



# flood risk assessment

PROJECT  
**Crabbet Park (Unit 5), Mid Sussex**

REFERENCE  
**CCE/ZG181/FRA-02**

DATE  
**August 2025**

FOR  
**Peacock 5 Ltd**

**Document Review Sheet:**

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| Reference        | Date        | Author | Checked |
|------------------|-------------|--------|---------|
| CCE/ZG181/FRA-01 | June 2025   | DL     |         |
| CCE/ZG181/FRA-02 | August 2025 | DL     |         |

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2. Forms of Flooding
3. Surface and Foul Water Management
4. Conclusions

## **Appendices**

### **A. Existing site**

Topographical survey  
CCTV Survey

### **B. Proposed site**

Proposed layout  
Surface water Drainage Strategy  
Catchment plan  
Causeway Flow calculations

## Summary Table

|                                     |                                                                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Site location</b>                | Crabbet Park Equestrian Centre, Turners Hill Road, Turners Hill, Crawley<br><br>Grid reference – 530518, 137359 |
| <b>Existing site</b>                | Brownfield                                                                                                      |
| <b>Application site area</b>        | Approximately 0.038 ha                                                                                          |
| <b>Proposed development</b>         | Demolition of existing site office and construction of a single dwelling and associated works.                  |
| <b>Flooding from rivers and sea</b> | None.                                                                                                           |
| <b>Reservoir Inundation Zone</b>    | None                                                                                                            |
| <b>Other sources of flooding</b>    | Areas of high, medium and low risk surface water flooding.                                                      |
| <b>Surface water management</b>     | Drainage sized to manage the 1 in 100 annual probability storm plus climate change and creep allowances.        |

## **1.0 Introduction**

- 1.1 This Flood Risk Assessment (FRA) has been prepared on behalf of Peacock 5 Ltd to support a full planning application for the demolition of existing site office and construction of a single dwelling and associated works.
- 1.2 This assessment takes account of the National Planning Policy Framework (NPPF) and the definitions of sources of flooding within the Flood and Water Management Act (FWMA) 2010.
- 1.3 The site lies on the eastern edge of Crawley and is approximately centred on Ordnance Survey grid reference 530518, 137359. The site is bounded by the M23 to the west, rural land to the north and west, and commercial buildings to the south.
- 1.4 The site extends to approximately 0.038 ha. The total existing impermeable area is circa 0.015 ha.
- 1.5 The dominant downward slope direction of the site is eastwards. Existing ground levels range from approximately 85.34 m AOD along the western boundary to approximately 84.75 m AOD along the eastern boundary. Refer to the topographical survey in Appendix A.
- 1.6 The nearest mapped watercourse is Burleys Brook some 380 m to the north of the site. There is also a lake 250m to the east of the site.
- 1.7 Geological mapping shows that the site is underlain by Upper Tunbridge Wells Sand - Sandstone and siltstone (bedrock).

## **2.0 Forms of Flooding**

### **Watercourses**

- 2.1 The site is not shown to be affected by flooding from a watercourse.

### **Surface Water**

- 2.2 The surface water flood map for the site shows areas of surface water flooding in the east, south and west of the site. These areas are associated with topographical levels and are likely the result of relatively localised runoff generated from the land to the south flowing northeast towards the existing lake.
- 2.3 Images 2.1 to 2.3 overleaf show extracts from the 2040-2060 depth of surface water flooding maps. The extracts are from the 200 mm depth and 300mm depth data set. It is worth noting that this is labelled as the “up to 200 mm” depth data set on the web-based mapping but from context (and discussion with the JBA Consulting flood modelling team) it actually shows the likelihood of depths of 200 mm or more occurring. The images overleaf show that only small areas of the site are expected to experience flood depths of more than 200 mm, and none more than 300mm.
- 2.4 It is worth noting that the surface water flooding will be managed through a two stage approach. The floor level of the proposed dwelling should be a minimum of 300mm higher than the existing ground at the site’s southern boundary. The proposed green space at the site’s southern boundary should mimic the existing ground levels so not to impede the flood route.
- 2.5 Based on the location, extent, depth, and likelihood of the predicted surface water flooding, the risk posed by surface water flooding to the proposed development is not significant.

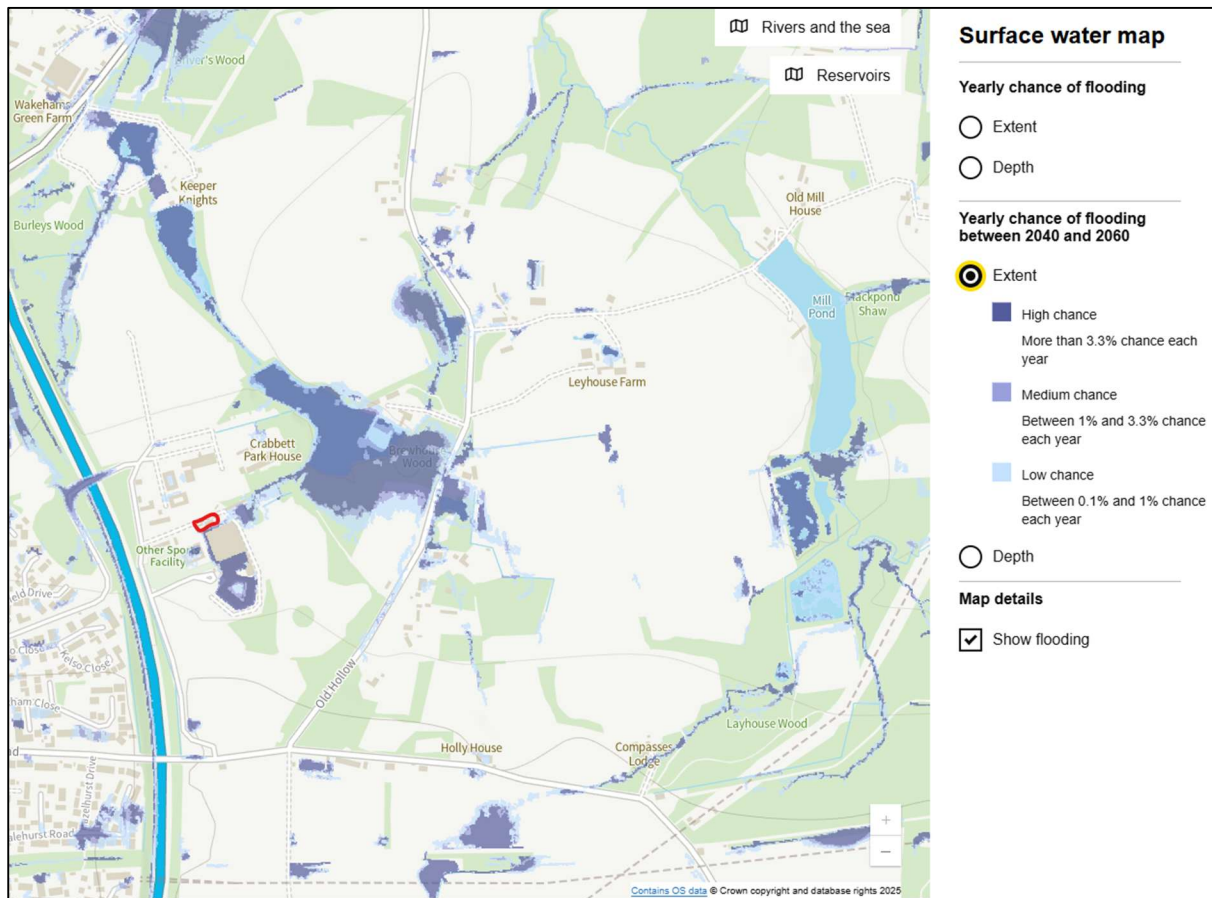


Image 2.1 extent of flooding 2040-2060, taken from the long term flood risk maps (February 2025) © Crown copyright and database rights 2025 Ordnance Survey 100047325

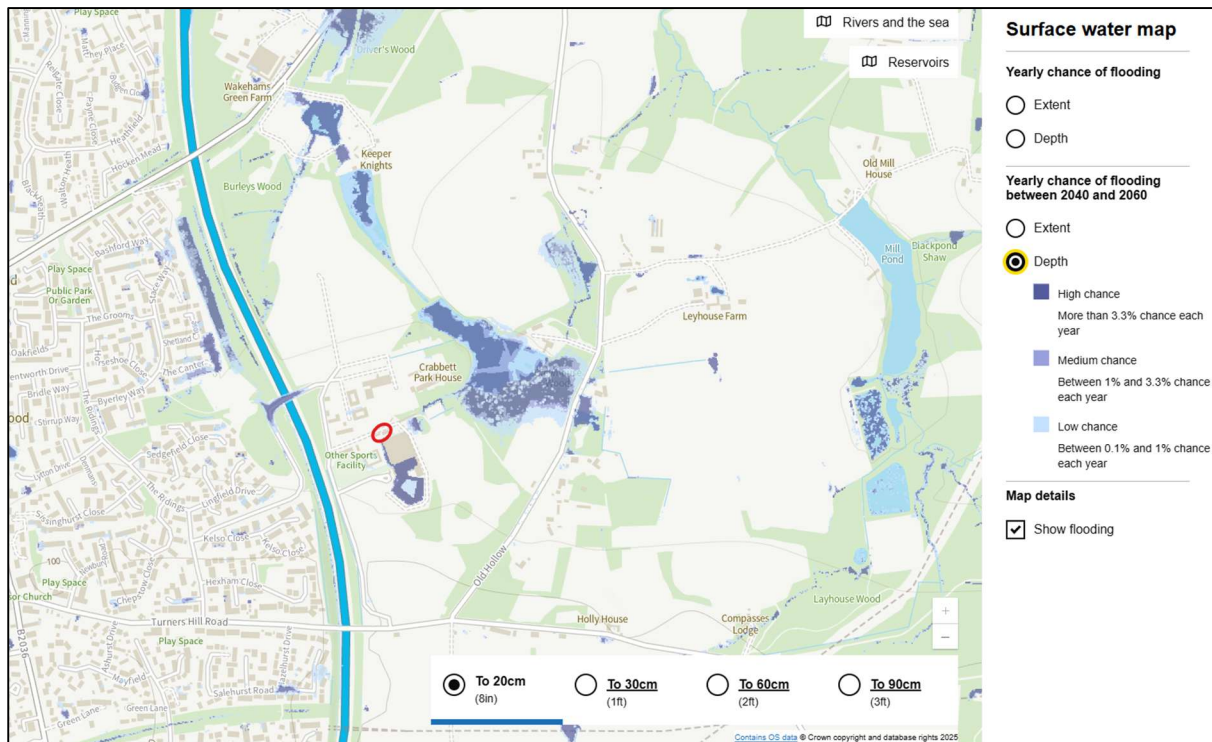


Image 2.2 chance of flooding (up to 200 mm) mm 2040-2060, taken from the long term flood risk maps (February 2025) © Crown copyright and database rights 2025 Ordnance Survey 100047325

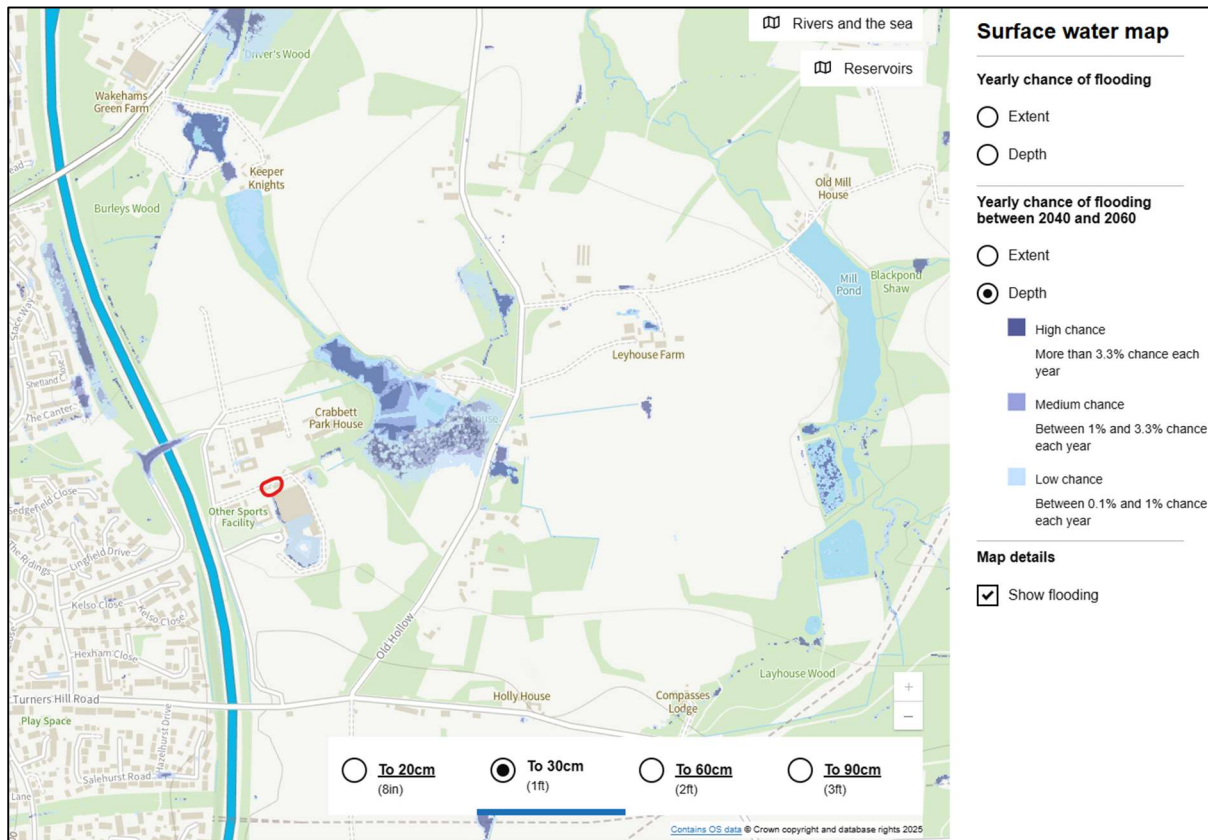


Image 2.3 chance of flooding (up to 300 mm) mm 2040-2060, taken from the long term flood risk maps (February 2025) © Crown copyright and database rights 2025 Ordnance Survey 100047325

### Existing Sewers

- 2.6 A CCTV Survey prepared by Express Solutions Group shows existing foul and surface water assets within the area, with a surface water pipe crossing through the southern section of the site.
- 2.7 These do not present a realistic flood risk to the proposed development (or the site) as levels dictate that any floodwater arising from the source would flow away from and past the site, rather than spilling onto the proposed development.

