

CA/25/00679

Canterbury City Council  
Planning Department

18<sup>th</sup> December 2025

To whom it may concern

**R676 - Barham Court Farm, The Street, Barham, CT4 6PB**  
**Planning Conditions 12 Letter (Planning Reference: CA/21/02835)**

This letter and appended documents are provided to support the discharge of Planning Conditions 12 related to the (respective) discharge of surface water from the above development.

**Planning Condition 12**

*No development (excluding site clearance) shall take place until details of the surface water disposal, including a detailed sustainable surface water drainage scheme for the site, which is compliant with the non-statutory technical standards for sustainable drainage and shall demonstrate the surface water run off generated up to and including the 100yr critical storm (including allowance for climate change) will not exceed the run off from the undeveloped site following the corresponding rainfall event, and so as not to increase the risk of flooding both on-or off-site, and including details for the long term maintenance of all surface water drainage infrastructure on site, and including the provision of measures to prevent the discharge of surface water onto the highway, have been submitted to and approved in writing by the local planning authority.*

*The development shall be carried out in accordance with such details as are agreed and thereafter maintained.*

**Engineers Response**

The proposals for the discharge of surface water put forward at Planning in Considine's Flood Risk and Drainage Strategy (September 2022, Rev P03) centred around the use of permeable paving and traditional soakaways. This was based on the understanding from geology records that the site sat entirely on chalk soils with not superficial deposits, with initial design calculations based on infiltration testing undertaken at the time. This testing was undertaken at depths of 2.75m below ground level and, tellingly, made no record of the soils encountered within the trial holes.

However, when we looked in to the separate Site Investigation undertaken by Peter Baxter Associates in 2017 which formed part of the planning, it demonstrates that in fact there is clay material present on the site, down to depths of at least 2.2m in areas. Borehole logs extracted from thus report are provided in **Appendix A**.

Given that the vast majority of the scheme was proposed to utilise permeable paving (modelled as only 300mm deep in the FRA) to infiltrate directly into the ground, it is considered that testing at the depths noted above is unlikely to be representative of the ground conditions at the formation level of the road.

The report also notes that further infiltration testing was required at detailed design, suggesting that there was some knowledge as to the fact the testing was not necessarily representative.

Furthermore, there is an inconsistency between the planning drainage design drawings and the calculations (soakaways are 1.6m deep on the drawing, 2.0m in the modelling).

Additionally, the Planning design does not account for the proposed changes to the levels across the site which will occur as part of the development. In some areas, levels are raising by 1m or more, so where in the calculations the base of the indicated soakaways are shown to be at around 3m below ground (which we would already consider is too deep) they will end up being 4.0 to 4.5m below ground in certain places, which realistically from a construction and maintenance point of view is impractical.

It was therefore concluded that the proposed drainage strategy from Planning was not actually viable and as such an alternative solution was required.

Consideration was given to discharging the surface water from the development into the Nail Bourne watercourse running along the east of Valley Road where the improved road connection is to be made. However, the area adjacent to the river is in Flood Zones 2 and 3, meaning that there is a likelihood that the outfall into the river will almost certainly get blocked by flood water at some point. As such, any design would need to provide attenuation sufficient to hold all water generated by a worst case storm in the event of the outfall becoming blocked.

However, the river is located at least 8m lower than the main part of the development, with only the new interconnecting access road linking it to Valley Road. As such, all attenuation for a block outfall scenario would need to be located at the lower level in the event of a blocked outfall. Given the development boundary is essentially the width of the new access road and footway, coupled with the fact the ground rises quickly up to the development, and the watercourse is relatively shallow, in reality this is impractical to achieve.

Additionally, if we did discharge everything into the Nail Buorne, it would increase the volume of water entering the river (there is no room for offline storage to compensate for this) which is not advisable where the river is already in a flood zone and there are records of historical flooding occurring within it.

As such, the only viable alternative to discharge surface water from the development is to utilise deep bore soakaways. Further site investigation work was undertaken to determine the infiltration rate at the four proposed locations, the logs of which are provided within **Appendix B**.

The drainage systems consist of four separate gravity networks serving the roofs of the new buildings, driveways, and the access road though the site. Lined permeable paving has been utilised in private driveways and all vehicle parking areas to provide treatment of the surface water in these areas where it is considered the risk of a pollution event is greatest (i.e. oil dripping from parked vehicles).

Each property will have at least one rainwater pipe water butt to capture water to be used for irrigation purposes.

At the eastern end to the site the proposed road falls away from the Church Lane, and so no development surface water will fall onto it. At the western end a channel drain is to be installed on the boundary as part of the bridge in order to prevent surface water from flowing from the site onto the Public Highway at Valley Road.

The drainage layout drawings are provided in **Appendix C**.

It should be noted that the surface water from the site when it was used for farming was just discharged to the ground with no attenuation or treatment at all. Given the inclusion of areas of permeable paving in the design, plus the change of use from farming to residential means that the risk of contamination to the ground from surface water will actually be reduced by the development.

The water is then conveyed to one of the four deep bore soakaways (positioned so as to be at least 10m away from any building and one another), via attenuation tanks where necessary.

The drainage design has been modelled in Causeway Flow (provided in **Appendix D**) using FEH 2022 rainfall data, assessing all critical storm durations up to and including the 1 in 100-year event with a 45% climate change allowance. The results confirm that the proposed drainage network provides sufficient attenuation and safely disposes of runoff. In the most extreme storms, there is a very small amount of flooding in a handful of places, however this flooding is in areas where it will be kept away from any of the residential properties and within the curtilage of the development and picked up by the development drainage, thus without increasing flood risk on or off site.

Provided in **Appendix E**, a detailed Maintenance Schedule has been prepared and is attached. It outlines the inspection procedures, cleaning frequencies, and maintenance responsibilities for all key drainage components including the channel drains, attenuation tank, permeable paving and flow-control chamber.

We trust that the above provides sufficient detail for this Condition to be discharged.

Yours sincerely,



**ANTHONY SAUNTER**  
**FOR ALAN BAXTER PARTNERSHIP LLP**

**SENT BY EMAIL**

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## **Appendix A**

### **2017 Site Investigation Borehole Logs**



# TRIAL PIT LOG

|                   |                   |                        |
|-------------------|-------------------|------------------------|
| Site:             | Barham Court Farm | TP1                    |
| Excavation Method | 360° Excavator    | Job Number<br><br>1044 |
| Location          | Date<br>14/11/17  |                        |
| Project:          |                   | Site Investigation     |
| Client:           |                   | Barham Court Farm      |

| Depth (m) | Samples/ Tests | Water<br>Depth (m) | Field Records | Depth (m bgl) | Thickness m | Description of Strata                              | Legend |
|-----------|----------------|--------------------|---------------|---------------|-------------|----------------------------------------------------|--------|
| 0.20      | D              |                    |               | 0.20          | (0.20)      | Topsoil.                                           |        |
|           |                |                    |               | 0.50          | (0.30)      | Firm brown sandy Clay with rootlets                |        |
|           |                |                    |               | 1.0           | (0.70)      | Stiff pale brown very sandy Clay with chalk gravel |        |
|           |                |                    |               | 1.20          |             | Base of Trial Pit                                  |        |
|           |                |                    |               | 1.50          |             |                                                    |        |
|           |                |                    |               | 2.0           |             |                                                    |        |
|           |                |                    |               | 3.0           |             |                                                    |        |

|      |                                                                                                     |              |               |
|------|-----------------------------------------------------------------------------------------------------|--------------|---------------|
| Plan | Remarks                                                                                             |              |               |
|      | No groundwater encountered<br>Excavation terminated at 1.2m following discovery of 150mm sewer pipe |              |               |
|      | Scale<br>1:25                                                                                       | Logged<br>KB | Checked<br>PB |



# TRIAL PIT LOG

|                   |                    |                              |
|-------------------|--------------------|------------------------------|
| Site:             | Barham Court Farm  | TP2                          |
| Excavation Method | 360° Excavator     | Ground Level                 |
| Project:          | Site Investigation | Job Number                   |
| Location          | Date<br>14/11/17   | Client:<br>Barham Court Farm |
|                   |                    | 1044                         |

| Depth (m) | Samples/ Tests | Water Depth (m) | Field Records | Depth (m bgl) | Thickness m | Description of Strata                                                                                                                           | Legend |
|-----------|----------------|-----------------|---------------|---------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 0.20      | D              |                 |               | 0.15          | (0.15)      | Concrete                                                                                                                                        |        |
| 0.80      | D              |                 |               | 0.50          |             | Structureless Chalk composed of compact pale brown gravelly sandy Silt. Gravel is subangular to subrounded, very weak medium density (Grade Dm) |        |
| 1.80      | D              |                 |               | 1.0           | (1.05)      |                                                                                                                                                 |        |
|           |                |                 |               | 1.20          |             | Structureless Chalk composed of slightly sandy subangular Gravel. Gravel is very weak, low density. (Grade Dc)                                  |        |
|           |                |                 |               | 1.80          | (0.60)      |                                                                                                                                                 |        |
|           |                |                 |               | 2.0           |             | Base of Trial Pit                                                                                                                               |        |
|           |                |                 |               | 3.0           |             |                                                                                                                                                 |        |

|      |                                                                |              |               |
|------|----------------------------------------------------------------|--------------|---------------|
| Plan | Remarks                                                        |              |               |
|      | No groundwater encountered<br>Concrete hardstanding broken out |              |               |
|      | Scale<br>1:25                                                  | Logged<br>KB | Checked<br>PB |



# TRIAL PIT LOG

Site: Barham Court Farm

TP3

Excavation Method  
360° Excavator

Ground Level

Project: Site Investigation

Job Number

Location

Date  
14/11/17

Client: Barham Court Farm

1044

| Depth (m) | Samples/ Tests | Water Depth (m) | Field Records | Depth (m bgl)               | Thickness m | Description of Strata                                                                                                                           | Legend |
|-----------|----------------|-----------------|---------------|-----------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 0.20      | D              |                 |               | 0.20                        | (0.20)      | Topsoil                                                                                                                                         |        |
| 0.80      | D              |                 |               | 0.50<br>1.0                 | (1.40)      | Firm to stiff brown mottled orange brown slightly gravelly Clay. Gravel is angular flint and chalk                                              |        |
| 2.00      | D              |                 |               | 1.50<br>1.60<br>2.0<br>2.20 | (0.60)      | Structureless Chalk composed of compact pale brown gravelly sandy Silt. Gravel is subangular to subrounded, very weak medium density (Grade Dm) |        |
|           |                |                 |               | 2.20<br>3.0                 |             | Base of Trial Pit                                                                                                                               |        |

Plan

Remarks

No groundwater encountered

Scale

1:25

Logged

KB

Checked

PB



# TRIAL PIT LOG

Site: Barham Court Farm

TP4

Excavation Method  
360° Excavator

Ground Level

Project: Site Investigation

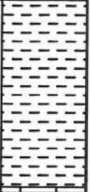
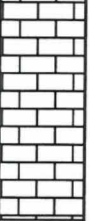
Job Number

Location

Date  
14/11/17

Client: Barham Court Farm

1044

| Depth (m) | Samples/ Tests | Water Depth (m) | Field Records | Depth (m bgl) | Thickness m | Description of Strata                                                                                                              | Legend                                                                              |
|-----------|----------------|-----------------|---------------|---------------|-------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 0.30      | D              |                 |               | 0.15          | (0.15)      | Concrete                                                                                                                           |  |
|           |                |                 |               | 0.50          | (0.65)      | Stiff pale brown Clay intermixed with chalk and flint gravel                                                                       |  |
| 1.20      | D              |                 |               | 1.0           | (0.80)      | Structureless Chalk composed of slightly sandy subangular Gravel. Gravel is very weak, low density, light brown stained (Grade Dc) |  |
|           |                |                 |               | 1.50          |             |                                                                                                                                    |                                                                                     |
|           |                |                 |               | 1.60          |             | Base of Trial Pit                                                                                                                  |                                                                                     |
|           |                |                 |               | 2.0           |             |                                                                                                                                    |                                                                                     |
|           |                |                 |               | 3.0           |             |                                                                                                                                    |                                                                                     |

Plan

Remarks

No groundwater encountered

Scale

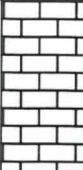
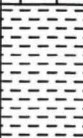
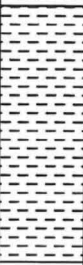
1:25

Logged

KB

Checked

PB

|  |                |                    | <h1 style="text-align: center;">TRIAL PIT LOG</h1> |               |             | Site: Barham Court Farm                                                                                               |                                                                                      | TP5                       |
|----------------------------------------------------------------------------------|----------------|--------------------|----------------------------------------------------|---------------|-------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------|
|                                                                                  |                |                    |                                                    |               |             | Project: Site Investigation                                                                                           |                                                                                      | Job Number                |
|                                                                                  |                |                    | Excavation Method<br>360° Excavator                |               |             | Ground Level                                                                                                          |                                                                                      | Client: Barham Court Farm |
| Location                                                                         |                |                    | Date<br>14/11/17                                   |               |             |                                                                                                                       |                                                                                      |                           |
| Depth (m)                                                                        | Samples/ Tests | Water<br>Depth (m) | Field Records                                      | Depth (m bgl) | Thickness m | Description of Strata                                                                                                 | Legend                                                                               |                           |
| 0.20                                                                             | D              |                    |                                                    | 0.20          | (0.20)      | Topsoil                                                                                                               |   |                           |
|                                                                                  |                |                    |                                                    | 0.50          | (0.60)      | Structureless Chalk composed of compact pale brown gravelly sandy Silt. . Gravel is very weak, low density (Grade Dm) |   |                           |
| 1.00                                                                             | D              |                    |                                                    | 0.80          |             |                                                                                                                       |                                                                                      |                           |
|                                                                                  |                |                    |                                                    | 1.0           | (0.50)      | Stiff brown slightly gravelly Clay<br>Gravel is angular flint gravel.                                                 |   |                           |
|                                                                                  |                |                    |                                                    | 1.30          |             |                                                                                                                       |                                                                                      |                           |
|                                                                                  |                |                    |                                                    | 1.50          | (0.90)      | Stiff pale brown Clay<br>Gravel is angular flint gravel and chalk.                                                    |  |                           |
|                                                                                  |                |                    |                                                    | 2.0           |             |                                                                                                                       |                                                                                      |                           |
|                                                                                  |                |                    |                                                    | 2.20          |             |                                                                                                                       |                                                                                      |                           |
|                                                                                  |                |                    |                                                    |               |             | Base of Trial Pit                                                                                                     |                                                                                      |                           |
|                                                                                  |                |                    |                                                    | 3.0           |             |                                                                                                                       |                                                                                      |                           |
| Plan                                                                             |                |                    |                                                    |               |             | Remarks<br>No groundwater encountered                                                                                 |                                                                                      |                           |
|                                                                                  |                |                    |                                                    |               |             | Scale<br>1:25                                                                                                         | Logged<br>KB                                                                         | Checked<br>PB             |

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## **Appendix B**

### **Infiltration Test and Site Investigation Borehole Logs**

FORM WR-38

## BOREHOLE RECORD

(water resources Act 1991 (as amended by the Water Act 2003))



## A. SITE DETAILS

|                          |                                                                            |            |            |
|--------------------------|----------------------------------------------------------------------------|------------|------------|
| Borehole Drilled For:    | Roma Homes Ltd                                                             |            |            |
| Location:                | Site, Barham Court Farm, CT4 6PB                                           |            |            |
| Borehole Number          | BH1                                                                        |            |            |
| Ground Level (if known)  | 61.00m AOD Approx                                                          |            |            |
| Drilling Company:        | <a href="http://www.Borehole-Driller.co.uk">www.Borehole-Driller.co.uk</a> |            |            |
| Date drilling Commenced: | 26/09/2025                                                                 | Completed: | 30/09/2025 |
| Drilling Rig:            | Dando175                                                                   | CP         |            |

## B. CONSTRUCTION DETAILS

|                                                            |                                                                         |     |                           |        |    |                |
|------------------------------------------------------------|-------------------------------------------------------------------------|-----|---------------------------|--------|----|----------------|
| BOREHOLE DATUM (if not ground level)                       | GL                                                                      | m   |                           |        |    |                |
| Borehole drilled Diameter:                                 | diameter                                                                | 200 | mm from                   | GL     | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Casing material and type (eg plain steel, plastic slotted) |                                                                         |     |                           |        |    |                |
| HDPE Casing                                                | diameter                                                                | 110 | mm from                   | GL     | to | 04.00m m/depth |
| HDPE Screen                                                | diameter                                                                | 110 | mm from                   | 04.00m | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Grouting details:                                          | Gravel 10.00m - 04.00m / Bentonite 04.00m - 02.00m / Gravel 02.00m - GL |     |                           |        |    |                |
| Water struck at:                                           | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |
| Rest water level on completion:                            | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |

## SOAKAGE TESTING RESULTS

| Constant Flow Test                                                      |              |            |                    | Falling Head Test |             |
|-------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|-------------|
| Borehole lined as above to -                                            |              | 10.00m     |                    | min:sec           | Water level |
| Installation pipe maximum capacity -                                    |              | 79 Litres  |                    | 00:00             | 08.30m      |
| 1000L pumped into borehole in seconds -                                 |              | 95 seconds |                    | 00:10             | 9.62m       |
| Water Level added by hose during drilling -                             |              | N/A        |                    | 00:30             | 09.83m      |
| Petrol pump could not fill borehole to Ground level, While continuously |              |            |                    | 01:00             | DRY         |
| pumping water level reached 08.30m. 1000 litres were discharged         |              |            |                    | 01:30             |             |
| into the borehole in 95 seconds with the borehole accepting water at    |              |            |                    | 02:00             |             |
| this rate. We then performed a falling head test when the borehole      |              |            |                    | 02:30             |             |
| had accepted the full bowser.                                           |              |            |                    | 03:00             |             |
|                                                                         |              |            |                    | 03:30             |             |
|                                                                         |              |            |                    | 04:00             |             |
|                                                                         |              |            |                    | 04:30             |             |
|                                                                         |              |            |                    | 05:00             |             |
|                                                                         |              |            |                    | 06:00             |             |
| Parameter                                                               | Symbol       | Value      | Unit               | 07:00             |             |
| Constant flow discharge rate                                            | Q            | 10.5       | L/s                | 08:00             |             |
| Borehole diameter                                                       | D            | 0.1        | m                  | 09:00             |             |
| Perforated length                                                       | L            | 6          | m                  | 10:00             |             |
| Infiltration area                                                       | $A = \pi DL$ | 1.885      | m <sup>2</sup>     | 15:00             |             |
| Infiltration rate (m/s)                                                 | $k = Q/A$    | 0.00557    | m/s                | 20:00             |             |
| Equivalent infiltration rate                                            | —            | 5.57       | L/s/m <sup>2</sup> |                   |             |

| D. STRATA LOG                 |                                                                    |             |         |
|-------------------------------|--------------------------------------------------------------------|-------------|---------|
| GEOLOGICAL CLASSIFICATION     | DESCRIPTION OF STRATA                                              | THICKNESS M | DEPTH M |
| CONCRETE                      | CONCRETE BASE. Over road planings                                  | 00.50m      | GL      |
| CLAY                          | CLAY Orange/Brown clay.                                            | 01.50m      | 00.50m  |
| LEWES NODULAR CHALK FORMATION | CHALK White competent Chalk with bands of flints                   | 08.00m      | 02.00m  |
|                               | End of Borehole                                                    |             | 10.00m  |
|                               | Other Comments (eg gas encountered, saline water intercepted, etc) |             |         |

| FOR OFFICE USE ONLY |                         |            |                   |
|---------------------|-------------------------|------------|-------------------|
| FILE<br>LICENCE NO  | CONSENT NO<br>USE OF BH | N/A<br>DBS | BGS REF NO<br>NGR |

FORM WR-38

## BOREHOLE RECORD

(water resources Act 1991 (as amended by the Water Act 2003))



## A. SITE DETAILS

|                          |                                                                            |            |            |
|--------------------------|----------------------------------------------------------------------------|------------|------------|
| Borehole Drilled For:    | Roma Homes Ltd                                                             |            |            |
| Location:                | Site, Barham Court Farm, CT4 6PB                                           |            |            |
| Borehole Number          | BH2                                                                        |            |            |
| Ground Level (if known)  | 57.00m AOD Approx                                                          |            |            |
| Drilling Company:        | <a href="http://www.Borehole-Driller.co.uk">www.Borehole-Driller.co.uk</a> |            |            |
| Date drilling Commenced: | 24/09/2025                                                                 | Completed: | 26/09/2025 |
| Drilling Rig:            | Dando175                                                                   | CP         |            |

## B. CONSTRUCTION DETAILS

|                                                            |                                                                         |     |                           |        |    |                |
|------------------------------------------------------------|-------------------------------------------------------------------------|-----|---------------------------|--------|----|----------------|
| BOREHOLE DATUM (if not ground level)                       | GL                                                                      | m   |                           |        |    |                |
| Borehole drilled Diameter:                                 | diameter                                                                | 200 | mm from                   | GL     | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Casing material and type (eg plain steel, plastic slotted) |                                                                         |     |                           |        |    |                |
| HDPE Casing                                                | diameter                                                                | 110 | mm from                   | GL     | to | 04.00m m/depth |
| HDPE Screen                                                | diameter                                                                | 110 | mm from                   | 04.00m | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Grouting details:                                          | Gravel 10.00m - 04.00m / Bentonite 04.00m - 02.00m / Gravel 02.00m - GL |     |                           |        |    |                |
| Water struck at:                                           | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |
| Rest water level on completion:                            | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |

## SOAKAGE TESTING RESULTS

| Constant Flow Test                                                      |              |            |                    | Falling Head Test |             |
|-------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|-------------|
| Borehole lined as above to -                                            |              | 10.00m     |                    | min:sec           | Water level |
| Installation pipe maximum capacity -                                    |              | 79 Litres  |                    | 00:00             | 07.43m      |
| 1000L pumped into borehole in seconds -                                 |              | 95 seconds |                    | 00:10             | 08.66m      |
| Water Level added by hose during drilling -                             |              | N/A        |                    | 00:30             | 08.75m      |
| Petrol pump could not fill borehole to Ground level, While continuously |              |            |                    | 01:00             | 08.85m      |
| pumping water level reached 07.43m. 1000 litres were discharged         |              |            |                    | 01:30             | 08.94m      |
| into the borehole in 95 seconds with the borehole accepting water at    |              |            |                    | 02:00             | 09.05m      |
| this rate. We then performed a falling head test when the borehole      |              |            |                    | 02:30             | 09.12m      |
| had accepted the full bowser.                                           |              |            |                    | 03:00             | 09.20m      |
|                                                                         |              |            |                    | 03:30             | 09.25m      |
|                                                                         |              |            |                    | 04:00             | 09.27m      |
|                                                                         |              |            |                    | 04:30             | 09.30m      |
|                                                                         |              |            |                    | 05:00             | 09.33m      |
|                                                                         |              |            |                    | 06:00             | 09.36m      |
|                                                                         |              |            |                    | 07:00             | 09.38m      |
|                                                                         |              |            |                    | 08:00             | 09.40m      |
|                                                                         |              |            |                    | 09:00             | 09.42m      |
|                                                                         |              |            |                    | 10:00             | 09.43m      |
|                                                                         |              |            |                    | 15:00             | 09.48m      |
|                                                                         |              |            |                    | 20:00             | 09.52m      |
| Parameter                                                               | Symbol       | Value      | Unit               |                   |             |
| Constant flow discharge rate                                            | Q            | 10.5       | L/s                |                   |             |
| Borehole diameter                                                       | D            | 0.1        | m                  |                   |             |
| Perforated length                                                       | L            | 6          | m                  |                   |             |
| Infiltration area                                                       | $A = \pi DL$ | 1.885      | m <sup>2</sup>     |                   |             |
| Infiltration rate (m/s)                                                 | $k = Q/A$    | 0.00557    | m/s                |                   |             |
| Equivalent infiltration rate                                            | —            | 5.57       | L/s/m <sup>2</sup> |                   |             |

| D. STRATA LOG                 |                                                                    |             |         |
|-------------------------------|--------------------------------------------------------------------|-------------|---------|
| GEOLOGICAL CLASSIFICATION     | DESCRIPTION OF STRATA                                              | THICKNESS M | DEPTH M |
| CLAY                          | CLAY Orange / Brown Clay.                                          | 01.50m      | GL      |
| LEWES NODULAR CHALK FORMATION | CHALK White/Yellow chalk with clay deposits.                       | 00.50m      | 01.50m  |
| LEWES NODULAR CHALK FORMATION | CHALK White competent Chalk with bands of flints                   | 08.00m      | 02.00m  |
|                               | End of Borehole                                                    |             | 10.00m  |
|                               | Other Comments (eg gas encountered, saline water intercepted, etc) |             |         |

| FOR OFFICE USE ONLY |                         |            |                   |
|---------------------|-------------------------|------------|-------------------|
| FILE LICENCE NO     | CONSENT NO<br>USE OF BH | N/A<br>DBS | BGS REF NO<br>NGR |

FORM WR-38

## BOREHOLE RECORD

(water resources Act 1991 (as amended by the Water Act 2003))



DRILLING

www.Borehole-Driller.co.uk

## A. SITE DETAILS

|                          |                                                                            |            |            |
|--------------------------|----------------------------------------------------------------------------|------------|------------|
| Borehole Drilled For:    | Roma Homes Ltd                                                             |            |            |
| Location:                | Site, Barham Court Farm, CT4 6PB                                           |            |            |
| Borehole Number          | BH3                                                                        |            |            |
| Ground Level (if known)  | 54.00m AOD Approx                                                          |            |            |
| Drilling Company:        | <a href="http://www.Borehole-Driller.co.uk">www.Borehole-Driller.co.uk</a> |            |            |
| Date drilling Commenced: | 22/09/2025                                                                 | Completed: | 24/09/2025 |
| Drilling Rig:            | Dando175                                                                   | CP         |            |

## B. CONSTRUCTION DETAILS

|                                                            |                                                                         |     |                           |        |    |                |
|------------------------------------------------------------|-------------------------------------------------------------------------|-----|---------------------------|--------|----|----------------|
| BOREHOLE DATUM (if not ground level)                       | GL                                                                      | m   |                           |        |    |                |
| Borehole drilled Diameter:                                 | diameter                                                                | 200 | mm from                   | GL     | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Casing material and type (eg plain steel, plastic slotted) |                                                                         |     |                           |        |    |                |
| HDPE Casing                                                | diameter                                                                | 110 | mm from                   | GL     | to | 04.00m m/depth |
| HDPE Screen                                                | diameter                                                                | 110 | mm from                   | 04.00m | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Grouting details:                                          | Gravel 10.00m - 04.00m / Bentonite 04.00m - 02.00m / Gravel 02.00m - GL |     |                           |        |    |                |
| Water struck at:                                           | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |
| Rest water level on completion:                            | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |

