Cross Grove, Cleator

5075-DD-XX-XX-RP-D-0001-S4-01

Proposed Drainage Strategy

First Issue

Version 1.0

Document prepared on behalf of Frankie Scott

DOCUMENT CONTROL

Document:	Proposed Drainage Strategy
Project:	Cross Grove, Cleator
Client:	Frankie Scott
Project Number:	5075-DD-XX-XX-RP-D-0001-S4-01

Revision:	P01	**Prepared by:**	PE
Date:	12.06.2025	**Checked by:**	MY
Status:	For Planning	**Approved By:**	MY
Description of Revision:	First Issue.		

Revision:	P02	**Prepared by:**	PE
Date:	27.06.2025	**Checked by:**	MY
Status:	For Planning	**Approved By:**	
Description of Revision:	Amendment for revised site layout.		

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Date:		**Checked by:**	
Status:		**Approved By:**	
Description of Revision:			

Revision:		**Prepared by:**	
Date:		**Checked by:**	
Status:		**Approved By:**	
Description of Revision:			

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

The Drainage Designers have been appointed by Frankie Scott (the 'Client') to prepare a drainage strategy for the re-development of an existing site at Cross Grove, Cleator.

1.2 SCOPE OF THE REPORT

The drainage strategy will consider all the relevant published code and guidance, including the Ciria SuDS manual C753, the Department for Environment, Food and Rural Affairs Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems, and Drainage and waste disposal: Approved Document H.

1.3 LIMITATIONS OF THIS REPORT

This report has been prepared by The Drainage Designers on behalf of the client in connection with the scope of the report, as described in Section 1.1 above and considering the particular instructions and requirements set out in the fee proposal, and the Client's acceptance. It is not intended for and should not be relied on by any third party and no responsibility is undertaken to any third party.

The Drainage Designers accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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Registered Office: Shelton Street, Covent Garden, London, WC2H 9JQ

2.0 SITE DESCRIPTION

2.1 EXISTING SITE

A location plan is included in Appendix A.

The site lies off the .A5086/Cross Grove at Cleator.

The Existing property is a hotel with a frontage of positively drained hard landscaping for parking together with gardens.

2.2 SOIL INFILTRATION TESTS

Trial pits were excavated on the site and percolation tests were undertaken. The site had a wide ranging capability for infiltration, from no infiltration at the north end of the site to good infiltration at the south. However, the site has been previously developed with considerable ground disturbance due to the demolition of the existing hotel. Due to the inconsistent nature of the infiltration tests we have chosen to use conservative values for infiltration of 0.05 m/hour for the locations where trial pits indicated good infiltration.

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3.0 EXISTING SITE FOUL AND SURFACE WATER DRAINAGE

3.1 EXISTING SURFACE WATER DRAINAGE

Surface water is positively drained from the hotel roof (1190 m^2) and parking (1036 m^2) and enters into a United Utilities combined sewer (300mm diameter) to the south of cross grove. There is no attenuation of the surface water runoff at present.

Using the principles of the Modified Rational Method an estimate of the pre development surface runoff rates of the existing roof and parking for 15 minute storm of a 1 in 1 year return period is 22.4 l/s. It is unknown what size drain pipes for the existing site was, it is possible that the site drained to the United Utilities Combined Sewer via 150 mm diameter pipe. If this was the case a 150 mm would be at capacity at this flow rate.

3.2 EXISTING FOUL WATER DRAINAGE

Foul water from the hotel would have also entered the United Utililities combined sewer.

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4.0 PROPOSED DEVELOPMENT

The proposed development involves the demolition of the existing hotel and construction of a new development comprising 6 No. detached houses. The proposed site plan is included in Appendix B

4.1 PROPOSED SUDS STRATEGY

The surface water discharge hierarchy has been considered in accordance with Ciria C753 guidelines, as outlined below:

- Used as a resource, where appropriate.
- Infiltration to the maximum extent that is practical.
- Discharge to watercourse.
- Discharge to surface water sewer.
- Discharge to combined sewer (last resort)

Used as a resource (rainwater harvesting)

As there is no requirement for rainwater harvesting, this option has not been considered.

Infiltration to the maximum extent that is practical

As referred to above infiltration tests show that infiltration is possible from parts of the site. Where infiltration has been demonstrated. Using a conservative infiltration rate of 0.05 m/hour we anticipate using infiltration for all Surface water runoff.

Discharge to watercourse

Not applicable as a higher discharge hierarchy has been met.

Discharge to surface water sewer

Not applicable as a higher discharge hierarchy has been met.

Discharge to combined sewer

Not applicable as a higher discharge hierarchy has been met.

4.2 PROPOSED SURFACE WATER DISCHARGE STRATEGY

Permeable block paving is to be used on driveways and access drives, individual soakaways are proposed for the rear gardens for units 1-3 – these will take roof runoff from the rear half of each of the dwellings. The roof runoff from the front half of Dwellings 1 to 3 and the entirety of the roof runoff from dwellings 4 to 6 will be infiltrated to a common soakaway that runs under the accessway to the dwellings.

4.3 PROPOSED FOUL DISCHARGE STRATEGY

The new development will keep foul and surface water system separate. The final demarcation chamber will make a new connection to United Utilities combined sewer manhole reverence 9001.

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The development comprises of 6 detached houses total of 70.8 discharge units. Using a frequency of use factor of 0.5 (Intermittent use) this gives a peak flow calculation of 4.2 l/s. – This is likely to be a significant decrease compared to the pre-development hotel peak discharge rates.

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5.0 PROPOSED SURFACE AND FOUL WATER DESIGN

Considering the strategy outlined above the proposed drainage design for the new development is included in the appendices as follows

Appendix C	Proposed Drainage Plans and Typical Details
Appendix D	Foul Water Inspection Chamber and Pipe Schedules
Appendix E	Surface Water Inspection Chamber and Pipe Schedules
Appendix F	Surface Water Hydraulic Analysis Results

The system is designed to ensure there is no flooding for all storm events up to and including a 1 in 100 year storm event plus a 50% allowance for climate change. In addition, there is no surcharging for a 1 in 1 year storm event.

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6.0 MANAGEMENT AND MAINTENANCE

The property owner(s), or an appointed maintenance company will maintain the drainage infrastructure as part of a site-wide management and maintenance schedule for the development, in line with the following maintenance requirements as minimum:

Item	Maintenance	Frequency per year
Foul Water Inspection Chambers	• Manholes covers checked for operation/damage – seating's re-greased or replaced as required. • Check for blockages and or damage to invert channel/inlets – jetting pipe runs if blocked, any damage to be repaired.	1
Surface Water Inspection chambers	• As Above • All catch pits/Flow control chambers and catch pits to have silt/solid accumulation removed & base jetted clean.	1
Attenuation Tanks / Soakaways	• Inspect for sediment and debris in pre-treatment components, check free flow/ flow through to /from attenuation tank.	1
Attenuation Tanks / Soakaways	• If annual inspection shows signs of blockage, jet through attenuation tank to remove accumulated silt/debris	As required

Table 1 - Below-ground Drainage Maintenance Plan

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7.0 CONCLUSIONS

We have demonstrated that surface water drainage can be significantly attenuated for all storm events when compared to pre-development discharge rates with a betterment of more than 80% for a 1 in 1 year storm event and 63% betterment for a 1:100 year storm event (+ 50% CC). Hydraulic Analysis demonstrates no surcharging for a 1 in 1 year storm event and no flooding for all storm events up to 1 in 100 year + 50% CC.

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8.0 APPENDICES

Appendix Summary:

Appendix A	Location Plan
Appendix B	Proposed Site Plan
Appendix C	Proposed Drainage Plans and Typical Details
Appendix D	Foul Water Inspection Chamber and Pipe Schedules
Appendix E	Surface Water Inspection Chamber and Pipe Schedules
Appendix F	Surface Water Hydraulic Analysis Results

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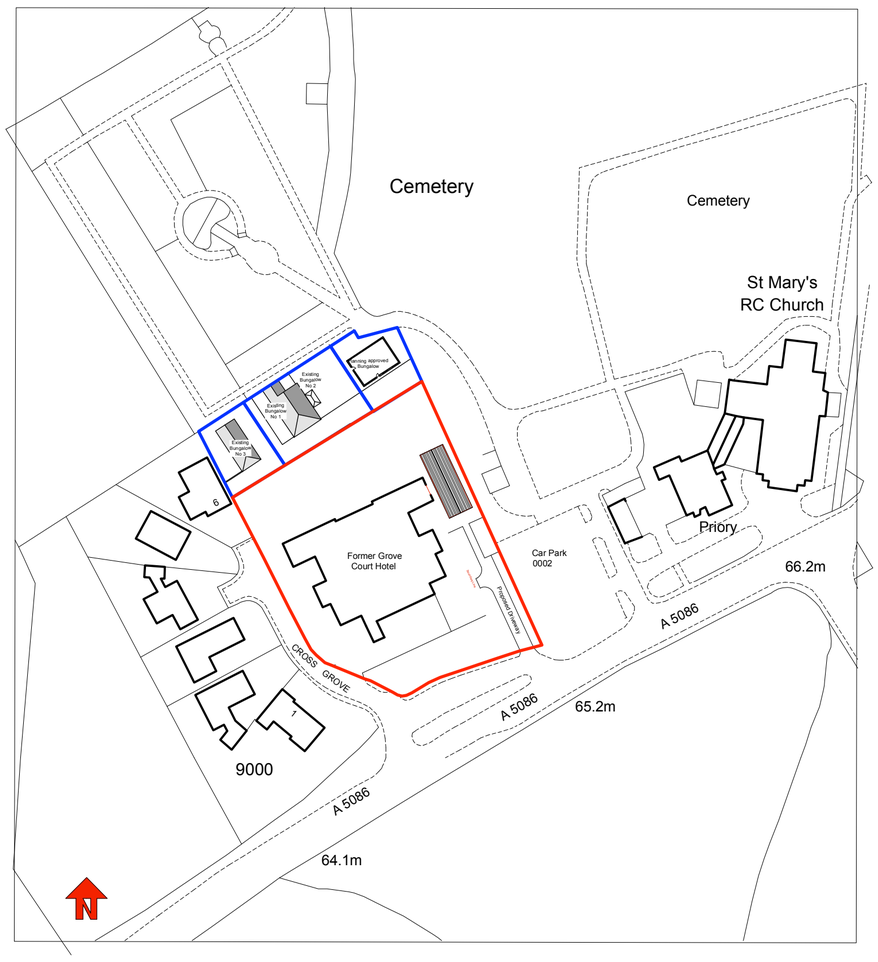
APPENDIX A

LOCATION PLAN



Location Plan - scale 1:1250

Rev:	Date:	Comments:	By:

Client:

Mr C Benn

DAY CUMMINS

DAY CUMMINS LIMITED

Architects & Surveyors
Lakeland Business Park
Cockermouth Cumbria CA13 0QT
Tel: 01900 820700
Fax: 01900 820701
email: dc@day-cummins.co.uk
www.day-cummins.co.uk

Project:

Proposed Residential Development
on Land at The Grove Court Hotel, Cleator

Drawing Title:

Existing Site Plan

Drawn:	Checked:	Signed:
MD	MP	
Scale:	**Date:**	**Paper Size:**
1:250 & 1:1250	02/07/20	A1

Project No:	Drawing No:	Rev:
5464	10	-

APPENDIX B

PROPOSED SITE PLAN

PROPOSED SITE PLAN
1:500

BRICK WALL 900

HALF FENCE 1.5M FENCE

NEW BIRCH TREE

PERMEABLE PAVERS ALL DRIVE TO ACCOMODATE 3No. CARS

PERMEABLE PAVERS ROAD

GRASSED AREA

TARMACADAM ROAD

PAVING SLABS

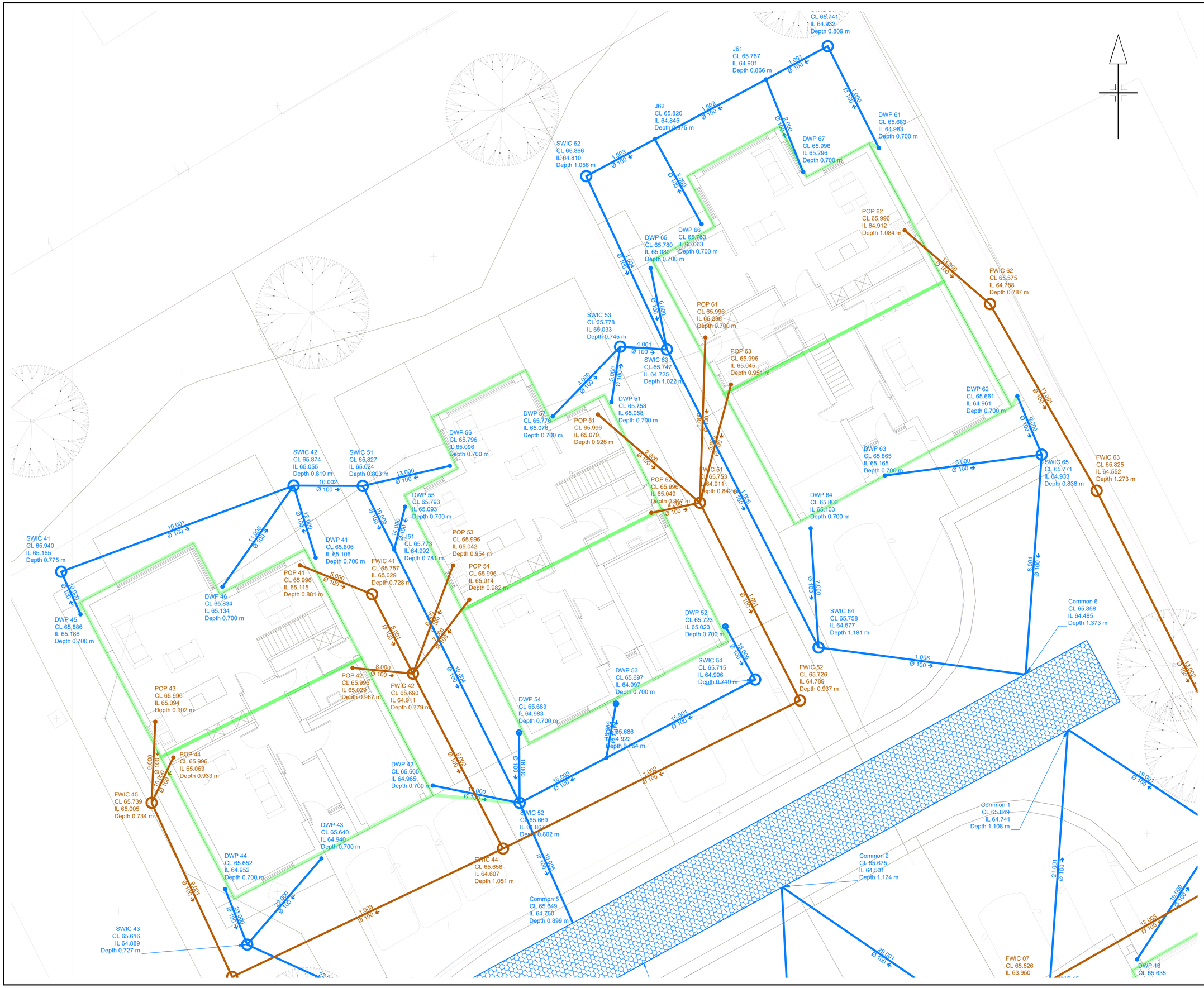
ACO DRAIN

JTS Architectural Services Ltd

Address	Grove Hotel, Cleator
Title Project	Site Plan– DWG14 Residential Development
Scale	1:500 revB