### Artificial Water Bodies

- 2.8 There is an existing lake to the east of the site. This does not present a flood risk.

### 3.0 Surface and Foul Water Management

- 3.1 Due to the location of the surface water flooding on the site, infiltration drainage has not been considered.
- 3.2 The appended calculations have been run for the 1 in 2, 1 in 30, and 1 in 100 annual probability storms. Climate change of 35 % and 40 % has been applied to the 1 in 30 and 1 in 100 annual probability storms respectively. The calculations assume a runoff coefficient of 1.0 (i.e. no losses from the system). 10% urban creep has been allowed for.

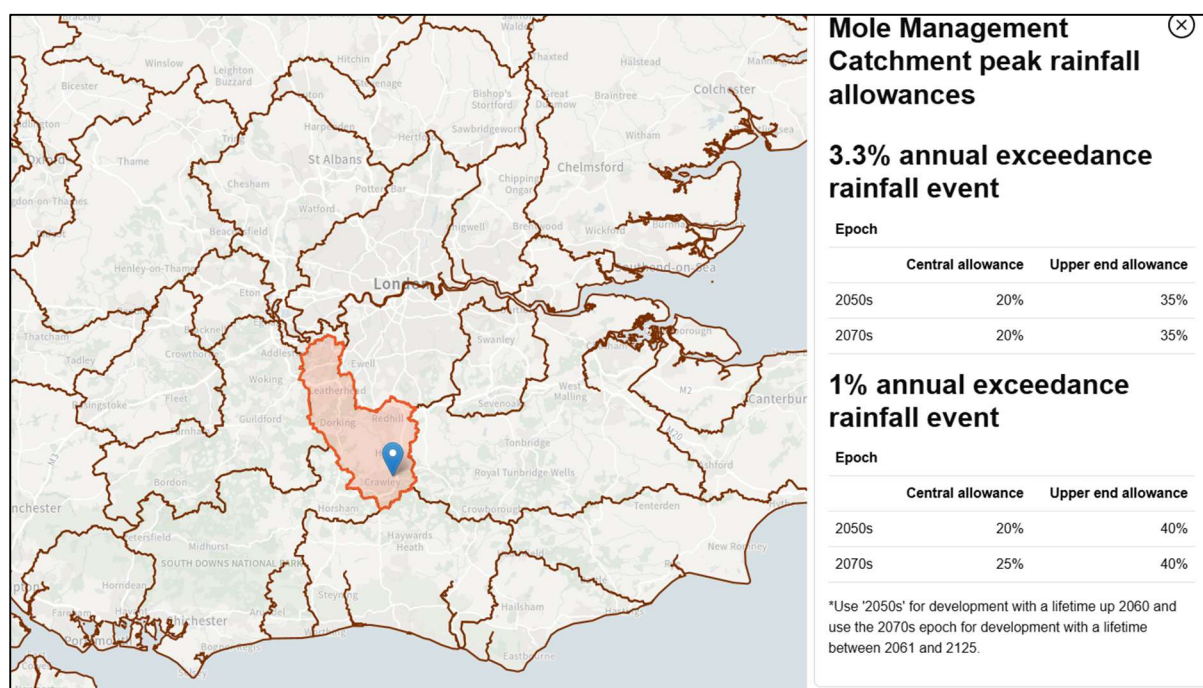


Image 3.1 – extract from the climate change allowances mapping. © Crown copyright and database rights 2025  
Ordnance Survey 100047325

- 3.3 Runoff from the site will be conveyed to a series of SuDS features (as shown in Appendix B) and connect to the existing surface water asset to the south of the site at a restricted rate of 0.8l/s. Currently the SuDS features proposed are a combination of SuDS planters and filter trenches.

#### Treatment

- 3.4 The highest pollution hazard level for the site (from Table 26.2 in The SuDS Manual, C753) is Low.
- 3.5 The pollution scores for the Low hazard category (Table 26.2) are 0.5, 0.4, and 0.4 (for suspended solids, metals and hydrocarbons respectively).

3.6 Treatment scores from Table 26.3 are relevant to the SuDS techniques upstream of the outfall. Treatment scores from Table 26.4 are relevant for the SuDS planters and filter strips. Scores are summarised below.

- Filter strip – 0.4, 0.4, 0.5
- SuDS planter with a minimum of 400 mm of ‘SuDS soil’ – 0.4, 0.3, 0.3

3.7 Treatment scores for the proposed combination of SuDS techniques are all greater than the respective pollution scores:

- Filter strip + SuDS planter = 0.6 + 0.55 + 0.65

#### **Maintenance**

3.8 All proposals are subject to detailed design and the approval of relevant parties.

3.9 Maintenance of private on-plot features would be the responsibility of the respective homeowners. This responsibility would be included in the home buyers pack.

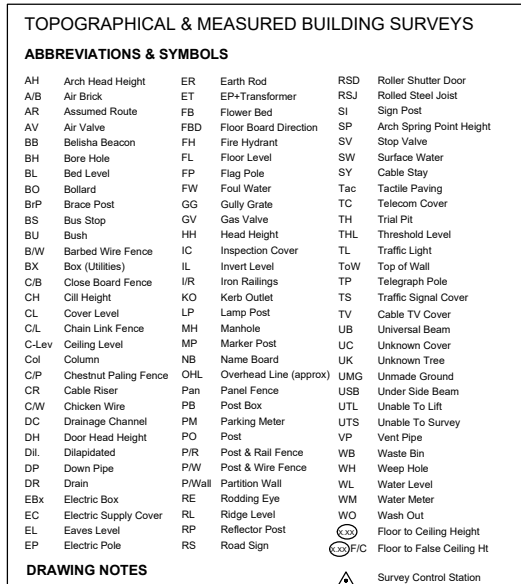
#### **Foul Water**

3.10 Foul water will utilise the existing connections serving the site.

## **4.0 Conclusions**

- 4.1 The site is not at risk of flooding from a watercourse and is not considered to be at a significant or unmanageable risk of flooding from any of the other sources listed in the Flood and Water Management Act.
- 4.2 Surface water runoff will be treated and discharged to a existing piped network via a number of SuDS components. The features are sized to manage the 1 in 100 annual probability storm inclusive of 40 % climate change allowance and urban creep.

**Appendix A Existing Site**  
Topographical survey  
CCTV Survey



Do not scale from this drawing.

\_\_\_\_\_

LAND SURVEYING  
BUILDINGS SURVEYING  
UNDERGROUND SURVEYING  
SITE ENGINEERING  
MONITORING

0845 040 5969  
survey-solutions.co.uk

PERKINS BIRKPOND COVENTRY GLASGOW LONDON NEWCASTLE NORWICH  
NOTTINGHAM VILVIA

|                                                                                     |                          |                  |                   |                          |
|-------------------------------------------------------------------------------------|--------------------------|------------------|-------------------|--------------------------|
| PROJECT TITLE<br>CRABET PARK LIVERY SERVICES<br>TURNER HILL ROAD, CRAWLEY, RH10 4ST |                          |                  |                   |                          |
| DRAWING DETAIL<br>TOPOGRAPHICAL SURVEY<br>Sheet 1 of 2                              |                          |                  |                   |                          |
| CLIENT<br>STEEL FRAMES SYSTEMS                                                      |                          |                  |                   | SCALE<br>1:200           |
| SURVEYOR<br>JG / FC                                                                 | SURVEY DATE<br>2007/2023 | CHECKED BY<br>GB | APPROVED BY<br>MB | DWG STATUS<br>FINAL      |
| DRAWING NUMBER<br>51404BWLS-01                                                      |                          |                  | REVISION<br>A     | ISSUE DATE<br>28/07/2023 |





# EXPRESS SOLUTIONS GROUP

CCTV Survey  
Report





# EXPRESS SOLUTIONS GROUP

Express Solutions Group

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surveys@expresssolutions.group  
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**Ref: DP-SD-2351**

Steel Frame Systems  
314 Hayling Road  
Watford  
Hertfordshire  
WD19 7QBG

Express Solutions Group  
152-154 Commercial Road  
Staines-Upon-Thames  
Surrey  
TW18 2QW

21 October 2024

Dear Ash Gorecia

**Re: Fully Comprehensive CCTV Survey:**

**Stables Cottage, Crabbet Park, Turners Hill Road, Crawley, West Sussex, RH10 4ST**

Express Solutions Group is a national, quality-assured and safety-accredited company with broad-ranging expertise specialising in all aspects of facility management, drainage and building work. All of our drainage works are carried out by our own fully qualified operatives to the highest standards.

As agreed, we carried out an investigative CCTV Survey to establish the condition of your drainage system. During this survey defects have been identified. The following have been included within the full survey report:

- An abbreviated condition summary index with recommendations and associated costings,
- A detailed and full condition report with still images,
- CCTV footage,
- A site plan showing the location of your Inspection Chambers and Drain Runs (*please note that the plan is for interpretation purposes only and not to scale*).

We aim to always offer the right solutions for your needs. We pride ourselves on our customer service and understand the need to work expediently so please do not hesitate to contact us should you require clarity on your report or wish to schedule the recommended work.

Once again, thank you for the opportunity and your interest in using the services of Express Solutions Group.

Kind regards,

Bradley Smith  
CCTV Analyst



Reg Address: As Above | Comp Reg No. 08845834 | VAT No. 178 610 783 | Trading name of Express Solutions Group Ltd



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# CCTV Summary Index

Recommendation Scale

1

No Further Action

2

Advisories

3

Works Required

Job Reference: SD-2351

Address: Stables Cottage, Crabbet Park, Turners Hill Road, Crawley, West Sussex, RH10 4ST

| Sheet | Drainage section       | Abbreviated Recommendations                                                                                                                                                                                                                                                  | Structural (S) or Serviceability/ Maintenance Defect (M) | Recommendation Scale (1-3) | Costs         |
|-------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------|---------------|
| A1:   | Inspection Chamber MH1 | No Recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| A2:   | Inspection Chamber MH2 | Please Contact The Office if You Require Quotation To Survey Manhole Using AP2 Entry                                                                                                                                                                                         | -                                                        | -                          | -             |
| A3:   | Inspection Chamber MH3 | No recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| A4:   | Inspection Chamber MH4 | No Recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| A5:   | Inspection Chamber MH5 | No Recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| A6:   | Inspection Chamber MH6 | No Recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| 1:    | MH1 Downstream         | No Recommendations.                                                                                                                                                                                                                                                          | -                                                        | -                          | -             |
| 2:    | MH4 Downstream         | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris.                                                                                                                                                               | M                                                        | 3                          | £180.00 + VAT |
| 3:    | MH4 Lateral 1 Upstream | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris.                                                                                                                                                               | M                                                        | 3                          | £180.00 + VAT |
| 4:    | MH4 Upstream           | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris.                                                                                                                                                               | M                                                        | 3                          | £180.00 + VAT |
| 5:    | MH5 Lateral 1 Upstream | 1. High pressure water jet and Roots cutting using a combination tanker unit to remove any roots/scale/residual debris.<br>2. Re-CCTV to establish the true condition of the remaining drainage run (with intention to reline, any further works will be quoted accordingly) | S/M                                                      | 3                          | £375.00 + VAT |