## SOAKAGE TESTING RESULTS

| Constant Flow Test                                                      |              |            |                    | Falling Head Test |             |
|-------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|-------------|
| Borehole lined as above to -                                            |              | 10.00m     |                    | min:sec           | Water level |
| Installation pipe maximum capacity -                                    |              | 79 Litres  |                    | 00:00             | 05.08m      |
| 1000L pumped into borehole in seconds -                                 |              | 95 seconds |                    | 00:10             | 06.80m      |
| Water Level added by hose during drilling -                             |              | N/A        |                    | 00:30             | 07.78m      |
| Petrol pump could not fill borehole to Ground level, While continuously |              |            |                    | 01:00             | 08.77m      |
| pumping water level reached 05.08m. 1000 litres were discharged         |              |            |                    | 01:30             | 09.60m      |
| into the borehole in 95 seconds with the borehole accepting water at    |              |            |                    | 02:00             | Dry         |
| this rate. We then performed a falling head test when the borehole      |              |            |                    | 02:30             |             |
| had accepted the full bowser.                                           |              |            |                    | 03:00             |             |
|                                                                         |              |            |                    | 03:30             |             |
|                                                                         |              |            |                    | 04:00             |             |
|                                                                         |              |            |                    | 04:30             |             |
|                                                                         |              |            |                    | 05:00             |             |
| Parameter                                                               | Symbol       | Value      | Unit               | 06:00             |             |
| Constant flow discharge rate                                            | Q            | 10.5       | L/s                | 07:00             |             |
| Borehole diameter                                                       | D            | 0.1        | m                  | 08:00             |             |
| Perforated length                                                       | L            | 6          | m                  | 09:00             |             |
| Infiltration area                                                       | $A = \pi DL$ | 1.885      | m <sup>2</sup>     | 10:00             |             |
| Infiltration rate (m/s)                                                 | $k = Q/A$    | 0.00557    | m/s                | 15:00             |             |
| Equivalent infiltration rate                                            | —            | 5.57       | L/s/m <sup>2</sup> | 20:00             |             |

| D. STRATA LOG                 |                                                                    |             |         |
|-------------------------------|--------------------------------------------------------------------|-------------|---------|
| GEOLOGICAL CLASSIFICATION     | DESCRIPTION OF STRATA                                              | THICKNESS M | DEPTH M |
| CLAY                          | CLAY Orange / Brown Clay.                                          | 01.50m      | GL      |
| LEWES NODULAR CHALK FORMATION | CHALK White/Yellow chalk with clay deposits.                       | 00.50m      | 01.50m  |
| LEWES NODULAR CHALK FORMATION | CHALK White competent Chalk with bands of flints                   | 08.00m      | 02.00m  |
|                               | End of Borehole                                                    |             | 10.00m  |
|                               | Other Comments (eg gas encountered, saline water intercepted, etc) |             |         |

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|---------------------|-------------------------|------------|-------------------|
| FILE LICENCE NO     | CONSENT NO<br>USE OF BH | N/A<br>DBS | BGS REF NO<br>NGR |

FORM WR-38

## BOREHOLE RECORD

(water resources Act 1991 (as amended by the Water Act 2003))



## A. SITE DETAILS

|                          |                                                                            |            |            |
|--------------------------|----------------------------------------------------------------------------|------------|------------|
| Borehole Drilled For:    | Roma Homes Ltd                                                             |            |            |
| Location:                | Site, Barham Court Farm, CT4 6PB                                           |            |            |
| Borehole Number          | BH4                                                                        |            |            |
| Ground Level (if known)  | 49.00m AOD Approx                                                          |            |            |
| Drilling Company:        | <a href="http://www.Borehole-Driller.co.uk">www.Borehole-Driller.co.uk</a> |            |            |
| Date drilling Commenced: | 16/09/2025                                                                 | Completed: | 17/09/2025 |
| Drilling Rig:            | Dando175                                                                   | CP         |            |

## B. CONSTRUCTION DETAILS

|                                                            |                                                                         |     |                           |        |    |                |
|------------------------------------------------------------|-------------------------------------------------------------------------|-----|---------------------------|--------|----|----------------|
| BOREHOLE DATUM (if not ground level)                       | GL                                                                      | m   |                           |        |    |                |
| Borehole drilled Diameter:                                 | diameter                                                                | 200 | mm from                   | GL     | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Casing material and type (eg plain steel, plastic slotted) |                                                                         |     |                           |        |    |                |
| HDPE Casing                                                | diameter                                                                | 110 | mm from                   | GL     | to | 04.00m m/depth |
| HDPE Screen                                                | diameter                                                                | 110 | mm from                   | 04.00m | to | 10.00m m/depth |
|                                                            | diameter                                                                |     | mm from                   |        | to | m/depth        |
| Grouting details:                                          | Gravel 10.00m - 04.00m / Bentonite 04.00m - 02.00m / Gravel 02.00m - GL |     |                           |        |    |                |
| Water struck at:                                           | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |
| Rest water level on completion:                            | n/a                                                                     | m   | (depth below datum - mbd) |        |    |                |

## SOAKAGE TESTING RESULTS

| Constant Flow Test                                                      |              |            |                    | Falling Head Test |             |
|-------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|-------------|
| Borehole lined as above to -                                            |              | 10.00m     |                    | min:sec           | Water level |
| Installation pipe maximum capacity -                                    |              | 79 Litres  |                    | 00:00             | 03.60m      |
| 1000L pumped into borehole in seconds -                                 |              | 95 seconds |                    | 00:10             | 07.90m      |
| Water Level added by hose during drilling -                             |              | N/A        |                    | 00:30             | 08.40m      |
| Petrol pump could not fill borehole to Ground level, While continuously |              |            |                    | 01:00             | 08.90m      |
| pumping water level reached 03.60m. 1000 litres were discharged         |              |            |                    | 01:30             | 09.22m      |
| into the borehole in 95 seconds with the borehole accepting water at    |              |            |                    | 02:00             | 09.30m      |
| this rate. We then performed a falling head test when the borehole      |              |            |                    | 02:30             | 09.37m      |
| had accepted the full bowser.                                           |              |            |                    | 03:00             | 09.43m      |
|                                                                         |              |            |                    | 03:30             | 09.49m      |
|                                                                         |              |            |                    | 04:00             | 09.55m      |
|                                                                         |              |            |                    | 04:30             | 09.60m      |
|                                                                         |              |            |                    | 05:00             | 09.65m      |
|                                                                         |              |            |                    | 06:00             | 09.68m      |
|                                                                         |              |            |                    | 07:00             | 09.70m      |
|                                                                         |              |            |                    | 08:00             | 09.72m      |
|                                                                         |              |            |                    | 09:00             | 09.73m      |
|                                                                         |              |            |                    | 10:00             | 09.73m      |
|                                                                         |              |            |                    | 15:00             | 09.76m      |
|                                                                         |              |            |                    | 20:00             | 09.78m      |
| Parameter                                                               | Symbol       | Value      | Unit               |                   |             |
| Constant flow discharge rate                                            | Q            | 10.5       | L/s                |                   |             |
| Borehole diameter                                                       | D            | 0.1        | m                  |                   |             |
| Perforated length                                                       | L            | 6          | m                  |                   |             |
| Infiltration area                                                       | $A = \pi DL$ | 1.885      | m <sup>2</sup>     |                   |             |
| Infiltration rate (m/s)                                                 | $k = Q/A$    | 0.00557    | m/s                |                   |             |
| Equivalent infiltration rate                                            | —            | 5.57       | L/s/m <sup>2</sup> |                   |             |

| D. STRATA LOG                 |                                                                    |             |         |
|-------------------------------|--------------------------------------------------------------------|-------------|---------|
| GEOLOGICAL CLASSIFICATION     | DESCRIPTION OF STRATA                                              | THICKNESS M | DEPTH M |
| CLAY                          | CLAY Orange / Brown Clay.                                          | 02.00m      | GL      |
| RIVER TERRACE DEPOSITS        | GRAVEL Dense Subangular gravel beds                                | 02.50m      | 02.00m  |
| LEWES NODULAR CHALK FORMATION | CHALK White competent Chalk with bands of flints                   | 06.00m      | 04.00m  |
|                               | End of Borehole                                                    |             | 10.00m  |
|                               | Other Comments (eg gas encountered, saline water intercepted, etc) |             |         |

| FOR OFFICE USE ONLY |                         |            |                   |
|---------------------|-------------------------|------------|-------------------|
| FILE<br>LICENCE NO  | CONSENT NO<br>USE OF BH | N/A<br>DBS | BGS REF NO<br>NGR |

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## **Appendix C**

### Surface Water Layout Drawings



**Notes**

© Copyright Alan Baxter Partnership LLP

This drawing & design is the copyright of Alan Baxter Partnership LLP and must not be copied in part or whole without consent.

Do not scale off this drawing

- To be read in conjunction with all relevant Architects and Engineers draw
- Level design is based on information from a topographical survey provided by others. Alan Baxter Partnership LLP takes no responsibility for the accuracy of the original topographical survey. All existing levels are to be confirmed by the contractor prior to the commencement of the works.
- All discrepancies to be notified immediately to the Principal Designer and the Engineers.
- Only "Construction" drawings shall be used for construction or the ordering of materials. Any other drawings (tender / billing / work in progress etc.) drawings shall not be used for this purpose.
- All proposals to be in accordance with Design and Construction Guidance (Sewerage Sector Guidance).
- All rainwater pipe (RWP), soil vent pipe (SVP) and stub stack (SS) locations are approximate. Refer to Architects drawings for exact locations.
- All special DPC detailing (required due to levels) to be in accordance with Architect details.
- Stub stack's (SS) are to incorporate air admittance valves.
- The invert level of the bottom bends for all SVP's and SS's are to be 600mm below F.F.L.
- Pipes to be laid soft-to-soft unless otherwise noted.
- 100mm Foul Drains to be laid at a minimum gradient of 1:80. 150mm Foul Drains to be laid at a minimum gradient of 1:150.
- Integrated Diffuser units to be Sol Environmental LTD - Rainairsa Filter Unit RTNA060550 to be installed in accordance with manufacturer's details).
- Diffuser units to be laid on top of impermeable liner at road formation level within subbase storage areas.
- All above ground drainage to be in accordance with Architect drawings.
- Contractor to avoid clashes with any existing services or infrastructure (any infrastructure to be retained/diverted/abandoned to be done by others and in accordance with Engineering draw
- Refer to drawings R876-0500-005 & 006 for construction details.
- All critical existing levels to be determined on site by Contractor prior to construction.
- If any drainage connections from adjacent sites are discovered, the engineer is to be notified immediately.
- For Channel Drain details refer to channel drain run schedule / calculations. Channel access and outlet boxes to have silt traps. Grating Finish to Architects Specification.
- Refer to CCTV Survey Report for remediate/pair/upgrade/diversion works to existing drains (to be undertaken as part of development works).
- Foul Water Pump and Rising Main to specialists design with suitable emergency storage capacity provided.
- All below ground drainage materials and installation to be in accordance with the most up to c Sewerage Sector Guidance Design & Construction Guide.
- A minimum of 1No. water butt fed by a rainwater pipe is to be provided to each property with development.

**Key**

**Existing**

Foul Water (Retained)

- Carrier pipe
- Chamber

**Proposed**

Surface Water (Private)

- Rainwater Pipe (refer to note)
- Rainwater Pipe with Integrated Diffuser (refer to note 12)
- Carrier Pipe (100mm UPVC unless stated otherwise)
- Rodding Eye (with ref. no.)
- Inspection Chamber (with ref. no.)
- Catchpit Chamber (with ref. no.)
- Threshold Drain (ACO Threshold Unit)
- Channel Drain (refer to note)
- Channel Drain Access Point with Sump
- Permeable Paving (Sub-Base Storage) (formation to fall towards diffusers)
- Diffuser Unit (Permavoid - For Unit Type Refer to Labels)
- Attenuation Tank (install to manufacturers detail)
- Attenuation Tank Access Turret
- Deep Bore Sorkaway

Foul Water (Private)

- Soil Vent Pipe / Stub Stack (refer to notes)
- Carrier Pipe (100mm UPVC unless stated otherwise)
- Rising Main (refer to note 19)
- Inspection chamber (with ref. no.)
- PCC Manhole (with ref. no.)
- Backdrop (external in accordance with DCG vertical backdrop detail)
- Pump Chamber (refer to note 19)

|   |                       |      |   |            |
|---|-----------------------|------|---|------------|
| C | MINOR DESIGN UPDATES  | ARWS | - | 18/12/2025 |
| B | SCHEME DESIGN UPDATED | ARWS | - | 11/12/2025 |
| 0 | FIRST ISSUE           | ARWS | - | 28/11/2025 |

**VB**

CONSULTING SURVEYING CIVIL & DRAINAGE ENGINEERS

**ALAN BAXTER PARTNERSHIP LTD**

15 The Clock Building, 15 Market Street, Barham, Kent, ME16 9JF

www.alanbaxter.co.uk

01533 344 393

Project Title:

**Barham Court Farm,**

**The Street,**

**Barham,**

**CT4 6PB**

Drawing Title:

**Drainage Surface Water**

**General Arrangement**

**(1 of 2)**

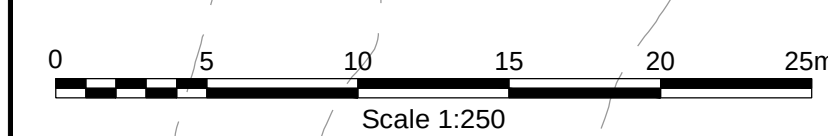
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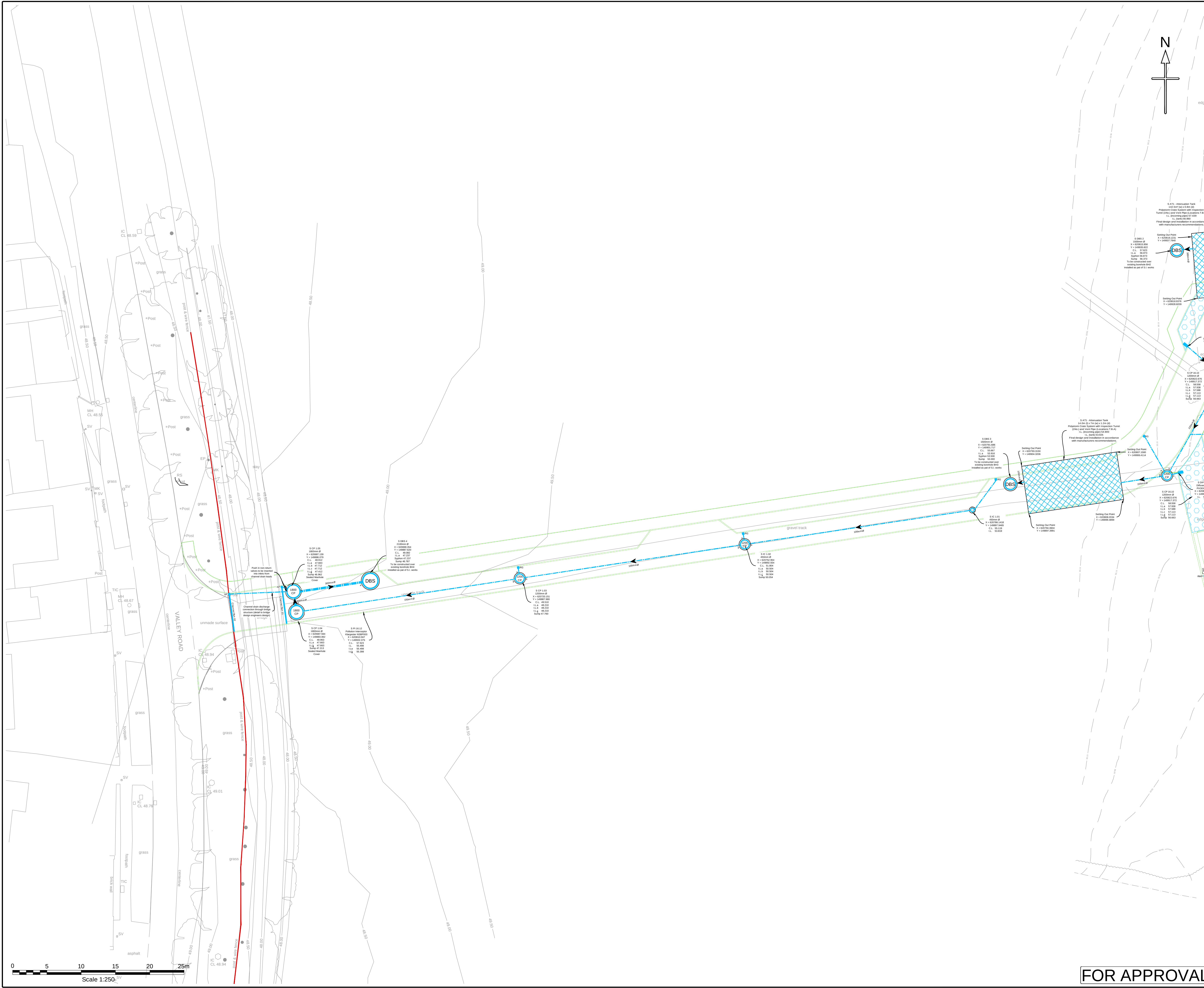
Drawing Number: **R676-0500-001**

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- All discrepancies to be notified immediately to the Principal Designer and the Engineers.
- Only 'Construction' drawings shall be used for construction or the ordering of materials. Any other drawings (tender / billing / work in progress etc.) drawings shall not be used for this purpose.
- All proposals to be in accordance with Design and Construction Guidance (Sewerage Sector Guidance)
- All rainwater pipe (RWP), soil vent pipe (SVP) and stub stack (SS) locations are approximate. Refer to Architects drawings for exact locations.
- Stub stack's (SS) are to incorporate air admittance valves.
- The invert level of the bottom bends for all SVP's and SS's are to be 600mm below F.F.L.
- Pipes to be laid soft-to-soft unless otherwise noted.
- 100mmØ Foul Drains to be laid at a minimum gradient of 1:80. 150mmØ Foul Drains to be laid at a minimum gradient of 1:50.
- Integrated Diffuser units to be Sol Environmental LTD - Rainsara Filter Unit RTNA060550 (to be installed in accordance with manufacturer's details).
- Diffuser units to be laid on top of impermeable liner at road formation level within subbase storage areas.
- All above ground drainage to be in accordance with Architect drawings.
- Contractor to avoid clashes with any existing services or infrastructure (any infrastructure to be retained/diverted/abandoned to be done by others and in accordance with Engineering draw
- Refer to drawings R676-0500-005 & 006 for construction details.
- All critical existing levels to be determined on site by Contractor prior to construction.
- If any drainage connections from adjacent sites are discovered, the engineer is to be notified immediately.
- For Channel Drain details refer to channel drain run schedule / calculations). Channel access and outlet boxes to have silt traps. Grating Finish to Architects Specification.
- Refer to CCTV Survey Report for remediate/repair/upgrade/diversion works to existing drains (to be undertaken as part of development works).
- Foul Water Pump and Rising Main to specialists design with suitable emergency storage capacity provided.
- All below ground drainage materials and installation to be in accordance with the most up to c Sewerage Sector Guidance Design & Construction Guide.
- A minimum of 1No. water butt fed by a rainwater pipe is to be provided to each property with development.

**Key**

**Existing**

Foul Water (Retained)

- Carrier pipe
- Chamber

**Proposed**

Surface Water (Private)

- RWP Rainwater Pipe (refer to note)
- RWP DPC Rainwater Pipe with Integrated Diffuser (refer to note 12)
- Carrier Pipe (100mm UPVC unless stated otherwise)
- Rodding Eye (with ref. no.)
- Inspection Chamber (with ref. no.)
- Catchpit Chamber (with ref. no.)
- Threshold Drain (ACO Threshold Unit)
- Channel Drain (refer to note)
- Channel Drain Access Point with Sump
- Permeable Paving (Sub-Base Storage) (formation to fall towards diffusers)
- Diffuser Unit (Permeable - For Unit Type Refer to Labels)
- Attenuation Tank (install to manufacturers detail)
- Attenuation Tank Access Turret
- Deep Bore Soakaway

Foul Water (Private)

- Soil Vent Pipe / Stub Stack (refer to notes)
- Carrier Pipe (100mm UPVC unless stated otherwise)
- Rising Main (refer to note 19)
- Inspection chamber (with ref. no.)
- PCC Manhole (with ref. no.)
- Backdrop (external in accordance with DCG vertical backdrop detail)
- Pump Chamber (refer to note 19)

|   |                       |      |   |             |
|---|-----------------------|------|---|-------------|
| B | MINOR DESIGN UPDATES  | ARWS | - | 18/12/ 2025 |
| A | SCHEME DESIGN UPDATED | ARWS | - | 11/12/ 2025 |
| 0 | FIRST ISSUE           | ARWS | - | 28/11/ 2025 |

CONSULTING STRUCTURAL CIVIL & DRAINAGE ENGINEERS

**ALAN BAXTER PARTNERSHIP LLP**

11 The Clock Building, 14 Market Lane, Barham, Kent, ME12 0LQ

M: 01353 344 393

Project Title:

**Barham Court Farm,  
The Street,  
Barham,  
CT4 6PB**

Drawing Title:

**Drainage Surface Water  
General Arrangement  
(2 of 2)**

|                 |                      |                           |
|-----------------|----------------------|---------------------------|
| Scale:          | <b>1:250 @A1</b>     | Do not scale from drawing |
| Drawing Number: | <b>R676-0500-002</b> | Rev: <b>B</b>             |

**FOR APPROVAL**

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## **Appendix D**

### Causeway Flow Network Modelling

Design Settings

|                       |        |                                      |       |                             |              |                                      |
|-----------------------|--------|--------------------------------------|-------|-----------------------------|--------------|--------------------------------------|
| Rainfall Methodology  | FEH-22 | Time of Entry (mins)                 | 5.00  | Connection Type             | Level Slopes | Enforce best practice design rules ✓ |
| Return Period (years) | 100    | Maximum Time of Concentration (mins) | 30.00 | Minimum Backdrop Height (m) | 0.000        |                                      |
| Additional Flow (%)   | 45     | Maximum Rainfall (mm/hr)             | 50.0  | Preferred Cover Depth (m)   | 0.450        |                                      |
| CV                    | 1.000  | Minimum Velocity (m/s)               | 1.00  | Include Intermediate Ground | ✓            |                                      |

Nodes

| Name        | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) | Invert Level (m) |
|-------------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|------------------|
| S IC 2.01   | 0.006     | 5.00          | 65.834          | 450           | 620932.089  | 149965.134   | 0.550     | 65.284           |
| S IC 2.02   |           |               | 65.834          | 450           | 620939.278  | 149969.318   | 0.690     | 65.144           |
| S IC 2.03   | 0.002     | 5.00          | 66.006          | 450           | 620946.580  | 149958.836   | 1.077     | 64.929           |
| S CP 2.04   | 0.003     | 5.00          | 65.358          | 1200          | 620931.600  | 149945.998   | 1.000     | 64.358           |
| S IC 3.01   | 0.004     | 5.00          | 65.080          | 450           | 620913.244  | 149934.308   | 0.550     | 64.530           |
| S IC 3.02   |           |               | 65.511          | 450           | 620913.201  | 149943.098   | 1.129     | 64.382           |
| S IC 3.03   | 0.003     | 5.00          | 64.839          | 450           | 620918.737  | 149943.098   | 0.551     | 64.288           |
| S DIFF 1    | 0.011     | 5.00          | 64.561          |               | 620918.737  | 149948.073   | 0.550     | 64.011           |
| S CP 2.05   | 0.025     | 5.00          | 64.567          | 1200          | 620918.767  | 149945.998   | 1.000     | 63.567           |
| S DIFF 3    | 0.022     | 5.00          | 64.815          |               | 620925.109  | 149927.810   | 0.550     | 64.265           |
| S IC 4.01   | 0.002     | 5.00          | 64.830          | 450           | 620922.335  | 149925.379   | 0.627     | 64.203           |
| S IC 4.02   | 0.004     | 5.00          | 64.125          | 450           | 620916.894  | 149923.921   | 0.550     | 63.575           |
| S IC 4.03   | 0.005     | 5.00          | 63.332          | 450           | 620896.337  | 149935.918   | 0.550     | 62.782           |
| S CP 2.06   |           |               | 63.150          | 1200          | 620893.412  | 149939.502   | 1.125     | 62.025           |
| S DIFF 4    | 0.015     | 5.00          | 63.316          |               | 620892.291  | 149927.285   | 0.550     | 62.766           |
| S CP 2.07   | 0.013     | 5.00          | 63.207          | 1200          | 620888.678  | 149928.647   | 1.261     | 61.946           |
| S IC 5.01   | 0.002     | 5.00          | 64.083          | 450           | 620916.863  | 149911.973   | 0.550     | 63.533           |
| S IC 5.02   | 0.003     | 5.00          | 64.098          | 450           | 620909.359  | 149912.319   | 0.692     | 63.406           |
| S IC 5.03   | 0.006     | 5.00          | 63.692          | 450           | 620900.902  | 149917.202   | 0.550     | 63.142           |
| S IC 5.04   | 0.003     | 5.00          | 63.773          | 450           | 620898.447  | 149912.950   | 0.714     | 63.059           |
| S IC 5.05   |           |               | 63.380          | 450           | 620891.627  | 149913.731   | 0.550     | 62.830           |
| S CP 2.08   |           |               | 63.227          | 1200          | 620886.763  | 149916.406   | 1.364     | 61.863           |
| S CP 2.09   |           |               | 62.122          | 1200          | 620883.057  | 149916.070   | 0.825     | 61.297           |
| S CP 2.10   | 0.011     | 5.00          | 62.012          | 1200          | 620882.053  | 149911.790   | 0.744     | 61.268           |
| S IC 6.01   | 0.003     | 5.00          | 63.975          | 450           | 620909.582  | 149906.105   | 0.550     | 63.425           |
| S IC 6.02   |           |               | 63.965          | 450           | 620913.849  | 149903.538   | 0.590     | 63.375           |
| S IC 6.03   | 0.004     | 5.00          | 63.961          | 450           | 620909.514  | 149896.384   | 0.727     | 63.234           |
| S IC 6.04   | 0.003     | 5.00          | 63.953          | 450           | 620902.021  | 149896.889   | 0.846     | 63.107           |
| S IC 6.05   | 0.006     | 5.00          | 62.811          | 450           | 620889.877  | 149897.707   | 0.550     | 62.261           |
| S IC 6.06   |           |               | 61.915          | 450           | 620877.734  | 149898.526   | 0.550     | 61.365           |
| S CP 2.11   | 0.003     | 5.00          | 61.819          | 1200          | 620877.939  | 149911.373   | 1.300     | 60.519           |
| S DIFF CP 2 | 0.025     | 5.00          | 60.081          |               | 620838.390  | 149899.423   | 0.650     | 59.431           |
| S CP 7.01   |           |               | 60.151          | 1200          | 620838.696  | 149898.262   | 0.740     | 59.411           |
| S CP 7.02   |           |               | 60.457          | 1200          | 620846.059  | 149898.102   | 1.170     | 59.287           |
| S DBS BH1   |           |               | 60.332          |               | 620846.219  | 149908.158   | 1.647     | 58.685           |
| S DIFF 5    | 0.014     | 5.00          | 63.216          |               | 620886.407  | 149913.809   | 0.550     | 62.666           |
| S AT1 IN    |           |               | 61.114          |               | 620863.481  | 149909.908   | 2.413     | 58.701           |
| S AT1       |           | 5.00          | 60.451          | 1200          | 620848.557  | 149908.395   | 1.750     | 58.701           |