APPENDIX C

PROPOSED DRAINAGE PLANS AND TYPICAL DETAILS



LEGEND

- Proposed Surface water drainage
- Proposed Foul drainage
- Proposed combined drain
- Existing combined sewer
- Impermeable catchment areas

Rev.	Date	Description	By	Chk'd	App'd
03	27-06-25	Redesign with new site layout	PE	MTY	MTY
02	13-06-25	REDESIGN WITH ATTENUATION	PE	MTY	MTY
01	05-02-25	FIRST ISSUE	PE	MTY	MTY

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90 Coronation Street, Sunderland, SR1 2HE

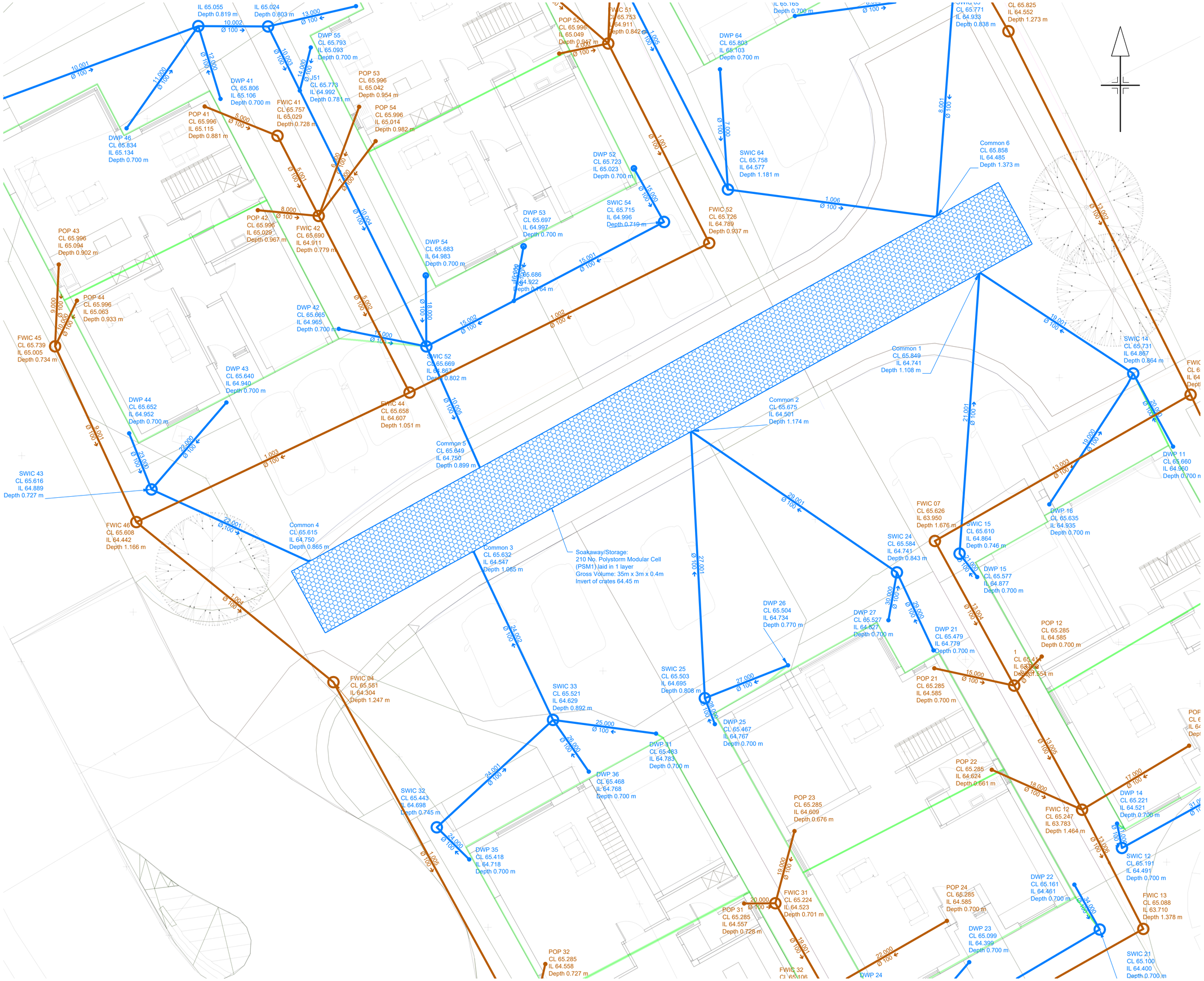
Drawing Status	Suitability
FOR CONSTRUCTION	C4

Project Title: CROSS GROVE

Drawing Title: PROPOSED DRAINAGE LAYOUT 1 of 3

Scale	Designed	Drawn	Checked	Authorised
1:75	PE	PE	MTY	MTY
Original Size	**Date**	**Date**	**Date**	**Date**
A1	06-02-25	06-02-25	06-02-25	06-02-25

Drawing Number	Revision
5075-DD-XX-XX-DR-D-0001	03



LEGEND

- Proposed Surface water drainage
- Proposed Foul drainage
- Proposed combined drain
- Existing combined sewer
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Rev.	Date	Description	By	Chk'd	App'd
03	27-06-25	Redesign with new site layout	PE	MTY	MTY
02	13-06-25	REDESIGN WITH ATTENUATION	PE	MTY	MTY
01	05-02-25	FIRST ISSUE	PE	MTY	MTY

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Drawing Status	Suitability
FOR CONSTRUCTION	C4

Project Title: CROSS GROVE

Drawing Title: PROPOSED DRAINAGE LAYOUT 2 of 3

Scale	Designed	Drawn	Checked	Authorised
1:75	PE	PE	MTY	MTY
Original Size	**Date**	**Date**	**Date**	**Date**
A1	06-02-25	06-02-25	06-02-25	06-02-25

Drawing Number: 5075-DD-XX-XX-DR-D-0002

Revision: 03

LEGEND

- Proposed Surface water drainage
- Proposed Foul drainage
- Proposed combined drain
- Existing combined sewer
- Impermeable catchment areas

Common 3
CL 65.632
IL 64.547
Depth 1.055 m

Soakaway/Storage:
210 No. Polystorm Modular Cell
(PSM1) laid in 1 layer
Gross Volume: 35m x 3m x 0.4m
Invert of crates 64.45 m

SWIC 32
CL 65.443
IL 64.698
Depth 0.745 m

SWIC 33
CL 65.521
IL 64.629
Depth 0.892 m

SWIC 25
CL 65.503
IL 64.695
Depth 0.808 m

DWP 26
CL 65.504
IL 64.734
Depth 0.770 m

DWP 27
CL 65.527
IL 64.827
Depth 0.700 m

SWIC 24
CL 65.584
IL 64.741
Depth 0.843 m

FWIC 07
CL 65.626
IL 63.950
Depth 1.676 m

SWIC 15
CL 65.610
IL 64.864
Depth 0.746 m

DWP 16
CL 65.635
IL 64.935
Depth 0.700 m

DWP 15
CL 65.577
IL 64.877
Depth 0.700 m

DWP 21
CL 65.479
IL 64.779
Depth 0.700 m

POP 12
CL 65.285
IL 64.585
Depth 0.700 m

POP 21
CL 65.285
IL 64.585
Depth 0.700 m

1
CL 65.417
IL 63.863
Depth 1.554 m

FWIC 11
CL 65.576
IL 64.550
Depth 1.026 m

POP 11
CL 65.285
IL 64.585
Depth 0.700 m

DWP 12
CL 65.367
IL 64.667
Depth 0.700 m

SWIC 11
CL 65.333
IL 64.379
Depth 0.954 m

Soak 1
CL 65.225
IL 64.329
Depth 0.496 m

POP 13
CL 65.285
IL 64.677
Depth 0.608 m

DWP 13
CL 65.280
IL 64.580
Depth 0.700 m

J11
CL 65.284
IL 64.414
Depth 0.870 m

DWP 14
CL 65.221
IL 64.521
Depth 0.700 m

FWIC 12
CL 65.247
IL 63.783
Depth 1.464 m

POP 22
CL 65.285
IL 64.624
Depth 0.661 m

DWP 35
CL 65.418
IL 64.718
Depth 0.700 m

DWP 36
CL 65.468
IL 64.768
Depth 0.700 m

DWP 31
CL 65.483
IL 64.783
Depth 0.700 m

DWP 25
CL 65.467
IL 64.767
Depth 0.700 m

POP 23
CL 65.285
IL 64.609
Depth 0.676 m

FWIC 31
CL 65.224
IL 64.523
Depth 0.701 m

POP 31
CL 65.285
IL 64.557
Depth 0.728 m

POP 24
CL 65.285
IL 64.585
Depth 0.700 m

DWP 22
CL 65.161
IL 64.461
Depth 0.700 m

SWIC 12
CL 65.191
IL 64.491
Depth 0.700 m

FWIC 13
CL 65.088
IL 63.710
Depth 1.378 m

Soakaway/Storage:
20 No. Polystorm Lite Modular Cell
(PSM2) laid in 1 layer
Gross Volume: 5m x 2m x 0.4m
Invert of crates 64.2 m

SWIC 21
CL 65.100
IL 64.400
Depth 0.700 m

DWP 23
CL 65.099
IL 64.399
Depth 0.700 m

FWIC 32
CL 65.106
IL 64.006
Depth 1.100 m

DWP 24
CL 65.073
IL 64.373
Depth 0.700 m

DWP 32
CL 65.068
IL 64.368
Depth 0.700 m

SWIC 23
CL 65.014
IL 64.294
Depth 0.720 m

POP 32
CL 65.285
IL 64.558
Depth 0.727 m

POP 33
CL 65.285
IL 64.548
Depth 0.737 m

FWIC 03
CL 65.174
IL 64.083
Depth 1.091 m

POP 34
CL 65.285
IL 64.585
Depth 0.700 m

DWP 33
CL 65.012
IL 64.312
Depth 0.700 m

J31
CL 64.991
IL 63.963
Depth 1.028 m

DWP 34
CL 64.788
IL 64.088
Depth 0.700 m

FWIC 01
CL 64.983
IL 63.346
Depth 1.637 m

Soak 2
CL 64.814
IL 64.114
Depth 0.700 m

Soakaway/Storage:
20 No. Polystorm Lite Modular Cell
(PSM2) laid in 1 layer
Gross Volume: 5m x 2m x 0.4m
Invert of crates 69.9 m

SWIC 01
CL 64.719
IL 64.019
Depth 0.700 m

FWIC 02
CL 64.627
IL 63.927
Depth 0.700 m

SWIC 34
CL 65.023
IL 63.914
Depth 1.109 m

Soak 3
CL 64.750
IL 63.867
Depth 0.883 m

FW Demarcation
CL 64.610
IL 63.239
Depth 1.371 m

Soakaway/Storage:
20 No. Polystorm Lite Modular Cell
(PSM2) laid in 1 layer
Gross Volume: 5m x 2m x 0.4m
Invert of crates 63.7 m

Direct connection to
United Utilities
combined sewer

UU 9001
CL 64.443
IL 62.820
Depth 1.623 m

Ø300

Ø300

Rev.	Date	Description	By	Chk'd	App'd
03	27-06-25	Redesign with new site layout	PE	MTY	MTY
02	13-06-25	REDESIGN WITH ATTENUATION	PE	MTY	MTY
01	05-02-25	FIRST ISSUE	PE	MTY	MTY

The Drainage Designers
90 Coronation Street, Sunderland, SR1 2HE

Drawing Status: FOR CONSTRUCTION
Suitability: C4

Project Title: CROSS GROVE

Drawing Title: PROPOSED DRAINAGE LAYOUT 3 of 3

Scale	Designed	Drawn	Checked	Authorised
1:75	PE	PE	MTY	MTY
Original Size	Date	Date	Date	Date
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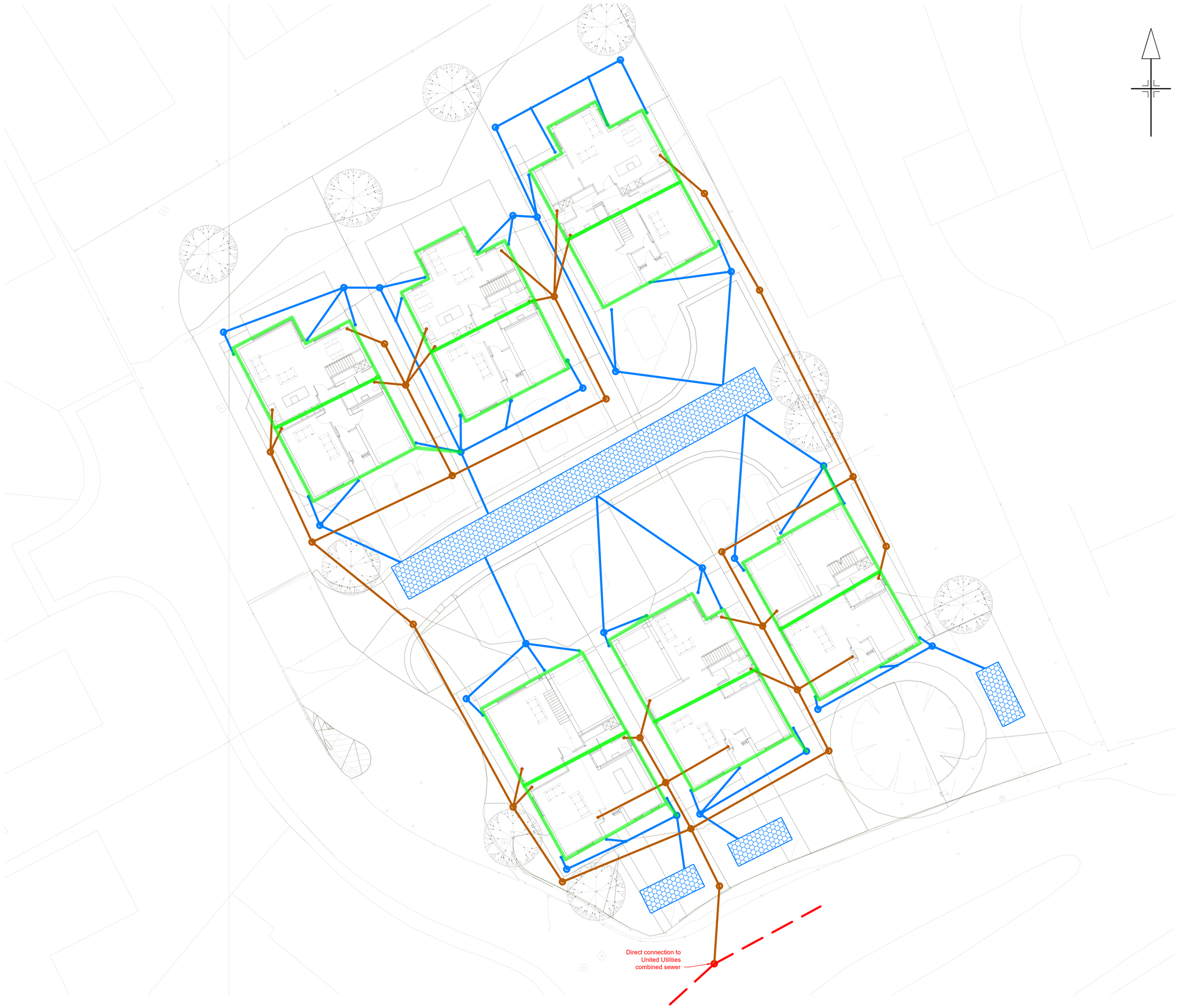
Revision: 03