# CCTV Summary Index

Recommendation Scale

1

No Further Action

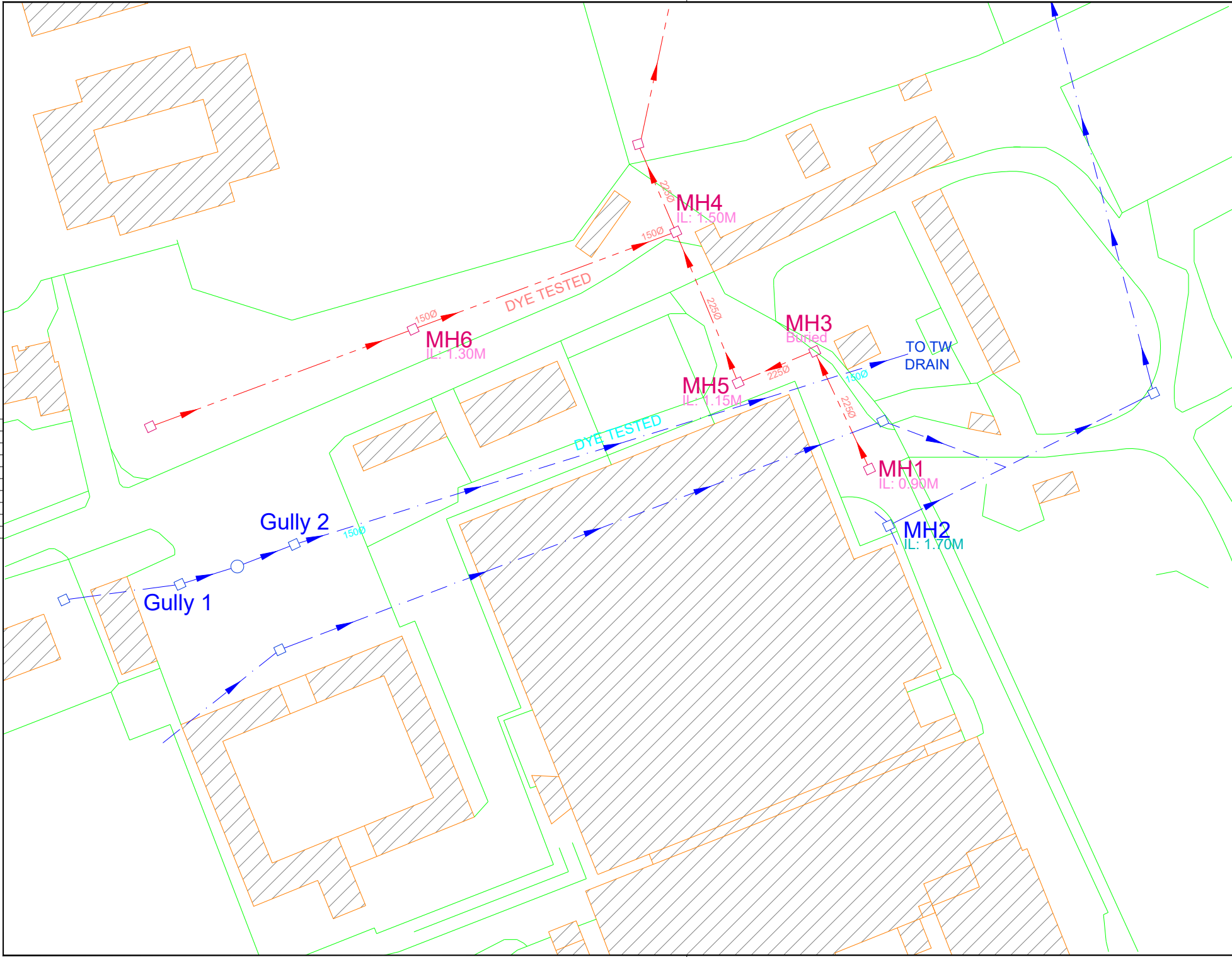
2

Advisories

3

Works Required

| Sheet        | Drainage section   | Abbreviated Recommendations                                                                                    | Structural (S) or Serviceability/ Maintenance Defect (M) | Recommendation Scale (1-3)                                                                                                               | Costs         |
|--------------|--------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 6:           | MH6 Downstream     | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris. | M                                                        | 3                                                                                                                                        | £180.00 + VAT |
| 7:           | Gully 1 Downstream | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris. | M                                                        | 3                                                                                                                                        | £180.00 + VAT |
| 8:           | Gully 2 Downstream | 1. High pressure water jet and extraction using a combination tanker unit to remove any scale/residual debris. | M                                                        | 3                                                                                                                                        | £180.00 + VAT |
| TOTAL PRICE: |                    |                                                                                                                |                                                          | £1455.00 + VAT<br>£155.00 + VAT, Per Tonne Extracted<br><br>Please note should Individual works be undertaken additional cost may apply. |               |



JOB No. SD-2351

LEGEND

FW MH/IC

SW MH/IC

INTERCEPTOR

FW GULLY

SW GULLY

ST/VP: STACK

RWP

SW: SURFACE WATER

SURFACE WATER ROUTE

FW: FOUL WATER

FOUL WATER ROUTE

BUILDING OUTLINE

OVERHEAD BUILDING LINE

BOUNDARY LINE

ROAD

PROPOSED

BANK

BANK SYMBOL

UTS: Unable to Survey

UTL: Unable to Lift

EOT: End of Trace

TREE

NOT TO SCALE

Drawing Notes

| Rev. | Date | Description | By |
|------|------|-------------|----|
|      |      |             |    |

EXPRESS SOLUTIONS GROUP

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152-154 Commercial Road  
Staines-Upon-Thames  
Surrey  
TW18 2QW  
Tel 020 8979 5444  
VAT 851970604  
Company No 04935559

|               |                                                                  |
|---------------|------------------------------------------------------------------|
| Client        | Steel Frame Systems                                              |
| Site Address  | Stables Cottage<br>Crabbet Park<br>Turners Hill Road<br>RH10 4ST |
| Drawing title | Plan                                                             |
| Scales        | NOT TO SCALE                                                     |
| Surveyor      | DP743                                                            |
| Drawn By      | BS                                                               |
| Date          | 21/10/2024                                                       |

JOB No. SD-2351



## Inspection Chamber condition report

| Sheet A1                                                                       |                | Photo                                                                               |                          |                           |                          |
|--------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------|--------------------------|
| Job number                                                                     | SD-2351        |  |                          |                           |                          |
| Inspection Chamber                                                             | MH1            |                                                                                     |                          |                           |                          |
| Invert level (mm)                                                              | 900mm          |                                                                                     |                          |                           |                          |
| Cover Size (mm)                                                                | 600 x 600      |                                                                                     |                          |                           |                          |
| Chamber Size (mm)                                                              | 900 Ø          |                                                                                     |                          |                           |                          |
| Condition                                                                      | Good           | <input checked="" type="checkbox"/>                                                 |                          |                           |                          |
|                                                                                | Fair           | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                                | Poor           | <input type="checkbox"/>                                                            |                          |                           |                          |
| Material                                                                       | Brick          | <input checked="" type="checkbox"/>                                                 |                          |                           |                          |
|                                                                                | Concrete       | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                                | UPVC           | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                                | Rendered Walls | <input type="checkbox"/>                                                            |                          |                           |                          |
| Defects<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                | Covering frame seized                                                               | <input type="checkbox"/> | Missing Covering Lid      | <input type="checkbox"/> |
|                                                                                |                | Cracked benching                                                                    | <input type="checkbox"/> | Deteriorated Covering Lid | <input type="checkbox"/> |
|                                                                                |                | Root Ingress                                                                        | <input type="checkbox"/> | Scale/rubble/debris       | <input type="checkbox"/> |
|                                                                                |                | Location unknown                                                                    | <input type="checkbox"/> | Blocked interceptor       | <input type="checkbox"/> |
| Details                                                                        |                | No recommendations                                                                  |                          |                           |                          |
| Recommendations                                                                |                | No recommendations                                                                  |                          |                           |                          |
| Works Guarantee                                                                |                | N/A                                                                                 |                          |                           |                          |
| Are there any Health & Safety issues                                           |                | N/A                                                                                 |                          |                           |                          |
| Risk & Method Statement supplied                                               |                | N/A                                                                                 |                          |                           |                          |
| Any Special Site Requirements or Conditions                                    |                | N/A                                                                                 |                          |                           |                          |
| Specialist Plant Requirement                                                   |                | N/A                                                                                 |                          |                           |                          |





# Inspection Chamber condition report

| Sheet A2                                                                       |                                                                                                                                                            | Photo                                                                                |                          |                           |                          |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------|---------------------------|--------------------------|
| Job number                                                                     | SD-2351                                                                                                                                                    |   |                          |                           |                          |
| Inspection Chamber                                                             | MH2                                                                                                                                                        |                                                                                      |                          |                           |                          |
| Invert level (mm)                                                              | 1700mm                                                                                                                                                     |                                                                                      |                          |                           |                          |
| Cover Size (mm)                                                                | 600 x 600                                                                                                                                                  |                                                                                      |                          |                           |                          |
| Chamber Size (mm)                                                              | 1200 x                                                                                                                                                     |                                                                                      |                          |                           |                          |
| Condition                                                                      | Good <input checked="" type="checkbox"/><br>Fair <input type="checkbox"/><br>Poor <input type="checkbox"/>                                                 |                                                                                      |                          |                           |                          |
| Material                                                                       | Brick <input checked="" type="checkbox"/><br>Concrete <input type="checkbox"/><br>UPVC <input type="checkbox"/><br>Rendered Walls <input type="checkbox"/> |                                                                                      |                          |                           |                          |
| Defects<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                                                                                                                                                            | Covering frame seized                                                                | <input type="checkbox"/> | Missing Covering Lid      | <input type="checkbox"/> |
|                                                                                |                                                                                                                                                            | Cracked benching                                                                     | <input type="checkbox"/> | Deteriorated Covering Lid | <input type="checkbox"/> |
|                                                                                |                                                                                                                                                            | Root Ingress                                                                         | <input type="checkbox"/> | Scale/rubble/debris       | <input type="checkbox"/> |
|                                                                                |                                                                                                                                                            | Location unknown                                                                     | <input type="checkbox"/> | Blocked interceptor       | <input type="checkbox"/> |
| Details                                                                        |                                                                                                                                                            | Please Contact The Office if You Require Quotation To Survey Manhole Using AP2 Entry |                          |                           |                          |
| Recommendations                                                                |                                                                                                                                                            | No recommendations                                                                   |                          |                           |                          |
| Works Guarantee                                                                |                                                                                                                                                            | N/A                                                                                  |                          |                           |                          |
| Are there any Health & Safety issues                                           |                                                                                                                                                            | N/A                                                                                  |                          |                           |                          |
| Risk & Method Statement supplied                                               |                                                                                                                                                            | N/A                                                                                  |                          |                           |                          |
| Any Special Site Requirements or Conditions                                    |                                                                                                                                                            | N/A                                                                                  |                          |                           |                          |
| Specialist Plant Requirement                                                   |                                                                                                                                                            | N/A                                                                                  |                          |                           |                          |





## Inspection Chamber condition report

| Sheet A3                                                            |                | Photo                                                                               |                          |                           |                          |
|---------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------|--------------------------|
| Job number                                                          | SD-2351        |  |                          |                           |                          |
| Inspection Chamber                                                  | MH3            |                                                                                     |                          |                           |                          |
| Invert level (mm)                                                   | 950mm          |                                                                                     |                          |                           |                          |
| Cover Size (mm)                                                     | 600 x 600      |                                                                                     |                          |                           |                          |
| Chamber Size (mm)                                                   | 900 Ø          |                                                                                     |                          |                           |                          |
| Condition                                                           | Good           | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                     | Fair           | <input checked="" type="checkbox"/>                                                 |                          |                           |                          |
|                                                                     | Poor           | <input type="checkbox"/>                                                            |                          |                           |                          |
| Material                                                            | Brick          | <input checked="" type="checkbox"/>                                                 |                          |                           |                          |
|                                                                     | Concrete       | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                     | UPVC           | <input type="checkbox"/>                                                            |                          |                           |                          |
|                                                                     | Rendered Walls | <input type="checkbox"/>                                                            |                          |                           |                          |
| Defects<br>Yes <input type="checkbox"/> No <input type="checkbox"/> |                | Covering frame seized                                                               | <input type="checkbox"/> | Missing Covering Lid      | <input type="checkbox"/> |
|                                                                     |                | Cracked benching                                                                    | <input type="checkbox"/> | Deteriorated Covering Lid | <input type="checkbox"/> |
|                                                                     |                | Root Ingress                                                                        | <input type="checkbox"/> | Scale/rubble/debris       | <input type="checkbox"/> |
|                                                                     |                | Location unknown                                                                    | <input type="checkbox"/> | Blocked interceptor       | <input type="checkbox"/> |
| Details                                                             |                | No recommendations                                                                  |                          |                           |                          |
| Recommendations                                                     |                | No recommendations                                                                  |                          |                           |                          |
| Works Guarantee                                                     |                | N/A                                                                                 |                          |                           |                          |
| Are there any Health & Safety issues                                |                | N/A                                                                                 |                          |                           |                          |
| Risk & Method Statement supplied                                    |                | N/A                                                                                 |                          |                           |                          |
| Any Special Site Requirements or Conditions                         |                | N/A                                                                                 |                          |                           |                          |
| Specialist Plant Requirement                                        |                | N/A                                                                                 |                          |                           |                          |



Reg Address: As Above | Comp Reg No. 08845834 | VAT No. 178 610 783 | Trading name of Express Solutions Group Ltd





## Inspection Chamber condition report

| Sheet A4                                                                       |                | Photo                                                                               |                          |                                     |                          |
|--------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------|--------------------------|-------------------------------------|--------------------------|
| Job number                                                                     | SD-2351        |  |                          |                                     |                          |
| Inspection Chamber                                                             | MH4            |                                                                                     |                          |                                     |                          |
| Invert level (mm)                                                              | 1500mm         |                                                                                     |                          |                                     |                          |
| Cover Size (mm)                                                                | 600 x 600      |                                                                                     |                          |                                     |                          |
| Chamber Size (mm)                                                              | 1200 x         |                                                                                     |                          |                                     |                          |
| Condition                                                                      | Good           |                                                                                     |                          | <input checked="" type="checkbox"/> |                          |
|                                                                                | Fair           | <input type="checkbox"/>                                                            |                          |                                     |                          |
|                                                                                | Poor           | <input type="checkbox"/>                                                            |                          |                                     |                          |
| Material                                                                       | Brick          | <input checked="" type="checkbox"/>                                                 |                          |                                     |                          |
|                                                                                | Concrete       | <input type="checkbox"/>                                                            |                          |                                     |                          |
|                                                                                | UPVC           | <input type="checkbox"/>                                                            |                          |                                     |                          |
|                                                                                | Rendered Walls | <input type="checkbox"/>                                                            |                          |                                     |                          |
| Defects<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                | Covering frame seized                                                               | <input type="checkbox"/> | Missing Covering Lid                | <input type="checkbox"/> |
|                                                                                |                | Cracked benching                                                                    | <input type="checkbox"/> | Deteriorated Covering Lid           | <input type="checkbox"/> |
|                                                                                |                | Root Ingress                                                                        | <input type="checkbox"/> | Scale/rubble/debris                 | <input type="checkbox"/> |
|                                                                                |                | Location unknown                                                                    | <input type="checkbox"/> | Blocked interceptor                 | <input type="checkbox"/> |
| Details                                                                        |                | No recommendations                                                                  |                          |                                     |                          |
| Recommendations                                                                |                | No recommendations                                                                  |                          |                                     |                          |
| Works Guarantee                                                                |                | N/A                                                                                 |                          |                                     |                          |
| Are there any Health & Safety issues                                           |                | N/A                                                                                 |                          |                                     |                          |
| Risk & Method Statement supplied                                               |                | N/A                                                                                 |                          |                                     |                          |
| Any Special Site Requirements or Conditions                                    |                | N/A                                                                                 |                          |                                     |                          |
| Specialist Plant Requirement                                                   |                | N/A                                                                                 |                          |                                     |                          |





