.724	0.063	0.0	0.0	0.0	0.95	37.6	8.6
8.003	49.24	4.86	4.650	0.091	0.0	0.0	0.0	0.95	37.6	12.2
8.004	48.61	5.01	4.575	0.097	0.0	0.0	0.0	0.94	37.5	12.8
11.000	52.31	4.17	5.090	0.013	0.0	0.0	0.0	0.73	5.7	1.9
8.005	48.34	5.08	4.529	0.111	0.0	0.0	0.0	0.95	37.6	14.5
8.006	47.89	5.19	4.509	0.112	0.0	0.0	0.0	1.31	52.0	14.6
8.007	47.56	5.28	4.420	0.112	0.0	0.0	0.0	0.95	37.6	14.6
8.008	45.84	5.75	4.394	0.132	0.0	0.0	0.0	0.95	37.6	16.3
8.009	45.30	5.90	4.254	0.133	0.0	0.0	0.0	0.95	37.6	16.4
8.010	44.77	6.06	4.208	0.135	0.0	0.0	0.0	0.95	37.6	16.4
8.011	41.66	7.07	3.150	0.141	0.0	0.0	0.0	0.09	3.3	16.4
1.008	39.11	8.05	3.100	0.309	0.0	0.0	0.0	0.09	3.3	32.7
1.009	38.46	8.32	3.100	0.317	0.0	0.0	0.0	0.94	37.5	33.0
1.010	37.11	8.93	3.000	0.317	0.0	0.0	0.0	0.82	14.5	33.0

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XP Solutions		Network 2019.1

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
1	5.720	0.720	Open Manhole	450	1.000	5.000	150				
2	5.730	0.530	Open Manhole	250	2.000	5.200	100				
3	5.730	0.530	Open Manhole	250	3.000	5.200	100				
4	5.750	0.624	Open Manhole	450	2.001	5.126	100	2.000	5.126	100	
								3.000	5.126	100	
5	5.800	0.833	Junction		1.001	4.967	150	1.000	4.967	150	
								2.001	5.036	100	19
6	5.950	1.181	Open Manhole	600	1.002	4.769	225	1.001	4.844	150	
7	6.100	0.530	Open Manhole	250	4.000	5.570	100				
8	6.200	1.477	Open Manhole	600	1.003	4.723	225	1.002	4.723	225	
								4.000	5.528	100	680
9	6.150	0.588	Open Manhole	250	5.000	5.562	100				
10	6.350	1.704	Open Manhole	600	1.004	4.646	225	1.003	4.646	225	
								5.000	5.523	100	752
11	6.150	1.638	Open Manhole	600	1.005	4.512	225	1.004	4.512	225	
12	6.150	0.500	Open Manhole	250	6.000	5.650	100				
13	6.150	1.765	Open Manhole	600	1.006	4.385	225	1.005	4.385	225	
								6.000	5.627	100	1117
14	6.150	3.000	Open Manhole	1200	1.007	3.150	150	1.006	4.374	225	1299
15	6.200	0.500	Open Manhole	450	7.000	5.700	100				
16	6.250	0.619	Open Manhole	450	7.001	5.631	100	7.000	5.631	100	
17	6.150	3.000	Open Manhole	1200	7.002	3.150	150	7.001	5.587	100	2387
18	5.750	0.930	Open Manhole	600	8.000	4.820	225				
19	5.611	0.530	Open Manhole	250	9.000	5.081	100				
20	5.745	0.936	Junction		8.001	4.809	225	8.000	4.809	225	
								9.000	5.039	100	105
21	5.700	0.530	Open Manhole	250	10.000	5.170	100				
22	5.740	1.016	Open Manhole	600	8.002	4.724	225	8.001	4.724	225	
								10.000	5.133	100	284
23	6.340	1.690	Open Manhole	600	8.003	4.650	225	8.002	4.655	225	5
24	6.300	1.725	Open Manhole	600	8.004	4.575	225	8.003	4.575	225	
25	5.620	0.530	Open Manhole	250	11.000	5.090	100				
26	5.800	1.271	Open Manhole	600	8.005	4.529	225	8.004	4.529	225	
								11.000	5.023	100	369
27	6.250	1.741	Open Manhole	600	8.006	4.509	225	8.005	4.509	225	
28	6.200	1.780	Open Manhole	600	8.007	4.420	225	8.006	4.420	225	
29	6.200	1.806	Open Manhole	600	8.008	4.394	225	8.007	4.394	225	
30	6.500	2.246	Open Manhole	600	8.009	4.254	225	8.008	4.254	225	
31	6.400	2.192	Open Manhole	600	8.010	4.208	225	8.009	4.208	225	
32	6.300	3.150	Open Manhole	1200	8.011	3.150	150	8.010	4.161	225	1086
33	6.150	3.050	Open Manhole	450	1.008	3.100	150	1.007	3.150	150	50
								7.002	3.150	150	50
								8.011	3.150	150	50
34	6.150	3.050	Open Manhole	1200	1.009	3.100	225	1.008	3.100	150	
35	7.000	4.000	Open Manhole	1200	1.010	3.000	150	1.009	3.019	225	94