LEGEND

- Proposed Surface water drainage
- Proposed Foul drainage
- Proposed combined drain
- Existing combined sewer
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Rev.	Date	Description	By	Chk'd	App'd
02	27-06-25	Redesign with new site layout	PE	MTY	MTY
01	13-06-25	FIRST ISSUE	PE	MTY	MTY

The Drainage Designers
90 Coronation Street, Sunderland, SR1 2HE

Drawing Status: FOR CONSTRUCTION
Suitability: C4

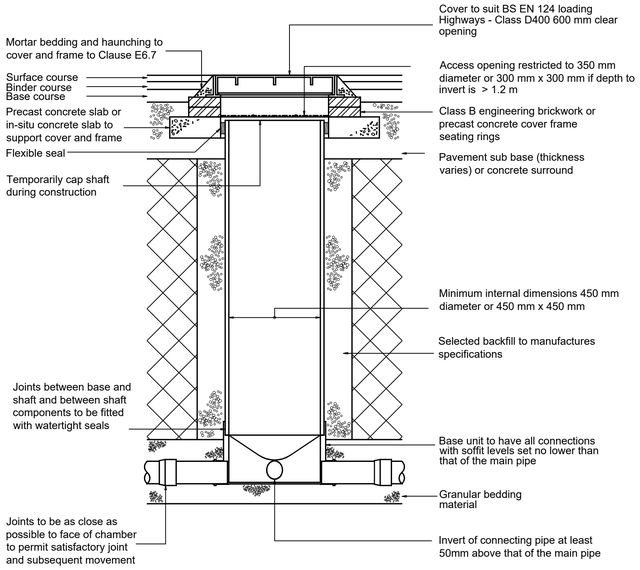
Project Title: CROSS GROVE

Drawing Title: PROPOSED DRAINAGE ARRANGEMENT

Scale	Designed	Drawn	Checked	Authorised
1:150	PE	PE	MTY	MTY
Original Size	Date	Date	Date	Date
A1	13-06-25	13-06-25	13-06-25	13-06-25

Drawing Number: 5075-DD-XX-XX-DR-D-0004
Revision: 02

Plastic chambers and rings shall comply with BS EN 13598 -1 and BS EN 13598 - or have equivalent independent approval

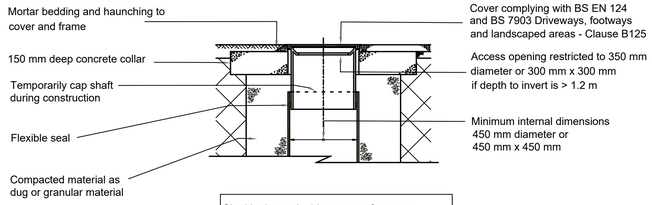


Note: Where the access chamber is in the highway the Highway Authority can gave specific requirements

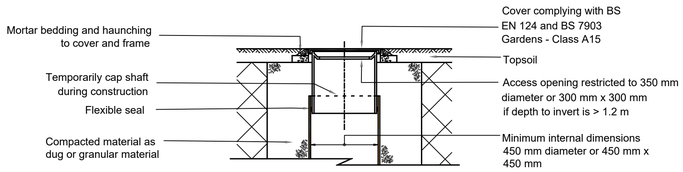
Typical Inspection Chamber Detail - Private
Maximum depth from cover level to soffit of pipe in areas subject to vehicle loading 3 m, non-entry

Not to scale

Plastic chambers and rings shall comply with BS EN 13598-1 and BS EN 13598-2 or have equivalent independent approval



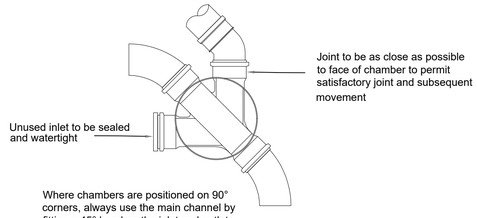
Sited in domestic driveways or footways



Sited in domestic gardens

Alternative Top Details for Light Vehicle Loading
Landscaped Areas - Private

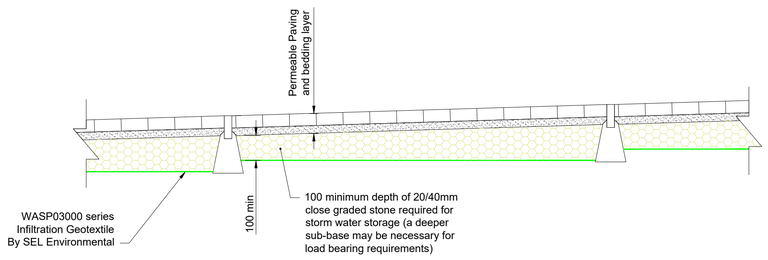
Not to scale



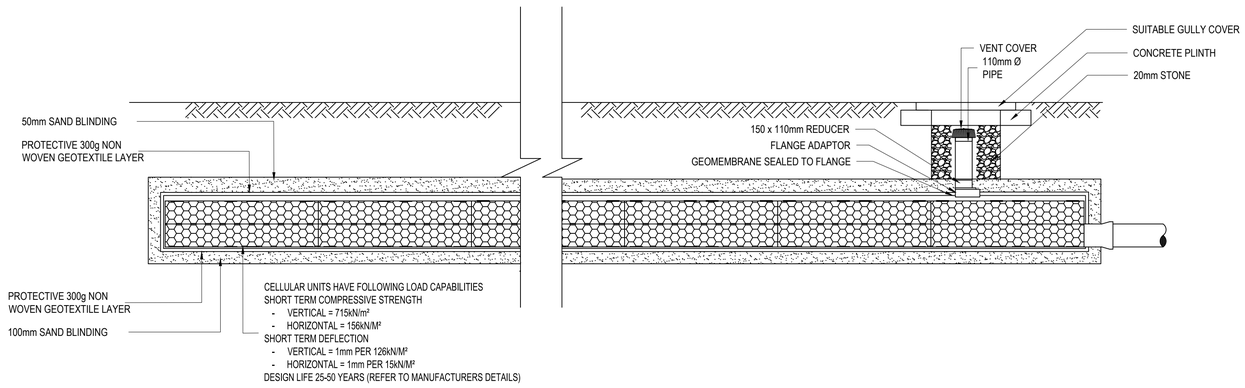
Where chambers are positioned on 90° corners, always use the main channel by fitting a 45° bend on the inlet and outlet

Note: Where the access chamber is in the highway,the highway authority can have specific requirements

Not To Scale



ZONE 2 PERMEABLE PAVING DETAIL



TYPICAL CELLULAR SOAKAWAY

TO BE CONSTRUCTED AND INSTALLED TO MANUFACTURERS SPECIFICATION
SCALE 1:20

Notes

Inspection chambers, manholes, covers and pipes to be constructed in accordance with Design and Construction Guidance Appendix C (DCG-C) version 2.3

Rev.	Date	Description	By	Chk'd	App'd
01	13-06-25	FIRST ISSUE	PE	MTY	MTY

The Drainage Designers
90 Coronation Street, Sunderland, SR1 2HE

Drawing Status	Suitability
FOR CONSTRUCTION	C4

Project Title: CROSS GROVE

Drawing Title: TYPICAL CONSTRUCTION DETAILS

Scale	Designed	Drawn	Checked	Authorised
NTS	PE	PE	MTY	MTY
Original Size	**Date**	**Date**	**Date**	**Date**
A1	13-06-25	13-06-25	13-06-25	13-06-25

Drawing Number	Revision
5075-DD-XX-XX-DR-D-0005	01

APPENDIX D

FOUL WATER INSPECTION CHAMBER AND PIPE SCHEDULES

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	7.250	18.8	100	Circular	65.996	65.296	0.600	65.753	64.911	0.742
2.000	5.911	37.2	100	Circular	65.996	65.070	0.826	65.753	64.911	0.742
3.000	5.358	40.0	100	Circular	65.996	65.045	0.851	65.753	64.911	0.742
4.000	2.176	15.8	100	Circular	65.996	65.049	0.847	65.753	64.911	0.742
1.001	9.713	79.6	100	Circular	65.753	64.911	0.742	65.726	64.789	0.837
1.002	14.548	79.9	100	Circular	65.726	64.789	0.837	65.658	64.607	0.951
5.000	3.410	39.7	100	Circular	65.996	65.115	0.781	65.757	65.029	0.628
5.001	3.915	33.2	100	Circular	65.757	65.029	0.628	65.690	64.911	0.679
6.000	5.056	38.6	100	Circular	65.996	65.042	0.854	65.690	64.911	0.679
7.000	4.081	39.6	100	Circular	65.996	65.014	0.882	65.690	64.911	0.679
8.000	2.659	22.5	100	Circular	65.996	65.029	0.867	65.690	64.911	0.679
5.002	8.622	28.4	100	Circular	65.690	64.911	0.679	65.658	64.607	0.951
1.003	13.133	79.6	100	Circular	65.658	64.607	0.951	65.608	64.442	1.066
9.000	3.556	40.0	100	Circular	65.996	65.094	0.802	65.739	65.005	0.634
10.000	2.201	37.9	100	Circular	65.996	65.063	0.833	65.739	65.005	0.634
9.001	8.407	14.9	100	Circular	65.739	65.005	0.634	65.608	64.442	1.066
1.004	11.029	79.9	100	Circular	65.608	64.442	1.066	65.551	64.304	1.147
1.005	17.622	79.7	100	Circular	65.551	64.304	1.147	65.174	64.083	0.991
11.000	3.308	7.0	100	Circular	65.285	64.558	0.627	65.174	64.083	0.991
12.000	2.305	5.0	100	Circular	65.285	64.548	0.637	65.174	64.083	0.991
1.006	7.585	48.7	100	Circular	65.174	64.083	0.991	64.627	63.927	0.600
1.007	11.773	20.3	100	Circular	64.627	63.927	0.600	64.983	63.346	1.537
13.000	4.942	39.9	100	Circular	65.996	64.912	0.984	65.575	64.788	0.687
13.001	9.421	39.9	100	Circular	65.575	64.788	0.687	65.825	64.552	1.173
13.002	17.655	39.9	100	Circular	65.825	64.552	1.173	65.704	64.110	1.494

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
1.000	POP 61		Junction	FWIC 51	450	Manhole
2.000	POP 51		Junction	FWIC 51	450	Manhole
3.000	POP 63		Junction	FWIC 51	450	Manhole
4.000	POP 52		Junction	FWIC 51	450	Manhole
1.001	FWIC 51	450	Manhole	FWIC 52	450	Manhole
1.002	FWIC 52	450	Manhole	FWIC 44	450	Manhole
5.000	POP 41		Junction	FWIC 41	450	Manhole
5.001	FWIC 41	450	Manhole	FWIC 42	450	Manhole
6.000	POP 53		Junction	FWIC 42	450	Manhole
7.000	POP 54		Junction	FWIC 42	450	Manhole
8.000	POP 42		Junction	FWIC 42	450	Manhole
5.002	FWIC 42	450	Manhole	FWIC 44	450	Manhole
1.003	FWIC 44	450	Manhole	FWIC 46	450	Manhole
9.000	POP 43		Junction	FWIC 45	450	Manhole
10.000	POP 44		Junction	FWIC 45	450	Manhole
9.001	FWIC 45	450	Manhole	FWIC 46	450	Manhole
1.004	FWIC 46	450	Manhole	FWIC 04	450	Manhole
1.005	FWIC 04	450	Manhole	FWIC 03	450	Manhole
11.000	POP 32		Junction	FWIC 03	450	Manhole
12.000	POP 33		Junction	FWIC 03	450	Manhole
1.006	FWIC 03	450	Manhole	FWIC 02	450	Manhole
1.007	FWIC 02	450	Manhole	FWIC 01	450	Manhole
13.000	POP 62		Junction	FWIC 62	450	Manhole
13.001	FWIC 62	450	Manhole	FWIC 63	450	Manhole
13.002	FWIC 63	450	Manhole	FWIC 08	450	Manhole