| Links |            |              |               |                |                    |                    |                |                          |                      |                          |                 |
|-------|------------|--------------|---------------|----------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|-----------------|
| Name  | US<br>Node | DS<br>Node   | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m)       | DS IL<br>(m)       | Fall<br>(m)    | Slope<br>(1:X)           | Dia<br>(mm)          | T of C<br>(mins)         | Rain<br>(mm/hr) |
| 1.000 | S IC 2.01  | S IC 2.02    | 8.318         | 0.600          | 65.284             | 65.144             | 0.140          | 59.4                     | 100                  | 5.14                     | 50.0            |
| 1.001 | S IC 2.02  | S IC 2.03    | 12.775        | 0.600          | 65.144             | 64.929             | 0.215          | 59.4                     | 100                  | 5.35                     | 50.0            |
| 1.002 | S IC 2.03  | S CP 2.04    | 19.729        | 0.600          | 64.929             | 64.358             | 0.571          | 34.6                     | 100                  | 5.60                     | 50.0            |
| 1.003 | S CP 2.04  | S CP 2.05    | 12.833        | 0.600          | 64.358             | 63.567             | 0.791          | 16.2                     | 100                  | 5.71                     | 50.0            |
| 2.000 | S IC 3.01  | S IC 3.02    | 8.790         | 0.600          | 64.530             | 64.382             | 0.148          | 59.4                     | 100                  | 5.15                     | 50.0            |
| 2.001 | S IC 3.02  | S IC 3.03    | 5.536         | 0.600          | 64.382             | 64.288             | 0.094          | 58.9                     | 100                  | 5.24                     | 50.0            |
| 2.002 | S IC 3.03  | S CP 2.05    | 2.900         | 0.600          | 64.288             | 63.567             | 0.721          | 4.0                      | 100                  | 5.25                     | 50.0            |
| 3.000 | S DIFF 1   | S CP 2.05    | 2.075         | 0.600          | 64.011             | 63.567             | 0.444          | 4.7                      | 100                  | 5.01                     | 50.0            |
| 1.004 | S CP 2.05  | S CP 2.06    | 26.174        | 0.600          | 63.567             | 62.150             | 1.417          | 18.5                     | 100                  | 5.95                     | 50.0            |
| 4.000 | S DIFF 3   | S IC 4.01    | 3.688         | 0.600          | 64.265             | 64.203             | 0.062          | 59.5                     | 100                  | 5.06                     | 50.0            |
| 4.001 | S IC 4.01  | S IC 4.02    | 5.633         | 0.600          | 64.203             | 63.575             | 0.628          | 9.0                      | 150                  | 5.09                     | 50.0            |
| 4.002 | S IC 4.02  | S IC 4.03    | 23.802        | 0.600          | 63.575             | 62.782             | 0.793          | 30.0                     | 150                  | 5.30                     | 50.0            |
| 4.003 | S IC 4.03  | S CP 2.06    | 4.626         | 0.600          | 62.782             | 62.150             | 0.632          | 7.3                      | 150                  | 5.32                     | 50.0            |
| 1.005 | S CP 2.06  | S CP 2.07    | 11.842        | 0.600          | 62.025             | 61.946             | 0.079          | 150.0                    | 225                  | 6.14                     | 50.0            |
| 5.000 | S DIFF 4   | S CP 2.07    | 3.861         | 0.600          | 62.766             | 62.207             | 0.559          | 6.9                      | 100                  | 5.02                     | 50.0            |
| 1.006 | S CP 2.07  | S CP 2.08    | 12.390        | 0.600          | 61.946             | 61.863             | 0.083          | 150.0                    | 225                  | 6.33                     | 50.0            |
| 6.000 | S IC 5.01  | S IC 5.02    | 7.512         | 0.600          | 63.533             | 63.406             | 0.127          | 59.1                     | 100                  | 5.12                     | 50.0            |
| 6.001 | S IC 5.02  | S IC 5.03    | 9.765         | 0.600          | 63.406             | 63.142             | 0.264          | 37.0                     | 100                  | 5.25                     | 50.0            |
| 6.002 | S IC 5.03  | S IC 5.04    | 4.910         | 0.600          | 63.142             | 63.059             | 0.083          | 59.2                     | 100                  | 5.33                     | 50.0            |
| 6.003 | S IC 5.04  | S IC 5.05    | 6.865         | 0.600          | 63.059             | 62.830             | 0.229          | 30.0                     | 100                  | 5.42                     | 50.0            |
| 6.004 | S IC 5.05  | S CP 2.08    | 5.551         | 0.600          | 62.830             | 62.227             | 0.603          | 9.2                      | 100                  | 5.45                     | 50.0            |
| 7.000 | S DIFF 5   | S CP 2.08    | 2.621         | 0.600          | 62.666             | 62.227             | 0.439          | 6.0                      | 100                  | 5.01                     | 50.0            |
| 1.007 | S CP 2.08  | S CP 2.09    | 3.721         | 0.600          | 61.863             | 61.297             | 0.566          | 6.6                      | 225                  | 6.34                     | 50.0            |
| 1.008 | S CP 2.09  | S CP 2.10    | 4.396         | 0.600          | 61.297             | 61.268             | 0.029          | 150.0                    | 225                  | 6.41                     | 50.0            |
|       |            |              |               |                |                    |                    |                |                          |                      |                          |                 |
|       | Name       | Vel<br>(m/s) | Cap<br>(l/s)  | Flow<br>(l/s)  | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |                 |
|       | 1.000      | 1.001        | 7.9           | 1.6            | 0.450              | 0.590              | 0.006          | 0.0                      | 31                   | 0.788                    |                 |
|       | 1.001      | 1.001        | 7.9           | 1.6            | 0.590              | 0.977              | 0.006          | 0.0                      | 31                   | 0.788                    |                 |
|       | 1.002      | 1.316        | 10.3          | 2.2            | 0.977              | 0.900              | 0.008          | 0.0                      | 36                   | 0.860                    |                 |
|       | 1.003      | 1.927        | 15.1          | 3.1            | 0.900              | 0.900              | 0.012          | 0.0                      | 33                   | 1.352                    |                 |
|       | 2.000      | 1.001        | 7.9           | 1.2            | 0.450              | 1.029              | 0.004          | 0.0                      | 26                   | 0.718                    |                 |
|       | 2.001      | 1.005        | 7.9           | 1.2            | 1.029              | 0.451              | 0.004          | 0.0                      | 26                   | 0.721                    |                 |
|       | 2.002      | 3.883        | 30.5          | 2.0            | 0.451              | 0.900              | 0.007          | 0.0                      | 17                   | 1.309                    |                 |
|       | 3.000      | 3.601        | 28.3          | 2.9            | 0.450              | 0.900              | 0.011          | 0.0                      | 0                    | 0.000                    |                 |
|       | 1.004      | 1.805        | 14.2          | 14.6           | 0.900              | 0.900              | 0.056          | 0.0                      | 67                   | 1.967                    |                 |
|       | 4.000      | 1.000        | 7.9           | 5.8            | 0.450              | 0.527              | 0.022          | 0.0                      | 0                    | 0.000                    |                 |
|       | 4.001      | 3.384        | 59.8          | 6.3            | 0.477              | 0.400              | 0.024          | 0.0                      | 11                   | 1.110                    |                 |
|       | 4.002      | 1.844        | 32.6          | 7.4            | 0.400              | 0.400              | 0.028          | 0.0                      | 26                   | 1.015                    |                 |
|       | 4.003      | 3.748        | 66.2          | 8.6            | 0.400              | 0.850              | 0.033          | 0.0                      | 25                   | 1.085                    |                 |
|       | 1.005      | 1.065        | 42.3          | 23.2           | 0.900              | 1.036              | 0.089          | 0.0                      | 93                   | 1.087                    |                 |
|       | 5.000      | 2.960        | 23.2          | 3.8            | 0.450              | 0.900              | 0.015          | 0.0                      | 0                    | 0.000                    |                 |
|       | 1.006      | 1.065        | 42.3          | 30.4           | 1.036              | 1.139              | 0.116          | 0.0                      | 112                  | 1.131                    |                 |
|       | 6.000      | 1.003        | 7.9           | 0.6            | 0.450              | 0.592              | 0.002          | 0.0                      | 19                   | 0.597                    |                 |
|       | 6.001      | 1.272        | 10.0          | 1.4            | 0.592              | 0.450              | 0.005          | 0.0                      | 25                   | 0.897                    |                 |
|       | 6.002      | 1.003        | 7.9           | 3.0            | 0.450              | 0.614              | 0.011          | 0.0                      | 29                   | 0.767                    |                 |
|       | 6.003      | 1.414        | 11.1          | 3.7            | 0.614              | 0.450              | 0.014          | 0.0                      | 29                   | 1.083                    |                 |
|       | 6.004      | 2.562        | 20.1          | 3.7            | 0.450              | 0.900              | 0.014          | 0.0                      | 31                   | 1.012                    |                 |
|       | 7.000      | 3.185        | 25.0          | 3.7            | 0.450              | 0.900              | 0.014          | 0.0                      | 48                   | 0.994                    |                 |
|       | 1.007      | 5.135        | 204.2         | 37.8           | 1.139              | 0.600              | 0.144          | 0.0                      | 43                   | 5.214                    |                 |
|       | 1.008      | 1.065        | 42.3          | 37.8           | 0.600              | 0.519              | 0.144          | 0.0                      | 119                  | 1.025                    |                 |

| Name   | US<br>Node  | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|--------|-------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 1.009  | S CP 2.10   | S CP 2.11  | 4.135         | 0.600          | 61.268       | 61.144       | 0.124       | 33.3           | 225         | 6.44             | 50.0            |
| 8.000  | S IC 6.01   | S IC 6.02  | 4.980         | 0.600          | 63.425       | 63.375       | 0.050       | 100.0          | 100         | 5.11             | 50.0            |
| 8.001  | S IC 6.02   | S IC 6.03  | 8.365         | 0.600          | 63.375       | 63.234       | 0.141       | 59.3           | 100         | 5.25             | 50.0            |
| 8.002  | S IC 6.03   | S IC 6.04  | 7.510         | 0.600          | 63.234       | 63.107       | 0.127       | 59.1           | 100         | 5.37             | 50.0            |
| 8.003  | S IC 6.04   | S IC 6.05  | 12.172        | 0.600          | 63.107       | 62.261       | 0.846       | 14.4           | 100         | 5.47             | 50.0            |
| 8.004  | S IC 6.05   | S IC 6.06  | 12.171        | 0.600          | 62.261       | 61.365       | 0.896       | 13.6           | 100         | 5.57             | 50.0            |
| 8.005  | S IC 6.06   | S CP 2.11  | 12.849        | 0.600          | 61.365       | 61.149       | 0.216       | 59.5           | 100         | 5.78             | 50.0            |
| 9.000  | S DIFF CP 2 | S CP 7.01  | 1.201         | 0.600          | 59.431       | 59.411       | 0.020       | 60.0           | 100         | 5.02             | 50.0            |
| 9.001  | S CP 7.01   | S CP 7.02  | 7.365         | 0.600          | 59.411       | 59.287       | 0.124       | 59.4           | 150         | 5.11             | 50.0            |
| 10.000 | S AT1       | S DBS BH1  | 2.350         | 0.600          | 58.701       | 58.685       | 0.016       | 150.0          | 300         | 5.03             | 50.0            |
| 9.002  | S CP 7.02   | S DBS BH1  | 10.057        | 0.600          | 59.287       | 59.118       | 0.169       | 59.5           | 150         | 5.24             | 50.0            |
| 1.010  | S CP 2.11   | S AT1 IN   | 14.532        | 0.600          | 60.519       | 59.276       | 1.243       | 11.7           | 225         | 6.51             | 50.0            |

| Name   | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|--------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 1.009  | 2.273        | 90.4         | 40.7          | 0.519              | 0.450              | 0.155          | 0.0                      | 118                  | 1.034                    |
| 8.000  | 0.769        | 6.0          | 0.8           | 0.450              | 0.490              | 0.003          | 0.0                      | 0                    | 0.000                    |
| 8.001  | 1.002        | 7.9          | 0.8           | 0.490              | 0.627              | 0.003          | 0.0                      | 0                    | 0.000                    |
| 8.002  | 1.003        | 7.9          | 1.8           | 0.627              | 0.746              | 0.007          | 0.0                      | 25                   | 0.694                    |
| 8.003  | 2.047        | 16.1         | 2.6           | 0.746              | 0.450              | 0.010          | 0.0                      | 23                   | 1.367                    |
| 8.004  | 2.107        | 16.5         | 4.2           | 0.450              | 0.450              | 0.016          | 0.0                      | 31                   | 1.662                    |
| 8.005  | 1.000        | 7.9          | 4.2           | 0.450              | 0.570              | 0.016          | 0.0                      | 46                   | 0.962                    |
| 9.000  | 0.996        | 7.8          | 6.6           | 0.550              | 0.640              | 0.025          | 0.0                      | 0                    | 0.000                    |
| 9.001  | 1.307        | 23.1         | 6.6           | 0.590              | 1.020              | 0.025          | 0.0                      | 0                    | 0.000                    |
| 10.000 | 1.281        | 90.6         | 0.0           | 1.450              | 1.347              | 0.000          | 0.0                      | 0                    | 0.000                    |
| 9.002  | 1.306        | 23.1         | 6.6           | 1.020              | 1.064              | 0.025          | 0.0                      | 0                    | 0.000                    |
| 1.010  | 3.848        | 153.0        | 45.7          | 1.075              | 1.613              | 0.174          | 0.0                      |                      |                          |

| Rainfall Methodology  |                       | FEH-22                |  | Summer CV             |  | 1.000                 |                       | Analysis Speed        |  | Normal                |  | Drain Down Time (mins)     |                       | 240                   |  | Starong Level (m)       |  | Check Discharge Volume |                       | x                     |  |                       |  |      |  |      |  |      |  |      |  |      |  |      |  |       |  |
|-----------------------|-----------------------|-----------------------|--|-----------------------|--|-----------------------|-----------------------|-----------------------|--|-----------------------|--|----------------------------|-----------------------|-----------------------|--|-------------------------|--|------------------------|-----------------------|-----------------------|--|-----------------------|--|------|--|------|--|------|--|------|--|------|--|------|--|-------|--|
| Rainfall Events       |                       | Singular              |  | Winter CV             |  | 1.000                 |                       | Skip Steady State     |  | x                     |  | Additional Storage (m³/ha) |                       | 20.0                  |  | Check Discharge Rate(s) |  | x                      |                       |                       |  |                       |  |      |  |      |  |      |  |      |  |      |  |      |  |       |  |
| Storm Durations       |                       |                       |  |                       |  |                       |                       |                       |  |                       |  |                            |                       |                       |  |                         |  |                        |                       |                       |  |                       |  |      |  |      |  |      |  |      |  |      |  |      |  |       |  |
| 15                    |                       | 30                    |  | 60                    |  | 120                   |                       | 180                   |  | 240                   |  | 360                        |                       | 480                   |  | 600                     |  | 720                    |                       | 960                   |  | 1440                  |  | 2160 |  | 2880 |  | 4320 |  | 5760 |  | 7200 |  | 8640 |  | 10080 |  |
| Return Period (years) | Climate Change (CC %) | Additional Area (A %) |  | Additional Flow (Q %) |  | Return Period (years) | Climate Change (CC %) | Additional Area (A %) |  | Additional Flow (Q %) |  | Return Period (years)      | Climate Change (CC %) | Additional Area (A %) |  | Additional Flow (Q %)   |  | Return Period (years)  | Climate Change (CC %) | Additional Area (A %) |  | Additional Flow (Q %) |  |      |  |      |  |      |  |      |  |      |  |      |  |       |  |
| 2                     | 0                     | 10                    |  | 0                     |  | 30                    | 40                    | 10                    |  | 0                     |  | 100                        | 45                    | 10                    |  | 0                       |  |                        |                       |                       |  |                       |  |      |  |      |  |      |  |      |  |      |  |      |  |       |  |

|                            |          |               |      |                           |        |              |       |                    |        |                 |       |
|----------------------------|----------|---------------|------|---------------------------|--------|--------------|-------|--------------------|--------|-----------------|-------|
| Base Inf Coek cient (m/hr) | 20.05200 | Safety Factor | 2.0  | Invert Level (m)          | 58.532 | Diameter (m) | 2.100 | Borehole Diameter  | 0.110  | Inf Depth (m)   | 6.000 |
| Side Inf Coek cient (m/hr) | 20.05200 | Porosity      | 1.00 | Time to half empty (mins) | 7      | Depth (m)    |       | Borehole Depth (m) | 10.000 | Number Required | 1     |

Node S DIFF 1 Carpark Storage Structure

|                            |         |               |      |                           |        |            |        |             |      |               |
|----------------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coeficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 64.011 | Width (m)  | 13.000 | Slope (1:X) | 10.0 | Inf Depth (m) |
| Side Inf Coeficient (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 12     | Length (m) | 5.250  | Depth (m)   |      |               |

Node S DIFF 3 Carpark Storage Structure

|                            |         |               |      |                           |        |            |        |             |      |               |
|----------------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coeficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 64.265 | Width (m)  | 8.000  | Slope (1:X) | 30.0 | Inf Depth (m) |
| Side Inf Coeficient (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 3      | Length (m) | 17.000 | Depth (m)   |      |               |

Node S DIFF 4 Carpark Storage Structure

|                            |         |               |      |                           |        |            |        |             |      |               |
|----------------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coeficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 62.766 | Width (m)  | 13.000 | Slope (1:X) | 40.0 | Inf Depth (m) |
| Side Inf Coeficient (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 0      | Length (m) | 9.460  | Depth (m)   |      |               |

Node S DIFF 5 Carpark Storage Structure

|                            |         |               |      |                           |        |            |        |             |      |               |
|----------------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coeficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 62.666 | Width (m)  | 14.500 | Slope (1:X) | 23.0 | Inf Depth (m) |
| Side Inf Coeficient (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 0      | Length (m) | 9.500  | Depth (m)   |      |               |

Node S AT1 Tank Storage Structure

Invert Level (m) 58.701 | Time to half empty (mins) 136 | Analyse Now through structure x

Inlets  
S AT1 IN

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| Depth (m) | Area (m²) | Depth (m) | Area (m²) |
| 0.000     | 112.0     | 0.800     | 112.0     |

Node S DIFF CP 2 Carpark Storage Structure

|                            |         |               |      |                           |        |            |        |             |      |               |
|----------------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coeficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 59.431 | Width (m)  | 11.300 | Slope (1:X) | 22.0 | Inf Depth (m) |
| Side Inf Coeficient (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 60     | Length (m) | 22.000 | Depth (m)   |      |               |

Results for 2 year +10% A 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 | S IC 2.01 | 10          | 65.311    | 0.027     | 1.2          | 0.0110        | 0.0000     | OK     |
| 15 minute summer | S IC 2.02 | 10          | 65.170    | 0.026     | 1.2          | 0.0042        | 0.0000     | OK     |
| 15 minute summer | S IC 2.03 | 11          | 64.956    | 0.027     | 1.6          | 0.0054        | 0.0000     | OK     |
| 15 minute summer | S CP 2.04 | 11          | 64.384    | 0.026     | 2.2          | 0.0312        | 0.0000     | OK     |
| 15 minute summer | S IC 3.01 | 10          | 64.553    | 0.023     | 0.9          | 0.0077        | 0.0000     | OK     |
| 15 minute summer | S IC 3.02 | 10          | 64.406    | 0.024     | 0.9          | 0.0039        | 0.0000     | OK     |
| 15 minute summer | S IC 3.03 | 11          | 64.303    | 0.015     | 1.5          | 0.0041        | 0.0000     | OK     |
| 15 minute summer | S DIFF 1  | 10          | 64.029    | 0.018     | 2.1          | 0.0172        | 0.0000     | OK     |
| 15 minute summer | S CP 2.05 | 11          | 63.633    | 0.066     | 10.6         | 0.1117        | 0.0000     | OK     |
| 15 minute summer | S DIFF 3  | 11          | 64.322    | 0.057     | 4.2          | 0.1832        | 0.0000     | OK     |
| 15 minute summer | S IC 4.01 | 11          | 64.231    | 0.028     | 4.5          | 0.0065        | 0.0000     | OK     |
| 15 minute summer | S IC 4.02 | 11          | 63.618    | 0.043     | 5.3          | 0.0144        | 0.0000     | OK     |
| 15 minute summer | S IC 4.03 | 11          | 62.815    | 0.033     | 6.1          | 0.0111        | 0.0000     | OK     |
| 15 minute summer | S CP 2.06 | 11          | 62.132    | 0.107     | 16.6         | 0.1212        | 0.0000     | OK     |
| 15 minute summer | S DIFF 4  | 10          | 62.790    | 0.024     | 2.8          | 0.0657        | 0.0000     | OK     |
| 15 minute summer | S CP 2.07 | 11          | 62.067    | 0.121     | 21.8         | 0.1647        | 0.0000     | OK     |
| 15 minute summer | S IC 5.01 | 10          | 63.550    | 0.017     | 0.5          | 0.0042        | 0.0000     | OK     |
| 15 minute summer | S IC 5.02 | 10          | 63.428    | 0.022     | 1.1          | 0.0057        | 0.0000     | OK     |
| 15 minute summer | S IC 5.03 | 10          | 63.181    | 0.039     | 2.3          | 0.0154        | 0.0000     | OK     |
| 15 minute summer | S IC 5.04 | 10          | 63.096    | 0.037     | 2.7          | 0.0088        | 0.0000     | OK     |
| 15 minute summer | S IC 5.05 | 11          | 62.856    | 0.026     | 2.7          | 0.0041        | 0.0000     | OK     |
| 15 minute summer | S CP 2.08 | 11          | 61.918    | 0.055     | 27.2         | 0.0624        | 0.0000     | OK     |
| 15 minute summer | S CP 2.09 | 11          | 61.436    | 0.139     | 27.2         | 0.1571        | 0.0000     | OK     |
| 15 minute summer | S CP 2.10 | 11          | 61.374    | 0.106     | 29.2         | 0.1548        | 0.0000     | OK     |
| 15 minute summer | S IC 6.01 | 10          | 63.447    | 0.022     | 0.6          | 0.0062        | 0.0000     | OK     |

| Link Event (Outflow) | US Node   | Link  | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|-------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S IC 2.01 | 1.000 | S IC 2.02 | 1.2           | 0.705          | 0.150    | 0.0139        |
| 15 minute summer     | S IC 2.02 | 1.001 | S IC 2.03 | 1.2           | 0.699          | 0.147    | 0.0211        |
| 15 minute summer     | S IC 2.03 | 1.002 | S CP 2.04 | 1.6           | 0.953          | 0.151    | 0.0324        |
| 15 minute summer     | S CP 2.04 | 1.003 | S CP 2.05 | 2.2           | 0.625          | 0.145    | 0.0455        |
| 15 minute summer     | S IC 3.01 | 2.000 | S IC 3.02 | 0.9           | 0.624          | 0.112    | 0.0124        |
| 15 minute summer     | S IC 3.02 | 2.001 | S IC 3.03 | 0.9           | 0.792          | 0.108    | 0.0060        |
| 15 minute summer     | S IC 3.03 | 2.002 | S CP 2.05 | 1.5           | 0.503          | 0.048    | 0.0090        |
| 15 minute summer     | S DIFF 1  | 3.000 | S CP 2.05 | 2.1           | 0.733          | 0.074    | 0.0067        |
| 15 minute summer     | S CP 2.05 | 1.004 | S CP 2.06 | 10.5          | 1.941          | 0.739    | 0.1414        |
| 15 minute summer     | S DIFF 3  | 4.000 | S IC 4.01 | 4.1           | 1.301          | 0.522    | 0.0117        |
| 15 minute summer     | S IC 4.01 | 4.001 | S IC 4.02 | 4.5           | 1.407          | 0.075    | 0.0182        |
| 15 minute summer     | S IC 4.02 | 4.002 | S IC 4.03 | 5.3           | 1.503          | 0.162    | 0.0842        |
| 15 minute summer     | S IC 4.03 | 4.003 | S CP 2.06 | 6.1           | 2.240          | 0.092    | 0.0126        |
| 15 minute summer     | S CP 2.06 | 1.005 | S CP 2.07 | 16.6          | 0.822          | 0.393    | 0.2395        |
| 15 minute summer     | S DIFF 4  | 5.000 | S CP 2.07 | 2.7           | 1.946          | 0.118    | 0.0055        |
| 15 minute summer     | S CP 2.07 | 1.006 | S CP 2.08 | 21.8          | 1.511          | 0.515    | 0.1817        |
| 15 minute summer     | S IC 5.01 | 6.000 | S IC 5.02 | 0.5           | 0.445          | 0.060    | 0.0080        |
| 15 minute summer     | S IC 5.02 | 6.001 | S IC 5.03 | 1.1           | 0.529          | 0.106    | 0.0199        |
| 15 minute summer     | S IC 5.03 | 6.002 | S IC 5.04 | 2.2           | 0.820          | 0.282    | 0.0133        |
| 15 minute summer     | S IC 5.04 | 6.003 | S IC 5.05 | 2.7           | 1.288          | 0.243    | 0.0145        |
| 15 minute summer     | S IC 5.05 | 6.004 | S CP 2.08 | 2.7           | 1.734          | 0.135    | 0.0087        |
| 15 minute summer     | S CP 2.08 | 1.007 | S CP 2.09 | 27.2          | 1.659          | 0.133    | 0.0619        |
| 15 minute summer     | S CP 2.09 | 1.008 | S CP 2.10 | 27.2          | 1.230          | 0.642    | 0.0971        |
| 15 minute summer     | S CP 2.10 | 1.009 | S CP 2.11 | 29.2          | 1.787          | 0.323    | 0.0676        |
| 15 minute summer     | S IC 6.01 | 8.000 | S IC 6.02 | 0.6           | 0.523          | 0.099    | 0.0057        |