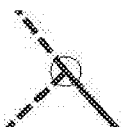
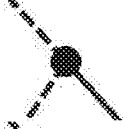
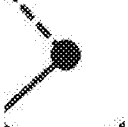
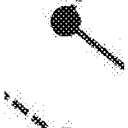
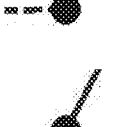
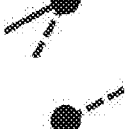
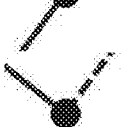
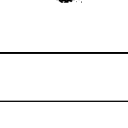
Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN Invert Level (m) Diameter (mm)	Pipes In PN Invert Level (m) Diameter (mm)	Backdrop (mm)
36	6.750	3.948	Open Manhole	0	OUTFALL	1.010 2.802 150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
1	506930.960	104464.146	506930.960	104464.146	Required	
2	506943.776	104473.841	506943.776	104473.841	Required	
3	506947.134	104464.855	506947.134	104464.855	Required	
4	506940.224	104467.393	506940.224	104467.393	Required	
5	506933.625	104461.172			No Entry	
6	506943.558	104450.299	506943.558	104450.299	Required	
7	506940.964	104442.437	506940.964	104442.437	Required	
8	506937.111	104444.194	506937.111	104444.194	Required	
9	506949.805	104435.694	506949.805	104435.694	Required	
10	506946.722	104433.309	506946.722	104433.309	Required	
11	506963.515	104414.059	506963.515	104414.059	Required	
12	506946.426	104396.343	506946.426	104396.343	Required	
13	506945.604	104397.963	506945.604	104397.963	Required	
14	506943.787	104398.825	506943.787	104398.825	Required	
15	506935.003	104400.318	506935.003	104400.318	Required	
16	506939.252	104403.854	506939.252	104403.854	Required	

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XP Solutions	Network 2019.1	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
17	506941.616	104401.223	506941.616	104401.223	Required	
18	506907.391	104442.900	506907.391	104442.900	Required	
19	506905.719	104438.313	506905.719	104438.313	Required	
20	506908.704	104441.210			No Entry	
21	506917.340	104426.115	506917.340	104426.115	Required	
22	506919.405	104429.216	506919.405	104429.216	Required	
23	506928.138	104419.469	506928.138	104419.469	Required	
24	506917.437	104410.014	506917.437	104410.014	Required	
25	506907.969	104422.470	506907.969	104422.470	Required	
26	506910.618	104415.512	506910.618	104415.512	Required	
27	506908.298	104412.528	506908.298	104412.528	Required	
28	506902.780	104405.508	506902.780	104405.508	Required	
29	506900.456	104401.235	506900.456	104401.235	Required	
30	506921.396	104384.859	506921.396	104384.859	Required	
31	506930.255	104385.027	506930.255	104385.027	Required	
32	506936.022	104391.738	506936.022	104391.738	Required	
33	506938.654	104396.732	506938.654	104396.732	Required	
34	506933.845	104394.192	506933.845	104394.192	Required	
35	506924.661	104381.777	506924.661	104381.777	Required	

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XP Solutions		Network 2019.1

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
36	506901.212	104399.965			No Entry	



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XP Solutions	Network 2019.1	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	1	5.720	5.000	0.570	Open Manhole	450
2.000	o	100	2	5.730	5.200	0.430	Open Manhole	250
3.000	o	100	3	5.730	5.200	0.430	Open Manhole	250
2.001	o	100	4	5.750	5.126	0.524	Open Manhole	450
1.001	o	150	5	5.800	4.967	0.683	Junction	
1.002	o	225	6	5.950	4.769	0.956	Open Manhole	600
4.000	o	100	7	6.100	5.570	0.430	Open Manhole	250
1.003	o	225	8	6.200	4.723	1.252	Open Manhole	600
5.000	o	100	9	6.150	5.562	0.488	Open Manhole	250
1.004	o	225	10	6.350	4.646	1.479	Open Manhole	600
1.005	o	225	11	6.150	4.512	1.413	Open Manhole	600
6.000	o	100	12	6.150	5.650	0.400	Open Manhole	250
1.006	o	225	13	6.150	4.385	1.540	Open Manhole	600
1.007	oo	150	14	6.150	3.150	2.850	Open Manhole	1200
7.000	o	100	15	6.200	5.700	0.400	Open Manhole	450