## Inspection Chamber condition report

| Sheet A5                                                                       |                       | Photo                                                                               |                                                    |
|--------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|
| Job number                                                                     | SD-2351               |  |                                                    |
| Inspection Chamber                                                             | MH5                   |                                                                                     |                                                    |
| Invert level (mm)                                                              | 1150mm                |                                                                                     |                                                    |
| Cover Size (mm)                                                                | 600 x 600             |                                                                                     |                                                    |
| Chamber Size (mm)                                                              | 1200 x                |                                                                                     |                                                    |
| Condition                                                                      | Good                  | <input checked="" type="checkbox"/>                                                 |                                                    |
|                                                                                | Fair                  | <input type="checkbox"/>                                                            |                                                    |
|                                                                                | Poor                  | <input type="checkbox"/>                                                            |                                                    |
| Material                                                                       | Brick                 | <input type="checkbox"/>                                                            |                                                    |
|                                                                                | Concrete              | <input checked="" type="checkbox"/>                                                 |                                                    |
|                                                                                | UPVC                  | <input type="checkbox"/>                                                            |                                                    |
|                                                                                | Rendered Walls        | <input type="checkbox"/>                                                            |                                                    |
| Defects<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Covering frame seized | <input type="checkbox"/>                                                            | Missing Covering Lid <input type="checkbox"/>      |
|                                                                                | Cracked benching      | <input type="checkbox"/>                                                            | Deteriorated Covering Lid <input type="checkbox"/> |
|                                                                                | Root Ingress          | <input type="checkbox"/>                                                            | Scale/rubble/debris <input type="checkbox"/>       |
|                                                                                | Location unknown      | <input type="checkbox"/>                                                            | Blocked interceptor <input type="checkbox"/>       |
| Details                                                                        |                       | No recommendations                                                                  |                                                    |
| Recommendations                                                                |                       | No recommendations                                                                  |                                                    |
| Works Guarantee                                                                |                       | N/A                                                                                 |                                                    |
| Are there any Health & Safety issues                                           |                       | N/A                                                                                 |                                                    |
| Risk & Method Statement supplied                                               |                       | N/A                                                                                 |                                                    |
| Any Special Site Requirements or Conditions                                    |                       | N/A                                                                                 |                                                    |
| Specialist Plant Requirement                                                   |                       | N/A                                                                                 |                                                    |



Reg Address: As Above | Comp Reg No. 08845834 | VAT No. 178 610 783 | Trading name of Express Solutions Group Ltd





## Inspection Chamber condition report

| Sheet A6                                                                       |                | Photo                                                                               |                                                                             |
|--------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Job number                                                                     | SD-2351        |  |                                                                             |
| Inspection Chamber                                                             | MH6            |                                                                                     |                                                                             |
| Invert level (mm)                                                              | 1300mm         |                                                                                     |                                                                             |
| Cover Size (mm)                                                                | 600 × 600      |                                                                                     |                                                                             |
| Chamber Size (mm)                                                              | 1200 Ø         |                                                                                     |                                                                             |
| Condition                                                                      | Good           | <input checked="" type="checkbox"/>                                                 |                                                                             |
|                                                                                | Fair           | <input type="checkbox"/>                                                            |                                                                             |
|                                                                                | Poor           | <input type="checkbox"/>                                                            |                                                                             |
| Material                                                                       | Brick          | <input type="checkbox"/>                                                            |                                                                             |
|                                                                                | Concrete       | <input checked="" type="checkbox"/>                                                 |                                                                             |
|                                                                                | UPVC           | <input type="checkbox"/>                                                            |                                                                             |
|                                                                                | Rendered Walls | <input type="checkbox"/>                                                            |                                                                             |
| Defects<br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                | Covering frame seized                                                               | <input type="checkbox"/> Missing Covering Lid <input type="checkbox"/>      |
|                                                                                |                | Cracked benching                                                                    | <input type="checkbox"/> Deteriorated Covering Lid <input type="checkbox"/> |
|                                                                                |                | Root Ingress                                                                        | <input type="checkbox"/> Scale/rubble/debris <input type="checkbox"/>       |
|                                                                                |                | Location unknown                                                                    | <input type="checkbox"/> Blocked interceptor <input type="checkbox"/>       |
| Details                                                                        |                | No recommendations                                                                  |                                                                             |
| Recommendations                                                                |                | No recommendations                                                                  |                                                                             |
| Works Guarantee                                                                |                | N/A                                                                                 |                                                                             |
| Are there any Health & Safety issues                                           |                | N/A                                                                                 |                                                                             |
| Risk & Method Statement supplied                                               |                | N/A                                                                                 |                                                                             |
| Any Special Site Requirements or Conditions                                    |                | N/A                                                                                 |                                                                             |
| Specialist Plant Requirement                                                   |                | N/A                                                                                 |                                                                             |





## Section Inspection - MH1X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>1     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:49 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>MH1X                     |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |            |
|---------------------|-------------------------|-----------------------|----------------|------------------------|------------|
| Town or Village:    | Crawley                 | Inspection Direction: | Downstream     | Upstream Node:         | MH1        |
| Road:               | Turners Hill Road       | Inspected Length:     | 19.02 m        | Upstream Pipe Depth:   | 0.900 m    |
| Location:           | Property or buildings   | Total Length:         | 19.02 m        | Downstream Node:       | DOWNSTREAM |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: |            |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |            |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 225 mm         |                        |            |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |            |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |            |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |            |

Comments:

Recommendations:

| Scale:                             | 1:165 | Position [m] | Code                                         | Observation | MPEG | Photo | Grade |
|------------------------------------|-------|--------------|----------------------------------------------|-------------|------|-------|-------|
| <div>Depth: 0.90 m<br/>MH1</div>   |       |              |                                              |             |      |       |       |
|                                    | 0.00  | MH           | Start node, manhole, reference: MH1          | 00:00:00    | 1    |       |       |
|                                    | 0.00  | WL           | Water level, 5% of the vertical dimension    | 00:00:08    | 2    |       |       |
|                                    | 19.02 | MHF          | Finish node, manhole, reference: MH3: Buried | 00:00:51    | 3    |       |       |
| <div>Downstream<br/>Depth: m</div> |       |              |                                              |             |      |       |       |

### Construction Features

#### Structural Defects

### Miscellaneous Features

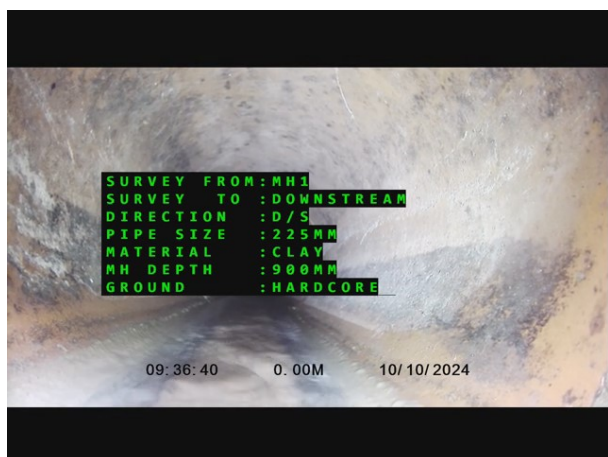
#### Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 0           | 0.0      | 0.0      | 0.0       | 1.0       |



## Section Pictures - MH1X

| Item No. | Inspection Direction | PLR  | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|------|------------------|----------------------|
| 1        | Downstream           | MH1X |                  |                      |



1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH1



2, 00:00:08, 0.00 m  
Water level, 5% of the vertical dimension



3, 00:00:51, 19.02 m  
Finish node, manhole, reference: MH3, Buried



## Section Inspection - MH4X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>2     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:03 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>MH4X                     |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |            |
|---------------------|-------------------------|-----------------------|----------------|------------------------|------------|
| Town or Village:    | Crawley                 | Inspection Direction: | Downstream     | Upstream Node:         | MH4        |
| Road:               | Turners Hill Road       | Inspected Length:     | 8.07 m         | Upstream Pipe Depth:   | 1.500 m    |
| Location:           | Property or buildings   | Total Length:         | 8.07 m         | Downstream Node:       | DOWNSTREAM |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: |            |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |            |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 225 mm         |                        |            |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |            |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |            |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |            |

Comments:

Recommendations:

| Scale:                                    | 1:70 | Position [m] | Code | Observation                                                                                        | MPEG     | Photo | Grade |
|-------------------------------------------|------|--------------|------|----------------------------------------------------------------------------------------------------|----------|-------|-------|
| <div> <p>Depth: 1.50 m<br/>MH4</p> </div> |      |              |      |                                                                                                    |          |       |       |
|                                           | 0.00 | MH           |      | Start node, manhole, reference: MH4                                                                | 00:00:00 | 1     |       |
|                                           | 0.00 | WL           |      | Water level, 5% of the vertical dimension                                                          | 00:00:04 | 2     |       |
|                                           | 0.40 | S01          | DEE  | Attached deposits, encrustation from 4 o'clock to 8 o'clock, 5% cross-sectional area loss, start   | 00:00:07 | 3     |       |
|                                           | 2.34 | WL           |      | Water level, 15% of the vertical dimension                                                         | 00:00:14 | 4     |       |
|                                           | 8.06 | F01          | DEE  | Attached deposits, encrustation from 4 o'clock to 8 o'clock, 10% cross-sectional area loss, finish | 00:00:50 |       | 3     |
|                                           | 8.07 | MHF          |      | Finish node, manhole, reference: Off Boundary Manhole                                              | 00:00:50 | 5     |       |
| Downstream<br>Depth: m                    |      |              |      |                                                                                                    |          |       |       |

Construction Features

Structural Defects

Miscellaneous Features

Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 1           | 2.0      | 2.0      | 16.0      | 3.0       |



## Section Pictures - MH4X

| Item No. | Inspection Direction | PLR  | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|------|------------------|----------------------|
| 2        | Downstream           | MH4X |                  |                      |



1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH4



2, 00:00:04, 0.00 m  
Water level, 5% of the vertical dimension



3, 00:00:07, 0.40 m  
Attached deposits, encrustation from 4 o'clock to 8 o'clock, 5% cross-sectional area loss, start



4, 00:00:14, 2.34 m  
Water level, 15% of the vertical dimension



5, 00:00:50, 8.07 m  
Finish node, manhole, reference: Off Boundary Manhole



## Section Inspection - Lateral 1X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>3     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:05 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>LATERAL 1X               |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |           |
|---------------------|-------------------------|-----------------------|----------------|------------------------|-----------|
| Town or Village:    | Crawley                 | Inspection Direction: | Upstream       | Upstream Node:         | LATERAL 1 |
| Road:               | Turners Hill Road       | Inspected Length:     | 26.51 m        | Upstream Pipe Depth:   |           |
| Location:           | Property or buildings   | Total Length:         | 35.00 m        | Downstream Node:       | MH4       |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: | 1.500 m   |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |           |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 150 mm         |                        |           |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |           |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |           |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |           |

Comments:

Recommendations:

| Scale: 1:304                  | Position [m] | Code | Observation                                                                                        | MPEG     | Photo | Grade |
|-------------------------------|--------------|------|----------------------------------------------------------------------------------------------------|----------|-------|-------|
| <p>Depth: 1.50 m<br/>MH4</p>  |              |      |                                                                                                    |          |       |       |
| 0.00                          | MH           |      | Start node, manhole, reference: MH4                                                                | 00:00:00 | 1     |       |
| 0.00                          | WL           |      | Water level, 5% of the vertical dimension                                                          | 00:00:06 | 2     |       |
| 22.86                         | S01          | DEE  | Attached deposits, encrustation from 4 o'clock to 8 o'clock, 10% cross-sectional area loss, start  | 00:02:06 | 3     |       |
| 23.84                         | F01          | DEE  | Attached deposits, encrustation from 4 o'clock to 8 o'clock, 10% cross-sectional area loss, finish | 00:02:40 | 4     | 3     |
| 26.51                         | SA           |      | Survey abandoned: Unable To Push Furhter (Overlap With MH6 Downstream)                             | 00:03:50 | 5     |       |
| 35.00                         |              |      | End of pipe                                                                                        |          |       |       |
| <p>Lateral 1<br/>Depth: m</p> |              |      |                                                                                                    |          |       |       |

Construction Features

Miscellaneous Features

Structural Defects

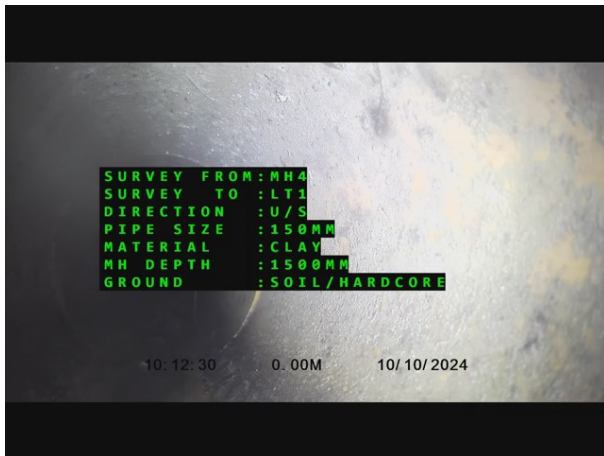
Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 1           | 2.0      | 0.1      | 2.0       | 3.0       |



## Section Pictures - Lateral 1X

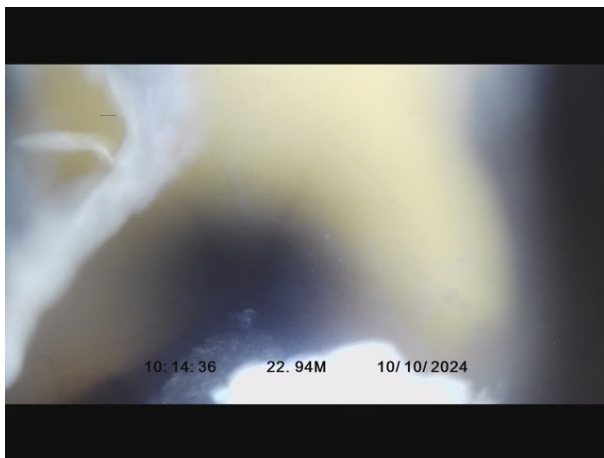
| Item No. | Inspection Direction | PLR        | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|------------|------------------|----------------------|
| 3        | Upstream             | LATERAL 1X |                  |                      |