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
14.000	2.779	79.4	100	Circular	65.285	64.585	0.600	65.576	64.550	0.926
14.001	6.526	14.8	100	Circular	65.576	64.550	0.926	65.704	64.110	1.494
13.003	12.796	80.0	100	Circular	65.704	64.110	1.494	65.626	63.950	1.576
13.004	7.164	79.6	100	Circular	65.626	63.950	1.576	65.414	63.860	1.454
15.000	3.551	4.9	100	Circular	65.285	64.585	0.600	65.414	63.860	1.454
16.000	1.739	2.4	100	Circular	65.285	64.585	0.600	65.414	63.860	1.454
13.005	6.143	79.8	100	Circular	65.414	63.860	1.454	65.247	63.783	1.364
17.000	5.416	6.1	100	Circular	65.285	64.677	0.508	65.247	63.783	1.364
18.000	4.290	5.1	100	Circular	65.285	64.624	0.561	65.247	63.783	1.364
13.006	5.819	79.7	100	Circular	65.247	63.783	1.364	65.088	63.710	1.278
13.007	13.401	36.8	100	Circular	65.088	63.710	1.278	64.983	63.346	1.537
19.000	3.242	37.7	100	Circular	65.285	64.609	0.576	65.224	64.523	0.601
20.000	1.356	39.9	100	Circular	65.285	64.557	0.628	65.224	64.523	0.601
19.001	4.376	8.5	100	Circular	65.224	64.523	0.601	65.106	64.006	1.000
21.000	6.441	11.1	100	Circular	65.285	64.585	0.600	65.106	64.006	1.000
22.000	6.083	10.5	100	Circular	65.285	64.585	0.600	65.106	64.006	1.000
19.002	4.449	6.7	100	Circular	65.106	64.006	1.000	64.983	63.346	1.537
1.008	5.421	79.7	100	Circular	64.983	63.346	1.537	64.610	63.278	1.232
1.011	6.587	15.7	150	Circular	64.610	63.239	1.221	64.443	62.820	1.473

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
14.000	POP 11		Junction	FWIC 11	450	Manhole
14.001	FWIC 11	450	Manhole	FWIC 08	450	Manhole
13.003	FWIC 08	450	Manhole	FWIC 07	450	Manhole
13.004	FWIC 07	450	Manhole	1	450	Manhole
15.000	POP 21		Junction	1	450	Manhole
16.000	POP 12		Junction	1	450	Manhole
13.005	1	450	Manhole	FWIC 12	450	Manhole
17.000	POP 13		Junction	FWIC 12	450	Manhole
18.000	POP 22		Junction	FWIC 12	450	Manhole
13.006	FWIC 12	450	Manhole	FWIC 13	450	Manhole
13.007	FWIC 13	450	Manhole	FWIC 01	450	Manhole
19.000	POP 23		Junction	FWIC 31	450	Manhole
20.000	POP 31		Junction	FWIC 31	450	Manhole
19.001	FWIC 31	450	Manhole	FWIC 32	450	Manhole
21.000	POP 34		Junction	FWIC 32	450	Manhole
22.000	POP 24		Junction	FWIC 32	450	Manhole
19.002	FWIC 32	450	Manhole	FWIC 01	450	Manhole
1.008	FWIC 01	450	Manhole	FW Demarcation	450	Manhole
1.011	FW Demarcation	450	Manhole	UU 9001	450	Manhole

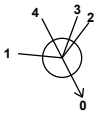
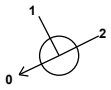
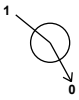
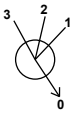
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections		Link	IL (m)	Dia (mm)
POP 61	301927.767	514076.542	65.996	0.700			0	1.000	65.296	100

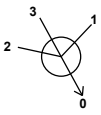
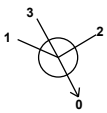
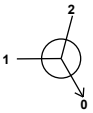
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
POP 62	301936.502	514081.238	65.996	1.084		0	13.000	64.912	100
FWIC 62	301940.242	514078.008	65.575	0.787	450	1	13.000	64.788	100
						0	13.001	64.788	100
FWIC 63	301944.914	514069.827	65.825	1.273	450	1	13.001	64.552	100
						0	13.002	64.552	100
POP 51	301923.061	514073.166	65.996	0.926		0	2.000	65.070	100
POP 63	301928.889	514074.479	65.996	0.951		0	3.000	65.045	100
POP 52	301925.398	514068.857	65.996	0.947		0	4.000	65.049	100
FWIC 51	301927.529	514069.296	65.753	0.842	450	1	4.000	64.911	100
						2	3.000	64.911	100
						3	2.000	64.911	100
						4	1.000	64.911	100
						0	1.001	64.911	100
FWIC 52	301931.915	514060.630	65.726	0.937	450	1	1.001	64.789	100
						0	1.002	64.789	100
POP 41	301909.997	514066.561	65.996	0.881		0	5.000	65.115	100
FWIC 41	301913.160	514065.286	65.757	0.728	450	1	5.000	65.029	100
						0	5.001	65.029	100
POP 53	301916.705	514066.547	65.996	0.954		0	6.000	65.042	100
POP 54	301917.421	514065.054	65.996	0.982		0	7.000	65.014	100
POP 42	301912.304	514062.057	65.996	0.967		0	8.000	65.029	100

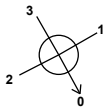
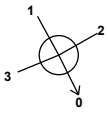
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
FWIC 42	301914.951	514061.805	65.690	0.779	450		1	8.000	64.911	100
							2	7.000	64.911	100
							3	6.000	64.911	100
							4	5.001	64.911	100
							0	5.002	64.911	100
FWIC 44	301918.896	514054.138	65.658	1.051	450		1	5.002	64.607	100
							2	1.002	64.607	100
							0	1.003	64.607	100
POP 43	301903.658	514059.696	65.996	0.902			0	9.000	65.094	100
POP 44	301904.448	514058.130	65.996	0.933			0	10.000	65.063	100
FWIC 45	301903.499	514056.144	65.739	0.734	450		1	10.000	65.005	100
							2	9.000	65.005	100
							0	9.001	65.005	100
FWIC 04	301915.591	514041.562	65.551	1.247	450		1	1.004	64.304	100
							0	1.005	64.304	100
POP 32	301924.795	514029.324	65.285	0.727			0	11.000	64.558	100
POP 33	301925.630	514027.777	65.285	0.737			0	12.000	64.548	100
FWIC 03	301924.047	514026.102	65.174	1.091	450		1	12.000	64.083	100
							2	11.000	64.083	100
							3	1.005	64.083	100
							0	1.006	64.083	100
FWIC 02	301928.219	514019.768	64.627	0.700	450		1	1.006	63.927	100
							0	1.007	63.927	100
POP 11	301954.980	514045.449	65.285	0.700			0	14.000	64.585	100
FWIC 11	301955.629	514048.151	65.576	1.026	450		1	14.000	64.550	100
							0	14.001	64.550	100
FWIC 08	301952.826	514054.044	65.704	1.594	450		1	14.001	64.110	100
							2	13.002	64.110	100
							0	13.003	64.110	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
FWIC 07	301941.717	514047.693	65.626	1.676	450		1	13.003	63.950	100
							0	13.004	63.950	100
POP 21	301941.693	514042.165	65.285	0.700			0	15.000	64.585	100
POP 12	301946.358	514042.675	65.285	0.700			0	16.000	64.585	100
1	301945.163	514041.412	65.414	1.554	450		1	16.000	63.860	100
							2	15.000	63.860	100
							3	13.004	63.860	100
							0	13.005	63.860	100
POP 13	301952.759	514038.803	65.285	0.608			0	17.000	64.677	100
POP 22	301944.188	514037.760	65.285	0.661			0	18.000	64.624	100
FWIC 12	301948.111	514036.023	65.247	1.464	450		1	18.000	63.783	100
							2	17.000	63.783	100
							3	13.005	63.783	100
							0	13.006	63.783	100
FWIC 13	301950.771	514030.848	65.088	1.378	450		1	13.006	63.710	100
							0	13.007	63.710	100
POP 23	301935.618	514035.096	65.285	0.676			0	19.000	64.609	100
POP 31	301933.431	514031.952	65.285	0.728			0	20.000	64.557	100
FWIC 31	301934.787	514031.962	65.224	0.701	450		1	20.000	64.523	100
							2	19.000	64.523	100
							0	19.001	64.523	100
POP 34	301931.234	514025.224	65.285	0.700			0	21.000	64.585	100
POP 24	301942.238	514031.197	65.285	0.700			0	22.000	64.585	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections		Link	IL (m)	Dia (mm)
FWIC 32	301936.964	514028.166	65.106	1.100	450		1	22.000	64.006	100
							2	21.000	64.006	100
							3	19.001	64.006	100
							0	19.002	64.006	100
FWIC 01	301939.100	514024.263	64.983	1.637	450		1	19.002	63.346	100
							2	13.007	63.346	100
							3	1.007	63.346	100
							0	1.008	63.346	100
FW Demarcation	301941.515	514019.410	64.610	1.371	450		1	1.008	63.278	100
							0	1.011	63.239	150
UU 9001	301941.071	514012.838	64.443	1.623	450		1	1.011	62.820	150
FWIC 46	301907.028	514048.514	65.608	1.166	450		1	9.001	64.442	100
							2	1.003	64.442	100
							0	1.004	64.442	100

APPENDIX E

SURFACE WATER INSPECTION CHAMBER AND PIPE SCHEDULES

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	5.000	98.0	100	Circular	65.683	64.983	0.600	65.741	64.932	0.709
1.001	3.073	99.1	100	Circular	65.741	64.932	0.709	65.767	64.901	0.766
2.000	4.374	11.1	100	Circular	65.996	65.296	0.600	65.767	64.901	0.766
1.002	5.532	98.8	100	Circular	65.767	64.901	0.766	65.820	64.845	0.875
3.000	4.246	19.5	100	Circular	65.763	65.063	0.600	65.820	64.845	0.875
1.003	3.416	97.6	100	Circular	65.820	64.845	0.875	65.866	64.810	0.956
1.004	8.379	98.6	100	Circular	65.866	64.810	0.956	65.747	64.725	0.922
4.000	4.251	98.9	100	Circular	65.776	65.076	0.600	65.778	65.033	0.645
5.000	2.460	98.4	100	Circular	65.758	65.058	0.600	65.778	65.033	0.645
4.001	2.055	6.7	100	Circular	65.778	65.033	0.645	65.747	64.725	0.922
6.000	3.638	10.2	100	Circular	65.780	65.080	0.600	65.747	64.725	0.922
1.005	14.656	99.0	100	Circular	65.747	64.725	0.922	65.758	64.577	1.081
7.000	5.232	9.9	100	Circular	65.803	65.103	0.600	65.758	64.577	1.081
1.006	9.150	99.5	100	Circular	65.758	64.577	1.081	65.858	64.485	1.273
8.000	6.935	29.9	100	Circular	65.865	65.165	0.600	65.771	64.933	0.738
9.000	2.774	99.1	100	Circular	65.661	64.961	0.600	65.771	64.933	0.738
8.001	9.670	21.6	100	Circular	65.771	64.933	0.738	65.858	64.485	1.273
1.007	15.304	99.4	100	Circular	65.858	64.485	1.273	65.674	64.331	1.243
10.000	2.053	97.8	100	Circular	65.886	65.186	0.600	65.940	65.165	0.675
10.001	10.864	98.8	100	Circular	65.940	65.165	0.675	65.874	65.055	0.719
11.000	5.423	68.6	100	Circular	65.834	65.134	0.600	65.874	65.055	0.719
12.000	3.304	64.8	100	Circular	65.806	65.106	0.600	65.874	65.055	0.719
10.002	3.030	97.7	100	Circular	65.874	65.055	0.719	65.827	65.024	0.703
13.000	3.917	54.4	100	Circular	65.796	65.096	0.600	65.827	65.024	0.703
10.003	3.110	97.2	100	Circular	65.827	65.024	0.703	65.773	64.992	0.681

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
1.000	DWP 61		Junction	SWIC 61	450	Manhole
1.001	SWIC 61	450	Manhole	J61		Junction
2.000	DWP 67		Junction	J61		Junction
1.002	J61		Junction	J62		Junction
3.000	DWP 66		Junction	J62		Junction
1.003	J62		Junction	SWIC 62	450	Manhole
1.004	SWIC 62	450	Manhole	SWIC 63	450	Manhole
4.000	DWP 57		Junction	SWIC 53	450	Manhole
5.000	DWP 51		Junction	SWIC 53	450	Manhole
4.001	SWIC 53	450	Manhole	SWIC 63	450	Manhole
6.000	DWP 65		Junction	SWIC 63	450	Manhole
1.005	SWIC 63	450	Manhole	SWIC 64	450	Manhole
7.000	DWP 64		Junction	SWIC 64	450	Manhole
1.006	SWIC 64	450	Manhole	Common 6		Junction
8.000	DWP 63		Junction	SWIC 65	450	Manhole
9.000	DWP 62		Junction	SWIC 65	450	Manhole
8.001	SWIC 65	450	Manhole	Common 6		Junction
1.007	Common 6		Junction	Common Collect		Junction
10.000	DWP 45		Junction	SWIC 41	450	Manhole
10.001	SWIC 41	450	Manhole	SWIC 42	450	Manhole
11.000	DWP 46		Junction	SWIC 42	450	Manhole
12.000	DWP 41		Junction	SWIC 42	450	Manhole
10.002	SWIC 42	450	Manhole	SWIC 51	450	Manhole
13.000	DWP 56		Junction	SWIC 51	450	Manhole
10.003	SWIC 51	450	Manhole	J51		Junction

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
14.000	1.935	19.2	100	Circular	65.793	65.093	0.600	65.773	64.992	0.681
10.004	12.392	99.1	100	Circular	65.773	64.992	0.681	65.669	64.867	0.702
15.000	2.669	98.9	100	Circular	65.723	65.023	0.600	65.715	64.996	0.619
15.001	7.372	99.6	100	Circular	65.715	64.996	0.619	65.686	64.922	0.664
16.000	2.410	32.1	100	Circular	65.697	64.997	0.600	65.686	64.922	0.664
15.002	4.282	77.9	100	Circular	65.686	64.922	0.664	65.669	64.867	0.702
17.000	3.881	39.6	100	Circular	65.665	64.965	0.600	65.669	64.867	0.702
18.000	3.082	26.6	100	Circular	65.683	64.983	0.600	65.669	64.867	0.702
10.005	5.806	49.6	100	Circular	65.669	64.867	0.702	65.649	64.750	0.799
10.006	7.599	18.1	100	Circular	65.649	64.750	0.799	65.674	64.331	1.243
19.000	6.755	99.3	100	Circular	65.635	64.935	0.600	65.731	64.867	0.764
20.000	3.616	38.9	100	Circular	65.660	64.960	0.600	65.731	64.867	0.764
19.001	7.995	63.5	100	Circular	65.731	64.867	0.764	65.849	64.741	1.008
21.000	1.272	97.8	100	Circular	65.577	64.877	0.600	65.610	64.864	0.646
21.001	12.242	99.5	100	Circular	65.610	64.864	0.646	65.849	64.741	1.008
19.002	15.736	38.4	100	Circular	65.849	64.741	1.008	65.674	64.331	1.243
22.000	4.985	97.8	100	Circular	65.640	64.940	0.600	65.616	64.889	0.627
23.000	2.622	41.6	100	Circular	65.652	64.952	0.600	65.616	64.889	0.627
22.001	7.563	54.4	100	Circular	65.616	64.889	0.627	65.615	64.750	0.765
22.002	15.950	38.1	100	Circular	65.615	64.750	0.765	65.674	64.331	1.243
24.000	1.981	99.0	100	Circular	65.418	64.718	0.600	65.443	64.698	0.645
24.001	6.874	99.6	100	Circular	65.443	64.698	0.645	65.521	64.629	0.792
25.000	4.515	29.3	100	Circular	65.483	64.783	0.600	65.521	64.629	0.792
26.000	2.731	19.6	100	Circular	65.468	64.768	0.600	65.521	64.629	0.792
24.002	8.120	99.0	100	Circular	65.521	64.629	0.792	65.632	64.547	0.985