Results for 2 year +10% A 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     | S IC 6.02   | 11          | 63.394    | 0.019         | 0.6            | 0.0030        | 0.0000        | OK     |
| 15 minute summer     | S IC 6.03   | 10          | 63.264    | 0.030         | 1.4            | 0.0083        | 0.0000        | OK     |
| 15 minute summer     | S IC 6.04   | 10          | 63.131    | 0.024         | 2.0            | 0.0057        | 0.0000        | OK     |
| 15 minute summer     | S IC 6.05   | 11          | 62.290    | 0.029         | 3.1            | 0.0116        | 0.0000        | OK     |
| 15 minute summer     | S IC 6.06   | 11          | 61.410    | 0.045         | 3.0            | 0.0071        | 0.0000        | OK     |
| 15 minute summer     | S CP 2.11   | 11          | 60.592    | 0.073         | 32.9           | 0.0859        | 0.0000        | OK     |
| 15 minute summer     | S DIFF CP 2 | 11          | 59.491    | 0.060         | 4.8            | 0.2066        | 0.0000        | OK     |
| 15 minute summer     | S CP 7.01   | 11          | 59.459    | 0.048         | 4.6            | 0.0545        | 0.0000        | OK     |
| 15 minute summer     | S CP 7.02   | 11          | 59.334    | 0.047         | 4.6            | 0.0526        | 0.0000        | OK     |
| 120 minute summer    | S DBS BH1   | 82          | 58.854    | 0.169         | 9.6            | 1.2103        | 0.0000        | OK     |
| 15 minute summer     | S DIFF 5    | 10          | 62.689    | 0.023         | 2.8            | 0.0458        | 0.0000        | OK     |
| 120 minute summer    | S AT1 IN    | 82          | 58.862    | 0.161         | 17.4           | 0.0000        | 0.0000        | OK     |
| 120 minute summer    | S AT1       | 82          | 58.854    | 0.153         | 10.9           | 17.2412       | 0.0000        | OK     |
| Link Event (Outflow) | US Node     | Link        | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |        |
| 15 minute summer     | S IC 6.02   | 8.001       | S IC 6.03 | 0.6           | 0.417          | 0.076         | 0.0125        |        |
| 15 minute summer     | S IC 6.03   | 8.002       | S IC 6.04 | 1.4           | 0.813          | 0.174         | 0.0127        |        |
| 15 minute summer     | S IC 6.04   | 8.003       | S IC 6.05 | 2.0           | 1.187          | 0.122         | 0.0201        |        |
| 15 minute summer     | S IC 6.05   | 8.004       | S IC 6.06 | 3.0           | 1.168          | 0.184         | 0.0322        |        |
| 15 minute summer     | S IC 6.06   | 8.005       | S CP 2.11 | 3.1           | 0.921          | 0.390         | 0.0427        |        |
| 15 minute summer     | S CP 2.11   | 1.010       | S AT1 IN  | 32.9          | 3.028          | 0.215         | 0.1577        |        |
| 15 minute summer     | S DIFF CP 2 | 9.000       | S CP 7.01 | 4.6           | 1.067          | 0.593         | 0.0052        |        |
| 15 minute summer     | S CP 7.01   | 9.001       | S CP 7.02 | 4.6           | 0.973          | 0.201         | 0.0351        |        |
| 15 minute summer     | S CP 7.02   | 9.002       | S DBS BH1 | 4.6           | 1.009          | 0.200         | 0.0460        |        |
| 15 minute summer     | S DBS BH1   | Inj ltraon  |           | 5.8           |                |               |               |        |
| 15 minute summer     | S DIFF 5    | 7.000       | S CP 2.08 | 2.7           | 2.034          | 0.110         | 0.0035        |        |
| 30 minute summer     | S AT1       | 10.000      | S DBS BH1 | 9.0           | 0.796          | 0.099         | 0.0675        |        |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.96%

| Node Event       | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S IC 2.01 | 10          | 65.338    | 0.054     | 4.1          | 0.0221        | 0.0000     | OK         |
| 15 minute summer | S IC 2.02 | 10          | 65.197    | 0.053     | 4.1          | 0.0084        | 0.0000     | OK         |
| 15 minute summer | S IC 2.03 | 10          | 64.981    | 0.052     | 5.5          | 0.0104        | 0.0000     | OK         |
| 15 minute summer | S CP 2.04 | 12          | 64.541    | 0.183     | 7.7          | 0.2214        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 3.01 | 10          | 64.574    | 0.044     | 3.0          | 0.0149        | 0.0000     | OK         |
| 15 minute summer | S IC 3.02 | 10          | 64.427    | 0.045     | 3.0          | 0.0072        | 0.0000     | OK         |
| 15 minute summer | S IC 3.03 | 12          | 64.409    | 0.121     | 5.0          | 0.0339        | 0.0000     | SURCHARGED |
| 15 minute summer | S DIFF 1  | 14          | 64.397    | 0.386     | 15.5         | 3.3945        | 0.0000     | FLOOD RISK |
| 15 minute summer | S CP 2.05 | 12          | 64.391    | 0.824     | 28.0         | 1.3923        | 0.0000     | FLOOD RISK |
| 15 minute summer | S DIFF 3  | 12          | 64.441    | 0.176     | 14.6         | 1.3902        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 4.01 | 12          | 64.248    | 0.045     | 11.5         | 0.0104        | 0.0000     | OK         |
| 15 minute summer | S IC 4.02 | 11          | 63.649    | 0.074     | 14.1         | 0.0246        | 0.0000     | OK         |
| 15 minute summer | S IC 4.03 | 10          | 62.838    | 0.056     | 16.9         | 0.0189        | 0.0000     | OK         |
| 15 minute summer | S CP 2.06 | 11          | 62.220    | 0.195     | 33.5         | 0.2203        | 0.0000     | OK         |
| 15 minute summer | S DIFF 4  | 10          | 62.813    | 0.047     | 9.6          | 0.2225        | 0.0000     | OK         |
| 15 minute summer | S CP 2.07 | 11          | 62.166    | 0.220     | 50.8         | 0.2987        | 0.0000     | OK         |
| 15 minute summer | S IC 5.01 | 10          | 63.563    | 0.030     | 1.6          | 0.0077        | 0.0000     | OK         |
| 15 minute summer | S IC 5.02 | 10          | 63.448    | 0.042     | 3.7          | 0.0108        | 0.0000     | OK         |
| 15 minute summer | S IC 5.03 | 10          | 63.236    | 0.094     | 7.7          | 0.0373        | 0.0000     | OK         |
| 15 minute summer | S IC 5.04 | 11          | 63.141    | 0.082     | 9.2          | 0.0196        | 0.0000     | OK         |
| 15 minute summer | S IC 5.05 | 11          | 62.882    | 0.052     | 9.2          | 0.0083        | 0.0000     | OK         |
| 15 minute summer | S CP 2.08 | 11          | 61.983    | 0.120     | 69.0         | 0.1358        | 0.0000     | OK         |
| 15 minute summer | S CP 2.09 | 11          | 61.655    | 0.358     | 68.9         | 0.4053        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 2.10 | 11          | 61.501    | 0.233     | 75.6         | 0.3398        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 6.01 | 10          | 63.467    | 0.042     | 2.0          | 0.0117        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link  | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|-------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S IC 2.01 | 1.000 | S IC 2.02 | 4.1           | 0.956          | 0.520    | 0.0355        |
| 15 minute summer     | S IC 2.02 | 1.001 | S IC 2.03 | 4.1           | 0.981          | 0.518    | 0.0530        |
| 15 minute summer     | S IC 2.03 | 1.002 | S CP 2.04 | 5.4           | 1.200          | 0.526    | 0.1170        |
| 15 minute summer     | S CP 2.04 | 1.003 | S CP 2.05 | 6.6           | 0.891          | 0.435    | 0.1004        |
| 15 minute summer     | S IC 3.01 | 2.000 | S IC 3.02 | 3.0           | 0.885          | 0.377    | 0.0299        |
| 15 minute summer     | S IC 3.02 | 2.001 | S IC 3.03 | 3.0           | 1.029          | 0.375    | 0.0293        |
| 15 minute summer     | S IC 3.03 | 2.002 | S CP 2.05 | 4.6           | 0.750          | 0.151    | 0.0227        |
| 15 minute summer     | S DIFF 1  | 3.000 | S CP 2.05 | 11.7          | 1.490          | 0.412    | 0.0162        |
| 15 minute summer     | S CP 2.05 | 1.004 | S CP 2.06 | 16.7          | 2.129          | 1.175    | 0.2048        |
| 15 minute summer     | S DIFF 3  | 4.000 | S IC 4.01 | 10.4          | 1.595          | 1.318    | 0.0206        |
| 15 minute summer     | S IC 4.01 | 4.001 | S IC 4.02 | 11.5          | 1.813          | 0.192    | 0.0367        |
| 15 minute summer     | S IC 4.02 | 4.002 | S IC 4.03 | 14.0          | 1.935          | 0.430    | 0.1727        |
| 15 minute summer     | S IC 4.03 | 4.003 | S CP 2.06 | 16.9          | 2.807          | 0.256    | 0.0320        |
| 15 minute summer     | S CP 2.06 | 1.005 | S CP 2.07 | 33.4          | 0.974          | 0.788    | 0.4503        |
| 15 minute summer     | S DIFF 4  | 5.000 | S CP 2.07 | 9.4           | 2.686          | 0.402    | 0.0135        |
| 15 minute summer     | S CP 2.07 | 1.006 | S CP 2.08 | 50.5          | 1.707          | 1.194    | 0.3782        |
| 15 minute summer     | S IC 5.01 | 6.000 | S IC 5.02 | 1.6           | 0.620          | 0.201    | 0.0193        |
| 15 minute summer     | S IC 5.02 | 6.001 | S IC 5.03 | 3.7           | 0.660          | 0.366    | 0.0524        |
| 15 minute summer     | S IC 5.03 | 6.002 | S IC 5.04 | 7.5           | 1.035          | 0.954    | 0.0354        |
| 15 minute summer     | S IC 5.04 | 6.003 | S IC 5.05 | 9.2           | 1.658          | 0.831    | 0.0377        |
| 15 minute summer     | S IC 5.05 | 6.004 | S CP 2.08 | 9.2           | 2.364          | 0.459    | 0.0217        |
| 15 minute summer     | S CP 2.08 | 1.007 | S CP 2.09 | 68.9          | 1.982          | 0.337    | 0.1141        |
| 15 minute summer     | S CP 2.09 | 1.008 | S CP 2.10 | 68.6          | 1.724          | 1.619    | 0.1748        |
| 15 minute summer     | S CP 2.10 | 1.009 | S CP 2.11 | 75.3          | 2.120          | 0.833    | 0.1427        |
| 15 minute summer     | S IC 6.01 | 8.000 | S IC 6.02 | 2.0           | 0.727          | 0.328    | 0.0136        |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.96%

| Node Event           | US Node     | Peak (mins) | Level (m) | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status     |
|----------------------|-------------|-------------|-----------|---------------|----------------|---------------|---------------|------------|
| 15 minute summer     | S IC 6.02   | 10          | 63.409    | 0.034         | 2.0            | 0.0054        | 0.0000        | OK         |
| 15 minute summer     | S IC 6.03   | 10          | 63.293    | 0.059         | 4.6            | 0.0165        | 0.0000        | OK         |
| 15 minute summer     | S IC 6.04   | 10          | 63.152    | 0.045         | 6.6            | 0.0108        | 0.0000        | OK         |
| 15 minute summer     | S IC 6.05   | 10          | 62.319    | 0.058         | 10.5           | 0.0230        | 0.0000        | OK         |
| 15 minute summer     | S IC 6.06   | 11          | 61.636    | 0.271         | 10.5           | 0.0431        | 0.0000        | FLOOD RISK |
| 15 minute summer     | S CP 2.11   | 11          | 60.647    | 0.128         | 87.0           | 0.1512        | 0.0000        | OK         |
| 15 minute summer     | S DIFF CP 2 | 12          | 59.603    | 0.172         | 16.6           | 1.3688        | 0.0000        | SURCHARGED |
| 15 minute summer     | S CP 7.01   | 12          | 59.500    | 0.089         | 13.0           | 0.1010        | 0.0000        | OK         |
| 180 minute winter    | S CP 7.02   | 168         | 59.436    | 0.149         | 4.0            | 0.1688        | 0.0000        | OK         |
| 180 minute winter    | S DBS BH1   | 160         | 59.436    | 0.751         | 7.8            | 3.2277        | 0.0000        | OK         |
| 15 minute summer     | S DIFF 5    | 10          | 62.712    | 0.046         | 9.5            | 0.1495        | 0.0000        | OK         |
| 180 minute winter    | S AT1 IN    | 156         | 59.448    | 0.747         | 27.7           | 0.0000        | 0.0000        | OK         |
| 180 minute winter    | S AT1       | 156         | 59.436    | 0.735         | 15.3           | 81.3111       | 0.0000        | SURCHARGED |
| Link Event (Outflow) | US Node     | Link        | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |            |
| 15 minute summer     | S IC 6.02   | 8.001       | S IC 6.03 | 2.0           | 0.549          | 0.250         | 0.0300        |            |
| 15 minute summer     | S IC 6.03   | 8.002       | S IC 6.04 | 4.5           | 1.101          | 0.575         | 0.0309        |            |
| 15 minute summer     | S IC 6.04   | 8.003       | S IC 6.05 | 6.6           | 1.632          | 0.411         | 0.0493        |            |
| 15 minute summer     | S IC 6.05   | 8.004       | S IC 6.06 | 10.5          | 1.492          | 0.633         | 0.0762        |            |
| 15 minute summer     | S IC 6.06   | 8.005       | S CP 2.11 | 9.9           | 1.261          | 1.256         | 0.0993        |            |
| 15 minute summer     | S CP 2.11   | 1.010       | S AT1 IN  | 86.9          | 3.864          | 0.568         | 0.3268        |            |
| 15 minute summer     | S DIFF CP 2 | 9.000       | S CP 7.01 | 13.0          | 1.663          | 1.662         | 0.0091        |            |
| 15 minute summer     | S CP 7.01   | 9.001       | S CP 7.02 | 13.0          | 1.235          | 0.562         | 0.0775        |            |
| 15 minute summer     | S CP 7.02   | 9.002       | S DBS BH1 | 13.0          | 1.316          | 0.562         | 0.0991        |            |
| 15 minute summer     | S DBS BH1   | Inj Itraon  |           | 5.8           |                |               |               |            |
| 15 minute summer     | S DIFF 5    | 7.000       | S CP 2.08 | 9.4           | 2.788          | 0.374         | 0.0088        |            |
| 30 minute summer     | S AT1       | 10.000      | S DBS BH1 | 7.9           | 0.766          | 0.087         | 0.1655        |            |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.92%

| Node Event       | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S IC 2.01 | 10          | 65.348    | 0.064     | 5.3          | 0.0263        | 0.0000     | OK         |
| 15 minute summer | S IC 2.02 | 10          | 65.207    | 0.063     | 5.3          | 0.0100        | 0.0000     | OK         |
| 15 minute summer | S IC 2.03 | 12          | 64.998    | 0.069     | 7.0          | 0.0140        | 0.0000     | OK         |
| 15 minute summer | S CP 2.04 | 12          | 64.797    | 0.439     | 9.9          | 0.5298        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 3.01 | 12          | 64.607    | 0.077     | 3.8          | 0.0258        | 0.0000     | OK         |
| 15 minute summer | S IC 3.02 | 12          | 64.593    | 0.211     | 3.8          | 0.0336        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 3.03 | 12          | 64.584    | 0.296     | 5.8          | 0.0827        | 0.0000     | FLOOD RISK |
| 30 minute summer | S DIFF 1  | 23          | 64.543    | 0.532     | 19.2         | 6.3384        | 0.0000     | FLOOD RISK |
| 15 minute summer | S CP 2.05 | 12          | 64.567    | 1.000     | 32.5         | 1.6885        | 0.0000     | FLOOD RISK |
| 15 minute summer | S DIFF 3  | 13          | 64.491    | 0.226     | 18.8         | 2.2318        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 4.01 | 12          | 64.251    | 0.048     | 13.2         | 0.0112        | 0.0000     | OK         |
| 15 minute summer | S IC 4.02 | 11          | 63.658    | 0.083     | 16.5         | 0.0274        | 0.0000     | OK         |
| 15 minute summer | S IC 4.03 | 9           | 62.839    | 0.057     | 20.2         | 0.0194        | 0.0000     | OK         |
| 15 minute summer | S CP 2.06 | 11          | 62.349    | 0.324     | 36.5         | 0.3666        | 0.0000     | SURCHARGED |
| 15 minute summer | S DIFF 4  | 10          | 62.821    | 0.055     | 12.4         | 0.2977        | 0.0000     | OK         |
| 15 minute summer | S CP 2.07 | 11          | 62.268    | 0.322     | 59.2         | 0.4369        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 5.01 | 10          | 63.567    | 0.034     | 2.0          | 0.0087        | 0.0000     | OK         |
| 15 minute summer | S IC 5.02 | 10          | 63.454    | 0.048     | 4.7          | 0.0124        | 0.0000     | OK         |
| 15 minute summer | S IC 5.03 | 11          | 63.369    | 0.227     | 9.7          | 0.0904        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 5.04 | 11          | 63.217    | 0.158     | 11.1         | 0.0379        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 5.05 | 12          | 62.888    | 0.058     | 10.8         | 0.0092        | 0.0000     | OK         |
| 15 minute summer | S CP 2.08 | 11          | 62.033    | 0.170     | 81.4         | 0.1928        | 0.0000     | OK         |
| 15 minute summer | S CP 2.09 | 11          | 61.802    | 0.505     | 80.9         | 0.5713        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 2.10 | 11          | 61.588    | 0.320     | 89.3         | 0.4656        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 6.01 | 10          | 63.474    | 0.048     | 2.6          | 0.0135        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link  | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|-------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S IC 2.01 | 1.000 | S IC 2.02 | 5.3           | 1.006          | 0.670    | 0.0436        |
| 15 minute summer     | S IC 2.02 | 1.001 | S IC 2.03 | 5.2           | 1.034          | 0.667    | 0.0681        |
| 15 minute summer     | S IC 2.03 | 1.002 | S CP 2.04 | 6.9           | 1.253          | 0.666    | 0.1345        |
| 15 minute summer     | S CP 2.04 | 1.003 | S CP 2.05 | 7.6           | 0.970          | 0.501    | 0.1004        |
| 15 minute summer     | S IC 3.01 | 2.000 | S IC 3.02 | 3.8           | 0.909          | 0.488    | 0.0627        |
| 30 minute summer     | S IC 3.02 | 2.001 | S IC 3.03 | 3.5           | 1.034          | 0.446    | 0.0433        |
| 15 minute summer     | S IC 3.03 | 2.002 | S CP 2.05 | 5.1           | 0.759          | 0.167    | 0.0227        |
| 15 minute summer     | S DIFF 1  | 3.000 | S CP 2.05 | 13.6          | 1.742          | 0.482    | 0.0162        |
| 30 minute summer     | S CP 2.05 | 1.004 | S CP 2.06 | 17.2          | 2.203          | 1.216    | 0.2048        |
| 15 minute summer     | S DIFF 3  | 4.000 | S IC 4.01 | 11.8          | 1.781          | 1.496    | 0.0212        |
| 15 minute summer     | S IC 4.01 | 4.001 | S IC 4.02 | 13.2          | 1.871          | 0.220    | 0.0416        |
| 15 minute summer     | S IC 4.02 | 4.002 | S IC 4.03 | 16.5          | 2.059          | 0.506    | 0.1913        |
| 15 minute summer     | S IC 4.03 | 4.003 | S CP 2.06 | 20.2          | 2.803          | 0.305    | 0.0548        |
| 15 minute summer     | S CP 2.06 | 1.005 | S CP 2.07 | 36.8          | 0.993          | 0.868    | 0.4710        |
| 15 minute summer     | S DIFF 4  | 5.000 | S CP 2.07 | 12.5          | 2.841          | 0.536    | 0.0180        |
| 15 minute summer     | S CP 2.07 | 1.006 | S CP 2.08 | 58.8          | 1.724          | 1.388    | 0.4463        |
| 15 minute summer     | S IC 5.01 | 6.000 | S IC 5.02 | 2.0           | 0.653          | 0.252    | 0.0229        |
| 15 minute summer     | S IC 5.02 | 6.001 | S IC 5.03 | 4.6           | 0.701          | 0.466    | 0.0564        |
| 15 minute summer     | S IC 5.03 | 6.002 | S IC 5.04 | 9.0           | 1.150          | 1.142    | 0.0384        |
| 15 minute summer     | S IC 5.04 | 6.003 | S IC 5.05 | 10.8          | 1.643          | 0.971    | 0.0430        |
| 15 minute summer     | S IC 5.05 | 6.004 | S CP 2.08 | 10.8          | 2.445          | 0.537    | 0.0245        |
| 15 minute summer     | S CP 2.08 | 1.007 | S CP 2.09 | 80.9          | 2.101          | 0.396    | 0.1340        |
| 15 minute summer     | S CP 2.09 | 1.008 | S CP 2.10 | 80.3          | 2.019          | 1.896    | 0.1748        |
| 15 minute summer     | S CP 2.10 | 1.009 | S CP 2.11 | 88.1          | 2.264          | 0.975    | 0.1515        |
| 15 minute summer     | S IC 6.01 | 8.000 | S IC 6.02 | 2.6           | 0.778          | 0.424    | 0.0164        |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.92%

| Node Event        | US Node     | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|-------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer  | S IC 6.02   | 10          | 63.414    | 0.039     | 2.6          | 0.0062        | 0.0000     | OK         |
| 15 minute summer  | S IC 6.03   | 10          | 63.305    | 0.071     | 5.9          | 0.0197        | 0.0000     | OK         |
| 15 minute summer  | S IC 6.04   | 10          | 63.159    | 0.052     | 8.6          | 0.0125        | 0.0000     | OK         |
| 15 minute summer  | S IC 6.05   | 11          | 62.400    | 0.139     | 13.6         | 0.0552        | 0.0000     | SURCHARGED |
| 15 minute summer  | S IC 6.06   | 12          | 61.820    | 0.455     | 13.2         | 0.0724        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S CP 2.11   | 11          | 60.663    | 0.144     | 102.3        | 0.1696        | 0.0000     | OK         |
| 180 minute winter | S DIFF CP 2 | 144         | 60.081    | 0.650     | 13.9         | 17.9244       | 3.3205     | FLOOD      |
| 180 minute winter | S CP 7.01   | 144         | 60.084    | 0.673     | 11.5         | 0.7610        | 0.0000     | FLOOD RISK |
| 120 minute winter | S CP 7.02   | 112         | 60.086    | 0.799     | 14.1         | 0.9032        | 0.0000     | SURCHARGED |
| 120 minute summer | S DBS BH1   | 82          | 60.093    | 1.408     | 26.8         | 5.5026        | 0.0000     | OK         |
| 15 minute summer  | S DIFF 5    | 10          | 62.720    | 0.054     | 12.2         | 0.1988        | 0.0000     | OK         |
| 120 minute summer | S AT1 IN    | 82          | 60.121    | 1.420     | 61.7         | 0.0000        | 0.0000     | OK         |
| 120 minute summer | S AT1       | 82          | 60.094    | 1.393     | 39.8         | 89.8508       | 0.0000     | SURCHARGED |

| Link Event (Outflow) | US Node     | Link      | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-------------|-----------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S IC 6.02   | 8.001     | S IC 6.03 | 2.5           | 0.575          | 0.322    | 0.0367        |
| 15 minute summer     | S IC 6.03   | 8.002     | S IC 6.04 | 5.9           | 1.165          | 0.745    | 0.0377        |
| 15 minute summer     | S IC 6.04   | 8.003     | S IC 6.05 | 8.5           | 1.652          | 0.530    | 0.0721        |
| 15 minute summer     | S IC 6.05   | 8.004     | S IC 6.06 | 13.2          | 1.702          | 0.797    | 0.0952        |
| 15 minute summer     | S IC 6.06   | 8.005     | S CP 2.11 | 12.0          | 1.529          | 1.523    | 0.0995        |
| 15 minute summer     | S CP 2.11   | 1.010     | S AT1 IN  | 102.9         | 4.008          | 0.673    | 0.3734        |
| 15 minute summer     | S DIFF CP 2 | 9.000     | S CP 7.01 | 15.7          | 2.002          | 2.003    | 0.0094        |
| 120 minute summer    | S CP 7.01   | 9.001     | S CP 7.02 | -15.8         | 1.174          | -0.684   | 0.1297        |
| 120 minute summer    | S CP 7.02   | 9.002     | S DBS BH1 | -16.7         | 1.200          | -0.722   | 0.1771        |
| 15 minute summer     | S DBS BH1   | Inj Intra | 0.000     | 5.8           |                |          |               |
| 15 minute summer     | S DIFF 5    | 7.000     | S CP 2.08 | 12.0          | 2.946          | 0.480    | 0.0107        |
| 120 minute summer    | S AT1       | 10.000    | S DBS BH1 | 26.8          | 0.742          | 0.296    | 0.1655        |

Design Settings

|                       |        |                                      |       |                             |              |                                      |
|-----------------------|--------|--------------------------------------|-------|-----------------------------|--------------|--------------------------------------|
| Rainfall Methodology  | FEH-22 | Time of Entry (mins)                 | 5.00  | Connection Type             | Level Slopes | Enforce best practice design rules ✓ |
| Return Period (years) | 100    | Maximum Time of Concentration (mins) | 30.00 | Minimum Backdrop Height (m) | 0.000        |                                      |
| Additional Flow (%)   | 45     | Maximum Rainfall (mm/hr)             | 50.0  | Preferred Cover Depth (m)   | 0.900        |                                      |
| CV                    | 1.000  | Minimum Velocity (m/s)               | 0.75  | Include Intermediate Ground | ✓            |                                      |
|                       |        |                                      |       |                             |              |                                      |