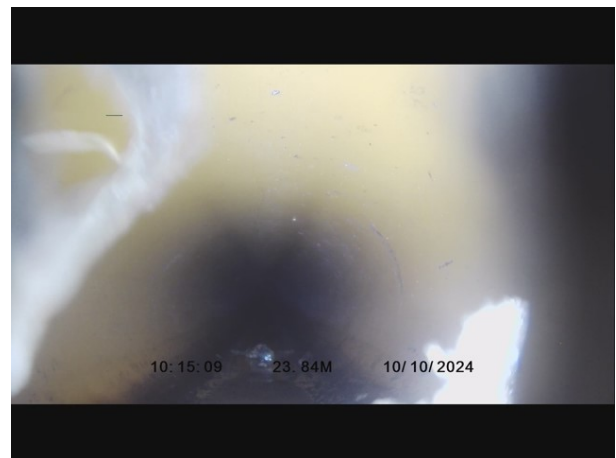
1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH4



2, 00:00:06, 0.00 m  
Water level, 5% of the vertical dimension



3, 00:02:06, 22.86 m  
Attached deposits, encrustation from 4 o'clock to 8 o'clock,  
10% cross-sectional area loss, start



4, 00:02:40, 23.84 m  
Attached deposits, encrustation from 4 o'clock to 8 o'clock,  
10% cross-sectional area loss, finish



5, 00:03:50, 26.51 m  
Survey abandoned, Unable To Push Further (Overlap With  
MH6 Downstream)



## Section Inspection - UpstreamX

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>4     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:01 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>UPSTREAMX                |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |          |
|---------------------|-------------------------|-----------------------|----------------|------------------------|----------|
| Town or Village:    | Crawley                 | Inspection Direction: | Upstream       | Upstream Node:         | UPSTREAM |
| Road:               | Turners Hill Road       | Inspected Length:     | 21.72 m        | Upstream Pipe Depth:   |          |
| Location:           | Property or buildings   | Total Length:         | 21.72 m        | Downstream Node:       | MH4      |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: | 1.500 m  |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |          |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 225 mm         |                        |          |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |          |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |          |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |          |

Comments:

Recommendations:

| Scale:               | 1:189 | Position [m] | Code                                       | Observation | MPEG | Photo | Grade |
|----------------------|-------|--------------|--------------------------------------------|-------------|------|-------|-------|
| Depth: 1.50 m<br>MH4 |       |              |                                            |             |      |       |       |
|                      |       |              |                                            |             |      |       |       |
|                      | 0.00  | MH           | Start node, manhole, reference: MH4        | 00:00:00    | 1    |       |       |
|                      | 0.00  | WL           | Water level, 10% of the vertical dimension | 00:00:06    | 2    |       |       |
|                      | 20.92 | WL           | Water level, 5% of the vertical dimension  | 00:01:05    | 3    |       |       |
|                      | 21.72 | MHF          | Finish node, manhole, reference: MH5       | 00:01:13    | 4    |       |       |
| Upstream<br>Depth: m |       |              |                                            |             |      |       |       |

### Construction Features

#### Structural Defects

### Miscellaneous Features

#### Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 0           | 0.0      | 0.0      | 0.0       | 1.0       |

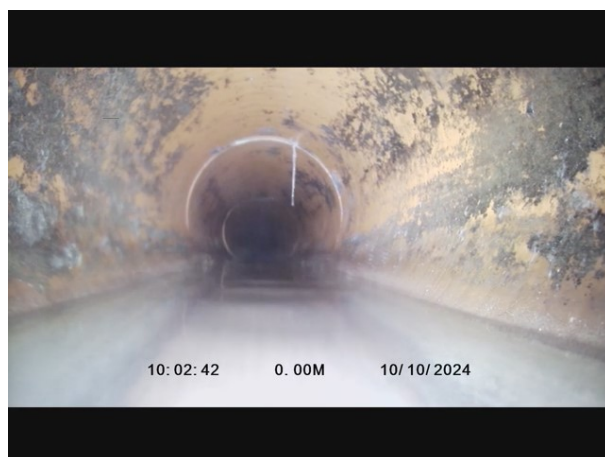


## Section Pictures - UpstreamX

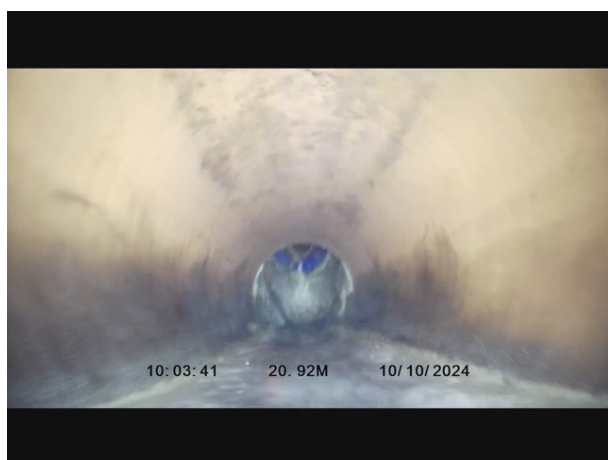
| Item No. | Inspection Direction | PLR       | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|-----------|------------------|----------------------|
| 4        | Upstream             | UPSTREAMX |                  |                      |



1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH4



2, 00:00:06, 0.00 m  
Water level, 10% of the vertical dimension



3, 00:01:05, 20.92 m  
Water level, 5% of the vertical dimension



4, 00:01:13, 21.72 m  
Finish node, manhole, reference: MH5



## Section Inspection - Lateral 1X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>5     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:07 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>LATERAL 1X               |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |           |
|---------------------|-------------------------|-----------------------|----------------|------------------------|-----------|
| Town or Village:    | Crawley                 | Inspection Direction: | Upstream       | Upstream Node:         | LATERAL 1 |
| Road:               | Turners Hill Road       | Inspected Length:     | 11.01 m        | Upstream Pipe Depth:   |           |
| Location:           | Property or buildings   | Total Length:         | 11.01 m        | Downstream Node:       | MH5       |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: | 1.150 m   |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |           |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 225 mm         |                        |           |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |           |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |           |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |           |

Comments:

Recommendations:

| Scale:                                                                                                                                                                             | 1:96 | Position [m] | Code | Observation                                  | MPEG     | Photo | Grade |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|------|----------------------------------------------|----------|-------|-------|
| <div> <div>Depth: 1.15 m<br/>MH5</div> <div> <div>0.00</div> <div>0.00</div> <div>10.93</div> <div>11.01</div> </div> <div> <div>Lateral 1</div> <div>Depth: m</div> </div> </div> |      |              |      |                                              |          |       |       |
|                                                                                                                                                                                    |      | 0.00         | MH   | Start node, manhole, reference: MH5          | 00:00:00 | 1     |       |
|                                                                                                                                                                                    |      | 0.00         | WL   | Water level, 5% of the vertical dimension    | 00:00:03 | 2     |       |
|                                                                                                                                                                                    |      | 10.93        | RM   | Roots, mass, 80% cross-sectional area loss   | 00:00:53 | 3     | 5     |
|                                                                                                                                                                                    |      | 11.01        | MHF  | Finish node, manhole, reference: MH3: Buried | 00:01:00 | 4     |       |

### Construction Features

#### Structural Defects

### Miscellaneous Features

#### Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 1           | 20.0     | 1.8      | 20.0      | 5.0       |



## Section Pictures - Lateral 1X

| Item No. | Inspection Direction | PLR        | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|------------|------------------|----------------------|
| 5        | Upstream             | LATERAL 1X |                  |                      |



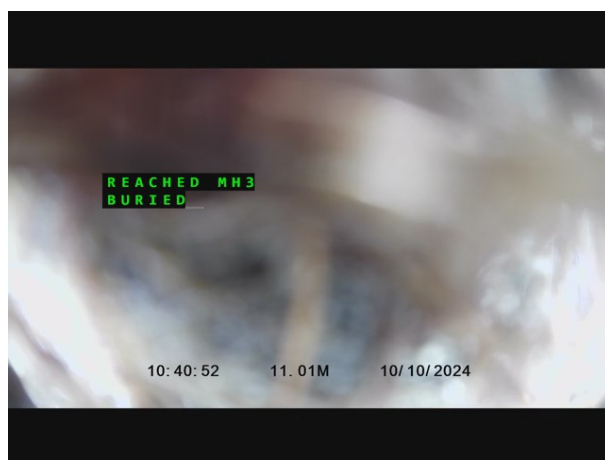
1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH5



2, 00:00:03, 0.00 m  
Water level, 5% of the vertical dimension



3, 00:00:53, 10.93 m  
Roots, mass, 80% cross-sectional area loss



4, 00:01:00, 11.01 m  
Finish node, manhole, reference: MH3, Buried



## Section Inspection - MH6X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>6     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:06 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>MH6X                     |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |            |
|---------------------|-------------------------|-----------------------|----------------|------------------------|------------|
| Town or Village:    | Crawley                 | Inspection Direction: | Downstream     | Upstream Node:         | MH6        |
| Road:               | Turners Hill Road       | Inspected Length:     | 18.24 m        | Upstream Pipe Depth:   | 1.300 m    |
| Location:           | Property or buildings   | Total Length:         | 35.00 m        | Downstream Node:       | DOWNSTREAM |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: | 1.500 m    |
| Use:                | Foul                    | Pipe Shape:           | Circular       |                        |            |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 150 mm         |                        |            |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |            |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |            |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |            |

Comments:

Recommendations:

| Scale: 1:304                        | Position [m] | Code | Observation                                          | MPEG     | Photo | Grade |
|-------------------------------------|--------------|------|------------------------------------------------------|----------|-------|-------|
| <p>Depth: 1.30 m<br/>MH6</p>        |              |      |                                                      |          |       |       |
|                                     | 0.00         | MH   | Start node, manhole, reference: MH6                  | 00:00:00 | 1     |       |
|                                     | 0.00         | WL   | Water level, 5% of the vertical dimension            | 00:00:04 | 2     |       |
|                                     | 18.24        | SA   | Survey abandoned: Overlap of MH4 Lateral 1 Completed | 00:01:15 | 3     |       |
|                                     | 35.00        |      | End of pipe                                          |          |       |       |
| <p>Downstream<br/>Depth: 1.50 m</p> |              |      |                                                      |          |       |       |

Construction Features

Structural Defects

Miscellaneous Features

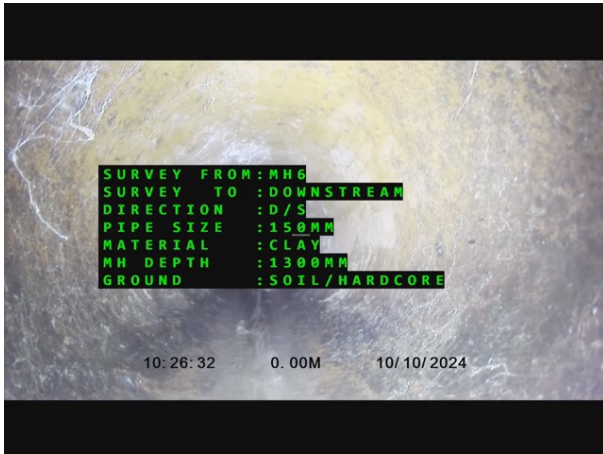
Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 0           | 0.0      | 0.0      | 0.0       | 1.0       |



## Section Pictures - MH6X

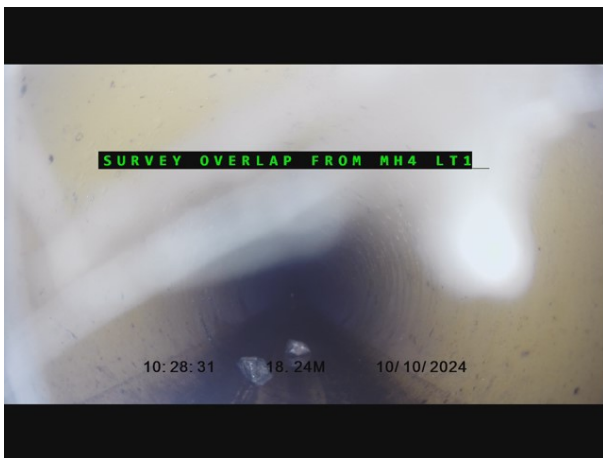
| Item No. | Inspection Direction | PLR  | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|------|------------------|----------------------|
| 6        | Downstream           | MH6X |                  |                      |



1, 00:00:00, 0.00 m  
Start node, manhole, reference: MH6



2, 00:00:04, 0.00 m  
Water level, 5% of the vertical dimension



3, 00:01:15, 18.24 m  
Survey abandoned, Overlap of MH4 Lateral 1 Completed



## Section Inspection - Gully 1X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>7     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:08 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>GULLY 1X                 |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |            |
|---------------------|-------------------------|-----------------------|----------------|------------------------|------------|
| Town or Village:    | Crawley                 | Inspection Direction: | Downstream     | Upstream Node:         | GULLY 1    |
| Road:               | Turners Hill Road       | Inspected Length:     | 9.55 m         | Upstream Pipe Depth:   |            |
| Location:           | Property or buildings   | Total Length:         | 9.55 m         | Downstream Node:       | DOWNSTREAM |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: |            |
| Use:                | Surface water           | Pipe Shape:           | Circular       |                        |            |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 150 mm         |                        |            |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |            |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |            |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |            |

Comments:

Recommendations:

| Scale:              | 1:83 | Position [m] | Code | Observation                                          | MPEG     | Photo | Grade |
|---------------------|------|--------------|------|------------------------------------------------------|----------|-------|-------|
| Depth: m<br>Gully 1 |      |              |      |                                                      |          |       |       |
|                     |      | 0.00         | GY   | Start node, gully, reference: Gully 1                | 00:00:00 | 1     |       |
|                     |      | 0.00         | WL   | Water level, 0% of the vertical dimension            | 00:00:06 | 2     |       |
|                     |      | 3.99         | RM   | Roots, mass, 70% cross-sectional area loss           | 00:00:19 | 3     | 5     |
|                     |      | 4.74         | WL   | Water level, 80% of the vertical dimension           | 00:00:44 | 4     |       |
|                     |      | 9.55         | SA   | Survey abandoned: Unable To Pass Unknown Obstruction | 00:01:08 | 5     |       |