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	3.993	121.0	5	5.800	4.967	0.683	Junction	
2.000	7.362	100.0	4	5.750	5.126	0.524	Open Manhole	450
3.000	7.361	100.0	4	5.750	5.126	0.524	Open Manhole	450
2.001	9.069	100.0	5	5.800	5.036	0.664	Junction	
1.001	14.727	120.0	6	5.950	4.844	0.956	Open Manhole	600
1.002	8.879	190.0	8	6.200	4.723	1.252	Open Manhole	600
4.000	4.235	100.8	8	6.200	5.528	0.572	Open Manhole	600
1.003	14.521	190.0	10	6.350	4.646	1.479	Open Manhole	600
5.000	3.897	99.9	10	6.350	5.523	0.727	Open Manhole	600
1.004	25.545	190.0	11	6.150	4.512	1.413	Open Manhole	600
1.005	24.081	190.0	13	6.150	4.385	1.540	Open Manhole	600
6.000	1.816	80.0	13	6.150	5.627	0.423	Open Manhole	600
1.006	2.011	190.0	14	6.150	4.374	1.551	Open Manhole	1200
1.007	5.543	0.0	33	6.150	3.150	2.850	Open Manhole	450
7.000	5.528	80.0	16	6.250	5.631	0.519	Open Manhole	450

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.001	o	100	16	6.250	5.631	0.519	Open Manhole	450
7.002	oo	150	17	6.150	3.150	2.850	Open Manhole	1200
8.000	o	225	18	5.750	4.820	0.705	Open Manhole	600
9.000	o	100	19	5.611	5.081	0.430	Open Manhole	250
8.001	o	225	20	5.745	4.809	0.711	Junction	
10.000	o	100	21	5.700	5.170	0.430	Open Manhole	250
8.002	o	225	22	5.740	4.724	0.791	Open Manhole	600
8.003	o	225	23	6.340	4.650	1.465	Open Manhole	600
8.004	o	225	24	6.300	4.575	1.500	Open Manhole	600
11.000	o	100	25	5.620	5.090	0.430	Open Manhole	250
8.005	o	225	26	5.800	4.529	1.046	Open Manhole	600
8.006	o	225	27	6.250	4.509	1.516	Open Manhole	600
8.007	o	225	28	6.200	4.420	1.555	Open Manhole	600
8.008	o	225	29	6.200	4.394	1.581	Open Manhole	600
8.009	o	225	30	6.500	4.254	2.021	Open Manhole	600
8.010	o	225	31	6.400	4.208	1.967	Open Manhole	600
8.011	oo	150	32	6.300	3.150	3.000	Open Manhole	1200
1.008	oo	150	33	6.150	3.100	2.900	Open Manhole	450

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
7.001	3.537	80.0	17	6.150	5.587	0.463	Open Manhole	1200
7.002	5.380	0.0	33	6.150	3.150	2.850	Open Manhole	450
8.000	2.141	190.0	20	5.745	4.809	0.711	Junction	
9.000	4.160	99.0	20	5.745	5.039	0.606	Junction	
8.001	16.073	190.0	22	5.740	4.724	0.791	Open Manhole	600
10.000	3.726	100.7	22	5.740	5.133	0.507	Open Manhole	600
8.002	13.088	190.0	23	6.340	4.655	1.460	Open Manhole	600
8.003	14.280	190.0	24	6.300	4.575	1.500	Open Manhole	600
8.004	8.760	190.4	26	5.800	4.529	1.046	Open Manhole	600
11.000	7.445	111.1	26	5.800	5.023	0.677	Open Manhole	600
8.005	3.780	190.0	27	6.250	4.509	1.516	Open Manhole	600
8.006	8.929	100.0	28	6.200	4.420	1.555	Open Manhole	600
8.007	4.864	190.0	29	6.200	4.394	1.581	Open Manhole	600
8.008	26.583	190.0	30	6.500	4.254	2.021	Open Manhole	600
8.009	8.861	190.0	31	6.400	4.208	1.967	Open Manhole	600
8.010	8.848	190.0	32	6.300	4.161	1.914	Open Manhole	1200
8.011	5.645	0.0	33	6.150	3.150	2.850	Open Manhole	450
1.008	5.439	0.0	34	6.150	3.100	2.900	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd	Diam	MH	C.Level	I.Level	D.Depth	MH	MH DIAM., L*W
	Sect	(mm)	Name	(m)	(m)	(m)	Connection	(mm)
1.009	o	225	34	6.150	3.100	2.825	Open Manhole	1200
1.010	o	150	35	7.000	3.000	3.850	Open Manhole	1200