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
14.000	DWP 55		Junction	J51		Junction
10.004	J51		Junction	SWIC 52	450	Manhole
15.000	DWP 52		Junction	SWIC 54	450	Manhole
15.001	SWIC 54	450	Manhole	J52		Junction
16.000	DWP 53		Junction	J52		Junction
15.002	J52		Junction	SWIC 52	450	Manhole
17.000	DWP 42		Junction	SWIC 52	450	Manhole
18.000	DWP 54		Junction	SWIC 52	450	Manhole
10.005	SWIC 52	450	Manhole	Common 5		Junction
10.006	Common 5		Junction	Common Collect		Junction
19.000	DWP 16		Junction	SWIC 14	450	Manhole
20.000	DWP 11		Junction	SWIC 14	450	Manhole
19.001	SWIC 14	450	Manhole	Common 1		Junction
21.000	DWP 15		Junction	SWIC 15	450	Manhole
21.001	SWIC 15	450	Manhole	Common 1		Junction
19.002	Common 1		Junction	Common Collect		Junction
22.000	DWP 43		Junction	SWIC 43	450	Manhole
23.000	DWP 44		Junction	SWIC 43	450	Manhole
22.001	SWIC 43	450	Manhole	Common 4		Junction
22.002	Common 4		Junction	Common Collect		Junction
24.000	DWP 35		Junction	SWIC 32	450	Manhole
24.001	SWIC 32	450	Manhole	SWIC 33	450	Manhole
25.000	DWP 31		Junction	SWIC 33	450	Manhole
26.000	DWP 36		Junction	SWIC 33	450	Manhole
24.002	SWIC 33	450	Manhole	Common 3		Junction

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
24.003	9.514	44.0	100	Circular	65.632	64.547	0.985	65.674	64.331	1.243
27.000	3.884	99.6	100	Circular	65.504	64.734	0.670	65.503	64.695	0.708
28.000	1.208	16.8	100	Circular	65.467	64.767	0.600	65.503	64.695	0.708
27.001	11.613	60.0	100	Circular	65.503	64.695	0.708	65.675	64.501	1.074
29.000	3.739	98.4	100	Circular	65.479	64.779	0.600	65.584	64.741	0.743
30.000	2.110	24.5	100	Circular	65.527	64.827	0.600	65.584	64.741	0.743
29.001	10.854	60.0	100	Circular	65.584	64.741	0.743	65.675	64.560	1.015
27.002	1.924	11.3	100	Circular	65.675	64.501	1.074	65.674	64.331	1.243
1.008	6.783	282.6	225	Circular	65.674	64.206	1.243	65.647	64.182	1.240
31.000	1.081	36.0	100	Circular	65.221	64.521	0.600	65.191	64.491	0.600
31.001	7.656	99.4	100	Circular	65.191	64.491	0.600	65.284	64.414	0.770
32.000	1.366	8.2	100	Circular	65.280	64.580	0.600	65.284	64.414	0.770
31.002	3.413	97.5	100	Circular	65.284	64.414	0.770	65.333	64.379	0.854
33.000	1.264	4.4	100	Circular	65.367	64.667	0.600	65.333	64.379	0.854
31.003	4.894	97.9	100	Circular	65.333	64.379	0.854	65.225	64.329	0.796
34.000	2.240	36.7	100	Circular	65.161	64.461	0.600	65.100	64.400	0.600
34.001	10.469	98.8	100	Circular	65.100	64.400	0.600	65.014	64.294	0.620
35.000	5.141	49.0	100	Circular	65.099	64.399	0.600	65.014	64.294	0.620
36.000	2.137	27.0	100	Circular	65.073	64.373	0.600	65.014	64.294	0.620
34.002	3.904	21.7	100	Circular	65.014	64.294	0.620	64.814	64.114	0.600
37.000	1.113	16.1	100	Circular	64.788	64.088	0.600	64.719	64.019	0.600
37.001	5.535	98.8	100	Circular	64.719	64.019	0.600	64.991	63.963	0.928
38.000	1.648	4.7	100	Circular	65.012	64.312	0.600	64.991	63.963	0.928
37.002	4.838	98.7	100	Circular	64.991	63.963	0.928	65.023	63.914	1.009
39.000	1.662	3.7	100	Circular	65.068	64.368	0.600	65.023	63.914	1.009

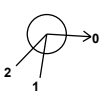
Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
24.003	Common 3		Junction	Common Collect		Junction
27.000	DWP 26		Junction	SWIC 25	450	Manhole
28.000	DWP 25		Junction	SWIC 25	450	Manhole
27.001	SWIC 25	450	Manhole	Common 2		Junction
29.000	DWP 21		Junction	SWIC 24	450	Manhole
30.000	DWP 27		Junction	SWIC 24	450	Manhole
29.001	SWIC 24	450	Manhole	Common 2		Junction
27.002	Common 2		Junction	Common Collect		Junction
1.008	Common Collect		Junction	Common Soakaway		Junction
31.000	DWP 14		Junction	SWIC 12	450	Manhole
31.001	SWIC 12	450	Manhole	J11		Junction
32.000	DWP 13		Junction	J11		Junction
31.002	J11		Junction	SWIC 11	450	Manhole
33.000	DWP 12		Junction	SWIC 11	450	Manhole
31.003	SWIC 11	450	Manhole	Soak 1		Junction
34.000	DWP 22		Junction	SWIC 21	450	Manhole
34.001	SWIC 21	450	Manhole	SWIC 23	450	Manhole
35.000	DWP 23		Junction	SWIC 23	450	Manhole
36.000	DWP 24		Junction	SWIC 23	450	Manhole
34.002	SWIC 23	450	Manhole	Soak 2		Junction
37.000	DWP 34		Junction	SWIC 01	450	Manhole
37.001	SWIC 01	450	Manhole	J31		Junction
38.000	DWP 33		Junction	J31		Junction
37.002	J31		Junction	SWIC 34	450	Manhole
39.000	DWP 32		Junction	SWIC 34	450	Manhole

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
37.003	4.609	98.1	100	Circular	65.023	63.914	1.009	64.750	63.867	0.783
40.000	1.226	94.3	100	Circular	64.750	64.050	0.600	64.750	64.037	0.613

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	Node Type
37.003	SWIC 34	450	Manhole	Soak 3		Junction
40.000	Perm 1		Junction	Perm 2		Junction

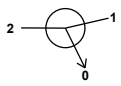
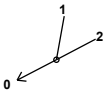
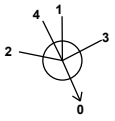
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
DWP 61	301935.375	514084.843	65.683	0.700					
						0	1.000	64.983	100
SWIC 61	301933.130	514089.311	65.741	0.809	450	1	1.000	64.932	100
									
						0	1.001	64.932	100
DWP 67	301932.051	514083.794	65.996	0.700					
						0	2.000	65.296	100
J61	301930.424	514087.854	65.767	0.866		1	2.000	64.901	100
						2	1.001	64.901	100
									
						0	1.002	64.901	100
DWP 66	301927.599	514081.511	65.763	0.700					
						0	3.000	65.063	100
J62	301925.553	514085.232	65.820	0.975		1	3.000	64.845	100
						2	1.002	64.845	100
									
						0	1.003	64.845	100
SWIC 62	301922.545	514083.613	65.866	1.056	450	1	1.003	64.810	100
									
						0	1.004	64.810	100
DWP 57	301921.076	514073.084	65.776	0.700					
						0	4.000	65.076	100
DWP 51	301923.654	514073.709	65.758	0.700					
						0	5.000	65.058	100
SWIC 53	301924.031	514076.140	65.778	0.745	450	1	5.000	65.033	100
						2	4.000	65.033	100
									
						0	4.001	65.033	100

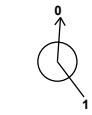
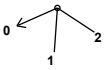
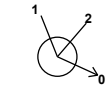
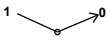
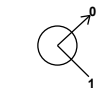
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
DWP 65	301925.370	514079.585	65.780	0.700		0	6.000	65.080	100
SWIC 63	301926.082	514076.017	65.747	1.022	450	1	6.000	64.725	100
						2	4.001	64.725	100
						3	1.004	64.725	100
						0	1.005	64.725	100
DWP 64	301932.381	514068.175	65.803	0.700		0	7.000	65.103	100
SWIC 64	301932.728	514062.955	65.758	1.181	450	1	7.000	64.577	100
						2	1.005	64.577	100
						0	1.006	64.577	100
DWP 63	301935.636	514070.489	65.865	0.700		0	8.000	65.165	100
DWP 62	301941.439	514073.966	65.661	0.700		0	9.000	64.961	100
SWIC 65	301942.510	514071.407	65.771	0.838	450	1	9.000	64.933	100
						2	8.000	64.933	100
						0	8.001	64.933	100
Common 6	301941.800	514061.763	65.858	1.373		1	8.001	64.485	100
						2	1.006	64.485	100
						0	1.007	64.485	100
DWP 45	301900.381	514064.406	65.886	0.700		0	10.000	65.186	100
SWIC 41	301899.534	514066.276	65.940	0.775	450	1	10.000	65.165	100
						0	10.001	65.165	100
DWP 46	301906.603	514065.613	65.834	0.700		0	11.000	65.134	100
DWP 41	301910.684	514066.889	65.806	0.700		0	12.000	65.106	100
SWIC 42	301909.721	514070.050	65.874	0.819	450	1	12.000	65.055	100
						2	11.000	65.055	100
						3	10.001	65.055	100
						0	10.002	65.055	100

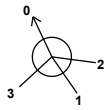
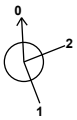
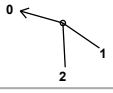
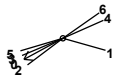
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
DWP 56	301916.568	514070.915	65.796	0.700			0	13.000	65.096	100
SWIC 51	301912.751	514070.035	65.827	0.803	450		1	13.000	65.024	100
							2	10.002	65.024	100
							0	10.003	65.024	100
DWP 55	301914.606	514069.123	65.793	0.700			0	14.000	65.093	100
J51	301914.130	514067.247	65.773	0.781			1	14.000	64.992	100
							2	10.003	64.992	100
							0	10.004	64.992	100
DWP 52	301928.644	514063.874	65.723	0.700			0	15.000	65.023	100
SWIC 54	301929.950	514061.546	65.715	0.719	450		1	15.000	64.996	100
							0	15.001	64.996	100
DWP 53	301923.850	514060.488	65.697	0.700			0	16.000	64.997	100
J52	301923.425	514058.116	65.686	0.764			1	16.000	64.922	100
							2	15.001	64.922	100
							0	15.002	64.922	100
DWP 42	301915.821	514056.903	65.665	0.700			0	17.000	64.965	100
DWP 54	301919.603	514059.222	65.683	0.700			0	18.000	64.983	100
SWIC 52	301919.626	514056.140	65.669	0.802	450		1	18.000	64.867	100
							2	17.000	64.867	100
							3	15.002	64.867	100
							4	10.004	64.867	100
							0	10.005	64.867	100
Common 5	301921.976	514050.831	65.649	0.899			1	10.005	64.750	100
							0	10.006	64.750	100
DWP 16	301946.688	514049.283	65.635	0.700			0	19.000	64.935	100