### Construction Features

#### Structural Defects

### Miscellaneous Features

#### Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 1           | 15.0     | 1.6      | 15.0      | 5.0       |



## Section Pictures - Gully 1X

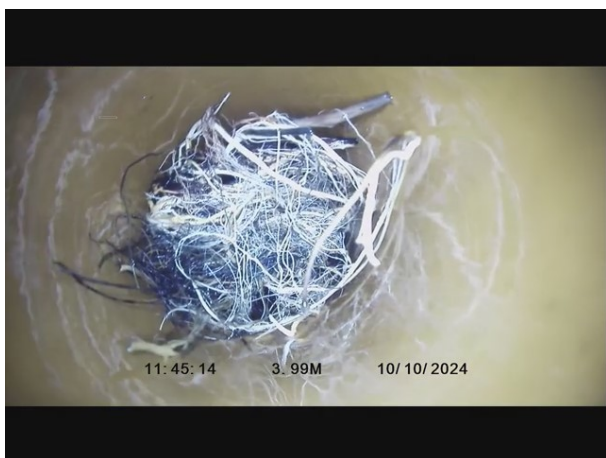
| Item No. | Inspection Direction | PLR      | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|----------|------------------|----------------------|
| 7        | Downstream           | GULLY 1X |                  |                      |



1, 00:00:00, 0.00 m  
Start node, gully, reference: Gully 1



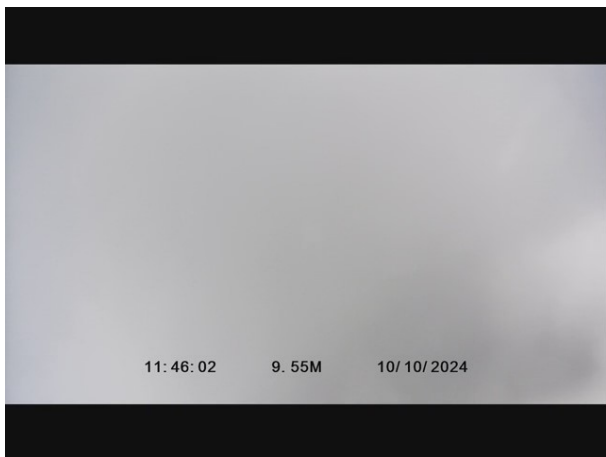
2, 00:00:06, 0.00 m  
Water level, 0% of the vertical dimension



3, 00:00:19, 3.99 m  
Roots, mass, 70% cross-sectional area loss



4, 00:00:44, 4.74 m  
Water level, 80% of the vertical dimension



5, 00:01:08, 9.55 m  
Survey abandoned, Unable To Pass Unknown Obstruction



## Section Inspection - Gully 2X

|                   |                |                          |              |                                   |                                |                               |                                 |
|-------------------|----------------|--------------------------|--------------|-----------------------------------|--------------------------------|-------------------------------|---------------------------------|
| Item No.<br>8     | Insp. No.<br>1 | Date<br>21/10/24         | Time<br>8:09 | Client's Job Ref<br>Not Specified | Weather<br>No Rain Or Snow     | Pre Cleaned<br>Not Specified  | PLR<br>GULLY 2X                 |
| Operator<br>DP743 |                | Vehicle<br>Not Specified |              | Camera<br>Not Specified           | Preset Length<br>Not Specified | Legal Status<br>Not Specified | Alternative ID<br>Not Specified |

|                     |                         |                       |                |                        |            |
|---------------------|-------------------------|-----------------------|----------------|------------------------|------------|
| Town or Village:    | Crawley                 | Inspection Direction: | Downstream     | Upstream Node:         | GULLY 2    |
| Road:               | Turners Hill Road       | Inspected Length:     | 10.00 m        | Upstream Pipe Depth:   |            |
| Location:           | Property or buildings   | Total Length:         | 10.00 m        | Downstream Node:       | DOWNSTREAM |
| Surface Type:       |                         | Joint Length:         |                | Downstream Pipe Depth: |            |
| Use:                | Surface water           | Pipe Shape:           | Circular       |                        |            |
| Type of Pipe:       | Gravity drain/sewer     | Dia/Height:           | 150 mm         |                        |            |
| Flow Control:       | No flow control         | Material:             | Vitrified clay |                        |            |
| Year Constructed:   | Not Specified           | Lining Type:          | No Lining      |                        |            |
| Inspection Purpose: | Sample condition survey | Lining Material:      | No Lining      |                        |            |

Comments:

Recommendations:

| Scale:                      | 1:87 | Position [m] | Code | Observation                                                       | MPEG     | Photo | Grade |
|-----------------------------|------|--------------|------|-------------------------------------------------------------------|----------|-------|-------|
| <p>Depth: m<br/>Gully 2</p> |      |              |      |                                                                   |          |       |       |
|                             |      | 0.00         | GY   | Start node, gully, reference: Gully 2                             | 00:00:00 | 1     |       |
|                             |      | 0.00         | WL   | Water level, 10% of the vertical dimension                        | 00:00:07 | 2     |       |
|                             |      | 0.01         | S01  | DES Settled deposits, fine, 35% cross-sectional area loss, start  | 00:00:07 | 3     |       |
|                             |      | 5.10         | SA   | Survey abandoned: Unable To Push Further                          | 00:01:46 | 4     |       |
|                             |      | 10.00        | F01  | DES Settled deposits, fine, 35% cross-sectional area loss, finish | 00:01:46 |       | 4     |
|                             |      | 10.00        |      | End of pipe                                                       |          |       |       |

Construction Features

Structural Defects

Miscellaneous Features

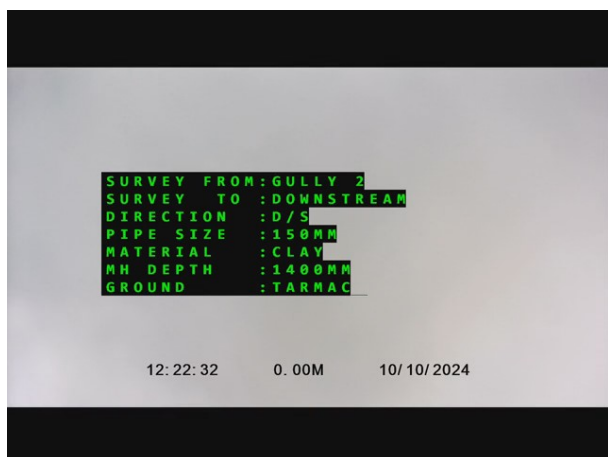
Service & Operational Observations

| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0           | 0.0      | 0.0      | 0.0       | 1.0       | 1           | 5.0      | 5.0      | 50.0      | 5.0       |



## Section Pictures - Gully 2X

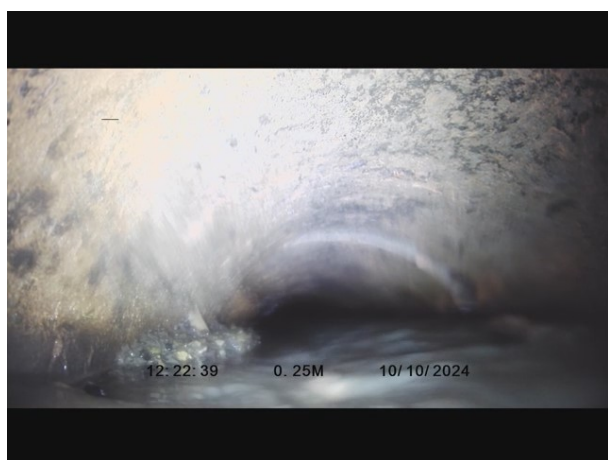
| Item No. | Inspection Direction | PLR      | Client's Job Ref | Contractor's Job Ref |
|----------|----------------------|----------|------------------|----------------------|
| 8        | Downstream           | GULLY 2X |                  |                      |



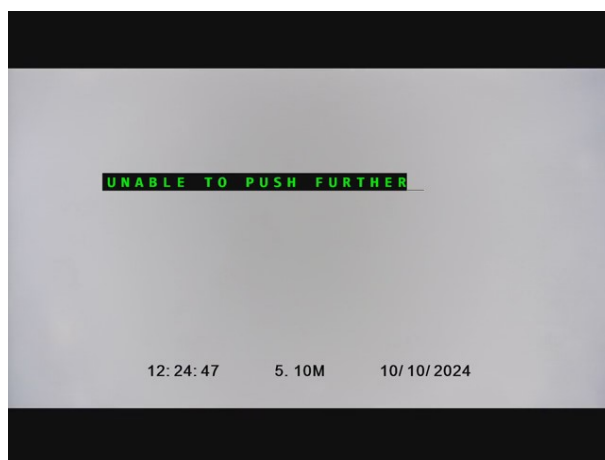
1, 00:00:00, 0.00 m  
Start node, gully, reference: Gully 2



2, 00:00:07, 0.00 m  
Water level, 10% of the vertical dimension



3, 00:00:07, 0.01 m  
Settled deposits, fine, 35% cross-sectional area loss, start



4, 00:01:46, 5.10 m  
Survey abandoned, Unable To Push Further



# Terms and Conditions

## 1. Definitions and Interpretation

The following definitions apply in these terms and conditions:

"Conditions" these terms and conditions. "Confirmation" is our Confirmation of your order attached to these Conditions.

"Contract" is the Confirmation together with Conditions. "Customer" is the person or firm or company that purchases work from the supplier.

"Supplier" Express Drainage Solutions. "Work" is the work and services to be provided by the Supplier under the Contract as set out in the Suppliers Confirmation or, (Where a Confirmation has not been provided) the Quotation.

## 2. Limitations of the Report

2.1 It should be noted that the exact layout of the system cannot be confirmed without the exposure of inaccessible branches, connections and all other inaccessible sections.

2.2 A CCTV Survey alone should not be a guarantee of water tightness,

2.3 The Report is not a structural survey and must not be construed as such

2.4 The Views expressed in this report are based entirely upon a visual examination of the drainage, supported by information from a drainage CCTV inspection and/or a water pressure test.

2.5 The drawing contained within or accompanying the report is not a scaled drawing and is for reference purposes only.

## 3. Rights of Originator

3.1 The report is for the sole use of the customer

3.1.1 It must not be reproduced or transferred to any other third party without the express written consent of the supplier.

3.2 This is a condition report of the drain/sewer at the time and date of the survey being carried out only.

3.3 We reserve the right to amend our opinions in the event of additional information being made available at a future date

## 4. Customer's Obligations

4.1 It is the Customer's responsibility to provide the Supplier, in sufficient time, with any information and instructions relating to the Work that is, or are, necessary to enable the supplier to provide the work in accordance with the contract.

4.2 The Customer shall inform the Supplier in writing in good time of any dangerous materials or hazards that may be present on the premises and which could constitute a danger to any person.

4.3 If the Customer fails to provide the information required in clause 4.2 above, or provides the Supplier with incomplete, incorrect or inaccurate information or instructions, the Supplier may:

4.3.1 Make an additional charge of a reasonable sum to cover any extra work that is required; or

4.3.2 Cancel the Contract by giving written notice to the Customer

## 5. Access

5.1 The Customer shall provide clear access to all drains, sewers, inspection covers and Inspection Chambers to enable the Supplier to carry out the Work.

5.2 Where the Customer's drains are shared with third parties, the Supplier will request written permission from the relevant third party (ies). If permission cannot be obtained, the Supplier will have the right to cancel the Contract and shall have no liability to the Customer in respect of any such cancellation.

5.3 The Customer shall obtain permission for the Supplier to proceed over the property belonging to third parties and/or to carry out work on property belonging to third parties where this is necessary for the proper execution of the Work.

## 6. Water and Power

6.1 The Customer shall provide all necessary power and a clean water supply from the mains or fire hydrant.

6.2 Where it is necessary for the Supplier to use a metered hydrant and supply controlled by the water authorities, the Supplier will invoice all charges made by that authority to the Customer and the Customer shall pay such charges within 7 days of receipt of the Supplier's invoice.

## 7. Work Guarantee

7.1 Subject to the following provisions of this Condition 7, The Supplier guarantees completed unblock and survey Work for a period of 28 days from the date of completion.

7.2 The Customer shall inspect the Work as far as it is reasonably possible immediately upon completion of it and shall as far as reasonably practicable notify the supplier of any reason for believing that the work carried out by the Supplier is not in accordance with the Contract within seven days of completion.

7.3 If the Customer fails to give such notice the Work shall conclusively be presumed free from any defects which would be apparent upon reasonable examination of the Work.

7.4 The Supplier reserves the right not to carry out Work requested under the guarantee until the Supplier has been paid. The Supplier also reserves the right to delay or withhold performance of the guarantee where the Supplier has advised the Customer that, although clear, the drains need further work or have a possible fault.

8. Limitation of Liability – The Customer's Attention is particularly drawn to the provisions of this condition.

8.1 The Supplier warrants to the Customer that the Work will be provided using reasonable care and skill and, unless the Supplier is prevented by circumstances beyond its reasonable control, in accordance with the Confirmation

8.2 The Supplier shall have no liability to the Customer for any loss, damage costs, expenses or other claims for compensation arising from:

8.2.1 Any information or instructions supplied by the Customer which is or are incomplete, incorrect or inaccurate; or

8.2.2 Any failure by the Customer to obtain proper access over any property of any third party required in accordance with clause 5: or

8.2.3 Any damage or defect caused by any third party.

8.3 The Supplier shall have no liability to the Customer for any loss, damage costs, expenses or other claims for compensation arising from any indirect or consequential loss, damage or expenses.