Downstream Manhole

PN	Length	Slope	MH	C.Level	I.Level	D.Depth	MH	MH DIAM., L*W
	(m)	(1:X)	Name	(m)	(m)	(m)	Connection	(mm)
1.009	15.443	190.7	35	7.000	3.019	3.756	Open Manhole	1200
1.010	29.676	149.9	36	6.750	2.802	3.798	Open Manhole	0

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.013	0.013	0.013
	User	-	100	0.018	0.018	0.032
2.000	User	-	100	0.012	0.012	0.012
3.000	User	-	100	0.022	0.022	0.022
2.001	-	-	100	0.000	0.000	0.000
1.001	-	-	100	0.000	0.000	0.000
1.002	User	-	100	0.013	0.013	0.013
	User	-	100	0.010	0.010	0.023
4.000	User	-	100	0.006	0.006	0.006
	User	-	100	0.002	0.002	0.008
1.003	User	-	100	0.026	0.026	0.026
	User	-	100	0.001	0.001	0.027
5.000	User	-	100	0.002	0.002	0.002
1.004	User	-	100	0.018	0.018	0.018
1.005	-	-	100	0.000	0.000	0.000
6.000	User	-	100	0.003	0.003	0.003
1.006	-	-	100	0.000	0.000	0.000
1.007	User	-	100	0.005	0.005	0.005
7.000	User	-	100	0.008	0.008	0.008
7.001	User	-	100	0.009	0.009	0.009
7.002	-	-	100	0.000	0.000	0.000
8.000	User	-	100	0.027	0.027	0.027
	User	-	100	0.010	0.010	0.037
9.000	User	-	100	0.014	0.014	0.014
8.001	-	-	100	0.000	0.000	0.000
10.000	User	-	100	0.010	0.010	0.010
	User	-	100	0.002	0.002	0.012
8.002	-	-	100	0.000	0.000	0.000
8.003	User	-	100	0.013	0.013	0.013
	User	-	100	0.015	0.015	0.028
8.004	User	-	100	0.006	0.006	0.006
11.000	User	-	100	0.013	0.013	0.013
8.005	-	-	100	0.000	0.000	0.000
8.006	User	-	100	0.002	0.002	0.002
8.007	-	-	100	0.000	0.000	0.000
8.008	User	-	100	0.019	0.019	0.019
8.009	User	-	100	0.002	0.002	0.002
8.010	User	-	100	0.002	0.002	0.002
8.011	User	-	100	0.005	0.005	0.005
1.008	-	-	100	0.000	0.000	0.000
1.009	User	-	100	0.008	0.008	0.008
1.010	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.317	0.317	0.317