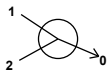
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
DWP 11	301952.063	514051.791	65.660	0.700					
						0	20.000	64.960	100
SWIC 14	301950.334	514054.967	65.731	0.864	450		1	20.000	64.867	100
							2	19.000	64.867	100
						0	19.001	64.867	100
DWP 15	301943.555	514046.129	65.577	0.700					
						0	21.000	64.877	100
SWIC 15	301942.790	514047.145	65.610	0.746	450		1	21.000	64.864	100
						0	21.001	64.864	100
Common 1	301943.652	514059.357	65.849	1.108			1	21.001	64.741	100
							2	19.001	64.741	100
						0	19.002	64.741	100
DWP 43	301910.941	514053.707	65.640	0.700					
						0	22.000	64.940	100
DWP 44	301906.717	514052.366	65.652	0.700					
						0	23.000	64.952	100
SWIC 43	301907.687	514049.930	65.616	0.727	450		1	23.000	64.889	100
							2	22.000	64.889	100
						0	22.001	64.889	100
Common 4	301914.566	514046.788	65.615	0.865			1	22.001	64.750	100
						0	22.002	64.750	100
DWP 35	301921.488	514033.866	65.418	0.700					
						0	24.000	64.718	100
SWIC 32	301920.080	514035.259	65.443	0.745	450		1	24.000	64.698	100
						0	24.001	64.698	100
DWP 31	301929.605	514039.330	65.483	0.700					
						0	25.000	64.783	100
DWP 36	301926.682	514037.677	65.468	0.700					
						0	26.000	64.768	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC 33	301925.129	514039.923	65.521	0.892	450		1	26.000	64.629	100
							2	25.000	64.629	100
							3	24.001	64.629	100
							0	24.002	64.629	100
Common 3	301921.661	514047.265	65.632	1.085			1	24.002	64.547	100
							0	24.003	64.547	100
DWP 26	301935.336	514042.295	65.504	0.770			0	27.000	64.734	100
DWP 25	301932.159	514039.740	65.467	0.700			0	28.000	64.767	100
SWIC 25	301931.724	514040.867	65.503	0.808	450		1	28.000	64.695	100
							2	27.000	64.695	100
							0	27.001	64.695	100
DWP 21	301941.656	514042.943	65.479	0.700			0	29.000	64.779	100
DWP 27	301939.699	514044.252	65.527	0.700			0	30.000	64.827	100
SWIC 24	301940.069	514046.329	65.584	0.843	450		1	30.000	64.741	100
							2	29.000	64.741	100
							0	29.001	64.741	100
Common 2	301931.115	514052.464	65.675	1.174			1	29.001	64.560	100
							2	27.001	64.501	100
							0	27.002	64.501	100
Common Collect	301929.263	514052.986	65.674	1.468			1	27.002	64.331	100
							2	24.003	64.331	100
							3	22.002	64.331	100
							4	19.002	64.331	100
							5	10.006	64.331	100
							6	1.007	64.331	100
							0	1.008	64.206	225
Common Soakaway	301923.300	514049.754	65.647	1.465			1	1.008	64.182	225
DWP 14	301949.630	514035.422	65.221	0.700			0	31.000	64.521	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC 12	301949.844	514034.362	65.191	0.700	450		1	31.000	64.491	100
							0	31.001	64.491	100
DWP 13	301955.183	514037.956	65.280	0.700			0	32.000	64.580	100
J11	301956.544	514038.067	65.284	0.870			1	32.000	64.414	100
							2	31.001	64.414	100
							0	31.002	64.414	100
DWP 12	301958.477	514040.415	65.367	0.700			0	33.000	64.667	100
SWIC 11	301959.531	514039.718	65.333	0.954	450		1	33.000	64.379	100
							2	31.002	64.379	100
							0	31.003	64.379	100
Soak 1	301964.030	514037.791	65.225	0.896			1	31.003	64.329	100
DWP 22	301947.776	514032.771	65.161	0.700			0	34.000	64.461	100
SWIC 21	301948.878	514030.821	65.100	0.700	450		1	34.000	64.400	100
							0	34.001	64.400	100
DWP 23	301943.209	514029.404	65.099	0.700			0	35.000	64.399	100
DWP 24	301939.100	514027.501	65.073	0.700			0	36.000	64.373	100
SWIC 23	301939.860	514025.504	65.014	0.720	450		1	36.000	64.294	100
							2	35.000	64.294	100
							3	34.001	64.294	100
							0	34.002	64.294	100
Soak 2	301943.128	514023.369	64.814	0.700			1	34.002	64.114	100
DWP 34	301928.116	514021.845	64.788	0.700			0	37.000	64.088	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC 01	301928.582	514020.834	64.719	0.700	450	1	37.000	64.019	100
						0	37.001	64.019	100
DWP 33	301931.953	514023.361	65.012	0.700		0	38.000	64.312	100
J31	301933.592	514023.186	64.991	1.028		1	38.000	63.963	100
						2	37.001	63.963	100
						0	37.002	63.963	100
DWP 32	301937.075	514026.823	65.068	0.700		0	39.000	64.368	100
SWIC 34	301937.903	514025.382	65.023	1.109	450	1	39.000	63.914	100
						2	37.002	63.914	100
						0	37.003	63.914	100
Soak 3	301938.549	514020.818	64.750	0.883		1	37.003	63.867	100
Perm 1	301869.652	514013.518	64.750	0.700		0	40.000	64.050	100
Perm 2	301869.619	514012.292	64.750	0.713		1	40.000	64.037	100

APPENDIX F

SURFACE WATER HYDRAULIC ANALYSIS RESULTS

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	✓	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	400	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	50	0	0

Node Soak 1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05000	Invert Level (m)	64.329	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.05000	Time to half empty (mins)	360	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.000	Number Required	1
Porosity	0.96	Pit Length (m)	5.000		

Node Soak 2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05000	Invert Level (m)	64.114	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.05000	Time to half empty (mins)	360	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.000	Number Required	1
Porosity	0.96	Pit Length (m)	5.000		

Node Soak 3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05000	Invert Level (m)	63.867	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.05000	Time to half empty (mins)	360	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.000	Number Required	1
Porosity	0.96	Pit Length (m)	5.000		

Node Common Soakaway Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05000	Invert Level (m)	64.182	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.05000	Time to half empty (mins)	403	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	35.000	Number Required	1
Porosity	0.96	Pit Length (m)	3.000		

Node Perm 2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05000	Invert Level (m)	64.037	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	149	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	DWP 61	10	65.009	0.026	0.9	0.0063	0.0000	OK
15 minute winter	SWIC 61	10	64.958	0.026	0.9	0.0041	0.0000	OK
15 minute summer	DWP 67	1	65.296	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J61	11	64.926	0.025	0.9	0.0000	0.0000	OK
15 minute summer	DWP 66	1	65.063	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J62	11	64.871	0.026	0.9	0.0000	0.0000	OK
15 minute winter	SWIC 62	11	64.835	0.025	0.9	0.0040	0.0000	OK
15 minute winter	DWP 57	10	65.100	0.024	0.7	0.0047	0.0000	OK
15 minute summer	DWP 51	1	65.058	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 53	10	65.045	0.012	0.7	0.0018	0.0000	OK
15 minute summer	DWP 65	1	65.080	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 63	11	64.760	0.035	1.5	0.0055	0.0000	OK
15 minute summer	DWP 64	1	65.103	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 64	11	64.611	0.034	1.5	0.0053	0.0000	OK
15 minute summer	DWP 63	1	65.165	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 62	11	64.985	0.024	0.7	0.0047	0.0000	OK
15 minute winter	SWIC 65	11	64.949	0.016	0.7	0.0025	0.0000	OK
15 minute winter	Common 6	12	64.526	0.041	2.2	0.0000	0.0000	OK
15 minute winter	DWP 45	10	65.209	0.023	0.7	0.0043	0.0000	OK
15 minute winter	SWIC 41	11	65.187	0.022	0.7	0.0035	0.0000	OK
15 minute summer	DWP 46	1	65.134	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 41	1	65.106	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 42	11	65.078	0.023	0.7	0.0037	0.0000	OK
15 minute summer	DWP 56	1	65.096	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 51	11	65.047	0.023	0.7	0.0036	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	DWP 61	1.000	SWIC 61	0.9	0.539	0.143	0.0081
15 minute winter	SWIC 61	1.001	J61	0.9	0.540	0.140	0.0049
15 minute summer	DWP 67	2.000	J61	0.0	0.000	0.000	0.0032
15 minute winter	J61	1.002	J62	0.9	0.540	0.142	0.0088
15 minute summer	DWP 66	3.000	J62	0.0	0.000	0.000	0.0033
15 minute winter	J62	1.003	SWIC 62	0.9	0.544	0.142	0.0054
15 minute winter	SWIC 62	1.004	SWIC 63	0.9	0.435	0.141	0.0166
15 minute winter	DWP 57	4.000	SWIC 53	0.7	0.703	0.110	0.0042
15 minute summer	DWP 51	5.000	SWIC 53	0.0	0.000	0.000	0.0006
15 minute winter	SWIC 53	4.001	SWIC 63	0.7	0.978	0.028	0.0030
15 minute summer	DWP 65	6.000	SWIC 63	0.0	0.000	0.000	0.0041
15 minute winter	SWIC 63	1.005	SWIC 64	1.5	0.636	0.247	0.0345
15 minute summer	DWP 64	7.000	SWIC 64	0.0	0.000	0.000	0.0058
15 minute winter	SWIC 64	1.006	Common 6	1.5	0.556	0.242	0.0242
15 minute summer	DWP 63	8.000	SWIC 65	0.0	0.000	0.000	0.0026
15 minute winter	DWP 62	9.000	SWIC 65	0.7	0.636	0.115	0.0031
15 minute winter	SWIC 65	8.001	Common 6	0.7	0.697	0.053	0.0182
15 minute winter	Common 6	1.007	Common Collect	2.1	0.709	0.352	0.0460
15 minute winter	DWP 45	10.000	SWIC 41	0.7	0.500	0.109	0.0027
15 minute winter	SWIC 41	10.001	SWIC 42	0.7	0.491	0.108	0.0146
15 minute summer	DWP 46	11.000	SWIC 42	0.0	0.000	0.000	0.0035
15 minute summer	DWP 41	12.000	SWIC 42	0.0	0.000	0.000	0.0021
15 minute winter	SWIC 42	10.002	SWIC 51	0.7	0.521	0.109	0.0041
15 minute summer	DWP 56	13.000	SWIC 51	0.0	0.000	0.000	0.0024
15 minute winter	SWIC 51	10.003	J51	0.7	0.562	0.107	0.0040

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 55	1	65.093	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J51	11	65.014	0.022	0.7	0.0000	0.0000	OK
15 minute winter	DWP 52	11	65.045	0.022	0.6	0.0040	0.0000	OK
15 minute summer	SWIC 54	11	65.018	0.022	0.6	0.0034	0.0000	OK
15 minute summer	DWP 53	1	64.997	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J52	11	64.942	0.020	0.6	0.0000	0.0000	OK
15 minute summer	DWP 42	1	64.965	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 54	1	64.983	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 52	11	64.900	0.033	1.8	0.0108	0.0000	OK
15 minute winter	Common 5	11	64.774	0.024	1.8	0.0000	0.0000	OK
15 minute summer	DWP 16	1	64.935	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 11	1	64.960	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 14	10	64.888	0.021	0.7	0.0064	0.0000	OK
15 minute summer	DWP 15	1	64.877	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 15	1	64.864	0.000	0.0	0.0000	0.0000	OK
15 minute winter	Common 1	11	64.759	0.018	0.7	0.0000	0.0000	OK
15 minute summer	DWP 43	1	64.940	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 44	1	64.952	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 43	1	64.889	0.000	0.0	0.0000	0.0000	OK
15 minute summer	Common 4	1	64.750	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 35	1	64.718	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 32	1	64.698	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 31	10	64.801	0.018	0.8	0.0038	0.0000	OK
15 minute summer	DWP 36	1	64.768	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 33	10	64.654	0.025	0.8	0.0039	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 55	14.000	J51	0.0	0.000	0.000	0.0012
15 minute winter	J51	10.004	SWIC 52	0.6	0.372	0.105	0.0218
15 minute winter	DWP 52	15.000	SWIC 54	0.6	0.479	0.099	0.0033
15 minute summer	SWIC 54	15.001	J52	0.6	0.511	0.099	0.0087
15 minute summer	DWP 53	16.000	J52	0.0	0.000	0.000	0.0013
15 minute summer	J52	15.002	SWIC 52	0.6	0.379	0.087	0.0071
15 minute summer	DWP 42	17.000	SWIC 52	0.0	0.000	0.000	0.0043
15 minute summer	DWP 54	18.000	SWIC 52	0.0	0.000	0.000	0.0034
15 minute winter	SWIC 52	10.005	Common 5	1.8	0.992	0.214	0.0108
15 minute winter	Common 5	10.006	Common Collect	1.8	1.252	0.128	0.0112
15 minute summer	DWP 16	19.000	SWIC 14	0.0	0.000	0.000	0.0037
15 minute summer	DWP 11	20.000	SWIC 14	0.0	0.000	0.000	0.0020
15 minute winter	SWIC 14	19.001	Common 1	0.7	0.648	0.089	0.0083
15 minute summer	DWP 15	21.000	SWIC 15	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 15	21.001	Common 1	0.0	0.000	0.000	0.0053
15 minute winter	Common 1	19.002	Common Collect	0.7	0.710	0.067	0.0145
15 minute summer	DWP 43	22.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	DWP 44	23.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 43	22.001	Common 4	0.0	0.000	0.000	0.0000
15 minute summer	Common 4	22.002	Common Collect	0.0	0.000	0.000	0.0000
15 minute summer	DWP 35	24.000	SWIC 32	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 32	24.001	SWIC 33	0.0	0.000	0.000	0.0049
15 minute winter	DWP 31	25.000	SWIC 33	0.8	0.641	0.069	0.0055
15 minute summer	DWP 36	26.000	SWIC 33	0.0	0.000	0.000	0.0019
15 minute winter	SWIC 33	24.002	Common 3	0.8	0.593	0.124	0.0104

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Common 3	11	64.567	0.020	0.8	0.0000	0.0000	OK
15 minute winter	DWP 26	10	64.759	0.025	0.8	0.0048	0.0000	OK
15 minute summer	DWP 25	1	64.767	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 25	10	64.717	0.022	0.8	0.0036	0.0000	OK
15 minute summer	DWP 21	1	64.779	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 27	1	64.827	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 24	1	64.741	0.000	0.0	0.0000	0.0000	OK
15 minute winter	Common 2	11	64.515	0.014	0.8	0.0000	0.0000	OK
15 minute winter	Common Collect	11	64.271	0.065	6.1	0.0000	0.0000	OK
360 minute winter	Common Soakaway	264	64.243	0.061	1.8	6.1374	0.0000	OK
15 minute winter	DWP 14	10	64.539	0.018	0.7	0.0036	0.0000	OK
15 minute summer	SWIC 12	10	64.513	0.022	0.7	0.0036	0.0000	OK
15 minute summer	DWP 13	1	64.580	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J11	11	64.437	0.023	0.7	0.0000	0.0000	OK
15 minute summer	DWP 12	1	64.667	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 11	11	64.403	0.024	0.7	0.0039	0.0000	OK
360 minute winter	Soak 1	264	64.398	0.069	0.2	0.6599	0.0000	OK
15 minute summer	DWP 22	1	64.461	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 21	10	64.424	0.024	0.7	0.0081	0.0000	OK
15 minute summer	DWP 23	1	64.399	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 24	1	64.373	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 23	10	64.310	0.016	0.7	0.0026	0.0000	OK
360 minute winter	Soak 2	264	64.182	0.068	0.2	0.6533	0.0000	OK
15 minute summer	DWP 34	1	64.088	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 01	1	64.019	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	Common 3	24.003	Common Collect	0.8	0.708	0.083	0.0102
15 minute winter	DWP 26	27.000	SWIC 25	0.8	0.546	0.127	0.0055
15 minute summer	DWP 25	28.000	SWIC 25	0.0	0.000	0.000	0.0008
15 minute winter	SWIC 25	27.001	Common 2	0.8	0.773	0.096	0.0115
15 minute summer	DWP 21	29.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	DWP 27	30.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 24	29.001	Common 2	0.0	0.000	0.000	0.0000
15 minute winter	Common 2	27.002	Common Collect	0.8	1.141	0.042	0.0013
15 minute winter	Common Collect	1.008	Common Soakaway	6.1	1.495	0.199	0.0348
360 minute winter	Common Soakaway	Infiltration		0.8			
15 minute winter	DWP 14	31.000	SWIC 12	0.7	0.590	0.067	0.0012
15 minute summer	SWIC 12	31.001	J11	0.7	0.502	0.108	0.0101
15 minute summer	DWP 13	32.000	J11	0.0	0.000	0.000	0.0009
15 minute winter	J11	31.002	SWIC 11	0.7	0.509	0.109	0.0047
15 minute summer	DWP 12	33.000	SWIC 11	0.0	0.000	0.000	0.0009
15 minute summer	SWIC 11	31.003	Soak 1	0.7	0.863	0.110	0.0048
360 minute winter	Soak 1	Infiltration		0.1			
15 minute summer	DWP 22	34.000	SWIC 21	0.0	0.000	0.000	0.0015
15 minute winter	SWIC 21	34.001	SWIC 23	0.7	0.596	0.110	0.0118
15 minute summer	DWP 23	35.000	SWIC 23	0.0	0.000	0.000	0.0021
15 minute summer	DWP 24	36.000	SWIC 23	0.0	0.000	0.000	0.0009
15 minute winter	SWIC 23	34.002	Soak 2	0.7	1.182	0.050	0.0040
360 minute winter	Soak 2	Infiltration		0.1			
15 minute summer	DWP 34	37.000	SWIC 01	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 01	37.001	J31	0.0	0.000	0.000	0.0000