8.4 The Supplier's Liability in respect of any other loss or damage shall be limited to the price paid by the Customer.

8.5 The Supplier shall not be liable to the Customer because of any delay in performing, or any failure to perform, any of its obligations in relation to the Work if the delay or failure was due to:

8.5.1 Any act of God, war, terrorism, power failure, or any other cause beyond the Supplier's reasonable control; or

8.5.2 Any risk to health and safety or the environment, however, the Supplier will try to minimise any such problems where reasonably practicable.

8.6 The Supplier will not be liable for any fractured or frozen pipes and cannot guarantee to clear blockages occurring in a frozen pipe or drain.

8.7 Nothing in these Conditions affects any liability for death or personal injury caused by the Supplier's negligence or for fraudulent misrepresentation, or the Customer's statutory rights as a consumer.

## 9. Data Protection

9.1 The Supplier will use personal information provided by the Customer for the purposes of:

9.1.1 Providing the Work:

9.1.2 Carrying out marketing and statistical analysis and we may disclose your information to our service providers for these purposes;

9.1.3 Informing the Customer by post or telephone about similar products and services provided by the Supplier and/or its related companies.

9.2 The Customer acknowledges and agrees that the details of the Customer's name, Address and payment records may be submitted to a credit reference agency.

9.3 The Customer can correct any information or ask for information about the Customer to be deleted or opt-out from receiving any marketing information by post or by telephone by giving written notice to the Supplier at the address, fax number or email address shown on the Confirmation and/or any customer satisfaction questionnaire provided.

## 10. General

10.1 If any provision (or part of a provision) of this contract is found by any court or administrative body of competent jurisdiction to be invalid unenforceable or illegal, the other provisions will remain in force.

10.2 If any invalid, unenforceable or illegal provision of this Contract would be valid, enforceable or legal if some part of it were changed, or deleted, that provision will apply with whatever changes are necessary to make the relevant provision valid, enforceable and legal.

10.3 A delay by either party in acting on a breach of this Contract will not prevent the other party from taking action in respect of that breach or any subsequent breach of this contract.



Reg Address: As Above | Comp Reg No. 08845834 | VAT No. 178 610 783 | Trading name of Express Solutions Group Ltd



EXPRESS  
CLEAR  
SOLUTIONS



EXPRESS  
HYDRO  
SOLUTIONS



EXPRESS  
DRAINAGE  
SURVEYS



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COMMERCIAL  
SOLUTIONS



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ECO  
SOLUTIONS



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SOLUTIONS  
GROUP



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SOLUTIONS  
**GROUP**

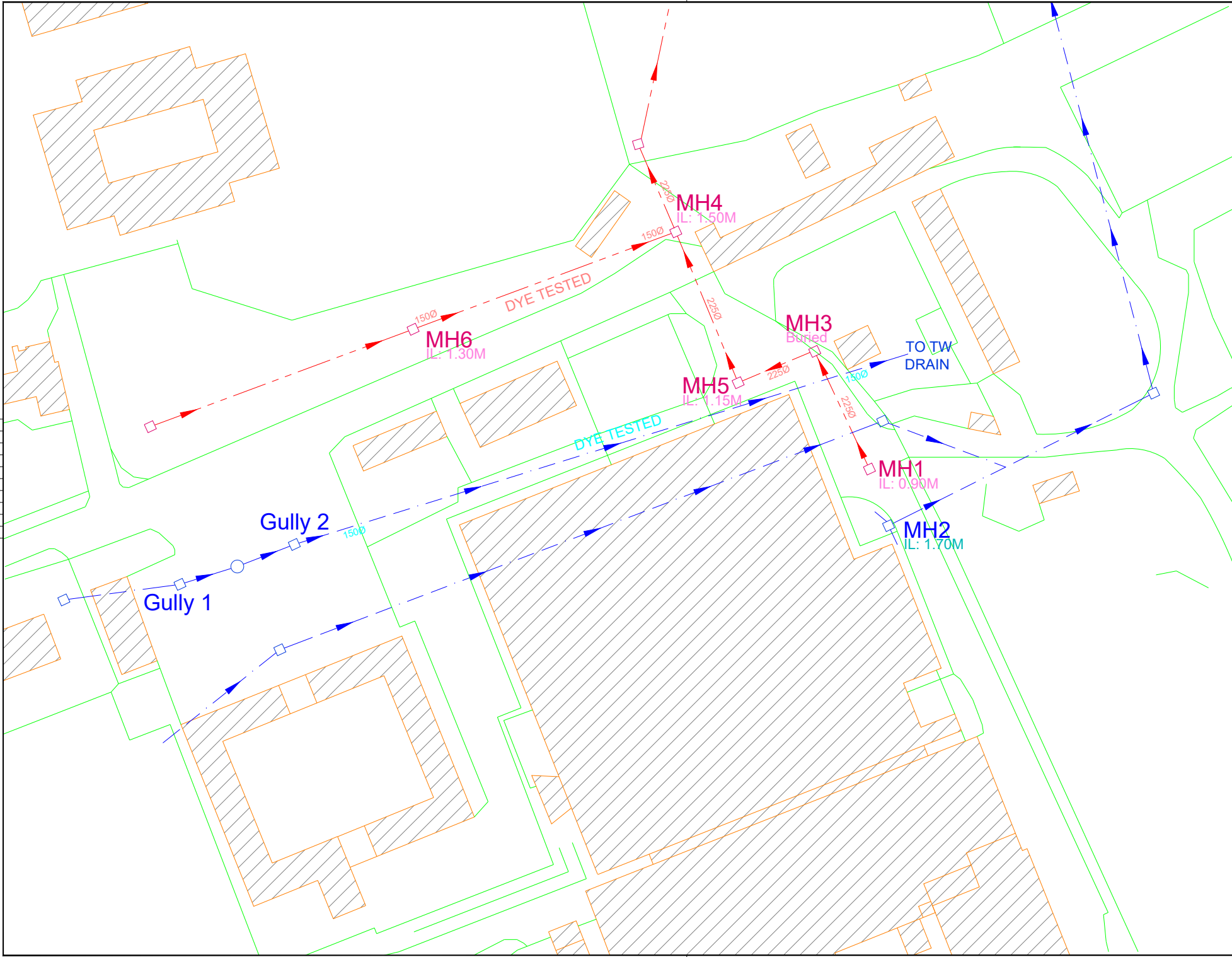
## Contact Us

0208 979 5444

[info@expresssolutions.group](mailto:info@expresssolutions.group)

[www.expresssolutions.group](http://www.expresssolutions.group)

152-154 Commercial Road, Staines-Upon-Thames, Surrey, TW18 2QW



JOB No. SD-2351

LEGEND

FW MH/IC

SW MH/IC

INTERCEPTOR

FW GULLY

SW GULLY

ST/VP:STACK

RWP

SW: SURFACE WATER

SURFACE WATER ROUTE

FW: FOUL WATER

FOUL WATER ROUTE

BUILDING OUTLINE

OVERHEAD BUILDING LINE

BOUNDARY LINE

ROAD

PROPOSED

BANK

BANK SYMBOL

UTS: Unable to Survey

UTL: Unable to Lift

EOT: End of Trace

TREE

NOT TO SCALE

Drawing Notes

| Rev. | Date | Description | By |
|------|------|-------------|----|
|      |      |             |    |

 EXPRESS SOLUTIONS GROUP

Head Office:  
152-154 Commercial Road  
Staines-Upon-Thames  
Surrey  
TW18 2QW  
Tel 020 8979 5444  
VAT 851970604  
Company No 04935559

|               |                                                                  |
|---------------|------------------------------------------------------------------|
| Client        | Steel Frame Systems                                              |
| Site Address  | Stables Cottage<br>Crabbet Park<br>Turners Hill Road<br>RH10 4ST |
| Drawing title | Plan                                                             |
| Scales        | NOT TO SCALE                                                     |
| Surveyor      | DP743                                                            |
| Drawn By      | BS                                                               |
| Date          | 21/10/2024                                                       |

JOB No. SD-2351

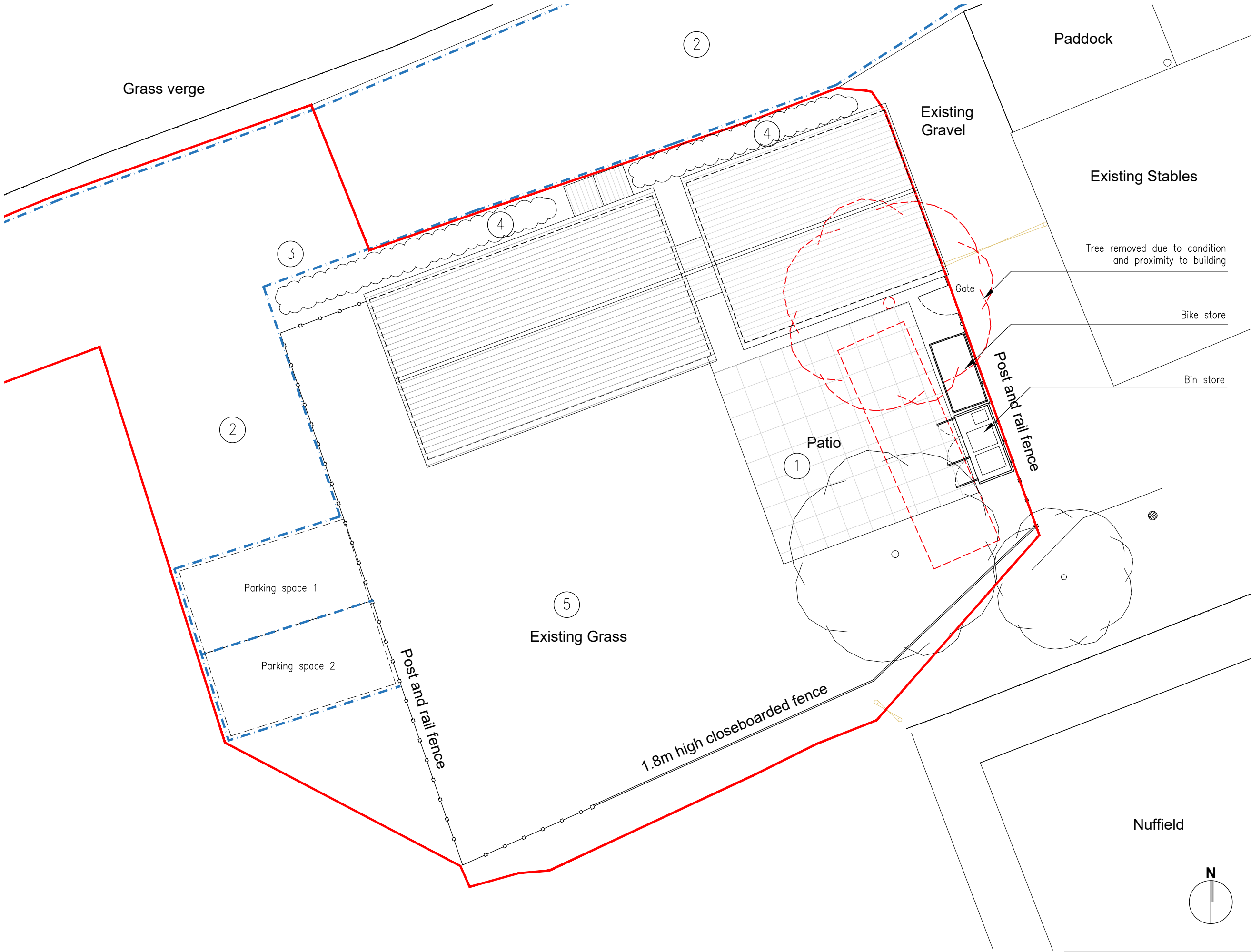
**Appendix B Proposed site full element**

Proposed layout

Surface water Drainage Strategy

Catchment plan

Causeway Flow calculations



| Landscaping Specification |                                                                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1.                        | 60x60cm Marshalls Yorkstone external paving                                                                                          |
| 2.                        | Proposed hoggin road surface                                                                                                         |
| 3.                        | Stone sett border edging                                                                                                             |
| 4.                        | Proposed hedgerow native species mix:<br>Buxus Sempervirens<br>Lavandula angustifolia 'Hidcote'<br>Eonymus fortunei 'Emerald Gaiety' |
| 5.                        | Proposed grass                                                                                                                       |