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Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000	1	150	0.570	0.683	Unclassified	450	0	0.570	Unclassified
2.000	2	100	0.430	0.524	Unclassified	250	0	0.430	Unclassified
3.000	3	100	0.430	0.524	Unclassified	250	0	0.430	Unclassified
2.001	4	100	0.524	0.664	Unclassified	450	0	0.524	Unclassified
1.001	5	150	0.683	0.956	Unclassified				Junction
1.002	6	225	0.956	1.252	Unclassified	600	0	0.956	Unclassified
4.000	7	100	0.430	0.572	Unclassified	250	0	0.430	Unclassified
1.003	8	225	1.252	1.479	Unclassified	600	0	1.252	Unclassified
5.000	9	100	0.488	0.727	Unclassified	250	0	0.488	Unclassified
1.004	10	225	1.413	1.479	Unclassified	600	0	1.479	Unclassified
1.005	11	225	1.413	1.540	Unclassified	600	0	1.413	Unclassified
6.000	12	100	0.400	0.423	Unclassified	250	0	0.400	Unclassified
1.006	13	225	1.540	1.551	Unclassified	600	0	1.540	Unclassified
1.007	14	150	2.850	2.850	Unclassified	1200	0	2.850	Unclassified
7.000	15	100	0.400	0.519	Unclassified	450	0	0.400	Unclassified
7.001	16	100	0.463	0.519	Unclassified	450	0	0.519	Unclassified
7.002	17	150	2.850	2.850	Unclassified	1200	0	2.850	Unclassified
8.000	18	225	0.705	0.711	Unclassified	600	0	0.705	Unclassified
9.000	19	100	0.430	0.606	Unclassified	250	0	0.430	Unclassified
8.001	20	225	0.711	0.791	Unclassified				Junction
10.000	21	100	0.430	0.507	Unclassified	250	0	0.430	Unclassified
8.002	22	225	0.791	1.460	Unclassified	600	0	0.791	Unclassified
8.003	23	225	1.465	1.500	Unclassified	600	0	1.465	Unclassified
8.004	24	225	1.046	1.500	Unclassified	600	0	1.500	Unclassified
11.000	25	100	0.430	0.677	Unclassified	250	0	0.430	Unclassified
8.005	26	225	1.046	1.516	Unclassified	600	0	1.046	Unclassified
8.006	27	225	1.516	1.555	Unclassified	600	0	1.516	Unclassified
8.007	28	225	1.555	1.581	Unclassified	600	0	1.555	Unclassified
8.008	29	225	1.581	2.021	Unclassified	600	0	1.581	Unclassified
8.009	30	225	1.967	2.021	Unclassified	600	0	2.021	Unclassified
8.010	31	225	1.914	1.967	Unclassified	600	0	1.967	Unclassified
8.011	32	150	2.850	3.000	Unclassified	1200	0	3.000	Unclassified
1.008	33	150	2.900	2.900	Unclassified	450	0	2.900	Unclassified
1.009	34	225	2.825	3.756	Unclassified	1200	0	2.825	Unclassified
1.010	35	150	3.798	3.850	Unclassified	1200	0	3.850	Unclassified

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.010	36	6.750	2.802	3.000	0	0
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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

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Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	30
Ratio R	0.350		

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Online Controls for Storm

Pump Manhole: 35, DS/PN: 1.010, Volume (m³): 5.1

Invert Level (m) 3.000

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	9.5000	1.200	9.5000

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Storage Structures for Storm

Porous Car Park Manhole: 2, DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	2.1	
Membrane Percolation (mm/hr)	1000	Length (m)	20.1	
Max Percolation (l/s)	11.7	Slope (1:X)	100.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.200	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 3, DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.8	
Membrane Percolation (mm/hr)	1000	Length (m)	21.6	
Max Percolation (l/s)	28.8	Slope (1:X)	100.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.200	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 7, DS/PN: 4.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.8	
Membrane Percolation (mm/hr)	1000	Length (m)	12.0	
Max Percolation (l/s)	16.0	Slope (1:X)	80.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.570	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 9, DS/PN: 5.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.8	
Membrane Percolation (mm/hr)	1000	Length (m)	4.8	
Max Percolation (l/s)	6.4	Slope (1:X)	0.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.562	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 19, DS/PN: 9.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.8	
Membrane Percolation (mm/hr)	1000	Length (m)	16.6	
Max Percolation (l/s)	22.1	Slope (1:X)	150.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.081	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 21, DS/PN: 10.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.8	
Membrane Percolation (mm/hr)	1000	Length (m)	12.0	
Max Percolation (l/s)	16.0	Slope (1:X)	20.0	
Safety Factor	2.0	Depression Storage (mm)	5	
Porosity	0.30	Evaporation (mm/day)	3	
Invert Level (m)	5.170	Cap Volume Depth (m)	0.400	

Porous Car Park Manhole: 25, DS/PN: 11.000

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	19.3	
Membrane Percolation (mm/hr)	1000	Safety Factor	2.0	

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Porous Car Park Manhole: 25, DS/PN: 11.000

Porosity	0.30	Slope (1:X)	20.0
Invert Level (m)	5.090	Depression Storage (mm)	5
Width (m)	4.8	Evaporation (mm/day)	3
Length (m)	14.5	Cap Volume Depth (m)	0.400

Cellular Storage Manhole: 33, DS/PN: 1.008

Invert Level (m)	3.100	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	48.0	48.0	1.200	48.0	81.6	1.201	0.0	81.6