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 33	1	64.312	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J31	1	63.963	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 32	1	64.368	0.000	0.0	0.0000	0.0000	OK
360 minute winter	SWIC 34	264	63.944	0.030	0.2	0.0085	0.0000	OK
360 minute winter	Soak 3	264	63.944	0.077	0.2	0.7401	0.0000	OK
15 minute winter	Perm 1	11	64.077	0.027	1.0	0.0078	0.0000	OK
180 minute winter	Perm 2	116	64.056	0.019	0.4	0.5616	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 33	38.000	J31	0.0	0.000	0.000	0.0000
15 minute summer	J31	37.002	SWIC 34	0.0	0.000	0.000	0.0035
15 minute summer	DWP 32	39.000	SWIC 34	0.0	0.000	0.000	0.0012
360 minute winter	SWIC 34	37.003	Soak 3	0.2	0.508	0.033	0.0195
360 minute winter	Soak 3	Infiltration		0.1			
15 minute winter	Perm 1	40.000	Perm 2	1.0	1.222	0.161	0.0012
180 minute winter	Perm 2	Infiltration		0.3			

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	DWP 61	10	65.027	0.044	2.3	0.0106	0.0000	OK
15 minute winter	SWIC 61	10	64.976	0.044	2.3	0.0070	0.0000	OK
15 minute summer	DWP 67	1	65.296	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J61	11	64.943	0.042	2.2	0.0000	0.0000	OK
15 minute summer	DWP 66	1	65.063	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J62	11	64.889	0.044	2.2	0.0000	0.0000	OK
15 minute winter	SWIC 62	11	64.852	0.042	2.2	0.0067	0.0000	OK
15 minute winter	DWP 57	10	65.116	0.040	1.8	0.0076	0.0000	OK
15 minute summer	DWP 51	1	65.058	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 53	10	65.052	0.019	1.8	0.0030	0.0000	OK
15 minute summer	DWP 65	1	65.080	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 63	11	64.786	0.061	4.0	0.0098	0.0000	OK
15 minute summer	DWP 64	1	65.103	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 64	11	64.637	0.060	4.0	0.0096	0.0000	OK
15 minute summer	DWP 63	1	65.165	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 62	10	65.000	0.039	1.9	0.0078	0.0000	OK
15 minute winter	SWIC 65	10	64.958	0.025	1.9	0.0040	0.0000	OK
15 minute winter	Common 6	11	64.562	0.077	5.7	0.0000	0.0000	OK
15 minute winter	DWP 45	10	65.225	0.039	1.8	0.0073	0.0000	OK
15 minute winter	SWIC 41	10	65.203	0.038	1.8	0.0060	0.0000	OK
15 minute summer	DWP 46	1	65.134	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 41	1	65.106	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 42	11	65.095	0.040	1.8	0.0064	0.0000	OK
15 minute summer	DWP 56	1	65.096	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 51	11	65.062	0.038	1.8	0.0061	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	DWP 61	1.000	SWIC 61	2.3	0.686	0.371	0.0165
15 minute winter	SWIC 61	1.001	J61	2.2	0.697	0.367	0.0098
15 minute summer	DWP 67	2.000	J61	0.0	0.000	0.000	0.0066
15 minute winter	J61	1.002	J62	2.2	0.697	0.363	0.0176
15 minute summer	DWP 66	3.000	J62	0.0	0.000	0.000	0.0068
15 minute winter	J62	1.003	SWIC 62	2.2	0.698	0.365	0.0109
15 minute winter	SWIC 62	1.004	SWIC 63	2.2	0.550	0.369	0.0342
15 minute winter	DWP 57	4.000	SWIC 53	1.8	0.936	0.293	0.0083
15 minute summer	DWP 51	5.000	SWIC 53	0.0	0.000	0.000	0.0012
15 minute winter	SWIC 53	4.001	SWIC 63	1.8	1.083	0.075	0.0062
15 minute summer	DWP 65	6.000	SWIC 63	0.0	0.000	0.000	0.0088
15 minute winter	SWIC 63	1.005	SWIC 64	4.0	0.801	0.658	0.0731
15 minute summer	DWP 64	7.000	SWIC 64	0.0	0.000	0.000	0.0125
15 minute winter	SWIC 64	1.006	Common 6	4.0	0.694	0.656	0.0521
15 minute summer	DWP 63	8.000	SWIC 65	0.0	0.000	0.000	0.0053
15 minute winter	DWP 62	9.000	SWIC 65	1.9	0.848	0.307	0.0061
15 minute winter	SWIC 65	8.001	Common 6	1.8	0.803	0.140	0.0385
15 minute winter	Common 6	1.007	Common Collect	5.7	0.883	0.939	0.0987
15 minute winter	DWP 45	10.000	SWIC 41	1.8	0.641	0.291	0.0057
15 minute winter	SWIC 41	10.001	SWIC 42	1.8	0.631	0.289	0.0303
15 minute summer	DWP 46	11.000	SWIC 42	0.0	0.000	0.000	0.0076
15 minute summer	DWP 41	12.000	SWIC 42	0.0	0.000	0.000	0.0046
15 minute winter	SWIC 42	10.002	SWIC 51	1.8	0.622	0.288	0.0086
15 minute summer	DWP 56	13.000	SWIC 51	0.0	0.000	0.000	0.0052
15 minute winter	SWIC 51	10.003	J51	1.8	0.658	0.289	0.0084

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 55	1	65.093	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J51	11	65.029	0.037	1.8	0.0000	0.0000	OK
15 minute winter	DWP 52	10	65.061	0.038	1.7	0.0069	0.0000	OK
15 minute winter	SWIC 54	10	65.033	0.037	1.7	0.0058	0.0000	OK
15 minute summer	DWP 53	1	64.997	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J52	11	64.955	0.033	1.7	0.0000	0.0000	OK
15 minute summer	DWP 42	1	64.965	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 54	1	64.983	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 52	11	64.926	0.059	5.1	0.0193	0.0000	OK
15 minute winter	Common 5	11	64.792	0.042	5.1	0.0000	0.0000	OK
15 minute summer	DWP 16	1	64.935	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 11	1	64.960	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 14	10	64.900	0.033	1.7	0.0102	0.0000	OK
15 minute summer	DWP 15	1	64.877	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 15	1	64.864	0.000	0.0	0.0000	0.0000	OK
15 minute winter	Common 1	10	64.769	0.028	1.7	0.0000	0.0000	OK
15 minute summer	DWP 43	1	64.940	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 44	1	64.952	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 43	1	64.889	0.000	0.0	0.0000	0.0000	OK
15 minute summer	Common 4	1	64.750	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 35	1	64.718	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 32	1	64.698	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 31	10	64.812	0.029	2.0	0.0061	0.0000	OK
15 minute summer	DWP 36	1	64.768	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 33	10	64.669	0.040	2.0	0.0064	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 55	14.000	J51	0.0	0.000	0.000	0.0024
15 minute winter	J51	10.004	SWIC 52	1.8	0.482	0.291	0.0460
15 minute winter	DWP 52	15.000	SWIC 54	1.7	0.633	0.276	0.0071
15 minute winter	SWIC 54	15.001	J52	1.7	0.680	0.274	0.0180
15 minute summer	DWP 53	16.000	J52	0.0	0.000	0.000	0.0026
15 minute winter	J52	15.002	SWIC 52	1.7	0.472	0.242	0.0152
15 minute summer	DWP 42	17.000	SWIC 52	0.0	0.000	0.000	0.0089
15 minute summer	DWP 54	18.000	SWIC 52	0.0	0.000	0.000	0.0071
15 minute winter	SWIC 52	10.005	Common 5	5.1	1.307	0.598	0.0229
15 minute winter	Common 5	10.006	Common Collect	5.2	1.672	0.360	0.0234
15 minute summer	DWP 16	19.000	SWIC 14	0.0	0.000	0.000	0.0074
15 minute summer	DWP 11	20.000	SWIC 14	0.0	0.000	0.000	0.0039
15 minute winter	SWIC 14	19.001	Common 1	1.7	0.834	0.221	0.0161
15 minute summer	DWP 15	21.000	SWIC 15	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 15	21.001	Common 1	0.0	0.000	0.000	0.0106
15 minute winter	Common 1	19.002	Common Collect	1.6	0.930	0.168	0.0279
15 minute summer	DWP 43	22.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	DWP 44	23.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 43	22.001	Common 4	0.0	0.000	0.000	0.0000
15 minute summer	Common 4	22.002	Common Collect	0.0	0.000	0.000	0.0000
15 minute summer	DWP 35	24.000	SWIC 32	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 32	24.001	SWIC 33	0.0	0.000	0.000	0.0098
15 minute winter	DWP 31	25.000	SWIC 33	2.0	0.831	0.177	0.0108
15 minute summer	DWP 36	26.000	SWIC 33	0.0	0.000	0.000	0.0039
15 minute winter	SWIC 33	24.002	Common 3	2.0	0.777	0.324	0.0206

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Common 3	10	64.578	0.031	2.0	0.0000	0.0000	OK
15 minute winter	DWP 26	10	64.775	0.041	2.0	0.0080	0.0000	OK
15 minute summer	DWP 25	1	64.767	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 25	10	64.732	0.037	2.0	0.0058	0.0000	OK
15 minute summer	DWP 21	1	64.779	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 27	1	64.827	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 24	1	64.741	0.000	0.0	0.0000	0.0000	OK
15 minute winter	Common 2	10	64.523	0.022	2.0	0.0000	0.0000	OK
360 minute winter	Common Collect	288	64.343	0.137	3.1	0.0000	0.0000	OK
360 minute winter	Common Soakaway	288	64.343	0.161	3.1	16.1828	0.0000	OK
15 minute winter	DWP 14	10	64.553	0.032	1.8	0.0062	0.0000	OK
15 minute winter	SWIC 12	10	64.529	0.038	1.8	0.0060	0.0000	OK
15 minute summer	DWP 13	1	64.580	0.000	0.0	0.0000	0.0000	OK
480 minute winter	J11	408	64.491	0.077	0.4	0.0000	0.0000	OK
15 minute summer	DWP 12	1	64.667	0.000	0.0	0.0000	0.0000	OK
480 minute winter	SWIC 11	408	64.491	0.112	0.4	0.0178	0.0000	SURCHARGED
480 minute winter	Soak 1	408	64.491	0.162	0.5	1.5575	0.0000	OK
15 minute summer	DWP 22	1	64.461	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 21	10	64.439	0.039	1.7	0.0132	0.0000	OK
15 minute summer	DWP 23	1	64.399	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 24	1	64.373	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 23	10	64.318	0.024	1.7	0.0038	0.0000	OK
240 minute winter	Soak 2	208	64.284	0.170	0.4	1.6367	0.0000	OK
15 minute summer	DWP 34	1	64.088	0.000	0.0	0.0000	0.0000	OK
480 minute winter	SWIC 01	440	64.043	0.024	0.0	0.0038	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	Common 3	24.003	Common Collect	2.0	0.928	0.213	0.0200
15 minute winter	DWP 26	27.000	SWIC 25	2.0	0.707	0.327	0.0109
15 minute summer	DWP 25	28.000	SWIC 25	0.0	0.000	0.000	0.0015
15 minute winter	SWIC 25	27.001	Common 2	2.0	1.020	0.251	0.0226
15 minute summer	DWP 21	29.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	DWP 27	30.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 24	29.001	Common 2	0.0	0.000	0.000	0.0000
15 minute winter	Common 2	27.002	Common Collect	2.0	1.508	0.108	0.0025
360 minute winter	Common Collect	1.008	Common Soakaway	3.1	0.726	0.100	0.1883
360 minute winter	Common Soakaway	Infiltration		0.8			
15 minute winter	DWP 14	31.000	SWIC 12	1.8	0.736	0.176	0.0026
15 minute winter	SWIC 12	31.001	J11	1.8	0.649	0.291	0.0208
15 minute summer	DWP 13	32.000	J11	0.0	0.000	0.000	0.0018
480 minute winter	J11	31.002	SWIC 11	0.4	0.356	0.060	0.0244
15 minute summer	DWP 12	33.000	SWIC 11	0.0	0.000	0.000	0.0016
480 minute winter	SWIC 11	31.003	Soak 1	0.5	0.441	0.086	0.0383
480 minute winter	Soak 1	Infiltration		0.1			
15 minute summer	DWP 22	34.000	SWIC 21	0.0	0.000	0.000	0.0030
15 minute winter	SWIC 21	34.001	SWIC 23	1.7	0.797	0.276	0.0223
15 minute summer	DWP 23	35.000	SWIC 23	0.0	0.000	0.000	0.0037
15 minute summer	DWP 24	36.000	SWIC 23	0.0	0.000	0.000	0.0015
15 minute winter	SWIC 23	34.002	Soak 2	1.7	1.301	0.127	0.0128
240 minute winter	Soak 2	Infiltration		0.1			
15 minute summer	DWP 34	37.000	SWIC 01	0.0	0.000	0.000	0.0000
480 minute winter	SWIC 01	37.001	J31	0.0	-0.004	-0.002	0.0226

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 33	1	64.312	0.000	0.0	0.0000	0.0000	OK
480 minute winter	J31	440	64.043	0.080	0.0	0.0000	0.0000	OK
15 minute summer	DWP 32	1	64.368	0.000	0.0	0.0000	0.0000	OK
480 minute winter	SWIC 34	440	64.043	0.129	0.3	0.0367	0.0000	SURCHARGED
480 minute winter	Soak 3	440	64.043	0.176	0.3	1.6901	0.0000	OK
15 minute winter	Perm 1	10	64.096	0.046	2.7	0.0131	0.0000	OK
60 minute winter	Perm 2	45	64.081	0.044	1.6	1.3243	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 33	38.000	J31	0.0	0.000	0.000	0.0000
480 minute winter	J31	37.002	SWIC 34	0.0	-0.014	-0.004	0.0352
15 minute summer	DWP 32	39.000	SWIC 34	0.0	0.000	0.000	0.0023
480 minute winter	SWIC 34	37.003	Soak 3	0.3	0.508	0.045	0.0361
480 minute winter	Soak 3	Infiltration		0.1			
15 minute winter	Perm 1	40.000	Perm 2	2.7	1.387	0.429	0.0029
60 minute winter	Perm 2	Infiltration		0.6			