Nodes

| Name       | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) | Invert Level (m) |
|------------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|------------------|
| S DIFF 2   | 0.016     | 5.00          | 63.080          |               | 620906.282  | 149972.783   | 0.550     | 62.530           |
| S CP 8.01  | 0.024     | 5.00          | 62.858          | 1200          | 620902.789  | 149972.783   | 1.050     | 61.808           |
| S RE 9.01  | 0.003     | 5.00          | 62.636          | 100           | 620899.493  | 149971.256   | 0.936     | 61.700           |
| S CP 8.02  | 0.003     | 5.00          | 62.413          | 1200          | 620900.659  | 149988.960   | 1.183     | 61.230           |
| S CP 8.03  |           |               | 61.698          | 1200          | 620880.832  | 149990.255   | 1.050     | 60.648           |
| S CP 8.04  |           |               | 59.823          | 1200          | 620855.020  | 149991.925   | 1.125     | 58.698           |
| S IC 10.01 | 0.006     | 5.00          | 62.243          | 450           | 620888.122  | 149979.025   | 1.150     | 61.093           |
| S IC 10.02 | 0.002     | 5.00          | 61.175          | 450           | 620876.770  | 149980.018   | 1.496     | 59.679           |
| S DIFF 19  | 0.007     | 5.00          | 60.668          |               | 620868.223  | 149987.221   | 0.550     | 60.118           |
| S IC 11.01 | 0.025     | 5.00          | 60.554          | 450           | 620866.828  | 149987.343   | 0.600     | 59.954           |
| S IC 10.03 | 0.005     | 5.00          | 60.574          | 450           | 620866.233  | 149980.535   | 1.000     | 59.574           |
| S IC 10.04 |           |               | 60.128          | 450           | 620858.701  | 149980.425   | 1.050     | 59.078           |
| S IC 12.01 | 0.008     | 5.00          | 60.548          | 450           | 620862.848  | 149967.295   | 1.000     | 59.548           |
| S IC 12.02 | 0.002     | 5.00          | 60.233          | 450           | 620854.598  | 149967.295   | 1.050     | 59.183           |
| S CP 8.05  | 0.003     | 5.00          | 60.147          | 1200          | 620854.598  | 149969.650   | 1.598     | 58.549           |
| S DIFF 18  | 0.010     | 5.00          | 59.593          |               | 620844.648  | 149989.784   | 0.550     | 59.043           |
| S IC 13.01 | 0.001     | 5.00          | 59.580          | 450           | 620837.958  | 149989.784   | 0.604     | 58.976           |
| S RE 14.01 | 0.002     | 5.00          | 59.225          | 100           | 620829.671  | 149970.671   | 0.550     | 58.675           |
| S IC 13.02 | 0.003     | 5.00          | 59.374          | 450           | 620838.067  | 149970.618   | 0.833     | 58.541           |
| CP 8.06    | 0.007     | 5.00          | 59.476          | 1200          | 620840.885  | 149969.417   | 1.018     | 58.458           |
| S IC 15.01 |           | 5.00          | 59.277          | 450           | 620827.886  | 149937.637   | 1.000     | 58.277           |
| S CP 15.02 | 0.003     | 5.00          | 59.246          | 1200          | 620827.155  | 149953.620   | 1.129     | 58.117           |
| CP 8.07    | 0.007     | 5.00          | 59.243          | 1200          | 620840.885  | 149953.619   | 1.463     | 57.780           |
| S CP 8.08  | 0.007     | 5.00          | 59.810          | 1200          | 620842.547  | 149934.983   | 2.155     | 57.655           |
| S AT 2 IN  | 0.021     | 5.00          | 59.642          |               | 620838.394  | 149934.606   | 2.682     | 56.960           |
| S AT 2     |           | 5.00          | 57.954          | 1200          | 620818.379  | 149936.068   | 0.994     | 56.960           |
| S DBS 2    |           |               | 57.623          |               | 620815.956  | 149935.822   | 0.750     | 56.873           |
| S IC 9.02  | 0.001     | 5.00          | 62.394          | 450           | 620900.374  | 149983.755   | 1.000     | 61.394           |
| S IC 9.03  | 0.005     | 5.00          | 62.315          | 450           | 620898.445  | 149986.073   | 1.000     | 61.315           |
| S DIFF 20  | 0.005     | 5.00          | 61.733          |               | 620881.159  | 149988.925   | 0.550     | 61.183           |

| Links |            |            |               |                |              |              |             |                |             |                  |                 |
|-------|------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| Name  | US<br>Node | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
| 1.000 | S DIFF 2   | S CP 8.01  | 3.493         | 0.600          | 62.530       | 61.858       | 0.672       | 5.2            | 100         | 5.02             | 50.0            |
| 1.001 | S CP 8.01  | S CP 8.02  | 16.317        | 0.600          | 61.808       | 61.363       | 0.445       | 36.7           | 150         | 5.18             | 50.0            |
| 2.000 | S RE 9.01  | S IC 9.02  | 12.530        | 0.600          | 61.700       | 61.394       | 0.306       | 40.9           | 100         | 5.17             | 50.0            |
| 1.002 | S CP 8.02  | S CP 8.03  | 19.869        | 0.600          | 61.230       | 60.648       | 0.582       | 34.1           | 150         | 5.49             | 50.0            |
| 2.001 | S IC 9.02  | S IC 9.03  | 3.016         | 0.600          | 61.394       | 61.315       | 0.079       | 38.2           | 100         | 5.21             | 50.0            |
| 1.003 | S CP 8.03  | S CP 8.04  | 25.866        | 0.600          | 60.648       | 58.773       | 1.875       | 13.8           | 150         | 5.64             | 50.0            |
| 2.002 | S IC 9.03  | S CP 8.02  | 3.638         | 0.600          | 61.315       | 61.280       | 0.035       | 103.9          | 100         | 5.29             | 50.0            |
| 3.000 | S DIFF 20  | S CP 8.03  | 1.370         | 0.600          | 61.183       | 61.148       | 0.035       | 39.1           | 100         | 5.02             | 50.0            |
| 1.004 | S CP 8.04  | S CP 8.05  | 22.279        | 0.600          | 58.698       | 58.549       | 0.149       | 150.0          | 225         | 5.99             | 50.0            |
| 4.000 | S IC 10.01 | S IC 10.02 | 11.395        | 0.600          | 61.093       | 59.679       | 1.414       | 8.1            | 100         | 5.07             | 50.0            |
| 4.001 | S IC 10.02 | S IC 10.03 | 10.550        | 0.600          | 59.679       | 59.574       | 0.105       | 100.0          | 100         | 5.30             | 50.0            |
| 5.000 | S DIFF 19  | S IC 11.01 | 1.400         | 0.600          | 60.118       | 60.004       | 0.114       | 12.3           | 100         | 5.01             | 50.0            |
| 5.001 | S IC 11.01 | S IC 10.03 | 6.834         | 0.600          | 59.954       | 59.624       | 0.330       | 20.7           | 100         | 5.08             | 50.0            |
| 4.002 | S IC 10.03 | S IC 10.04 | 7.533         | 0.600          | 59.574       | 59.128       | 0.446       | 16.9           | 100         | 5.36             | 50.0            |
| 4.003 | S IC 10.04 | S CP 8.05  | 11.530        | 0.600          | 59.078       | 58.963       | 0.115       | 100.0          | 150         | 5.56             | 50.0            |
| 6.000 | S IC 12.01 | S IC 12.02 | 8.250         | 0.600          | 59.548       | 59.233       | 0.315       | 26.2           | 100         | 5.09             | 50.0            |
| 6.001 | S IC 12.02 | S CP 8.05  | 2.355         | 0.600          | 59.183       | 59.159       | 0.024       | 100.0          | 100         | 5.14             | 50.0            |
| 1.005 | S CP 8.05  | CP 8.06    | 13.715        | 0.600          | 58.549       | 58.458       | 0.091       | 150.0          | 300         | 6.17             | 50.0            |
| 7.000 | S DIFF 18  | S IC 13.01 | 6.690         | 0.600          | 59.043       | 58.976       | 0.067       | 100.0          | 100         | 5.15             | 50.0            |
| 7.001 | S IC 13.01 | S IC 13.02 | 19.166        | 0.600          | 58.976       | 58.591       | 0.385       | 49.8           | 100         | 5.44             | 50.0            |
| 8.000 | S RE 14.01 | S IC 13.02 | 8.396         | 0.600          | 58.675       | 58.591       | 0.084       | 100.0          | 100         | 5.18             | 50.0            |
| 7.002 | S IC 13.02 | CP 8.06    | 3.063         | 0.600          | 58.541       | 58.510       | 0.031       | 100.0          | 100         | 5.50             | 50.0            |
| 1.006 | CP 8.06    | CP 8.07    | 15.798        | 0.600          | 58.458       | 58.353       | 0.105       | 150.0          | 300         | 6.38             | 50.0            |
| 9.000 | S IC 15.01 | S CP 15.02 | 16.000        | 0.600          | 58.277       | 58.117       | 0.160       | 100.0          | 100         | 5.35             | 50.0            |

| Name  | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|-------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 1.000 | 3.414        | 26.8         | 4.1           | 0.450              | 0.900              | 0.016          | 0.0                      | 26                   | 2.458                    |
| 1.001 | 1.667        | 29.5         | 10.4          | 0.900              | 0.900              | 0.040          | 0.0                      | 61                   | 1.522                    |
| 2.000 | 1.208        | 9.5          | 0.7           | 0.836              | 0.900              | 0.003          | 0.0                      | 19                   | 0.719                    |
| 1.002 | 1.728        | 30.5         | 13.5          | 1.033              | 0.900              | 0.051          | 0.0                      | 69                   | 1.672                    |
| 2.001 | 1.252        | 9.8          | 1.1           | 0.900              | 0.900              | 0.004          | 0.0                      | 22                   | 0.817                    |
| 1.003 | 2.726        | 48.2         | 14.9          | 0.900              | 0.900              | 0.057          | 0.0                      | 57                   | 2.407                    |
| 2.002 | 0.754        | 5.9          | 2.3           | 0.900              | 1.033              | 0.009          | 0.0                      | 43                   | 0.707                    |
| 3.000 | 1.236        | 9.7          | 1.4           | 0.450              | 0.450              | 0.005          | 0.0                      | 24                   | 0.946                    |
| 1.004 | 1.065        | 42.3         | 14.9          | 0.900              | 1.373              | 0.057          | 0.0                      | 92                   | 0.973                    |
| 4.000 | 2.740        | 21.5         | 1.5           | 1.050              | 1.396              | 0.006          | 0.0                      | 18                   | 1.554                    |
| 4.001 | 0.769        | 6.0          | 2.0           | 1.396              | 0.900              | 0.008          | 0.0                      | 40                   | 0.695                    |
| 5.000 | 2.217        | 17.4         | 1.8           | 0.450              | 0.450              | 0.007          | 0.0                      | 21                   | 1.420                    |
| 5.001 | 1.704        | 13.4         | 8.4           | 0.500              | 0.850              | 0.032          | 0.0                      | 57                   | 1.799                    |
| 4.002 | 1.888        | 14.8         | 11.7          | 0.900              | 0.900              | 0.045          | 0.0                      | 67                   | 2.088                    |
| 4.003 | 1.005        | 17.8         | 11.7          | 0.900              | 1.034              | 0.045          | 0.0                      | 89                   | 1.071                    |
| 6.000 | 1.514        | 11.9         | 2.1           | 0.900              | 0.900              | 0.008          | 0.0                      | 29                   | 1.142                    |
| 6.001 | 0.769        | 6.0          | 2.8           | 0.950              | 0.888              | 0.011          | 0.0                      | 7                    | 11.864                   |
| 1.005 | 1.281        | 90.6         | 30.0          | 1.298              | 0.718              | 0.114          | 0.0                      | 161                  | 0.775                    |
| 7.000 | 0.769        | 6.0          | 2.7           | 0.450              | 0.504              | 0.010          | 0.0                      | 48                   | 0.739                    |
| 7.001 | 1.095        | 8.6          | 3.0           | 0.504              | 0.683              | 0.011          | 0.0                      | 50                   | 0.753                    |
| 8.000 | 0.769        | 6.0          | 0.5           | 0.450              | 0.683              | 0.002          | 0.0                      | 20                   | 0.456                    |
| 7.002 | 0.769        | 6.0          | 4.4           | 0.733              | 0.866              | 0.017          | 0.0                      | 64                   | 0.831                    |
| 1.006 | 1.281        | 90.6         | 36.1          | 0.718              | 0.590              | 0.138          | 0.0                      | 181                  | 0.809                    |
| 9.000 | 0.769        | 6.0          | 0.0           | 0.900              | 1.029              | 0.000          | 0.0                      | 0                    | 0.000                    |



Node S AT 2 Tank Storage Structure

Invert Level (m) 56.960 | Time to half empty (mins) 148 | Analyse Now through structure x

Inlets  
S AT 2 IN

| Depth<br>(m) | Area<br>(m²) | Depth<br>(m) | Area<br>(m²) |
|--------------|--------------|--------------|--------------|
| 0.000        | 146.3        | 0.800        | 146.3        |

Results for 2 year +10% A 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 | S DIFF 2   | 10          | 62.553    | 0.023     | 3.0          | 0.0236        | 0.0000     | OK     |
| 15 minute summer | S CP 8.01  | 10          | 61.861    | 0.053     | 7.6          | 0.0874        | 0.0000     | OK     |
| 15 minute summer | S RE 9.01  | 11          | 61.716    | 0.016     | 0.5          | 0.0012        | 0.0000     | OK     |
| 15 minute summer | S CP 8.02  | 10          | 61.292    | 0.062     | 9.7          | 0.0732        | 0.0000     | OK     |
| 15 minute summer | S CP 8.03  | 11          | 60.697    | 0.049     | 10.6         | 0.0554        | 0.0000     | OK     |
| 15 minute summer | S CP 8.04  | 11          | 58.774    | 0.076     | 10.6         | 0.0862        | 0.0000     | OK     |
| 15 minute summer | S IC 10.01 | 10          | 61.108    | 0.015     | 1.1          | 0.0041        | 0.0000     | OK     |
| 15 minute summer | S IC 10.02 | 10          | 59.713    | 0.034     | 1.5          | 0.0064        | 0.0000     | OK     |
| 15 minute summer | S DIFF 19  | 12          | 60.136    | 0.018     | 1.3          | 0.1834        | 0.0000     | OK     |
| 15 minute summer | S IC 11.01 | 10          | 60.003    | 0.049     | 5.7          | 0.0529        | 0.0000     | OK     |
| 15 minute summer | S IC 10.03 | 10          | 59.630    | 0.056     | 8.0          | 0.0147        | 0.0000     | OK     |
| 15 minute summer | S IC 10.04 | 11          | 59.152    | 0.074     | 8.0          | 0.0118        | 0.0000     | OK     |
| 15 minute summer | S IC 12.01 | 10          | 59.573    | 0.025     | 1.6          | 0.0086        | 0.0000     | OK     |
| 15 minute summer | S IC 12.02 | 10          | 59.227    | 0.044     | 2.1          | 0.0093        | 0.0000     | OK     |
| 15 minute summer | S CP 8.05  | 11          | 58.656    | 0.107     | 21.1         | 0.1244        | 0.0000     | OK     |
| 15 minute summer | S DIFF 18  | 12          | 59.078    | 0.035     | 2.0          | 0.2981        | 0.0000     | OK     |
| 15 minute summer | S IC 13.01 | 13          | 59.005    | 0.029     | 1.6          | 0.0055        | 0.0000     | OK     |
| 15 minute summer | S RE 14.01 | 10          | 58.692    | 0.017     | 0.4          | 0.0014        | 0.0000     | OK     |
| 15 minute summer | S IC 13.02 | 11          | 58.591    | 0.050     | 2.4          | 0.0126        | 0.0000     | OK     |
| 15 minute summer | CP 8.06    | 11          | 58.572    | 0.114     | 24.8         | 0.1446        | 0.0000     | OK     |
| 15 minute summer | S IC 15.01 | 1           | 58.277    | 0.000     | 0.0          | 0.0000        | 0.0000     | OK     |
| 15 minute winter | S CP 15.02 | 11          | 58.136    | 0.019     | 0.5          | 0.0230        | 0.0000     | OK     |
| 15 minute summer | CP 8.07    | 11          | 57.897    | 0.117     | 26.3         | 0.1445        | 0.0000     | OK     |
| 15 minute summer | S CP 8.08  | 11          | 57.727    | 0.072     | 27.4         | 0.0858        | 0.0000     | OK     |

| Link Event (Outflow) | US Node    | Link  | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|------------|-------|------------|---------------|----------------|----------|---------------|
| 15 minute summer     | S DIFF 2   | 1.000 | S CP 8.01  | 3.0           | 2.206          | 0.111    | 0.0047        |
| 15 minute summer     | S CP 8.01  | 1.001 | S CP 8.02  | 7.5           | 1.365          | 0.255    | 0.0897        |
| 15 minute winter     | S RE 9.01  | 2.000 | S IC 9.02  | 0.5           | 0.574          | 0.053    | 0.0109        |
| 15 minute summer     | S CP 8.02  | 1.002 | S CP 8.03  | 9.6           | 1.640          | 0.315    | 0.1169        |
| 15 minute summer     | S CP 8.03  | 1.003 | S CP 8.04  | 10.6          | 2.163          | 0.221    | 0.1271        |
| 15 minute summer     | S CP 8.04  | 1.004 | S CP 8.05  | 10.7          | 0.703          | 0.252    | 0.3385        |
| 15 minute summer     | S IC 10.01 | 4.000 | S IC 10.02 | 1.1           | 0.844          | 0.051    | 0.0174        |
| 15 minute summer     | S IC 10.02 | 4.001 | S IC 10.03 | 1.5           | 0.428          | 0.242    | 0.0361        |
| 15 minute summer     | S DIFF 19  | 5.000 | S IC 11.01 | 1.0           | 1.176          | 0.060    | 0.0012        |
| 15 minute summer     | S IC 11.01 | 5.001 | S IC 10.03 | 5.7           | 1.562          | 0.424    | 0.0248        |
| 15 minute summer     | S IC 10.03 | 4.002 | S IC 10.04 | 8.0           | 1.831          | 0.537    | 0.0327        |
| 15 minute summer     | S IC 10.04 | 4.003 | S CP 8.05  | 8.0           | 0.948          | 0.448    | 0.0969        |
| 15 minute summer     | S IC 12.01 | 6.000 | S IC 12.02 | 1.6           | 1.032          | 0.133    | 0.0127        |
| 15 minute summer     | S IC 12.02 | 6.001 | S CP 8.05  | 2.1           | 0.658          | 0.342    | 0.0074        |
| 15 minute summer     | S CP 8.05  | 1.005 | CP 8.06    | 21.2          | 0.905          | 0.234    | 0.3215        |
| 15 minute summer     | S DIFF 18  | 7.000 | S IC 13.01 | 1.5           | 0.685          | 0.245    | 0.0144        |
| 15 minute summer     | S IC 13.01 | 7.001 | S IC 13.02 | 1.6           | 0.827          | 0.182    | 0.0363        |
| 15 minute summer     | S RE 14.01 | 8.000 | S IC 13.02 | 0.4           | 0.418          | 0.060    | 0.0072        |
| 15 minute summer     | S IC 13.02 | 7.002 | CP 8.06    | 2.4           | 0.647          | 0.396    | 0.0138        |
| 15 minute summer     | CP 8.06    | 1.006 | CP 8.07    | 24.6          | 1.057          | 0.272    | 0.3681        |
| 15 minute summer     | S IC 15.01 | 9.000 | S CP 15.02 | 0.0           | 0.000          | 0.000    | 0.0086        |
| 15 minute winter     | S CP 15.02 | 9.001 | CP 8.07    | 0.5           | 0.460          | 0.081    | 0.0145        |
| 15 minute summer     | CP 8.07    | 1.007 | S CP 8.08  | 26.2          | 1.383          | 0.289    | 0.3587        |
| 15 minute summer     | S CP 8.08  | 1.008 | S AT 2 IN  | 27.2          | 2.241          | 0.107    | 0.0506        |

Results for 2 year +10% A 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 |
|-------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|--------|
| 120 minute summer | S AT 2 IN | 80          | 57.069    | 0.109     | 17.4         | 0.0000        | 0.0000     | OK     |
| 120 minute summer | S AT 2    | 82          | 57.062    | 0.102     | 19.0         | 15.1382       | 0.0000     | OK     |
| 120 minute summer | S DBS 2   | 80          | 57.098    | 0.225     | 22.8         | 0.4940        | 0.0000     | OK     |
| 15 minute winter  | S IC 9.02 | 11          | 61.412    | 0.018     | 0.7          | 0.0034        | 0.0000     | OK     |
| 15 minute summer  | S IC 9.03 | 11          | 61.353    | 0.038     | 1.6          | 0.0101        | 0.0000     | OK     |
| 15 minute summer  | S DIFF 20 | 11          | 61.206    | 0.023     | 1.0          | 0.0367        | 0.0000     | OK     |

| Link Event (Outflow) | US Node   | Link        | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|-------------|-----------|---------------|----------------|----------|---------------|
| 120 minute summer    | S AT 2    | 10.000      | S DBS 2   | 22.8          | 1.033          | 0.108    | 0.0939        |
| 15 minute summer     | S DBS 2   | Inj ltracon |           | 5.8           |                |          |               |
| 15 minute winter     | S IC 9.02 | 2.001       | S IC 9.03 | 0.7           | 0.400          | 0.071    | 0.0055        |
| 15 minute summer     | S IC 9.03 | 2.002       | S CP 8.02 | 1.6           | 0.614          | 0.270    | 0.0095        |
| 15 minute summer     | S DIFF 20 | 3.000       | S CP 8.03 | 1.0           | 0.765          | 0.103    | 0.0018        |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.90%

| Node Event       | US Node    | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S DIFF 2   | 10          | 62.573    | 0.043     | 10.3         | 0.0537        | 0.0000     | OK         |
| 15 minute summer | S CP 8.01  | 10          | 61.928    | 0.120     | 26.3         | 0.1964        | 0.0000     | OK         |
| 15 minute summer | S RE 9.01  | 10          | 61.730    | 0.030     | 1.9          | 0.0022        | 0.0000     | OK         |
| 15 minute summer | S CP 8.02  | 11          | 61.507    | 0.277     | 31.4         | 0.3284        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 8.03  | 12          | 60.745    | 0.097     | 33.7         | 0.1094        | 0.0000     | OK         |
| 15 minute summer | S CP 8.04  | 12          | 58.862    | 0.164     | 33.6         | 0.1857        | 0.0000     | OK         |
| 15 minute summer | S IC 10.01 | 10          | 61.121    | 0.028     | 3.7          | 0.0075        | 0.0000     | OK         |
| 15 minute summer | S IC 10.02 | 12          | 60.043    | 0.364     | 5.1          | 0.0691        | 0.0000     | SURCHARGED |
| 15 minute summer | S DIFF 19  | 13          | 60.240    | 0.122     | 9.9          | 2.3817        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 11.01 | 12          | 60.235    | 0.281     | 16.8         | 0.3044        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 10.03 | 12          | 59.976    | 0.402     | 17.6         | 0.1049        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 10.04 | 12          | 59.214    | 0.136     | 17.2         | 0.0215        | 0.0000     | OK         |
| 15 minute summer | S IC 12.01 | 10          | 59.595    | 0.047     | 5.4          | 0.0159        | 0.0000     | OK         |
| 15 minute summer | S IC 12.02 | 10          | 59.300    | 0.117     | 7.1          | 0.0247        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 8.05  | 12          | 58.755    | 0.206     | 58.6         | 0.2405        | 0.0000     | OK         |
| 15 minute summer | S DIFF 18  | 12          | 59.111    | 0.068     | 7.0          | 1.1047        | 0.0000     | OK         |
| 15 minute summer | S IC 13.01 | 12          | 59.031    | 0.055     | 5.1          | 0.0104        | 0.0000     | OK         |
| 15 minute summer | S RE 14.01 | 12          | 58.761    | 0.086     | 1.2          | 0.0071        | 0.0000     | OK         |
| 15 minute summer | S IC 13.02 | 12          | 58.758    | 0.217     | 7.9          | 0.0543        | 0.0000     | SURCHARGED |
| 15 minute summer | CP 8.06    | 12          | 58.676    | 0.218     | 70.0         | 0.2773        | 0.0000     | OK         |
| 15 minute summer | S IC 15.01 | 1           | 58.277    | 0.000     | 0.0          | 0.0000        | 0.0000     | OK         |
| 15 minute summer | S CP 15.02 | 11          | 58.155    | 0.038     | 1.8          | 0.0444        | 0.0000     | OK         |
| 15 minute summer | CP 8.07    | 11          | 57.996    | 0.216     | 75.4         | 0.2667        | 0.0000     | OK         |
| 15 minute summer | S CP 8.08  | 11          | 57.786    | 0.131     | 79.2         | 0.1570        | 0.0000     | OK         |

| Link Event (Outflow) | US Node    | Link  | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|------------|-------|------------|---------------|----------------|----------|---------------|
| 15 minute summer     | S DIFF 2   | 1.000 | S CP 8.01  | 10.3          | 2.644          | 0.383    | 0.0158        |
| 15 minute summer     | S CP 8.01  | 1.001 | S CP 8.02  | 25.9          | 1.793          | 0.878    | 0.2590        |
| 15 minute summer     | S RE 9.01  | 2.000 | S IC 9.02  | 1.9           | 0.820          | 0.199    | 0.0612        |
| 15 minute summer     | S CP 8.02  | 1.002 | S CP 8.03  | 30.2          | 1.992          | 0.990    | 0.2942        |
| 15 minute summer     | S CP 8.03  | 1.003 | S CP 8.04  | 33.6          | 2.872          | 0.696    | 0.3021        |
| 15 minute summer     | S CP 8.04  | 1.004 | S CP 8.05  | 33.7          | 0.963          | 0.796    | 0.7712        |
| 15 minute summer     | S IC 10.01 | 4.000 | S IC 10.02 | 3.7           | 0.959          | 0.172    | 0.0549        |
| 15 minute summer     | S IC 10.02 | 4.001 | S IC 10.03 | 4.4           | 0.557          | 0.722    | 0.0825        |
| 15 minute summer     | S DIFF 19  | 5.000 | S IC 11.01 | 8.7           | 1.726          | 0.498    | 0.0110        |
| 30 minute summer     | S IC 11.01 | 5.001 | S IC 10.03 | 12.2          | 1.716          | 0.911    | 0.0535        |
| 15 minute summer     | S IC 10.03 | 4.002 | S IC 10.04 | 17.2          | 2.197          | 1.159    | 0.0589        |
| 15 minute summer     | S IC 10.04 | 4.003 | S CP 8.05  | 17.2          | 1.091          | 0.968    | 0.1843        |
| 15 minute summer     | S IC 12.01 | 6.000 | S IC 12.02 | 5.4           | 1.315          | 0.452    | 0.0381        |
| 15 minute summer     | S IC 12.02 | 6.001 | S CP 8.05  | 7.0           | 0.895          | 1.151    | 0.0175        |
| 15 minute summer     | S CP 8.05  | 1.005 | CP 8.06    | 58.4          | 1.098          | 0.645    | 0.7300        |
| 15 minute summer     | S DIFF 18  | 7.000 | S IC 13.01 | 4.7           | 0.926          | 0.771    | 0.0337        |
| 15 minute summer     | S IC 13.01 | 7.001 | S IC 13.02 | 5.0           | 1.033          | 0.586    | 0.1173        |
| 15 minute summer     | S RE 14.01 | 8.000 | S IC 13.02 | 1.2           | 0.467          | 0.191    | 0.0629        |
| 15 minute summer     | S IC 13.02 | 7.002 | CP 8.06    | 7.9           | 1.010          | 1.308    | 0.0240        |
| 15 minute summer     | CP 8.06    | 1.006 | CP 8.07    | 70.1          | 1.356          | 0.774    | 0.8162        |
| 15 minute summer     | S IC 15.01 | 9.000 | S CP 15.02 | 0.0           | 0.000          | 0.000    | 0.0215        |
| 15 minute summer     | S CP 15.02 | 9.001 | CP 8.07    | 1.7           | 0.657          | 0.288    | 0.0363        |
| 15 minute summer     | CP 8.07    | 1.007 | S CP 8.08  | 75.5          | 1.787          | 0.833    | 0.7854        |
| 15 minute summer     | S CP 8.08  | 1.008 | S AT 2 IN  | 79.0          | 2.926          | 0.311    | 0.1128        |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.90%