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

	US/MH								Water	Surcharged	Flooded
PN	Name	Storm	Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume
			Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)
1.000	1	15 Summer	1	+0%	100/15 Summer				5.064	-0.086	0.000
2.000	2	15 Winter	1	+0%	100/15 Summer				5.237	-0.063	0.000
3.000	3	15 Winter	1	+0%	30/15 Summer				5.247	-0.053	0.000
2.001	4	15 Winter	1	+0%	30/15 Summer				5.188	-0.039	0.000
1.001	5	15 Winter	1	+0%	100/15 Summer				5.040	-0.077	0.000
1.002	6	15 Winter	1	+0%	30/15 Winter				4.858	-0.137	0.000
4.000	7	30 Winter	1	+0%					5.594	-0.076	0.000
1.003	8	15 Winter	1	+0%	30/15 Summer				4.822	-0.126	0.000
5.000	9	120 Winter	1	+0%					5.569	-0.093	0.000
1.004	10	15 Winter	1	+0%	30/15 Summer				4.749	-0.122	0.000
1.005	11	15 Winter	1	+0%	30/15 Summer				4.614	-0.123	0.000
6.000	12	15 Winter	1	+0%					5.670	-0.080	0.000
1.006	13	15 Winter	1	+0%	30/15 Summer				4.498	-0.112	0.000
1.007	14	60 Winter	1	+0%	1/30 Winter				3.328	0.028	0.000
7.000	15	15 Summer	1	+0%	100/15 Summer				5.728	-0.072	0.000
7.001	16	15 Winter	1	+0%	100/15 Summer				5.672	-0.059	0.000
7.002	17	60 Winter	1	+0%	1/30 Winter				3.323	0.023	0.000
8.000	18	15 Summer	1	+0%	100/15 Summer				4.883	-0.162	0.000
9.000	19	30 Summer	1	+0%	100/15 Summer				5.115	-0.066	0.000
8.001	20	15 Winter	1	+0%	100/15 Summer				4.867	-0.166	0.000
10.000	21	15 Summer	1	+0%	100/15 Summer				5.209	-0.061	0.000
8.002	22	15 Winter	1	+0%	100/15 Summer				4.795	-0.154	0.000
8.003	23	15 Winter	1	+0%	100/15 Summer				4.735	-0.140	0.000
8.004	24	15 Winter	1	+0%	30/15 Summer				4.667	-0.132	0.000
11.000	25	15 Winter	1	+0%	100/15 Summer				5.131	-0.059	0.000
8.005	26	15 Winter	1	+0%	30/15 Summer				4.638	-0.116	0.000
8.006	27	15 Winter	1	+0%	100/15 Summer				4.592	-0.142	0.000
8.007	28	15 Winter	1	+0%	30/15 Summer				4.525	-0.120	0.000
8.008	29	15 Winter	1	+0%	30/15 Winter				4.494	-0.126	0.000
8.009	30	15 Winter	1	+0%	30/15 Summer				4.361	-0.118	0.000
8.010	31	15 Winter	1	+0%	30/15 Winter				4.315	-0.118	0.000

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Hampshire SO51 0QJ	Full Surface Water Network	
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XP Solutions	Network 2019.1	

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.38		4.3	OK	
2.000	2	0.29		1.6	OK	
3.000	3	0.43		2.3	OK	
2.001	4	0.67		3.8	OK	
1.001	5	0.47		7.7	OK*	
1.002	6	0.33		10.0	OK	
4.000	7	0.13		0.7	OK	
1.003	8	0.40		13.0	OK	
5.000	9	0.01		0.1	OK	
1.004	10	0.42		14.6	OK	
1.005	11	0.42		14.5	OK	
6.000	12	0.09		0.4	OK	
1.006	13	0.50		14.5	OK	
1.007	14	0.57		9.9	SURCHARGED	
7.000	15	0.18		1.1	OK	
7.001	16	0.36		2.0	OK	
7.002	17	0.06		1.0	SURCHARGED	
8.000	18	0.17		5.0	OK	
9.000	19	0.24		1.3	OK	
8.001	20	0.15		5.6	OK*	
10.000	21	0.29		1.5	OK	
8.002	22	0.22		7.1	OK	
8.003	23	0.30		9.8	OK	
8.004	24	0.35		10.5	OK	
11.000	25	0.32		1.7	OK	
8.005	26	0.47		12.0	OK	
8.006	27	0.29		12.2	OK	
8.007	28	0.45		12.2	OK	
8.008	29	0.39		13.7	OK	
8.009	30	0.46		14.0	OK	
8.010	31	0.46		14.0	OK	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

										Water	Surcharged	Flooded
US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume		
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	
8.011	32 60	Winter	1	+0%	1/30	Winter			3.328	0.028	0.000	
1.008	33 60	Winter	1	+0%	1/15	Summer			3.323	0.073	0.000	
1.009	34 60	Winter	1	+0%	30/15	Summer			3.313	-0.012	0.000	
1.010	35 60	Winter	1	+0%	1/15	Summer			3.295	0.145	0.000	