Results for 100 year +50% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	DWP 61	10	65.047	0.064	4.2	0.0155	0.0000	OK
15 minute winter	SWIC 61	10	64.996	0.064	4.2	0.0102	0.0000	OK
15 minute summer	DWP 67	1	65.296	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J61	13	64.970	0.069	4.1	0.0000	0.0000	OK
15 minute summer	DWP 66	1	65.063	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J62	13	64.963	0.118	4.2	0.0000	0.0000	SURCHARGED
15 minute winter	SWIC 62	13	64.952	0.142	3.9	0.0225	0.0000	SURCHARGED
15 minute winter	DWP 57	10	65.131	0.055	3.3	0.0106	0.0000	OK
15 minute winter	DWP 51	11	65.058	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 53	10	65.058	0.025	3.3	0.0040	0.0000	OK
15 minute summer	DWP 65	1	65.080	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 63	12	64.924	0.199	6.4	0.0316	0.0000	SURCHARGED
15 minute summer	DWP 64	1	65.103	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 64	13	64.779	0.201	5.9	0.0320	0.0000	SURCHARGED
15 minute summer	DWP 63	1	65.165	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 62	10	65.016	0.055	3.5	0.0109	0.0000	OK
15 minute winter	SWIC 65	10	64.968	0.035	3.5	0.0056	0.0000	OK
15 minute winter	Common 6	12	64.692	0.207	8.3	0.0000	0.0000	SURCHARGED
15 minute winter	DWP 45	10	65.242	0.056	3.3	0.0106	0.0000	OK
15 minute winter	SWIC 41	10	65.219	0.054	3.3	0.0086	0.0000	OK
15 minute summer	DWP 46	1	65.134	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 41	11	65.113	0.007	0.1	0.0000	0.0000	OK
15 minute winter	SWIC 42	11	65.113	0.058	3.2	0.0092	0.0000	OK
15 minute summer	DWP 56	1	65.096	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 51	11	65.078	0.054	3.2	0.0086	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	DWP 61	1.000	SWIC 61	4.2	0.784	0.682	0.0265
15 minute winter	SWIC 61	1.001	J61	4.1	0.803	0.680	0.0164
15 minute summer	DWP 67	2.000	J61	0.0	0.000	0.000	0.0106
15 minute winter	J61	1.002	J62	4.2	0.791	0.685	0.0375
15 minute summer	DWP 66	3.000	J62	0.0	0.000	0.000	0.0166
15 minute winter	J62	1.003	SWIC 62	3.9	0.789	0.638	0.0267
15 minute winter	SWIC 62	1.004	SWIC 63	3.5	0.579	0.578	0.0656
15 minute winter	DWP 57	4.000	SWIC 53	3.3	1.108	0.538	0.0127
15 minute winter	DWP 51	5.000	SWIC 53	0.0	-0.003	0.000	0.0019
15 minute winter	SWIC 53	4.001	SWIC 63	3.3	1.205	0.137	0.0096
15 minute summer	DWP 65	6.000	SWIC 63	0.0	0.000	0.000	0.0142
15 minute winter	SWIC 63	1.005	SWIC 64	5.9	0.831	0.977	0.1147
15 minute summer	DWP 64	7.000	SWIC 64	0.0	0.000	0.000	0.0205
15 minute winter	SWIC 64	1.006	Common 6	5.8	0.743	0.960	0.0716
15 minute summer	DWP 63	8.000	SWIC 65	0.0	0.000	0.000	0.0081
15 minute winter	DWP 62	9.000	SWIC 65	3.5	1.009	0.569	0.0095
15 minute winter	SWIC 65	8.001	Common 6	3.4	0.833	0.261	0.0496
15 minute winter	Common 6	1.007	Common Collect	8.2	1.043	1.347	0.1165
15 minute winter	DWP 45	10.000	SWIC 41	3.3	0.736	0.534	0.0091
15 minute winter	SWIC 41	10.001	SWIC 42	3.2	0.729	0.531	0.0484
15 minute summer	DWP 46	11.000	SWIC 42	0.0	0.000	0.000	0.0122
15 minute winter	DWP 41	12.000	SWIC 42	-0.1	-0.031	-0.008	0.0081
15 minute winter	SWIC 42	10.002	SWIC 51	3.2	0.713	0.526	0.0136
15 minute summer	DWP 56	13.000	SWIC 51	0.0	0.000	0.000	0.0081
15 minute winter	SWIC 51	10.003	J51	3.2	0.765	0.524	0.0131

Results for 100 year +50% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 55	1	65.093	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J51	11	65.044	0.052	3.2	0.0000	0.0000	OK
15 minute winter	DWP 52	10	65.078	0.055	3.2	0.0100	0.0000	OK
15 minute winter	SWIC 54	10	65.048	0.052	3.2	0.0083	0.0000	OK
15 minute summer	DWP 53	1	64.997	0.000	0.0	0.0000	0.0000	OK
15 minute winter	J52	12	64.981	0.059	3.1	0.0000	0.0000	OK
15 minute winter	DWP 42	12	64.978	0.013	0.1	0.0000	0.0000	OK
15 minute summer	DWP 54	1	64.983	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 52	12	64.977	0.110	9.5	0.0361	0.0000	SURCHARGED
15 minute winter	Common 5	10	64.808	0.058	9.1	0.0000	0.0000	OK
15 minute summer	DWP 16	1	64.935	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 11	1	64.960	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 14	10	64.914	0.047	3.2	0.0145	0.0000	OK
15 minute summer	DWP 15	1	64.877	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 15	1	64.864	0.000	0.0	0.0000	0.0000	OK
15 minute winter	Common 1	10	64.780	0.039	3.2	0.0000	0.0000	OK
15 minute summer	DWP 43	1	64.940	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 44	1	64.952	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 43	1	64.889	0.000	0.0	0.0000	0.0000	OK
15 minute summer	Common 4	1	64.750	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 35	1	64.718	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 32	1	64.698	0.000	0.0	0.0000	0.0000	OK
15 minute winter	DWP 31	10	64.822	0.039	3.7	0.0084	0.0000	OK
15 minute summer	DWP 36	1	64.768	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 33	10	64.686	0.057	3.7	0.0091	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 55	14.000	J51	0.0	0.000	0.000	0.0038
15 minute winter	J51	10.004	SWIC 52	3.2	0.519	0.528	0.0737
15 minute winter	DWP 52	15.000	SWIC 54	3.2	0.740	0.521	0.0114
15 minute winter	SWIC 54	15.001	J52	3.1	0.804	0.517	0.0326
15 minute summer	DWP 53	16.000	J52	0.0	0.000	0.000	0.0042
15 minute winter	J52	15.002	SWIC 52	3.1	0.527	0.452	0.0271
15 minute winter	DWP 42	17.000	SWIC 52	0.2	0.043	0.022	0.0163
15 minute summer	DWP 54	18.000	SWIC 52	0.0	0.000	0.000	0.0118
15 minute winter	SWIC 52	10.005	Common 5	9.1	1.433	1.058	0.0362
15 minute winter	Common 5	10.006	Common Collect	9.1	1.926	0.635	0.0359
15 minute summer	DWP 16	19.000	SWIC 14	0.0	0.000	0.000	0.0119
15 minute summer	DWP 11	20.000	SWIC 14	0.0	0.000	0.000	0.0063
15 minute winter	SWIC 14	19.001	Common 1	3.2	0.990	0.416	0.0256
15 minute summer	DWP 15	21.000	SWIC 15	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 15	21.001	Common 1	0.0	0.000	0.000	0.0168
15 minute winter	Common 1	19.002	Common Collect	3.1	1.109	0.317	0.0441
15 minute summer	DWP 43	22.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	DWP 44	23.000	SWIC 43	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 43	22.001	Common 4	0.0	0.000	0.000	0.0000
15 minute summer	Common 4	22.002	Common Collect	0.0	0.000	0.000	0.0095
15 minute summer	DWP 35	24.000	SWIC 32	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 32	24.001	SWIC 33	0.0	0.000	0.000	0.0154
15 minute winter	DWP 31	25.000	SWIC 33	3.7	0.979	0.328	0.0170
15 minute summer	DWP 36	26.000	SWIC 33	0.0	0.000	0.000	0.0061
15 minute winter	SWIC 33	24.002	Common 3	3.6	0.916	0.600	0.0322

Results for 100 year +50% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	Common 3	10	64.591	0.044	3.6	0.0000	0.0000	OK
15 minute winter	DWP 26	10	64.793	0.059	3.8	0.0116	0.0000	OK
15 minute summer	DWP 25	1	64.767	0.000	0.0	0.0000	0.0000	OK
15 minute winter	SWIC 25	10	64.747	0.052	3.7	0.0083	0.0000	OK
15 minute summer	DWP 21	1	64.779	0.000	0.0	0.0000	0.0000	OK
15 minute summer	DWP 27	1	64.827	0.000	0.0	0.0000	0.0000	OK
15 minute summer	SWIC 24	1	64.741	0.000	0.0	0.0000	0.0000	OK
720 minute winter	Common 2	510	64.568	0.067	1.6	0.0000	0.0000	OK
720 minute winter	Common Collect	525	64.560	0.354	3.9	0.0000	0.0000	SURCHARGED
960 minute winter	Common Soakaway	690	64.555	0.373	3.8	37.5537	0.0000	OK
600 minute winter	DWP 14	450	64.672	0.151	0.5	0.0291	0.0000	SURCHARGED
600 minute winter	SWIC 12	450	64.672	0.181	1.5	0.0287	0.0000	SURCHARGED
600 minute winter	DWP 13	450	64.672	0.092	0.1	0.0000	0.0000	OK
600 minute winter	J11	450	64.672	0.258	0.5	0.0000	0.0000	SURCHARGED
600 minute winter	DWP 12	450	64.672	0.005	0.0	0.0000	0.0000	OK
600 minute winter	SWIC 11	450	64.672	0.293	1.1	0.0465	0.0000	SURCHARGED
600 minute winter	Soak 1	450	64.672	0.343	0.4	3.2887	0.0000	OK
720 minute winter	DWP 22	510	64.476	0.015	0.0	0.0000	0.0000	OK
720 minute winter	SWIC 21	510	64.476	0.076	0.4	0.0257	0.0000	OK
720 minute winter	DWP 23	510	64.476	0.077	0.0	0.0000	0.0000	OK
720 minute winter	DWP 24	525	64.475	0.102	0.0	0.0000	0.0000	SURCHARGED
720 minute winter	SWIC 23	510	64.475	0.181	0.4	0.0289	0.0000	SURCHARGED
720 minute winter	Soak 2	510	64.476	0.362	0.4	3.4706	0.0000	OK
960 minute winter	DWP 34	675	64.231	0.143	0.0	0.0000	0.0000	SURCHARGED
960 minute winter	SWIC 01	675	64.231	0.212	0.0	0.0336	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute winter	Common 3	24.003	Common Collect	3.6	1.098	0.395	0.0313
15 minute winter	DWP 26	27.000	SWIC 25	3.7	0.836	0.620	0.0174
15 minute summer	DWP 25	28.000	SWIC 25	0.0	0.000	0.000	0.0024
15 minute winter	SWIC 25	27.001	Common 2	3.7	1.210	0.474	0.0358
15 minute summer	DWP 21	29.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	DWP 27	30.000	SWIC 24	0.0	0.000	0.000	0.0000
15 minute summer	SWIC 24	29.001	Common 2	0.0	0.000	0.000	0.0000
720 minute winter	Common 2	27.002	Common Collect	1.9	0.938	0.104	0.0129
720 minute winter	Common Collect	1.008	Common Soakaway	3.8	0.744	0.124	0.2698
960 minute winter	Common Soakaway	Infiltration		0.9			
600 minute winter	DWP 14	31.000	SWIC 12	1.5	0.512	0.145	0.0085
600 minute winter	SWIC 12	31.001	J11	0.5	0.401	0.077	0.0599
600 minute winter	DWP 13	32.000	J11	-0.1	-0.021	-0.004	0.0105
600 minute winter	J11	31.002	SWIC 11	1.1	0.352	0.174	0.0267
600 minute winter	DWP 12	33.000	SWIC 11	0.0	-0.006	-0.001	0.0050
600 minute winter	SWIC 11	31.003	Soak 1	0.4	0.497	0.066	0.0383
600 minute winter	Soak 1	Infiltration		0.1			
720 minute winter	DWP 22	34.000	SWIC 21	0.0	0.008	-0.002	0.0079
720 minute winter	SWIC 21	34.001	SWIC 23	0.4	0.528	0.067	0.0742
720 minute winter	DWP 23	35.000	SWIC 23	0.0	-0.005	0.004	0.0367
720 minute winter	DWP 24	36.000	SWIC 23	0.0	0.007	0.004	0.0167
720 minute winter	SWIC 23	34.002	Soak 2	0.4	0.667	0.030	0.0305
720 minute winter	Soak 2	Infiltration		0.1			
960 minute winter	DWP 34	37.000	SWIC 01	0.0	0.008	-0.002	0.0087
960 minute winter	SWIC 01	37.001	J31	0.0	-0.007	0.008	0.0433

Results for 100 year +50% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DWP 33	1	64.312	0.000	0.0	0.0000	0.0000	OK
960 minute winter	J31	690	64.231	0.268	0.1	0.0000	0.0000	SURCHARGED
15 minute summer	DWP 32	1	64.368	0.000	0.0	0.0000	0.0000	OK
960 minute winter	SWIC 34	675	64.231	0.317	0.4	0.0899	0.0000	SURCHARGED
960 minute winter	Soak 3	675	64.231	0.364	0.3	3.4905	0.0000	OK
60 minute winter	Perm 1	49	64.133	0.083	3.0	0.0238	0.0000	OK
60 minute winter	Perm 2	49	64.133	0.096	3.0	2.8807	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DWP 33	38.000	J31	0.0	0.000	0.000	0.0018
960 minute winter	J31	37.002	SWIC 34	-0.1	-0.009	-0.011	0.0379
15 minute summer	DWP 32	39.000	SWIC 34	0.0	0.000	0.000	0.0056
960 minute winter	SWIC 34	37.003	Soak 3	0.3	0.436	0.053	0.0361
960 minute winter	Soak 3	Infiltration		0.1			
60 minute winter	Perm 1	40.000	Perm 2	3.0	1.099	0.477	0.0090
60 minute winter	Perm 2	Infiltration		0.7			