| Node Event        | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 120 minute winter | S AT 2 IN | 116         | 57.453    | 0.493     | 36.6         | 0.0000        | 0.0000     | OK         |
| 120 minute winter | S AT 2    | 118         | 57.442    | 0.482     | 26.4         | 70.3486       | 0.0000     | SURCHARGED |
| 120 minute winter | S DBS 2   | 118         | 57.442    | 0.569     | 23.3         | 1.1014        | 0.0000     | OK         |
| 15 minute summer  | S IC 9.02 | 12          | 61.555    | 0.161     | 2.7          | 0.0300        | 0.0000     | SURCHARGED |
| 15 minute summer  | S IC 9.03 | 12          | 61.547    | 0.232     | 5.6          | 0.0620        | 0.0000     | SURCHARGED |
| 15 minute summer  | S DIFF 20 | 11          | 61.229    | 0.046     | 3.5          | 0.1307        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link         | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|--------------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S AT 2    | 10.000       | S DBS 2   | 31.6          | 1.297          | 0.150    | 0.1710        |
| 15 minute summer     | S DBS 2   | Inj Intracon |           | 5.8           |                |          |               |
| 15 minute summer     | S IC 9.02 | 2.001        | S IC 9.03 | 3.5           | 0.489          | 0.360    | 0.0236        |
| 15 minute summer     | S IC 9.03 | 2.002        | S CP 8.02 | 7.4           | 0.946          | 1.250    | 0.0285        |
| 15 minute summer     | S DIFF 20 | 3.000        | S CP 8.03 | 3.4           | 1.050          | 0.352    | 0.0045        |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.96%

| Node Event       | US Node    | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S DIFF 2   | 11          | 62.586    | 0.056     | 13.3         | 0.0784        | 0.0000     | OK         |
| 15 minute summer | S CP 8.01  | 12          | 62.268    | 0.460     | 33.6         | 0.7516        | 0.0000     | SURCHARGED |
| 15 minute summer | S RE 9.01  | 13          | 61.786    | 0.086     | 2.4          | 0.0063        | 0.0000     | OK         |
| 15 minute summer | S CP 8.02  | 12          | 61.741    | 0.511     | 36.3         | 0.6054        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 8.03  | 11          | 60.752    | 0.104     | 38.9         | 0.1177        | 0.0000     | OK         |
| 15 minute summer | S CP 8.04  | 12          | 58.910    | 0.212     | 39.0         | 0.2403        | 0.0000     | OK         |
| 15 minute summer | S IC 10.01 | 10          | 61.125    | 0.032     | 4.8          | 0.0086        | 0.0000     | OK         |
| 15 minute summer | S IC 10.02 | 12          | 60.217    | 0.538     | 6.6          | 0.1022        | 0.0000     | SURCHARGED |
| 30 minute summer | S DIFF 19  | 22          | 60.332    | 0.214     | 14.3         | 4.3191        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 11.01 | 12          | 60.339    | 0.385     | 21.6         | 0.4178        | 0.0000     | FLOOD RISK |
| 15 minute summer | S IC 10.03 | 12          | 60.113    | 0.539     | 19.1         | 0.1407        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 10.04 | 12          | 59.237    | 0.159     | 18.2         | 0.0253        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 12.01 | 10          | 59.603    | 0.055     | 6.9          | 0.0184        | 0.0000     | OK         |
| 15 minute summer | S IC 12.02 | 10          | 59.339    | 0.156     | 9.0          | 0.0328        | 0.0000     | SURCHARGED |
| 15 minute summer | S CP 8.05  | 12          | 58.781    | 0.232     | 66.0         | 0.2704        | 0.0000     | OK         |
| 30 minute summer | S DIFF 18  | 20          | 59.122    | 0.079     | 8.2          | 1.4807        | 0.0000     | OK         |
| 15 minute summer | S IC 13.01 | 12          | 59.043    | 0.067     | 6.1          | 0.0127        | 0.0000     | OK         |
| 15 minute summer | S RE 14.01 | 12          | 58.833    | 0.158     | 1.6          | 0.0131        | 0.0000     | SURCHARGED |
| 15 minute summer | S IC 13.02 | 12          | 58.828    | 0.287     | 9.7          | 0.0717        | 0.0000     | SURCHARGED |
| 15 minute summer | CP 8.06    | 12          | 58.705    | 0.247     | 80.2         | 0.3144        | 0.0000     | OK         |
| 15 minute summer | S IC 15.01 | 1           | 58.277    | 0.000     | 0.0          | 0.0000        | 0.0000     | OK         |
| 15 minute summer | S CP 15.02 | 11          | 58.160    | 0.043     | 2.3          | 0.0512        | 0.0000     | OK         |
| 15 minute summer | CP 8.07    | 12          | 58.020    | 0.240     | 87.0         | 0.2959        | 0.0000     | OK         |
| 15 minute summer | S CP 8.08  | 12          | 57.799    | 0.144     | 91.7         | 0.1720        | 0.0000     | OK         |

| Link Event (Outflow) | US Node    | Link  | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|------------|-------|------------|---------------|----------------|----------|---------------|
| 15 minute summer     | S DIFF 2   | 1.000 | S CP 8.01  | 13.0          | 2.674          | 0.486    | 0.0215        |
| 15 minute summer     | S CP 8.01  | 1.001 | S CP 8.02  | 29.7          | 1.757          | 1.007    | 0.2873        |
| 15 minute summer     | S RE 9.01  | 2.000 | S IC 9.02  | 2.4           | 0.834          | 0.252    | 0.0938        |
| 15 minute summer     | S CP 8.02  | 1.002 | S CP 8.03  | 34.8          | 2.101          | 1.140    | 0.3045        |
| 15 minute summer     | S CP 8.03  | 1.003 | S CP 8.04  | 39.0          | 2.894          | 0.809    | 0.3842        |
| 15 minute summer     | S CP 8.04  | 1.004 | S CP 8.05  | 39.2          | 1.004          | 0.926    | 0.8761        |
| 15 minute summer     | S IC 10.01 | 4.000 | S IC 10.02 | 4.8           | 0.907          | 0.222    | 0.0570        |
| 15 minute summer     | S IC 10.02 | 4.001 | S IC 10.03 | 5.4           | 0.692          | 0.897    | 0.0825        |
| 15 minute winter     | S DIFF 19  | 5.000 | S IC 11.01 | 11.5          | 1.801          | 0.661    | 0.0110        |
| 15 minute summer     | S IC 11.01 | 5.001 | S IC 10.03 | 12.7          | 1.765          | 0.948    | 0.0535        |
| 15 minute summer     | S IC 10.03 | 4.002 | S IC 10.04 | 18.2          | 2.330          | 1.229    | 0.0589        |
| 15 minute summer     | S IC 10.04 | 4.003 | S CP 8.05  | 18.2          | 1.091          | 1.027    | 0.1914        |
| 15 minute summer     | S IC 12.01 | 6.000 | S IC 12.02 | 6.9           | 1.349          | 0.578    | 0.0504        |
| 15 minute summer     | S IC 12.02 | 6.001 | S CP 8.05  | 8.8           | 1.124          | 1.457    | 0.0181        |
| 15 minute summer     | S CP 8.05  | 1.005 | CP 8.06    | 66.1          | 1.104          | 0.730    | 0.8263        |
| 15 minute summer     | S DIFF 18  | 7.000 | S IC 13.01 | 5.7           | 0.964          | 0.939    | 0.0409        |
| 30 minute summer     | S IC 13.01 | 7.001 | S IC 13.02 | 6.2           | 1.053          | 0.715    | 0.1279        |
| 15 minute summer     | S RE 14.01 | 8.000 | S IC 13.02 | 1.3           | 0.505          | 0.221    | 0.0657        |
| 15 minute summer     | S IC 13.02 | 7.002 | CP 8.06    | 9.6           | 1.232          | 1.597    | 0.0240        |
| 15 minute summer     | CP 8.06    | 1.006 | CP 8.07    | 80.4          | 1.378          | 0.888    | 0.9197        |
| 15 minute summer     | S IC 15.01 | 9.000 | S CP 15.02 | 0.0           | 0.000          | 0.000    | 0.0260        |
| 15 minute summer     | S CP 15.02 | 9.001 | CP 8.07    | 2.2           | 0.702          | 0.370    | 0.0438        |
| 15 minute summer     | CP 8.07    | 1.007 | S CP 8.08  | 87.2          | 1.834          | 0.963    | 0.8766        |
| 15 minute summer     | S CP 8.08  | 1.008 | S AT 2 IN  | 91.8          | 3.028          | 0.361    | 0.1265        |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.96%

| Node Event        | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 120 minute winter | S AT 2 IN | 114         | 57.637    | 0.677     | 46.8         | 0.0000        | 0.0000     | OK         |
| 120 minute winter | S AT 2    | 112         | 57.623    | 0.663     | 29.3         | 96.7029       | 0.0000     | SURCHARGED |
| 120 minute winter | S DBS 2   | 112         | 57.623    | 0.750     | 26.9         | 1.4213        | 0.9698     | FLOOD      |
| 15 minute summer  | S IC 9.02 | 12          | 61.775    | 0.381     | 3.4          | 0.0710        | 0.0000     | SURCHARGED |
| 15 minute summer  | S IC 9.03 | 12          | 61.771    | 0.456     | 5.8          | 0.1218        | 0.0000     | SURCHARGED |
| 15 minute summer  | S DIFF 20 | 11          | 61.237    | 0.054     | 4.6          | 0.1771        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link         | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|--------------|-----------|---------------|----------------|----------|---------------|
| 15 minute summer     | S AT 2    | 10.000       | S DBS 2   | 32.6          | 1.251          | 0.155    | 0.1715        |
| 15 minute summer     | S DBS 2   | Inj Intracon |           | 5.8           |                |          |               |
| 15 minute summer     | S IC 9.02 | 2.001        | S IC 9.03 | 4.5           | 0.569          | 0.453    | 0.0236        |
| 15 minute summer     | S IC 9.03 | 2.002        | S CP 8.02 | 8.3           | 1.055          | 1.394    | 0.0285        |
| 15 minute summer     | S DIFF 20 | 3.000        | S CP 8.03 | 4.4           | 1.118          | 0.457    | 0.0054        |

Design Settings

|                       |        |                                      |       |                             |               |                                      |
|-----------------------|--------|--------------------------------------|-------|-----------------------------|---------------|--------------------------------------|
| Rainfall Methodology  | FEH-22 | Time of Entry (mins)                 | 5.00  | Connection Type             | Level Inverts | Enforce best practice design rules ✓ |
| Return Period (years) | 100    | Maximum Time of Concentration (mins) | 30.00 | Minimum Backdrop Height (m) | 0.000         |                                      |
| Additional Flow (%)   | 45     | Maximum Rainfall (mm/hr)             | 50.0  | Preferred Cover Depth (m)   | 0.450         |                                      |
| CV                    | 0.100  | Minimum Velocity (m/s)               | 0.75  | Include Intermediate Ground | ✓             |                                      |

Nodes

| Name         | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easong (m) | Northing (m) | Depth (m) | Invert Level (m) |
|--------------|-----------|---------------|-----------------|---------------|------------|--------------|-----------|------------------|
| S IC 16.01   | 0.007     | 5.00          | 64.120          | 450           | 620911.862 | 149957.668   | 0.550     | 63.570           |
| S IC 16.02   | 0.003     | 5.00          | 63.296          | 450           | 620902.832 | 149957.668   | 1.000     | 62.296           |
| S IC 16.03   | 0.004     | 5.00          | 63.068          | 450           | 620898.207 | 149961.674   | 0.883     | 62.185           |
| S IC 16.04   | 0.004     | 5.00          | 63.064          | 450           | 620890.607 | 149961.462   | 1.002     | 62.062           |
| S IC 16.05   | 0.006     | 5.00          | 63.219          | 450           | 620884.082 | 149952.227   | 1.320     | 61.899           |
| S IC 17.01   | 0.003     | 5.00          | 61.734          | 450           | 620873.265 | 149950.316   | 0.550     | 61.184           |
| S IC 17.02   |           |               | 61.689          | 450           | 620880.678 | 149950.830   | 0.583     | 61.106           |
| S IC 16.06   | 0.007     | 5.00          | 62.098          | 450           | 620882.131 | 149934.845   | 1.203     | 60.895           |
| S IC 18.01   | 0.002     | 5.00          | 62.125          | 450           | 620870.254 | 149913.995   | 1.550     | 60.575           |
| S IC 16.07   | 0.011     | 5.00          | 61.110          | 450           | 620868.472 | 149933.604   | 0.782     | 60.328           |
| S DIFF 16+17 | 0.004     | 5.00          | 60.305          |               | 620852.330 | 149960.135   | 0.750     | 59.555           |
| S IC 19.01   |           |               | 60.348          | 450           | 620854.550 | 149960.336   | 0.850     | 59.498           |
| S DIFF 22a   | 0.006     | 5.00          | 60.576          |               | 620859.928 | 149957.847   | 0.550     | 60.026           |
| S IC 19.02   |           |               | 60.356          | 450           | 620854.818 | 149957.384   | 0.950     | 59.406           |
| S DIFF 14+15 | 0.004     | 5.00          | 61.324          |               | 620853.315 | 149949.294   | 0.750     | 60.574           |
| S CP 19.03   | 0.002     | 5.00          | 60.371          | 1200          | 620855.534 | 149949.496   | 1.041     | 59.330           |
| S DIFF 22b   | 0.002     | 5.00          | 60.540          |               | 620861.200 | 149938.910   | 0.550     | 59.990           |
| S CP 19.04   | 0.029     | 5.00          | 60.387          | 1200          | 620856.534 | 149938.487   | 1.163     | 59.224           |
| S CP 20.01   | 0.019     | 5.00          | 60.810          | 1200          | 620858.208 | 149915.608   | 0.568     | 60.242           |
| S CP 16.08   |           |               | 60.451          | 1200          | 620857.020 | 149932.552   | 1.284     | 59.167           |
| S CP 16.09   |           |               | 59.422          | 1200          | 620832.136 | 149929.120   | 1.000     | 58.422           |
| S RE 22.01   | 0.002     | 5.00          | 58.297          | 100           | 620826.483 | 149889.424   | 0.550     | 57.747           |
| S IC 22.02   | 0.001     | 5.00          | 58.287          | 450           | 620825.641 | 149897.926   | 0.675     | 57.612           |
| S IC 22.03   | 0.002     | 5.00          | 58.268          | 450           | 620834.365 | 149899.171   | 0.794     | 57.474           |
| S IC 22.04   | 0.001     | 5.00          | 58.298          | 450           | 620834.844 | 149906.166   | 0.944     | 57.354           |
| S IC 21.01   | 0.003     | 5.00          | 60.299          | 450           | 620849.418 | 149919.803   | 0.550     | 59.749           |
| S IC 21.02   | 0.003     | 5.00          | 60.074          | 450           | 620844.040 | 149919.314   | 0.625     | 59.449           |
| S IC 21.03   | 0.003     | 5.00          | 59.849          | 450           | 620838.662 | 149918.825   | 0.700     | 59.149           |
| S IC 21.04   | 0.003     | 5.00          | 59.624          | 450           | 620833.285 | 149918.336   | 1.361     | 58.263           |
| S CP 21.05   | 0.002     | 5.00          | 58.689          | 1200          | 620829.584 | 149918.000   | 1.509     | 57.180           |
| S DIFF CP 3  | 0.004     | 5.00          | 58.554          |               | 620817.426 | 149921.861   | 0.550     | 58.004           |
| S CP 16.10   |           |               | 58.558          | 1200          | 620822.676 | 149917.372   | 1.445     | 57.113           |
| S DIFF 13    | 0.006     | 5.00          | 57.930          |               | 620816.266 | 149903.379   | 0.550     | 57.380           |
| S CP 16.11   | 0.024     | 5.00          | 57.835          | 1200          | 620814.522 | 149902.973   | 1.725     | 56.110           |
| S AT 3 IN    |           |               | 57.354          |               | 620808.720 | 149902.096   | 3.429     | 53.925           |
| S AT 3       |           | 5.00          | 55.875          |               | 620793.762 | 149902.030   | 1.950     | 53.925           |
| S DBS 3      |           |               | 55.667          |               | 620791.686 | 149901.717   | 1.751     | 53.916           |
| S DIFF 21    | 0.006     | 5.00          | 63.019          |               | 620898.229 | 149962.395   | 0.750     | 62.269           |
| S DIFF CP 1  | 0.022     | 5.00          | 60.810          |               | 620858.377 | 149913.830   | 0.550     | 60.260           |

| Links  |              |            |            |             |              |              |             |                |                |                    |              |
|--------|--------------|------------|------------|-------------|--------------|--------------|-------------|----------------|----------------|--------------------|--------------|
| Name   | US Node      | DS Node    | Length (m) | ks (mm) / n | US IL (m)    | DS IL (m)    | Fall (m)    | Slope (1:X)    | Dia (mm)       | T of C (mins)      | Rain (mm/hr) |
| 1.000  | S IC 16.01   | S IC 16.02 | 9.030      | 0.600       | 63.570       | 62.296       | 1.274       | 7.1            | 100            | 5.05               | 50.0         |
| 1.001  | S IC 16.02   | S IC 16.03 | 6.119      | 0.600       | 62.296       | 62.235       | 0.061       | 100.0          | 100            | 5.18               | 50.0         |
| 1.002  | S IC 16.03   | S IC 16.04 | 7.603      | 0.600       | 62.185       | 62.112       | 0.073       | 104.2          | 100            | 5.35               | 50.0         |
| 1.003  | S IC 16.04   | S IC 16.05 | 11.308     | 0.600       | 62.062       | 61.949       | 0.113       | 100.0          | 100            | 5.60               | 50.0         |
| 1.004  | S IC 16.05   | S IC 16.06 | 17.491     | 0.600       | 61.899       | 60.945       | 0.954       | 18.3           | 100            | 5.76               | 50.0         |
| 3.000  | S IC 17.01   | S IC 17.02 | 7.431      | 0.600       | 61.184       | 61.113       | 0.071       | 104.7          | 100            | 5.16               | 50.0         |
| 3.001  | S IC 17.02   | S IC 16.06 | 16.051     | 0.600       | 61.106       | 60.945       | 0.161       | 100.0          | 100            | 5.51               | 50.0         |
| 1.005  | S IC 16.06   | S IC 16.07 | 13.715     | 0.600       | 60.895       | 60.328       | 0.567       | 24.2           | 150            | 5.87               | 50.0         |
| 4.000  | S IC 18.01   | S IC 16.07 | 19.690     | 0.600       | 60.575       | 60.378       | 0.197       | 100.0          | 100            | 5.43               | 50.0         |
| 1.006  | S IC 16.07   | S CP 16.08 | 11.500     | 0.600       | 60.328       | 59.451       | 0.877       | 13.1           | 150            | 5.94               | 50.0         |
| 5.000  | S DIFF 16+17 | S IC 19.01 | 2.229      | 0.600       | 59.555       | 59.498       | 0.057       | 39.1           | 100            | 5.03               | 50.0         |
| 5.001  | S IC 19.01   | S IC 19.02 | 2.964      | 0.600       | 59.498       | 59.469       | 0.029       | 102.2          | 100            | 5.10               | 50.0         |
| 6.000  | S DIFF 22a   | S IC 19.02 | 5.131      | 0.600       | 60.026       | 59.406       | 0.620       | 8.3            | 100            | 5.03               | 50.0         |
| 5.002  | S IC 19.02   | S CP 19.03 | 7.920      | 0.600       | 59.406       | 59.330       | 0.076       | 104.2          | 100            | 5.27               | 50.0         |
| 7.000  | S DIFF 14+15 | S CP 19.03 | 2.228      | 0.600       | 60.574       | 59.521       | 1.053       | 2.1            | 100            | 5.01               | 50.0         |
| 5.003  | S CP 19.03   | S CP 19.04 | 11.054     | 0.600       | 59.330       | 59.224       | 0.106       | 104.3          | 100            | 5.52               | 50.0         |
| 8.000  | S DIFF 22b   | S CP 19.04 | 4.685      | 0.600       | 59.990       | 59.537       | 0.453       | 10.3           | 100            | 5.03               | 50.0         |
| 5.004  | S CP 19.04   | S CP 16.08 | 5.955      | 0.600       | 59.224       | 59.167       | 0.057       | 104.5          | 150            | 5.62               | 50.0         |
| 9.001  | S CP 20.01   | S CP 16.08 | 16.986     | 0.600       | 60.242       | 59.901       | 0.341       | 49.8           | 100            | 5.30               | 50.0         |
| 1.007  | S CP 16.08   | S CP 16.09 | 25.120     | 0.600       | 59.167       | 58.422       | 0.745       | 33.7           | 150            | 6.18               | 50.0         |
| 1.008  | S CP 16.09   | S CP 16.10 | 15.083     | 0.600       | 58.422       | 57.558       | 0.864       | 17.5           | 150            | 6.28               | 50.0         |
| 10.000 | S RE 22.01   | S IC 22.02 | 8.544      | 0.600       | 57.747       | 57.662       | 0.085       | 100.0          | 100            | 5.19               | 50.0         |
| 10.001 | S IC 22.02   | S IC 22.03 | 8.812      | 0.600       | 57.612       | 57.524       | 0.088       | 100.0          | 100            | 5.38               | 50.0         |
| 10.002 | S IC 22.03   | S IC 22.04 | 7.011      | 0.600       | 57.474       | 57.404       | 0.070       | 100.0          | 100            | 5.53               | 50.0         |
|        |              |            |            |             |              |              |             |                |                |                    |              |
|        | Name         | Vel (m/s)  | Cap (l/s)  | Flow (l/s)  | US Depth (m) | DS Depth (m) | Σ Area (ha) | Σ Inflow (l/s) | Pro Depth (mm) | Pro Velocity (m/s) |              |
|        | 1.000        | 2.922      | 22.9       | 0.2         | 0.450        | 0.900        | 0.007       | 0.0            | 7              | 0.869              |              |
|        | 1.001        | 0.769      | 6.0        | 0.3         | 0.900        | 0.733        | 0.010       | 0.0            | 14             | 0.381              |              |
|        | 1.002        | 0.753      | 5.9        | 0.5         | 0.783        | 0.852        | 0.020       | 0.0            | 21             | 0.469              |              |
|        | 1.003        | 0.769      | 6.0        | 0.6         | 0.902        | 1.170        | 0.024       | 0.0            | 22             | 0.500              |              |
|        | 1.004        | 1.812      | 14.2       | 0.8         | 1.220        | 1.053        | 0.030       | 0.0            | 16             | 0.967              |              |
|        | 3.000        | 0.751      | 5.9        | 0.1         | 0.450        | 0.476        | 0.003       | 0.0            | 9              | 0.270              |              |
|        | 3.001        | 0.769      | 6.0        | 0.1         | 0.483        | 1.053        | 0.003       | 0.0            | 9              | 0.276              |              |
|        | 1.005        | 2.056      | 36.3       | 1.1         | 1.053        | 0.632        | 0.041       | 0.0            | 18             | 0.920              |              |
|        | 4.000        | 0.769      | 6.0        | 0.1         | 1.450        | 0.632        | 0.002       | 0.0            | 7              | 0.223              |              |
|        | 1.006        | 2.797      | 49.4       | 1.4         | 0.632        | 0.850        | 0.054       | 0.0            | 17             | 1.227              |              |
|        | 5.000        | 1.237      | 9.7        | 0.1         | 0.650        | 0.750        | 0.004       | 0.0            | 7              | 0.393              |              |
|        | 5.001        | 0.760      | 6.0        | 0.1         | 0.750        | 0.787        | 0.004       | 0.0            | 9              | 0.273              |              |
|        | 6.000        | 2.703      | 21.2       | 0.1         | 0.450        | 0.850        | 0.006       | 0.0            | 6              | 0.735              |              |
|        | 5.002        | 0.753      | 5.9        | 0.2         | 0.850        | 0.941        | 0.009       | 0.0            | 14             | 0.360              |              |
|        | 7.000        | 5.359      | 42.1       | 0.1         | 0.650        | 0.750        | 0.004       | 0.0            | 4              | 1.013              |              |
|        | 5.003        | 0.752      | 5.9        | 0.4         | 0.941        | 1.063        | 0.015       | 0.0            | 18             | 0.423              |              |
|        | 8.000        | 2.417      | 19.0       | 0.0         | 0.450        | 0.750        | 0.002       | 0.0            | 4              | 0.451              |              |
|        | 5.004        | 0.983      | 17.4       | 1.2         | 1.013        | 1.134        | 0.045       | 0.0            | 27             | 0.563              |              |
|        | 9.001        | 1.094      | 8.6        | 1.1         | 0.468        | 0.450        | 0.042       | 0.0            | 24             | 0.743              |              |
|        | 1.007        | 1.739      | 30.7       | 3.7         | 1.134        | 0.850        | 0.141       | 0.0            | 35             | 1.174              |              |
|        | 1.008        | 2.422      | 42.8       | 3.7         | 0.850        | 0.850        | 0.141       | 0.0            | 30             | 1.485              |              |
|        | 10.000       | 0.769      | 6.0        | 0.1         | 0.450        | 0.525        | 0.002       | 0.0            | 7              | 0.242              |              |
|        | 10.001       | 0.769      | 6.0        | 0.1         | 0.575        | 0.644        | 0.004       | 0.0            | 9              | 0.276              |              |
|        | 10.002       | 0.769      | 6.0        | 0.1         | 0.694        | 0.794        | 0.005       | 0.0            | 11             | 0.309              |              |

| Name   | US Node     | DS Node    | Length (m) | ks (mm) / n | US IL (m) | DS IL (m) | Fall (m) | Slope (1:X) | Dia (mm) | T of C (mins) | Rain (mm/hr) |
|--------|-------------|------------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 10.003 | S IC 22.04  | S CP 21.05 | 12.950     | 0.600       | 57.354    | 57.230    | 0.124    | 104.4       | 100      | 5.82          | 50.0         |
| 11.000 | S IC 21.01  | S IC 21.02 | 5.400      | 0.600       | 59.749    | 59.449    | 0.300    | 18.0        | 100      | 5.05          | 50.0         |
| 11.001 | S IC 21.02  | S IC 21.03 | 5.400      | 0.600       | 59.449    | 59.149    | 0.300    | 18.0        | 100      | 5.10          | 50.0         |
| 11.002 | S IC 21.03  | S IC 21.04 | 5.399      | 0.600       | 59.149    | 58.263    | 0.886    | 6.1         | 100      | 5.13          | 50.0         |
| 11.003 | S IC 21.04  | S CP 21.05 | 3.716      | 0.600       | 58.263    | 58.139    | 0.124    | 30.0        | 100      | 5.17          | 50.0         |
| 10.004 | S CP 21.05  | S CP 16.10 | 6.936      | 0.600       | 57.180    | 57.113    | 0.067    | 103.5       | 100      | 5.97          | 50.0         |
| 12.000 | S DIFF CP 3 | S CP 16.10 | 6.908      | 0.600       | 58.004    | 57.938    | 0.066    | 104.7       | 100      | 5.15          | 50.0         |
| 1.009  | S CP 16.10  | S CP 16.11 | 16.547     | 0.600       | 57.113    | 56.835    | 0.278    | 59.5        | 225      | 6.45          | 50.0         |
| 13.000 | S DIFF 13   | S CP 16.11 | 1.791      | 0.600       | 57.380    | 57.285    | 0.095    | 18.8        | 100      | 5.02          | 50.0         |
| 14.000 | S AT 3      | S DBS 3    | 2.099      | 0.600       | 53.925    | 53.916    | 0.009    | 225.0       | 100      | 5.07          | 50.0         |
| 2.000  | S DIFF 21   | S IC 16.03 | 1.000      | 0.600       | 62.269    | 62.235    | 0.034    | 29.4        | 100      | 5.01          | 50.0         |
| 9.000  | S DIFF CP 1 | S CP 20.01 | 1.786      | 0.600       | 60.260    | 60.242    | 0.018    | 99.2        | 100      | 5.04          | 50.0         |
| 1.010  | S CP 16.11  | S AT 3 IN  | 5.868      | 0.600       | 56.110    | 54.900    | 1.210    | 4.8         | 225      | 6.46          | 50.0         |

|                            |          |               |      |                           |        |              |       |                    |        |                 |       |
|----------------------------|----------|---------------|------|---------------------------|--------|--------------|-------|--------------------|--------|-----------------|-------|
| Base Inf Coek cient (m/hr) | 20.05200 | Safety Factor | 2.0  | Invert Level (m)          | 53.500 | Diameter (m) | 1.500 | Borehole Diameter  | 0.110  | Inf Depth (m)   | 6.000 |
| Side Inf Coek cient (m/hr) | 20.05200 | Porosity      | 1.00 | Time to half empty (mins) | 5      | Depth (m)    |       | Borehole Depth (m) | 10.000 | Number Required | 1     |