						Pipe			
		US/MH	Flow /	Overflow	Pipe			Level	
PN	Name	Cap.	(l/s)	(l/s)	Status	Level		Exceeded	
8.011	32	0.53		9.3	SURCHARGED				
1.008	33	0.72		12.6	SURCHARGED				
1.009	34	0.38		12.7	OK				
1.010	35	0.68		9.5	SURCHARGED				

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 8 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR M5-60 (mm)	19.000	Cv (Summer)	0.750
Region England and Wales	Ratio R	0.350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

									Water	Surcharged	Flooded
US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume	
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)
1.000	1	15	Winter	30	+0%	100/15	Summer		5.133	-0.017	0.000
2.000	2	15	Winter	30	+0%	100/15	Summer		5.289	-0.011	0.000
3.000	3	15	Winter	30	+0%	30/15	Summer		5.311	0.011	0.000
2.001	4	15	Winter	30	+0%	30/15	Summer		5.269	0.042	0.000
1.001	5	15	Winter	30	+0%	100/15	Summer		5.112	-0.005	0.000
1.002	6	15	Winter	30	+0%	30/15	Winter		4.998	0.004	0.000
4.000	7	15	Winter	30	+0%				5.618	-0.052	0.000
1.003	8	15	Winter	30	+0%	30/15	Summer		4.972	0.025	0.000
5.000	9	30	Winter	30	+0%				5.581	-0.081	0.000
1.004	10	15	Winter	30	+0%	30/15	Summer		4.905	0.034	0.000
1.005	11	15	Winter	30	+0%	30/15	Summer		4.776	0.039	0.000
6.000	12	15	Winter	30	+0%				5.682	-0.068	0.000
1.006	13	15	Winter	30	+0%	30/15	Summer		4.650	0.040	0.000
1.007	14	60	Winter	30	+0%	1/30	Winter		4.039	0.739	0.000
7.000	15	15	Winter	30	+0%	100/15	Summer		5.746	-0.054	0.000
7.001	16	15	Summer	30	+0%	100/15	Summer		5.711	-0.020	0.000
7.002	17	60	Winter	30	+0%	1/30	Winter		4.035	0.735	0.000
8.000	18	15	Winter	30	+0%	100/15	Summer		4.922	-0.123	0.000
9.000	19	15	Winter	30	+0%	100/15	Summer		5.145	-0.036	0.000
8.001	20	15	Winter	30	+0%	100/15	Summer		4.915	-0.119	0.000
10.000	21	15	Winter	30	+0%	100/15	Summer		5.237	-0.033	0.000
8.002	22	15	Winter	30	+0%	100/15	Summer		4.883	-0.067	0.000
8.003	23	15	Winter	30	+0%	100/15	Summer		4.853	-0.022	0.000
8.004	24	15	Winter	30	+0%	30/15	Summer		4.808	0.008	0.000
11.000	25	15	Winter	30	+0%	100/15	Summer		5.161	-0.029	0.000
8.005	26	15	Winter	30	+0%	30/15	Summer		4.771	0.017	0.000
8.006	27	15	Winter	30	+0%	100/15	Summer		4.715	-0.019	0.000
8.007	28	15	Winter	30	+0%	30/15	Summer		4.669	0.024	0.000
8.008	29	15	Winter	30	+0%	30/15	Winter		4.624	0.005	0.000
8.009	30	15	Winter	30	+0%	30/15	Summer		4.490	0.011	0.000
8.010	31	15	Winter	30	+0%	30/15	Winter		4.433	0.000	0.000

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

				Pipe		
	US/MH	Flow /	Overflow	Flow		Level
PN	Name	Cap.	(l/s)	(l/s)	Status	Exceeded
1.000	1	0.89		10.1	OK	
2.000	2	0.53		2.9	OK	
3.000	3	0.79		4.4	SURCHARGED	
2.001	4	1.23		6.9	SURCHARGED	
1.001	5	1.00		16.2	OK*	
1.002	6	0.74		22.5	SURCHARGED	
4.000	7	0.46		2.3	OK	
1.003	8	0.98		32.4	SURCHARGED	
5.000	9	0.08		0.4	OK	
1.004	10	1.06		36.9	SURCHARGED	
1.005	11	0.99		34.1	SURCHARGED	
6.000	12	0.22		0.9	OK	
1.006	13	1.20		34.8	SURCHARGED	
1.007	14	1.37		24.0	SURCHARGED	
7.000	15	0.44		2.6	OK	
7.001	16	0.99		5.6	OK	
7.002	17	0.11		2.0	SURCHARGED	
8.000	18	0.43		12.2	OK	
9.000	19	0.71		3.7	OK	
8.001	20	0.41		15.4	OK*	
10.000	21	0.77		3.9	OK	
8.002	22	0.55		17.8	OK	
8.003	23	0.76		25.1	OK	
8.004	24	0.88		26.7	SURCHARGED	
11.000	25	0.84		4.4	OK	
8.005	26	1.19		30.5	SURCHARGED	
8.006	27	0.73		30.8	OK	
8.007	28	1.12		30.6	SURCHARGED	
8.008	29	0.96		33.5	SURCHARGED	
8.009	30	1.11		33.7	SURCHARGED	
8.010	31	1.11		33.8	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

										Water	Surcharged	Flooded
US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume		
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	
8.011	32 60 Winter		30	+0%	1/30 Winter				4.039	0.739	0.000	
1.008	33 60 Winter		30	+0%	1/15 Summer				4.034	0.784	0.000	
1.009	34 60 Winter		30	+0%	30/15 Summer				4.065	0.740	0.000	
1.010	35 60 Winter		30	+0%	1/15 Summer				4.072	0.922	0.000	

										Pipe	
US/MH		Flow /	Overflow	Pipe							
PN	Name	Cap.	(l/s)	(l/s)	Status	Level					
					Exceeded						
8.011	32	1.27		22.1	SURCHARGED						
1.008	33	0.73		12.9	SURCHARGED						
1.009	34	0.39		12.9	SURCHARGED						
1.010	35	0.68		9.5	SURCHARGED						

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Pucknall Farm	20105-WFB-XX-XX-CA-C-001_P01	
Romsey	Angmering, West Sussex	
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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.82		9.3	FLOOD RISK	
2.000	2	0.41		2.2	FLOOD RISK	
3.000	3	0.73		4.0	FLOOD RISK	
2.001	4	1.11		6.2	FLOOD RISK	
1.001	5	0.48		7.8	SURCHARGED*	
1.002	6	0.73		22.2	FLOOD RISK	
4.000	7	0.46		2.4	OK	
1.003	8	0.98		32.1	SURCHARGED	
5.000	9	0.21		1.1	OK	
1.004	10	1.09		38.0	SURCHARGED	
1.005	11	1.10		37.8	SURCHARGED	
6.000	12	0.40		1.7	OK	
1.006	13	1.34		38.7	SURCHARGED	
1.007	14	2.20		38.3	SURCHARGED	
7.000	15	0.78		4.7	SURCHARGED	
7.001	16	1.75		9.9	SURCHARGED	
7.002	17	0.21		3.7	SURCHARGED	
8.000	18	0.25		7.2	FLOOD RISK	
9.000	19	0.82		4.2	FLOOD RISK	
8.001	20	0.16		6.0	SURCHARGED*	
10.000	21	0.46		2.3	FLOOD RISK	
8.002	22	0.38		12.3	FLOOD RISK	
8.003	23	0.54		17.8	SURCHARGED	
8.004	24	0.63		18.9	SURCHARGED	
11.000	25	0.50		2.6	FLOOD RISK	
8.005	26	0.84		21.5	FLOOD RISK	
8.006	27	0.52		21.9	SURCHARGED	
8.007	28	0.80		21.9	SURCHARGED	
8.008	29	0.73		25.5	SURCHARGED	
8.009	30	0.85		25.9	SURCHARGED	
8.010	31	1.24		37.8	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

										Water	Surcharged	Flooded
US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume		
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	
8.011	32 60	Winter	100	+40%	1/30	Winter			5.596	2.296	0.000	
1.008	33 60	Winter	100	+40%	1/15	Summer			5.605	2.355	0.000	
1.009	34 60	Winter	100	+40%	30/15	Summer			5.597	2.272	0.000	
1.010	35 60	Winter	100	+40%	1/15	Summer			5.580	2.430	0.000	

				Pipe			
US/MH		Flow /	Overflow	Pipe	Level		
PN	Name	Cap.	(l/s)	(l/s)	Status	Exceeded	
8.011	32	2.12		36.7	SURCHARGED		
1.008	33	1.86		32.7	SURCHARGED		
1.009	34	0.66		21.8	SURCHARGED		
1.010	35	0.68		9.5	SURCHARGED		