Node S DIFF 22b Carpark Storage Structure

|                      |         |               |      |                           |        |            |       |             |      |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|-------|-------------|------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 59.990 | Width (m)  | 3.375 | Slope (1:X) | 22.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 4      | Length (m) | 5.450 | Depth (m)   |      |               |

Node S DIFF 22a Carpark Storage Structure

|                      |         |               |      |                           |        |            |        |             |      |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 60.026 | Width (m)  | 11.000 | Slope (1:X) | 23.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 0      | Length (m) | 5.050  | Depth (m)   |      |               |

Node S DIFF 16+17 Carpark Storage Structure

|                      |         |               |      |                           |        |            |       |             |       |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|-------|-------------|-------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 59.555 | Width (m)  | 6.000 | Slope (1:X) | 100.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 12     | Length (m) | 6.100 | Depth (m)   |       |               |

Node S DIFF 14+15 Carpark Storage Structure

|                      |         |               |      |                           |        |            |       |             |       |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|-------|-------------|-------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 60.574 | Width (m)  | 6.000 | Slope (1:X) | 100.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) | 0      | Length (m) | 6.100 | Depth (m)   |       |               |

Node S DIFF 21 Carpark Storage Structure

|                      |         |               |      |                           |        |            |        |             |       |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|-------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 62.269 | Width (m)  | 10.000 | Slope (1:X) | 100.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 0.33 | Time to half empty (mins) | 0      | Length (m) | 6.000  | Depth (m)   |       |               |

Node S DIFF CP 1 Carpark Storage Structure

|                      |         |               |      |                           |        |            |        |             |      |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 60.260 | Width (m)  | 9.300  | Slope (1:X) | 21.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) | 15     | Length (m) | 24.000 | Depth (m)   |      |               |

Node S DIFF 13 Carpark Storage Structure

|                      |         |               |      |                           |        |            |        |             |      |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|--------|-------------|------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 57.380 | Width (m)  | 10.200 | Slope (1:X) | 25.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) | 0      | Length (m) | 6.000  | Depth (m)   |      |               |

Node S DIFF CP 3 Carpark Storage Structure

|                      |         |               |      |                           |        |            |       |             |      |               |
|----------------------|---------|---------------|------|---------------------------|--------|------------|-------|-------------|------|---------------|
| Base Inf Coef (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 58.004 | Width (m)  | 2.313 | Slope (1:X) | 19.0 | Inf Depth (m) |
| Side Inf Coef (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) | 0      | Length (m) | 8.000 | Depth (m)   |      |               |

Node S AT 3 Tank Storage Structure

Invert Level (m) 53.925 | Time to half empty (mins) 176 | Analyse flow through structure x

Inlets  
S AT 3 IN

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| Depth (m) | Area (m²) | Depth (m) | Area (m²) |
| 0.000     | 98.0      | 1.200     | 98.0      |

Results for 2 year +10% A 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 | S IC 16.01   | 10          | 63.586    | 0.016     | 1.3          | 0.0072        | 0.0000     | OK     |
| 15 minute winter | S IC 16.02   | 10          | 62.335    | 0.039     | 1.8          | 0.0086        | 0.0000     | OK     |
| 15 minute winter | S IC 16.03   | 11          | 62.243    | 0.058     | 3.5          | 0.0154        | 0.0000     | OK     |
| 15 minute winter | S IC 16.04   | 11          | 62.126    | 0.064     | 4.2          | 0.0161        | 0.0000     | OK     |
| 15 minute winter | S IC 16.05   | 11          | 61.942    | 0.043     | 5.2          | 0.0111        | 0.0000     | OK     |
| 15 minute winter | S IC 17.01   | 11          | 61.206    | 0.022     | 0.6          | 0.0065        | 0.0000     | OK     |
| 15 minute winter | S IC 17.02   | 11          | 61.127    | 0.021     | 0.6          | 0.0034        | 0.0000     | OK     |
| 15 minute winter | S IC 16.06   | 11          | 60.942    | 0.047     | 7.1          | 0.0138        | 0.0000     | OK     |
| 15 minute winter | S IC 18.01   | 10          | 60.591    | 0.016     | 0.4          | 0.0031        | 0.0000     | OK     |
| 15 minute winter | S IC 16.07   | 11          | 60.374    | 0.046     | 9.4          | 0.0217        | 0.0000     | OK     |
| 15 minute winter | S DIFF 16+17 | 11          | 59.572    | 0.017     | 0.7          | 0.0333        | 0.0000     | OK     |
| 15 minute winter | S IC 19.01   | 11          | 59.521    | 0.023     | 0.6          | 0.0037        | 0.0000     | OK     |
| 15 minute winter | S DIFF 22a   | 10          | 60.041    | 0.015     | 1.0          | 0.0137        | 0.0000     | OK     |
| 15 minute winter | S IC 19.02   | 11          | 59.442    | 0.036     | 1.6          | 0.0057        | 0.0000     | OK     |
| 15 minute winter | S DIFF 14+15 | 11          | 60.583    | 0.009     | 0.7          | 0.0254        | 0.0000     | OK     |
| 15 minute winter | S CP 19.03   | 11          | 59.376    | 0.046     | 2.5          | 0.0531        | 0.0000     | OK     |
| 15 minute winter | S DIFF 22b   | 11          | 59.999    | 0.009     | 0.3          | 0.0025        | 0.0000     | OK     |
| 15 minute winter | S CP 19.04   | 11          | 59.305    | 0.081     | 7.8          | 0.1351        | 0.0000     | OK     |
| 15 minute winter | S CP 20.01   | 11          | 60.310    | 0.068     | 6.5          | 0.1272        | 0.0000     | OK     |
| 15 minute winter | S CP 16.08   | 11          | 59.274    | 0.107     | 23.7         | 0.1213        | 0.0000     | OK     |
| 15 minute winter | S CP 16.09   | 11          | 58.507    | 0.085     | 23.7         | 0.0962        | 0.0000     | OK     |
| 15 minute winter | S RE 22.01   | 11          | 57.765    | 0.018     | 0.4          | 0.0019        | 0.0000     | OK     |
| 15 minute winter | S IC 22.02   | 11          | 57.634    | 0.022     | 0.6          | 0.0042        | 0.0000     | OK     |
| 15 minute winter | S IC 22.03   | 11          | 57.501    | 0.027     | 0.9          | 0.0054        | 0.0000     | OK     |
| 15 minute winter | S IC 22.04   | 11          | 57.384    | 0.030     | 1.1          | 0.0057        | 0.0000     | OK     |

| Link Event (Outflow) | US Node      | Link   | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|--------------|--------|------------|---------------|----------------|----------|---------------|
| 15 minute winter     | S IC 16.01   | 1.000  | S IC 16.02 | 1.3           | 0.736          | 0.056    | 0.0164        |
| 15 minute winter     | S IC 16.02   | 1.001  | S IC 16.03 | 1.8           | 0.647          | 0.292    | 0.0167        |
| 15 minute winter     | S IC 16.03   | 1.002  | S IC 16.04 | 3.4           | 0.758          | 0.582    | 0.0345        |
| 15 minute winter     | S IC 16.04   | 1.003  | S IC 16.05 | 4.2           | 0.811          | 0.694    | 0.0585        |
| 15 minute winter     | S IC 16.05   | 1.004  | S IC 16.06 | 5.2           | 1.646          | 0.368    | 0.0556        |
| 15 minute winter     | S IC 17.01   | 3.000  | S IC 17.02 | 0.6           | 0.478          | 0.102    | 0.0093        |
| 15 minute winter     | S IC 17.02   | 3.001  | S IC 16.06 | 0.6           | 0.490          | 0.099    | 0.0196        |
| 15 minute winter     | S IC 16.06   | 1.005  | S IC 16.07 | 7.2           | 1.543          | 0.197    | 0.0636        |
| 15 minute winter     | S IC 18.01   | 4.000  | S IC 16.07 | 0.3           | 0.417          | 0.057    | 0.0163        |
| 15 minute winter     | S IC 16.07   | 1.006  | S CP 16.08 | 9.4           | 2.100          | 0.191    | 0.0517        |
| 15 minute winter     | S DIFF 16+17 | 5.000  | S IC 19.01 | 0.6           | 0.567          | 0.065    | 0.0025        |
| 15 minute winter     | S IC 19.01   | 5.001  | S IC 19.02 | 0.6           | 0.481          | 0.107    | 0.0039        |
| 15 minute winter     | S DIFF 22a   | 6.000  | S IC 19.02 | 1.0           | 0.832          | 0.046    | 0.0082        |
| 15 minute winter     | S IC 19.02   | 5.002  | S CP 19.03 | 1.6           | 0.529          | 0.267    | 0.0237        |
| 15 minute winter     | S DIFF 14+15 | 7.000  | S CP 19.03 | 0.6           | 1.957          | 0.015    | 0.0007        |
| 15 minute winter     | S CP 19.03   | 5.003  | S CP 19.04 | 2.5           | 0.486          | 0.427    | 0.0565        |
| 15 minute winter     | S DIFF 22b   | 8.000  | S CP 19.04 | 0.3           | 0.886          | 0.016    | 0.0016        |
| 15 minute winter     | S CP 19.04   | 5.004  | S CP 16.08 | 7.8           | 0.678          | 0.448    | 0.0688        |
| 15 minute winter     | S CP 20.01   | 9.001  | S CP 16.08 | 6.5           | 1.174          | 0.751    | 0.0935        |
| 15 minute winter     | S CP 16.08   | 1.007  | S CP 16.09 | 23.7          | 1.989          | 0.772    | 0.2987        |
| 15 minute winter     | S CP 16.09   | 1.008  | S CP 16.10 | 23.6          | 2.389          | 0.553    | 0.1493        |
| 15 minute winter     | S RE 22.01   | 10.000 | S IC 22.02 | 0.4           | 0.432          | 0.066    | 0.0079        |
| 15 minute winter     | S IC 22.02   | 10.001 | S IC 22.03 | 0.6           | 0.487          | 0.099    | 0.0109        |
| 15 minute winter     | S IC 22.03   | 10.002 | S IC 22.04 | 0.9           | 0.543          | 0.149    | 0.0116        |
| 15 minute winter     | S IC 22.04   | 10.003 | S CP 21.05 | 1.1           | 0.570          | 0.186    | 0.0249        |

Results for 2 year +10% A 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     | S IC 21.01  | 10          | 59.762     | 0.013         | 0.5            | 0.0033        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.02  | 10          | 59.467     | 0.018         | 1.0            | 0.0045        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.03  | 10          | 59.165     | 0.016         | 1.4            | 0.0039        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.04  | 10          | 58.293     | 0.030         | 1.9            | 0.0060        | 0.0000        | OK         |
| 15 minute winter     | S CP 21.05  | 11          | 57.236     | 0.056         | 3.3            | 0.0656        | 0.0000        | OK         |
| 15 minute winter     | S DIFF CP 3 | 11          | 58.028     | 0.024         | 0.7            | 0.0183        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.10  | 11          | 57.220     | 0.107         | 27.6           | 0.1208        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 13   | 11          | 57.399     | 0.019         | 1.1            | 0.0535        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.11  | 11          | 56.169     | 0.059         | 32.7           | 0.0856        | 0.0000        | OK         |
| 120 minute winter    | S AT 3 IN   | 86          | 54.107     | 0.182         | 13.4           | 0.0000        | 0.0000        | OK         |
| 120 minute winter    | S AT 3      | 88          | 54.097     | 0.172         | 10.6           | 16.8632       | 0.0000        | SURCHARGED |
| 120 minute winter    | S DBS 3     | 88          | 54.076     | 0.160         | 8.0            | 1.1137        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 21   | 11          | 62.290     | 0.021         | 1.1            | 0.0818        | 0.0000        | OK         |
| 15 minute winter     | S DIFF CP 1 | 12          | 60.323     | 0.063         | 4.1            | 0.4504        | 0.0000        | OK         |
| Link Event (Outflow) | US Node     | Link        | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |            |
| 15 minute winter     | S IC 21.01  | 11.000      | S IC 21.02 | 0.5           | 0.628          | 0.033         | 0.0042        |            |
| 15 minute winter     | S IC 21.02  | 11.001      | S IC 21.03 | 0.9           | 1.051          | 0.066         | 0.0049        |            |
| 15 minute winter     | S IC 21.03  | 11.002      | S IC 21.04 | 1.4           | 1.045          | 0.057         | 0.0075        |            |
| 15 minute winter     | S IC 21.04  | 11.003      | S CP 21.05 | 1.9           | 1.002          | 0.167         | 0.0069        |            |
| 15 minute winter     | S CP 21.05  | 10.004      | S CP 16.10 | 3.3           | 0.489          | 0.551         | 0.0428        |            |
| 15 minute winter     | S DIFF CP 3 | 12.000      | S CP 16.10 | 0.7           | 0.503          | 0.118         | 0.0096        |            |
| 15 minute winter     | S CP 16.10  | 1.009       | S CP 16.11 | 27.5          | 1.552          | 0.407         | 0.2931        |            |
| 15 minute winter     | S DIFF 13   | 13.000      | S CP 16.11 | 1.0           | 1.012          | 0.073         | 0.0018        |            |
| 15 minute winter     | S CP 16.11  | 1.010       | S AT 3 IN  | 32.7          | 4.078          | 0.137         | 0.0470        |            |
| 30 minute winter     | S AT 3      | 14.000      | S DBS 3    | 9.1           | 1.158          | 2.268         | 0.0164        |            |
| 15 minute winter     | S DBS 3     | Inj ltraon  |            | 5.8           |                |               |               |            |
| 15 minute winter     | S DIFF 21   | 2.000       | S IC 16.03 | 1.0           | 0.831          | 0.087         | 0.0012        |            |
| 15 minute winter     | S DIFF CP 1 | 9.000       | S CP 20.01 | 3.4           | 0.668          | 0.561         | 0.0096        |            |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.88%

| Node Event       | US Node      | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|--------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | S IC 16.01   | 10          | 63.600    | 0.030     | 4.5          | 0.0134        | 0.0000     | OK         |
| 15 minute winter | S IC 16.02   | 11          | 62.435    | 0.139     | 6.3          | 0.0309        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.03   | 13          | 62.379    | 0.194     | 8.4          | 0.0516        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.04   | 12          | 62.271    | 0.209     | 8.3          | 0.0524        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.05   | 10          | 61.972    | 0.073     | 11.7         | 0.0187        | 0.0000     | OK         |
| 15 minute winter | S IC 17.01   | 10          | 61.227    | 0.043     | 2.1          | 0.0127        | 0.0000     | OK         |
| 15 minute winter | S IC 17.02   | 10          | 61.147    | 0.041     | 2.1          | 0.0065        | 0.0000     | OK         |
| 15 minute winter | S IC 16.06   | 10          | 60.973    | 0.078     | 18.4         | 0.0232        | 0.0000     | OK         |
| 15 minute winter | S IC 18.01   | 10          | 60.605    | 0.030     | 1.2          | 0.0057        | 0.0000     | OK         |
| 15 minute winter | S IC 16.07   | 11          | 60.428    | 0.100     | 26.5         | 0.0469        | 0.0000     | OK         |
| 30 minute winter | S DIFF 16+17 | 24          | 59.865    | 0.310     | 8.3          | 3.4072        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 19.01   | 15          | 59.868    | 0.370     | 8.9          | 0.0589        | 0.0000     | SURCHARGED |
| 15 minute winter | S DIFF 22a   | 10          | 60.053    | 0.027     | 3.5          | 0.0399        | 0.0000     | OK         |
| 15 minute winter | S IC 19.02   | 13          | 59.923    | 0.517     | 10.0         | 0.0822        | 0.0000     | SURCHARGED |
| 15 minute winter | S DIFF 14+15 | 11          | 60.589    | 0.015     | 2.2          | 0.0701        | 0.0000     | OK         |
| 15 minute winter | S CP 19.03   | 13          | 60.034    | 0.704     | 8.5          | 0.8211        | 0.0000     | SURCHARGED |
| 15 minute winter | S DIFF 22b   | 12          | 60.110    | 0.120     | 3.1          | 0.1951        | 0.0000     | SURCHARGED |
| 15 minute winter | S CP 19.04   | 12          | 60.106    | 0.882     | 19.1         | 1.4793        | 0.0000     | FLOOD RISK |
| 15 minute winter | S CP 20.01   | 13          | 60.478    | 0.236     | 12.0         | 0.4426        | 0.0000     | SURCHARGED |
| 15 minute winter | S CP 16.08   | 12          | 60.080    | 0.913     | 43.3         | 1.0323        | 0.0000     | SURCHARGED |
| 15 minute winter | S CP 16.09   | 13          | 58.565    | 0.143     | 41.3         | 0.1613        | 0.0000     | OK         |
| 15 minute winter | S RE 22.01   | 10          | 57.782    | 0.035     | 1.5          | 0.0037        | 0.0000     | OK         |
| 15 minute winter | S IC 22.02   | 10          | 57.655    | 0.043     | 2.2          | 0.0084        | 0.0000     | OK         |
| 15 minute winter | S IC 22.03   | 12          | 57.581    | 0.107     | 3.1          | 0.0216        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 22.04   | 12          | 57.565    | 0.211     | 3.8          | 0.0401        | 0.0000     | SURCHARGED |

| Link Event (Outflow) | US Node      | Link   | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|--------------|--------|------------|---------------|----------------|----------|---------------|
| 15 minute winter     | S IC 16.01   | 1.000  | S IC 16.02 | 4.5           | 0.988          | 0.195    | 0.0442        |
| 15 minute winter     | S IC 16.02   | 1.001  | S IC 16.03 | 5.8           | 0.748          | 0.962    | 0.0479        |
| 15 minute winter     | S IC 16.03   | 1.002  | S IC 16.04 | 6.9           | 0.881          | 1.165    | 0.0595        |
| 15 minute winter     | S IC 16.04   | 1.003  | S IC 16.05 | 8.2           | 1.046          | 1.354    | 0.0861        |
| 15 minute winter     | S IC 16.05   | 1.004  | S IC 16.06 | 11.6          | 1.962          | 0.817    | 0.1036        |
| 15 minute winter     | S IC 17.01   | 3.000  | S IC 17.02 | 2.1           | 0.668          | 0.352    | 0.0231        |
| 15 minute winter     | S IC 17.02   | 3.001  | S IC 16.06 | 2.1           | 0.690          | 0.340    | 0.0477        |
| 15 minute winter     | S IC 16.06   | 1.005  | S IC 16.07 | 18.3          | 1.918          | 0.505    | 0.1467        |
| 15 minute winter     | S IC 18.01   | 4.000  | S IC 16.07 | 1.2           | 0.580          | 0.200    | 0.0583        |
| 15 minute winter     | S IC 16.07   | 1.006  | S CP 16.08 | 25.6          | 2.432          | 0.518    | 0.1731        |
| 15 minute winter     | S DIFF 16+17 | 5.000  | S IC 19.01 | -8.1          | -1.039         | -0.837   | 0.0174        |
| 15 minute winter     | S IC 19.01   | 5.001  | S IC 19.02 | -8.9          | -1.142         | -1.496   | 0.0232        |
| 15 minute winter     | S DIFF 22a   | 6.000  | S IC 19.02 | 3.5           | 1.070          | 0.163    | 0.0245        |
| 15 minute winter     | S IC 19.02   | 5.002  | S CP 19.03 | 7.1           | 0.911          | 1.206    | 0.0620        |
| 15 minute winter     | S DIFF 14+15 | 7.000  | S CP 19.03 | 2.1           | 2.514          | 0.051    | 0.0095        |
| 15 minute winter     | S CP 19.03   | 5.003  | S CP 19.04 | 8.3           | 1.067          | 1.405    | 0.0865        |
| 15 minute winter     | S DIFF 22b   | 8.000  | S CP 19.04 | 2.8           | 1.213          | 0.150    | 0.0367        |
| 30 minute winter     | S CP 19.04   | 5.004  | S CP 16.08 | 12.4          | 0.801          | 0.716    | 0.1048        |
| 15 minute winter     | S CP 20.01   | 9.001  | S CP 16.08 | 9.6           | 1.227          | 1.117    | 0.1329        |
| 15 minute winter     | S CP 16.08   | 1.007  | S CP 16.09 | 41.3          | 2.345          | 1.343    | 0.4383        |
| 15 minute winter     | S CP 16.09   | 1.008  | S CP 16.10 | 41.0          | 2.587          | 0.957    | 0.2421        |
| 15 minute winter     | S RE 22.01   | 10.000 | S IC 22.02 | 1.5           | 0.622          | 0.245    | 0.0203        |
| 15 minute winter     | S IC 22.02   | 10.001 | S IC 22.03 | 2.1           | 0.686          | 0.354    | 0.0322        |
| 15 minute winter     | S IC 22.03   | 10.002 | S IC 22.04 | 3.0           | 0.720          | 0.498    | 0.0549        |
| 15 minute winter     | S IC 22.04   | 10.003 | S CP 21.05 | 3.7           | 0.576          | 0.634    | 0.1013        |

Results for 30 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.88%

| Node Event           | US Node     | Peak (mins)  | Level (m)  | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status     |
|----------------------|-------------|--------------|------------|---------------|----------------|---------------|---------------|------------|
| 15 minute winter     | S IC 21.01  | 10           | 59.772     | 0.023         | 1.6            | 0.0059        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.02  | 10           | 59.483     | 0.034         | 3.2            | 0.0085        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.03  | 10           | 59.179     | 0.030         | 4.8            | 0.0071        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.04  | 10           | 58.325     | 0.062         | 6.3            | 0.0125        | 0.0000        | OK         |
| 15 minute winter     | S CP 21.05  | 12           | 57.520     | 0.340         | 10.5           | 0.3969        | 0.0000        | SURCHARGED |
| 15 minute winter     | S DIFF CP 3 | 11           | 58.050     | 0.046         | 2.5            | 0.0581        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.10  | 12           | 57.279     | 0.166         | 53.0           | 0.1881        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 13   | 11           | 57.418     | 0.038         | 3.8            | 0.1950        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.11  | 11           | 56.200     | 0.090         | 69.3           | 0.1300        | 0.0000        | OK         |
|                      |             |              |            |               |                |               |               |            |
| 180 minute winter    | S AT 3 IN   | 156          | 54.795     | 0.870         | 31.0           | 0.0000        | 0.0000        | OK         |
| 180 minute winter    | S AT 3      | 156          | 54.782     | 0.857         | 18.7           | 82.4306       | 0.0000        | SURCHARGED |
| 180 minute winter    | S DBS 3     | 156          | 54.761     | 0.845         | 7.7            | 2.3240        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 21   | 14           | 62.380     | 0.111         | 6.1            | 1.6268        | 0.0000        | SURCHARGED |
| 15 minute winter     | S DIFF CP 1 | 14           | 60.486     | 0.226         | 15.8           | 5.2224        | 0.0000        | SURCHARGED |
|                      |             |              |            |               |                |               |               |            |
| Link Event (Outflow) | US Node     | Link         | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |            |
| 15 minute winter     | S IC 21.01  | 11.000       | S IC 21.02 | 1.6           | 0.868          | 0.111         | 0.0100        |            |
| 15 minute winter     | S IC 21.02  | 11.001       | S IC 21.03 | 3.2           | 1.466          | 0.220         | 0.0117        |            |
| 15 minute winter     | S IC 21.03  | 11.002       | S IC 21.04 | 4.7           | 1.362          | 0.192         | 0.0190        |            |
| 15 minute winter     | S IC 21.04  | 11.003       | S CP 21.05 | 6.3           | 1.342          | 0.568         | 0.0174        |            |
| 15 minute winter     | S CP 21.05  | 10.004       | S CP 16.10 | 9.9           | 1.265          | 1.669         | 0.0543        |            |
| 15 minute winter     | S DIFF CP 3 | 12.000       | S CP 16.10 | 2.4           | 0.707          | 0.413         | 0.0238        |            |
| 15 minute winter     | S CP 16.10  | 1.009        | S CP 16.11 | 52.8          | 1.781          | 0.782         | 0.4898        |            |
| 15 minute winter     | S DIFF 13   | 13.000       | S CP 16.11 | 3.6           | 1.408          | 0.257         | 0.0046        |            |
| 15 minute winter     | S CP 16.11  | 1.010        | S AT 3 IN  | 69.3          | 4.947          | 0.291         | 0.0822        |            |
|                      |             |              |            |               |                |               |               |            |
| 15 minute winter     | S AT 3      | 14.000       | S DBS 3    | 13.8          | 1.761          | 3.450         | 0.0164        |            |
| 15 minute winter     | S DBS 3     | Infiltration |            | 5.8           |                |               |               |            |
| 15 minute winter     | S DIFF 21   | 2.000        | S IC 16.03 | 5.5           | 1.229          | 0.487         | 0.0078        |            |
| 15 minute winter     | S DIFF CP 1 | 9.000        | S CP 20.01 | 8.3           | 1.064          | 1.374         | 0.0140        |            |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.86%

| Node Event       | US Node      | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|--------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | S IC 16.01   | 10          | 63.604    | 0.034     | 5.7          | 0.0151        | 0.0000     | OK         |
| 15 minute winter | S IC 16.02   | 11          | 62.525    | 0.229     | 8.0          | 0.0507        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.03   | 14          | 62.437    | 0.252     | 10.7         | 0.0669        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.04   | 12          | 62.319    | 0.257     | 9.0          | 0.0646        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.05   | 11          | 61.980    | 0.081     | 13.2         | 0.0209        | 0.0000     | OK         |
| 15 minute winter | S IC 17.01   | 10          | 61.234    | 0.050     | 2.7          | 0.0148        | 0.0000     | OK         |
| 15 minute winter | S IC 17.02   | 10          | 61.154    | 0.048     | 2.7          | 0.0076        | 0.0000     | OK         |
| 15 minute winter | S IC 16.06   | 11          | 60.988    | 0.093     | 21.7         | 0.0276        | 0.0000     | OK         |
| 15 minute winter | S IC 18.01   | 12          | 60.686    | 0.111     | 1.6          | 0.0207        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 16.07   | 12          | 60.670    | 0.342     | 32.1         | 0.1601        | 0.0000     | SURCHARGED |
| 30 minute winter | S DIFF 16+17 | 26          | 60.058    | 0.503     | 10.8         | 5.7618        | 0.0000     | FLOOD RISK |
| 30 minute winter | S IC 19.01   | 26          | 60.056    | 0.558     | 9.5          | 0.0887        | 0.0000     | FLOOD RISK |
| 30 minute winter | S DIFF 22a   | 24          | 60.076    | 0.050     | 3.5          | 0.1216        | 0.0000     | OK         |
| 30 minute winter | S IC 19.02   | 24          | 60.075    | 0.669     | 10.4         | 0.1064        | 0.0000     | FLOOD RISK |
| 15 minute winter | S DIFF 14+15 | 10          | 60.591    | 0.017     | 2.9          | 0.0901        | 0.0000     | OK         |
| 15 minute winter | S CP 19.03   | 13          | 60.232    | 0.902     | 10.5         | 1.0524        | 0.0000     | FLOOD RISK |
| 15 minute winter | S DIFF 22b   | 13          | 60.324    | 0.334     | 7.3          | 1.3101        | 0.0000     | FLOOD RISK |
| 15 minute winter | S CP 19.04   | 13          | 60.318    | 1.094     | 23.2         | 1.8357        | 0.0000     | FLOOD RISK |
| 15 minute winter | S CP 20.01   | 14          | 60.546    | 0.304     | 15.5         | 0.5705        | 0.0000     | FLOOD RISK |
| 15 minute winter | S CP 16.08   | 12          | 60.301    | 1.134     | 46.5         | 1.2830        | 0.0000     | FLOOD RISK |
| 15 minute winter | S CP 16.09   | 13          | 58.709    | 0.287     | 42.2         | 0.3250        | 0.0000     | SURCHARGED |
| 15 minute winter | S RE 22.01   | 10          | 57.788    | 0.041     | 2.0          | 0.0044        | 0.0000     | OK         |
| 15 minute winter | S IC 22.02   | 12          | 57.726    | 0.114     | 2.9          | 0.0223        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 22.03   | 12          | 57.714    | 0.240     | 4.1          | 0.0484        | 0.0000     | SURCHARGED |
| 15 minute winter | S IC 22.04   | 12          | 57.693    | 0.339     | 3.9          | 0.0645        | 0.0000     | SURCHARGED |

| Link Event (Outflow) | US Node      | Link   | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|--------------|--------|------------|---------------|----------------|----------|---------------|
| 15 minute winter     | S IC 16.01   | 1.000  | S IC 16.02 | 5.7           | 0.942          | 0.248    | 0.0459        |
| 15 minute winter     | S IC 16.02   | 1.001  | S IC 16.03 | 7.3           | 0.938          | 1.216    | 0.0479        |
| 15 minute winter     | S IC 16.03   | 1.002  | S IC 16.04 | 7.3           | 0.936          | 1.238    | 0.0595        |
| 15 minute winter     | S IC 16.04   | 1.003  | S IC 16.05 | 8.8           | 1.128          | 1.462    | 0.0868        |
| 15 minute winter     | S IC 16.05   | 1.004  | S IC 16.06 | 13.2          | 1.988          | 0.925    | 0.1158        |
| 15 minute winter     | S IC 17.01   | 3.000  | S IC 17.02 | 2.7           | 0.712          | 0.454    | 0.0280        |
| 15 minute winter     | S IC 17.02   | 3.001  | S IC 16.06 | 2.6           | 0.736          | 0.439    | 0.0578        |
| 15 minute winter     | S IC 16.06   | 1.005  | S IC 16.07 | 21.7          | 1.924          | 0.597    | 0.1997        |
| 15 minute winter     | S IC 18.01   | 4.000  | S IC 16.07 | 2.2           | 0.580          | 0.367    | 0.1541        |
| 15 minute winter     | S IC 16.07   | 1.006  | S CP 16.08 | 28.5          | 2.501          | 0.578    | 0.2025        |
| 15 minute winter     | S DIFF 16+17 | 5.000  | S IC 19.01 | -9.8          | -1.251         | -1.008   | 0.0174        |
| 15 minute winter     | S IC 19.01   | 5.001  | S IC 19.02 | -10.7         | -1.373         | -1.800   | 0.0232        |
| 15 minute winter     | S DIFF 22a   | 6.000  | S IC 19.02 | 4.4           | 1.162          | 0.209    | 0.0283        |
| 15 minute winter     | S IC 19.02   | 5.002  | S CP 19.03 | -8.0          | -1.028         | -1.360   | 0.0620        |
| 15 minute winter     | S DIFF 14+15 | 7.000  | S CP 19.03 | 2.8           | 2.462          | 0.066    | 0.0097        |
| 30 minute winter     | S CP 19.03   | 5.003  | S CP 19.04 | 9.2           | 1.171          | 1.551    | 0.0865        |
| 15 minute winter     | S DIFF 22b   | 8.000  | S CP 19.04 | 7.8           | 1.169          | 0.412    | 0.0367        |
| 15 minute winter     | S CP 19.04   | 5.004  | S CP 16.08 | 14.2          | 0.808          | 0.819    | 0.1048        |
| 30 minute winter     | S CP 20.01   | 9.001  | S CP 16.08 | 10.0          | 1.283          | 1.168    | 0.1329        |
| 15 minute winter     | S CP 16.08   | 1.007  | S CP 16.09 | 42.2          | 2.400          | 1.375    | 0.4422        |
| 15 minute winter     | S CP 16.09   | 1.008  | S CP 16.10 | 41.0          | 2.574          | 0.957    | 0.2446        |
| 15 minute winter     | S RE 22.01   | 10.000 | S IC 22.02 | 2.0           | 0.672          | 0.328    | 0.0331        |
| 15 minute winter     | S IC 22.02   | 10.001 | S IC 22.03 | 2.9           | 0.713          | 0.475    | 0.0689        |
| 15 minute winter     | S IC 22.03   | 10.002 | S IC 22.04 | 3.5           | 0.725          | 0.572    | 0.0549        |
| 15 minute winter     | S IC 22.04   | 10.003 | S CP 21.05 | 4.8           | 0.618          | 0.819    | 0.1013        |

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.86%

| Node Event           | US Node     | Peak (mins) | Level (m)  | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status     |
|----------------------|-------------|-------------|------------|---------------|----------------|---------------|---------------|------------|
| 15 minute winter     | S IC 21.01  | 10          | 59.775     | 0.026         | 2.1            | 0.0068        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.02  | 10          | 59.489     | 0.040         | 4.1            | 0.0098        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.03  | 10          | 59.183     | 0.034         | 6.1            | 0.0080        | 0.0000        | OK         |
| 15 minute winter     | S IC 21.04  | 10          | 58.338     | 0.075         | 8.2            | 0.0151        | 0.0000        | OK         |
| 15 minute winter     | S CP 21.05  | 12          | 57.640     | 0.460         | 12.5           | 0.5368        | 0.0000        | SURCHARGED |
| 15 minute winter     | S DIFF CP 3 | 10          | 58.057     | 0.053         | 3.2            | 0.0748        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.10  | 12          | 57.286     | 0.173         | 55.3           | 0.1952        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 13   | 11          | 57.424     | 0.044         | 4.9            | 0.2577        | 0.0000        | OK         |
| 15 minute winter     | S CP 16.11  | 10          | 56.207     | 0.097         | 77.8           | 0.1393        | 0.0000        | OK         |
| 180 minute winter    | S AT 3 IN   | 176         | 55.160     | 1.235         | 38.9           | 0.0000        | 0.0000        | OK         |
| 180 minute winter    | S AT 3      | 176         | 55.146     | 1.221         | 22.7           | 114.6666      | 0.0000        | SURCHARGED |
| 180 minute winter    | S DBS 3     | 176         | 55.126     | 1.210         | 7.3            | 2.9691        | 0.0000        | OK         |
| 15 minute winter     | S DIFF 21   | 14          | 62.439     | 0.170         | 9.5            | 2.8030        | 0.0000        | SURCHARGED |
| 30 minute winter     | S DIFF CP 1 | 24          | 60.553     | 0.293         | 17.4           | 8.6694        | 0.0000        | FLOOD RISK |
| Link Event (Outflow) | US Node     | Link        | DS Node    | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |            |
| 15 minute winter     | S IC 21.01  | 11.000      | S IC 21.02 | 2.1           | 0.939          | 0.145         | 0.0121        |            |
| 15 minute winter     | S IC 21.02  | 11.001      | S IC 21.03 | 4.1           | 1.566          | 0.283         | 0.0140        |            |
| 15 minute winter     | S IC 21.03  | 11.002      | S IC 21.04 | 6.1           | 1.399          | 0.245         | 0.0232        |            |
| 15 minute winter     | S IC 21.04  | 11.003      | S CP 21.05 | 8.1           | 1.405          | 0.730         | 0.0214        |            |
| 15 minute winter     | S CP 21.05  | 10.004      | S CP 16.10 | 12.0          | 1.533          | 2.021         | 0.0543        |            |
| 15 minute winter     | S DIFF CP 3 | 12.000      | S CP 16.10 | 3.1           | 0.749          | 0.522         | 0.0284        |            |
| 15 minute winter     | S CP 16.10  | 1.009       | S CP 16.11 | 55.2          | 1.794          | 0.818         | 0.5085        |            |
| 15 minute winter     | S DIFF 13   | 13.000      | S CP 16.11 | 4.6           | 1.493          | 0.328         | 0.0055        |            |
| 15 minute winter     | S CP 16.11  | 1.010       | S AT 3 IN  | 77.6          | 5.083          | 0.326         | 0.0897        |            |
| 15 minute winter     | S AT 3      | 14.000      | S DBS 3    | 13.6          | 1.734          | 3.398         | 0.0164        |            |
| 15 minute winter     | S DBS 3     | Infltration |            | 5.8           |                |               |               |            |
| 15 minute winter     | S DIFF 21   | 2.000       | S IC 16.03 | 6.5           | 1.213          | 0.583         | 0.0078        |            |
| 15 minute winter     | S DIFF CP 1 | 9.000       | S CP 20.01 | 9.1           | 1.161          | 1.499         | 0.0140        |            |

Design Settings

|                       |        |                                      |       |                             |              |                                    |   |
|-----------------------|--------|--------------------------------------|-------|-----------------------------|--------------|------------------------------------|---|
| Rainfall Methodology  | FEH-22 | Time of Entry (mins)                 | 4.00  | Connection Type             | Level Slopes | Enforce best practice design rules | x |
| Return Period (years) | 100    | Maximum Time of Concentration (mins) | 30.00 | Minimum Backdrop Height (m) | 0.200        |                                    |   |
| Additional Flow (%)   | 45     | Maximum Rainfall (mm/hr)             | 50.0  | Preferred Cover Depth (m)   | 1.200        |                                    |   |
| CV                    | 1.000  | Minimum Velocity (m/s)               | 1.00  | Include Intermediate Ground | ✓            |                                    |   |
|                       |        |                                      |       |                             |              |                                    |   |

Nodes

| Name      | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) | Invert Level (m) |
|-----------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|------------------|
| S IC 1.02 | 0.013     | 4.00          | 51.804          | 1200          | 620752.954  | 149892.934   | 1.300     | 50.504           |
| S CP 1.03 | 0.016     | 4.00          | 49.510          | 1200          | 620720.151  | 149887.980   | 1.350     | 48.160           |
| S CP 1.04 |           |               | 48.963          | 1800          | 620687.594  | 149883.062   | 1.500     | 47.463           |
| S CP 1.05 | 0.024     | 4.00          | 48.912          | 1800          | 620687.139  | 149886.079   | 1.500     | 47.412           |
| S DBS 4   |           |               | 49.082          |               | 620698.354  | 149887.620   | 1.845     | 47.237           |
| S IC 1.01 | 0.018     | 4.00          | 55.119          | 450           | 620788.015  | 149898.382   | 1.300     | 53.819           |

Links

| Name  | US Node   | DS Node   | Length (m) | ks (mm) / n | US IL (m) | DS IL (m) | Fall (m) | Slope (1:X) | Dia (mm) | T of C (mins) | Rain (mm/hr) |
|-------|-----------|-----------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 1.000 | S IC 1.01 | S IC 1.02 | 35.482     | 0.600       | 53.819    | 50.504    | 3.315    | 10.7        | 100      | 4.25          | 50.0         |
| 1.001 | S IC 1.02 | S CP 1.03 | 33.175     | 0.600       | 50.504    | 48.210    | 2.294    | 14.5        | 100      | 4.52          | 50.0         |
| 1.002 | S CP 1.03 | S CP 1.04 | 32.926     | 0.600       | 48.160    | 47.613    | 0.547    | 60.2        | 150      | 4.94          | 50.0         |
| 1.003 | S CP 1.04 | S CP 1.05 | 3.051      | 0.600       | 47.463    | 47.412    | 0.051    | 59.8        | 300      | 4.97          | 50.0         |
| 1.004 | S CP 1.05 | S DBS 4   | 11.320     | 0.600       | 47.412    | 47.237    | 0.175    | 64.7        | 300      | 5.06          | 50.0         |

| Name  | Vel (m/s) | Cap (l/s) | Flow (l/s) | US Depth (m) | DS Depth (m) | Σ Area (ha) | Σ Add Inflow (l/s) | Pro Depth (mm) | Pro Velocity (m/s) |
|-------|-----------|-----------|------------|--------------|--------------|-------------|--------------------|----------------|--------------------|
| 1.000 | 2.375     | 18.7      | 4.7        | 1.200        | 1.200        | 0.018       | 0.0                | 34             | 1.974              |
| 1.001 | 2.042     | 16.0      | 8.2        | 1.200        | 1.200        | 0.031       | 0.0                | 50             | 2.048              |
| 1.002 | 1.298     | 22.9      | 12.4       | 1.200        | 1.200        | 0.047       | 0.0                | 78             | 1.321              |
| 1.003 | 2.036     | 143.9     | 12.4       | 1.200        | 1.200        | 0.047       | 0.0                | 59             | 1.258              |
| 1.004 | 1.958     | 138.4     | 18.7       | 1.200        | 1.545        | 0.071       | 0.0                | 74             | 1.380              |

Simulation Settings

|                      |          |           |       |                   |        |                            |      |                         |                        |   |
|----------------------|----------|-----------|-------|-------------------|--------|----------------------------|------|-------------------------|------------------------|---|
| Rainfall Methodology | FEH-22   | Summer CV | 1.000 | Analysis Speed    | Normal | Drain Down Time (mins)     | 240  | Starting Level (m)      | Check Discharge Volume | x |
| Rainfall Events      | Singular | Winter CV | 1.000 | Skip Steady State | x      | Additional Storage (m³/ha) | 20.0 | Check Discharge Rate(s) |                        |   |

Storm Durations

|                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |      |      |      |      |      |      |      |       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------|------|------|------|------|------|------|-------|
|                       | 15                    | 30                    | 60                    | 120                   | 180                   | 240                   | 360                   | 480                   | 600                   | 720                   | 960                   | 1440 | 2160 | 2880 | 4320 | 5760 | 7200 | 8640 | 10080 |
| Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) | Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) | Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) |      |      |      |      |      |      |      |       |
| 2                     | 0                     | 0                     | 0                     | 30                    | 40                    | 0                     | 0                     | 100                   | 45                    | 0                     | 0                     |      |      |      |      |      |      |      |       |

Node S DBS 4 Deep Bore Soakaway Storage Structure

|                             |          |               |      |                           |        |              |       |                    |        |                 |       |
|-----------------------------|----------|---------------|------|---------------------------|--------|--------------|-------|--------------------|--------|-----------------|-------|
| Base Inf Coefficient (m/hr) | 20.05200 | Safety Factor | 2.0  | Invert Level (m)          | 47.237 | Diameter (m) | 2.100 | Borehole Diameter  | 0.110  | Inf Depth (m)   | 4.000 |
| Side Inf Coefficient (m/hr) | 20.05200 | Porosity      | 1.00 | Time to half empty (mins) | 12     | Depth (m)    |       | Borehole Depth (m) | 10.000 | Number Required | 1     |

Results for 2 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     | S IC 1.02 | 10             | 50.547    | 0.043         | 6.1            | 0.0578        | 0.0000        | OK     |
| 15 minute summer     | S CP 1.03 | 10             | 48.226    | 0.066         | 9.1            | 0.0910        | 0.0000        | OK     |
| 15 minute summer     | S CP 1.04 | 14             | 47.593    | 0.130         | 8.9            | 0.3316        | 0.0000        | OK     |
| 30 minute summer     | S CP 1.05 | 23             | 47.595    | 0.183         | 11.5           | 0.5243        | 0.0000        | OK     |
| 30 minute summer     | S DBS 4   | 22             | 47.594    | 0.357         | 11.1           | 1.3317        | 0.0000        | OK     |
| 15 minute summer     | S IC 1.01 | 10             | 53.848    | 0.029         | 3.5            | 0.0128        | 0.0000        | OK     |
| Link Event (Outflow) | US Node   | Link           | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) |        |
| 15 minute summer     | S IC 1.02 | 1.001          | S CP 1.03 | 6.0           | 1.878          | 0.377         | 0.1067        |        |
| 15 minute summer     | S CP 1.03 | 1.002          | S CP 1.04 | 8.9           | 1.203          | 0.389         | 0.2440        |        |
| 15 minute winter     | S CP 1.04 | 1.003          | S CP 1.05 | 13.7          | 0.851          | 0.095         | 0.1035        |        |
| 15 minute summer     | S CP 1.05 | 1.004          | S DBS 4   | 15.8          | 0.960          | 0.114         | 0.6415        |        |
| 15 minute summer     | S DBS 4   | Inlet to drain |           | 3.9           |                |               |               |        |
| 15 minute summer     | S IC 1.01 | 1.000          | S IC 1.02 | 3.5           | 1.392          | 0.188         | 0.0917        |        |

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.91%

| Node Event       | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S IC 1.02 | 12          | 50.970    | 0.466     | 21.0         | 0.6217        | 0.0000     | SURCHARGED |
| 30 minute summer | S CP 1.03 | 22          | 49.086    | 0.926     | 24.7         | 1.2671        | 0.0000     | SURCHARGED |
| 30 minute summer | S CP 1.04 | 24          | 48.963    | 1.500     | 20.7         | 4.0731        | 0.0000     | FLOOD RISK |
| 30 minute summer | S CP 1.05 | 23          | 48.912    | 1.500     | 32.1         | 4.7293        | 0.0000     | FLOOD RISK |
| 30 minute summer | S DBS 4   | 31          | 49.062    | 1.825     | 16.0         | 6.4164        | 0.0000     | OK         |
| 15 minute summer | S IC 1.01 | 10          | 53.878    | 0.059     | 12.1         | 0.0257        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link         | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|--------------|-----------|---------------|----------------|----------|---------------|
| 30 minute summer     | S IC 1.02 | 1.001        | S CP 1.03 | 15.9          | 2.204          | 0.991    | 0.2596        |
| 15 minute summer     | S CP 1.03 | 1.002        | S CP 1.04 | 21.7          | 1.395          | 0.944    | 0.5797        |
| 15 minute summer     | S CP 1.04 | 1.003        | S CP 1.05 | 21.7          | 0.862          | 0.151    | 0.2148        |
| 15 minute winter     | S CP 1.05 | 1.004        | S DBS 4   | 18.4          | 1.144          | 0.133    | 0.7971        |
| 15 minute summer     | S DBS 4   | Inj Intracon |           | 3.9           |                |          |               |
| 15 minute summer     | S IC 1.01 | 1.000        | S IC 1.02 | 12.1          | 1.818          | 0.649    | 0.2238        |

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 93.07%

| Node Event       | US Node   | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | S IC 1.02 | 12          | 51.662    | 1.158     | 26.7         | 1.5449        | 0.0000     | FLOOD RISK |
| 30 minute summer | S CP 1.03 | 21          | 49.509    | 1.349     | 26.7         | 1.8460        | 0.0451     | FLOOD      |
| 15 minute summer | S CP 1.04 | 14          | 48.963    | 1.500     | 23.1         | 4.1427        | 0.0000     | FLOOD RISK |
| 15 minute summer | S CP 1.05 | 14          | 48.912    | 1.500     | 43.7         | 4.8078        | 0.0000     | FLOOD RISK |
| 60 minute summer | S DBS 4   | 36          | 49.082    | 1.845     | 29.1         | 6.4870        | 9.3923     | FLOOD      |
| 15 minute summer | S IC 1.01 | 10          | 53.890    | 0.071     | 15.5         | 0.0310        | 0.0000     | OK         |

| Link Event (Outflow) | US Node   | Link           | DS Node   | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) |
|----------------------|-----------|----------------|-----------|---------------|----------------|----------|---------------|
| 15 minute winter     | S IC 1.02 | 1.001          | S CP 1.03 | 16.6          | 2.210          | 1.035    | 0.2596        |
| 15 minute winter     | S CP 1.03 | 1.002          | S CP 1.04 | 23.2          | 1.384          | 1.011    | 0.5797        |
| 15 minute summer     | S CP 1.04 | 1.003          | S CP 1.05 | 26.5          | 0.852          | 0.184    | 0.2148        |
| 30 minute summer     | S CP 1.05 | 1.004          | S DBS 4   | 32.3          | 1.096          | 0.234    | 0.7971        |
| 15 minute summer     | S DBS 4   | Inlet to drain |           | 3.9           |                |          |               |
| 15 minute summer     | S IC 1.01 | 1.000          | S IC 1.02 | 15.3          | 2.060          | 0.823    | 0.2443        |

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**Appendix E**  
Maintenance Schedule

## **R676 - Barham Court Farm, The Street, Barham, CT4 6PB - Maintenance Schedule**

Drainage maintenance to be undertaken by private maintenance contractor. No drainage is to be put up for adoption.

### **Main Drainage Networks**

| <b>Item</b>                        | <b>Task</b>                                                  | <b>Frequency</b> | <b>Location</b>                                                                                                                                                   | <b>Access</b> | <b>Specific Risks</b>                                                                                                                                                                 | <b>Specific Safety Measures</b>                                                                                                                     | <b>Traffic Management Required</b>                                                                              | <b>Comments</b>                                                                                                                                                                     |
|------------------------------------|--------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Channels, Filter Drains & Chambers | Clean out channels, gullies and chambers (grates and sumps). | Annually         | Throughout development.                                                                                                                                           |               | Working adjacent to live traffic<br>Slips, trips and falls<br>Working in a confined space<br>Potential for dealing with contaminated / polluted material (esp. Pollution Interceptor) | Implementation of advanced warning signs<br>Appropriate lighting provided during poor visibility<br>Correct PPE / equipment to be used at all times | Ensure any pedestrians / vehicles using the adjacent hardstanding areas are suitably segregated from any works. | Avoid undertaking work during or shortly after periods of intense rainfall.<br>Undertake maintenance works outside of school hours to minimise risk and impact to pupils and staff. |
| Pipe network                       | All pipes to be cleaned (jetted) and condition assessed.     | Annually         | Throughout development.                                                                                                                                           |               |                                                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                                                                                                                                                     |
| Attenuation Tanks                  | Clean out and remove debris and condition to be assessed.    | Annually         | Within shared car park area on southern boundary of site, and under access road at eastern end of the link road between Valley Road and the main development area |               |                                                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                                                                                                                                                     |
| Non-Return Valve                   | Clean out and remove debris.                                 | Annually         | Within chamber adjacent to the bridge at the point of connection to Valley Road                                                                                   |               |                                                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                                                                                                                                                     |

### **Permeable Pavements – Surface Water**

| <b>Item</b>             | <b>Required Works/Action</b>                                        | <b>Frequency</b> | <b>Responsibility</b>                |
|-------------------------|---------------------------------------------------------------------|------------------|--------------------------------------|
| Dust & sediment removal | Brushing and vacuuming (standard cosmetic sweep over whole surface) | Annually         | Land Owner or Maintenance Contractor |
| Weeds & sediment        | Stabilise and mow contributing and adjacent areas.<br>Remove weeds. | Annually         | Land Owner or Maintenance Contractor |