| Rev | Date |
|-----|------|
|-----|------|



Gavin Jones Architecture

Project Details

Site Office Building  
Crabbet Park  
RH10 4SW

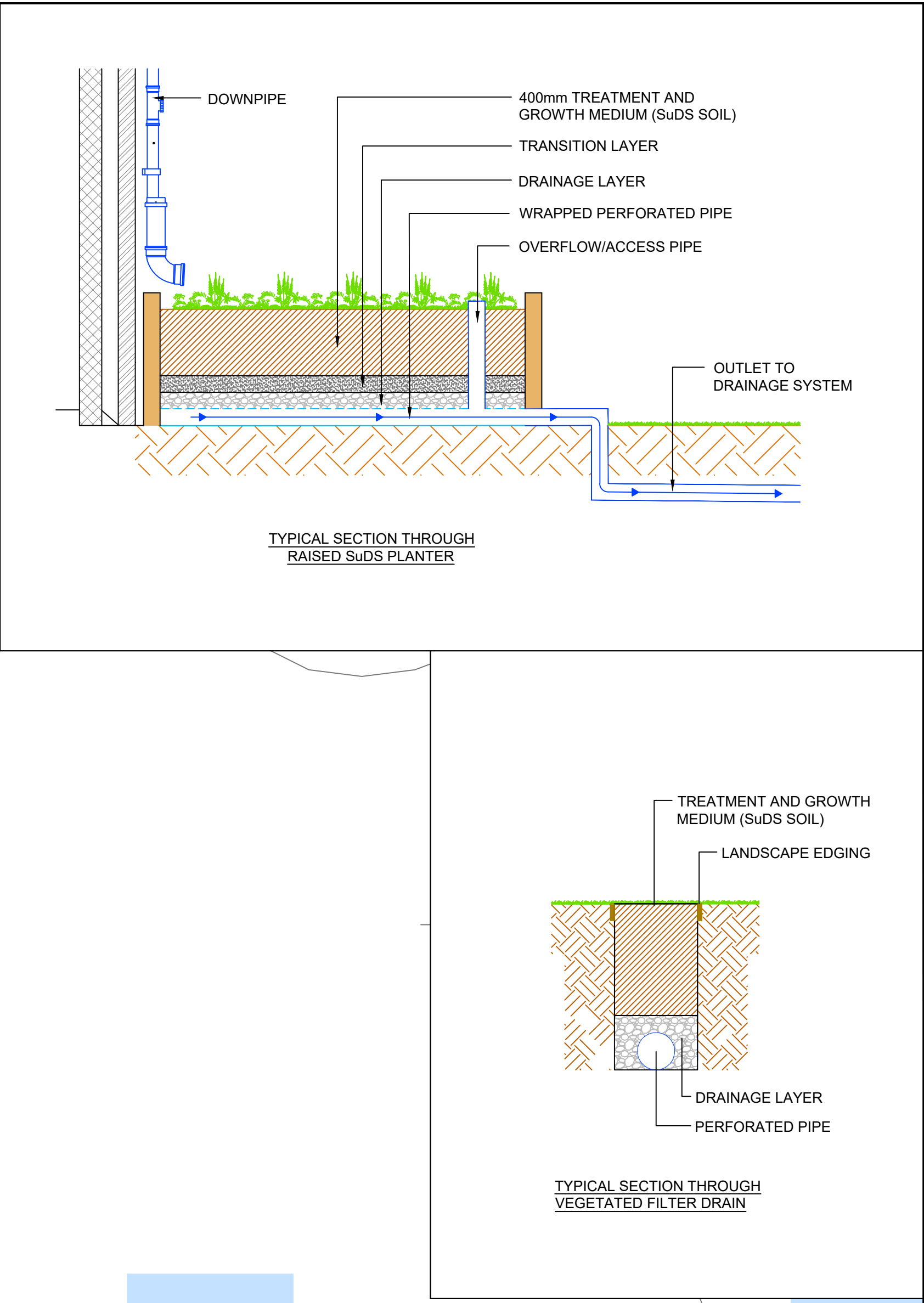
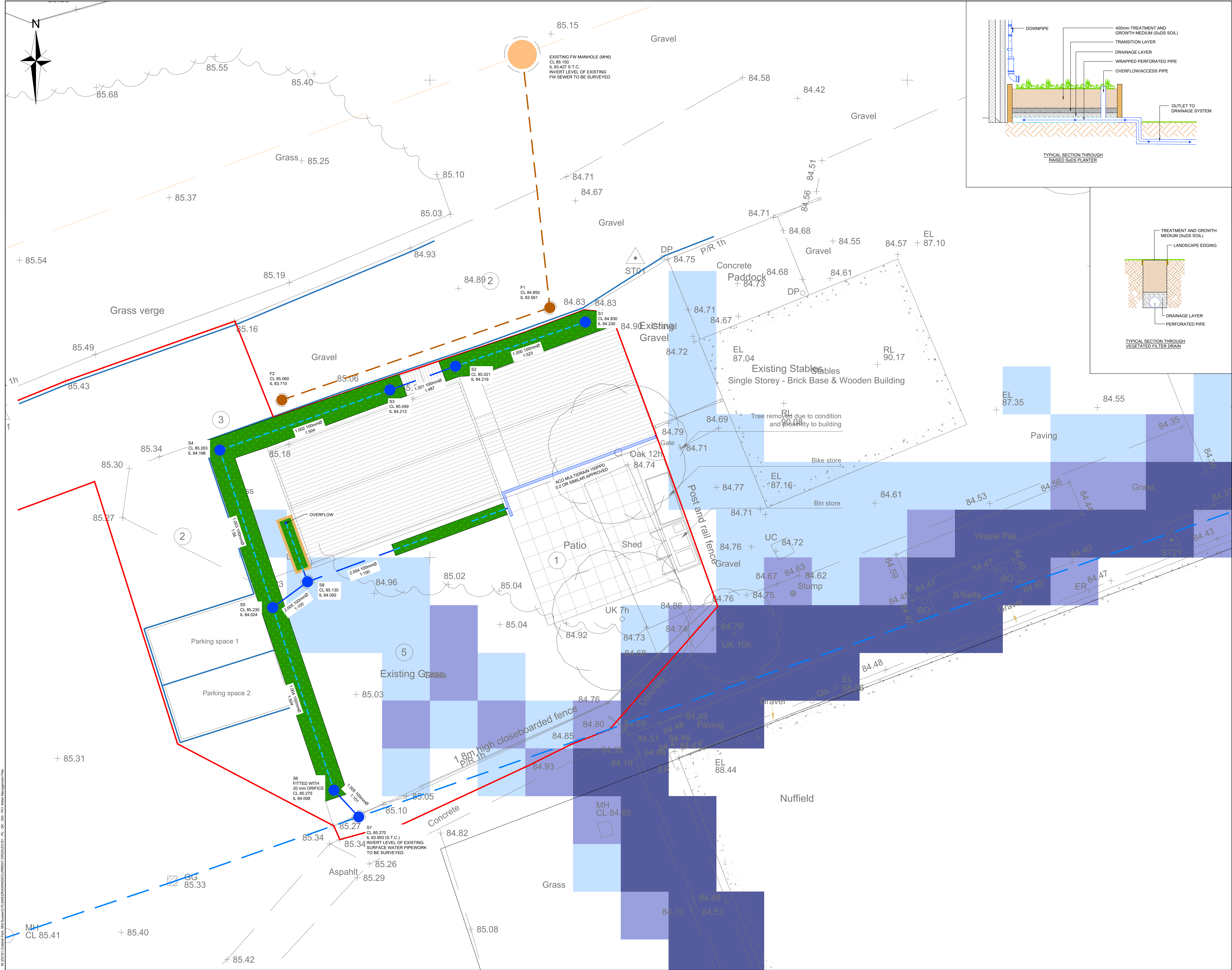
Drawing Details

Title:  
Proposed Site Plan

|                |                    |
|----------------|--------------------|
| Job no.<br>038 | Drawing no.<br>005 |
|----------------|--------------------|

|                      |                     |
|----------------------|---------------------|
| Scale:<br>1:100 @ A3 | Date:<br>August '25 |
|----------------------|---------------------|

|                     |              |
|---------------------|--------------|
| Status:<br>Planning | Rev:<br>PL01 |
|---------------------|--------------|



| KEY |                                                |
|-----|------------------------------------------------|
|     | EXISTING FW DRAINAGE (LOCATION APPROXIMATE)    |
|     | EXISTING SW DRAINAGE (LOCATION APPROXIMATE)    |
|     | PERFORATED PIPE                                |
|     | SURFACE WATER PIPE                             |
|     | FOUL WATER PIPE                                |
|     | SURFACE WATER INSPECTION CHAMBER               |
|     | FOUL WATER INSPECTION CHAMBER                  |
|     | FILTER DRAIN                                   |
|     | RAISED (SuDS) PLANTER                          |
|     | SURFACE WATER FLOODING EXTENTS (HIGH CHANCE)   |
|     | SURFACE WATER FLOODING EXTENTS (MEDIUM CHANCE) |
|     | SURFACE WATER FLOODING EXTENTS (LOW CHANCE)    |

#### NOTES

|                |  |                                   |  |
|----------------|--|-----------------------------------|--|
| PROJECT TITLE  |  | CRABBET PARK, CRAWLEY, MID SUSSEX |  |
| DRAWING TITLE  |  | WATER MANAGEMENT PLAN             |  |
| CLIENT         |  | PEACOCK 5 Ltd                     |  |
| DRAWING NUMBER |  | ZG181 - PL - SK - 300             |  |
| REV            |  | P01                               |  |

|                                                                                                                                                                                                                                                                                                                                |                       |                  |                 |     |          |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|-----------------|-----|----------|-----------------|
| KEY                                                                                                                                                                                                                                                                                                                            |                       |                  |                 |     |          |                 |
|                                                                                                                                                                                                                                                                                                                                |                       |                  |                 |     |          |                 |
| NOTES                                                                                                                                                                                                                                                                                                                          |                       |                  |                 |     |          |                 |
|                                                                                                                                                                                                                                                                                                                                |                       |                  |                 |     |          |                 |
| P01                                                                                                                                                                                                                                                                                                                            | LAYOUT UPDATED        | -                | AH              | -   | 22.08.25 |                 |
| REV.                                                                                                                                                                                                                                                                                                                           | DESCRIPTION           | DE.              | DR.             | CH. | DATE     |                 |
| -                                                                                                                                                                                                                                                                                                                              | DESIGNED BY<br>D.N.S. | DRAWN BY<br>A.H. | CHECKED BY<br>- |     |          |                 |
|                                                                                                                                                                                                                                                                                                                                | SCALE @ A1 SIZE       | DATE             |                 |     |          |                 |
|                                                                                                                                                                                                                                                                                                                                | JUNE 2025             |                  |                 |     |          |                 |
| PROJECT TITLE<br><br>CRABBET PARK,<br>CRAWLEY, MID SUSSEX                                                                                                                                                                                                                                                                      |                       |                  |                 |     |          |                 |
| DRAWING TITLE<br><br>CATCHMENT PLAN                                                                                                                                                                                                                                                                                            |                       |                  |                 |     |          |                 |
| CLIENT<br><br>PEACOCK 5 Ltd                                                                                                                                                                                                                                                                                                    |                       |                  |                 |     |          |                 |
| <div>cannon</div> <div>CONSULTING ENGINEERS</div> <div>Cambridge House, Lamwades Business Park, Kentford, Newmarket, CB8 7PN<br/>Tel: 01638 555107<br/><a href="#">www.cannnonce.co.uk</a><br/><a href="#">info@cannnonce.co.uk</a></div> |                       |                  |                 |     |          |                 |
| DRAWING NUMBER<br><br>ZG181 - PL - SK - 301                                                                                                                                                                                                                                                                                    |                       |                  |                 |     |          | REV.<br><br>P01 |

### Design Settings

|                                      |        |                                    |               |
|--------------------------------------|--------|------------------------------------|---------------|
| Rainfall Methodology                 | FEH-22 | Minimum Velocity (m/s)             | 1.00          |
| Return Period (years)                | 2      | Connection Type                    | Level Soffits |
| Additional Flow (%)                  | 0      | Minimum Backdrop Height (m)        | 0.200         |
| CV                                   | 1.000  | Preferred Cover Depth (m)          | 0.000         |
| Time of Entry (mins)                 | 5.00   | Include Intermediate Ground        | ✓             |
| Maximum Time of Concentration (mins) | 30.00  | Enforce best practice design rules | x             |
| Maximum Rainfall (mm/hr)             | 500.0  |                                    |               |

### Nodes

| Name  | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) |
|-------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|
| ACO 1 | 0.002        | 5.00             | 84.740                |                  | 530549.472     | 137245.060      | 0.170        |
| ACO 2 |              |                  | 84.740                |                  | 530543.070     | 137242.703      | 0.170        |
| ACO 3 |              |                  | 84.740                |                  | 530543.298     | 137242.084      | 0.170        |
| FD1   | 0.001        | 5.00             | 84.740                |                  | 530543.157     | 137242.032      | 0.600        |
| FD2   |              |                  | 84.960                |                  | 530538.480     | 137240.309      | 0.830        |
| S1    | 0.002        | 5.00             | 84.830                | 450              | 530546.511     | 137249.863      | 0.600        |
| S2    |              |                  | 85.021                | 450              | 530541.070     | 137248.013      | 0.802        |
| S3    | 0.002        | 5.00             | 85.049                | 450              | 530538.324     | 137247.020      | 0.836        |
| S4    | 0.004        | 5.00             | 85.263                | 450              | 530531.198     | 137244.497      | 1.065        |
| S5    | 0.003        | 5.00             | 85.230                | 450              | 530533.413     | 137237.899      | 1.206        |
| S6    |              |                  | 85.270                | 450              | 530535.980     | 137230.251      | 1.262        |
| S7    |              |                  | 85.270                | 1200             | 530537.016     | 137229.130      | 1.277        |
| S8    | 0.001        | 5.00             | 85.130                | 450              | 530534.873     | 137238.981      | 1.038        |

### 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 | S1         | S2         | 5.747         | 0.600          | 84.230       | 84.219       | 0.011       | 522.5          | 100         | 5.29             | 53.9            |
| 1.001 | S2         | S3         | 2.920         | 0.600          | 84.219       | 84.213       | 0.006       | 486.7          | 100         | 5.43             | 53.3            |
| 1.002 | S3         | S4         | 7.559         | 0.600          | 84.213       | 84.198       | 0.015       | 503.9          | 100         | 5.81             | 51.8            |
| 1.003 | S4         | S5         | 6.960         | 0.600          | 84.198       | 84.074       | 0.124       | 56.1           | 100         | 5.92             | 51.4            |
| 1.004 | S5         | S6         | 8.067         | 0.600          | 84.024       | 84.008       | 0.016       | 504.2          | 150         | 6.23             | 50.3            |
| 1.005 | S6         | S7         | 1.526         | 0.600          | 84.008       | 83.993       | 0.015       | 101.7          | 100         | 6.26             | 50.2            |
| 2.000 | ACO 1      | ACO 2      | 6.822         | 0.600          | 84.570       | 84.570       | 0.000       | 0.0            | 170         | 5.11             | 54.5            |
| 2.001 | ACO 2      | ACO 3      | 1.000         | 0.600          | 84.570       | 84.570       | 0.000       | 0.0            | 170         | 5.13             | 54.5            |
| 2.002 | ACO 3      | FD1        | 1.000         | 0.600          | 84.570       | 84.140       | 0.430       | 2.3            | 100         | 5.13             | 54.5            |
| 2.003 | FD1        | FD2        | 4.984         | 0.600          | 84.140       | 84.130       | 0.010       | 498.4          | 100         | 5.38             | 53.5            |
| 2.004 | FD2        | S8         | 3.844         | 0.600          | 84.130       | 84.092       | 0.038       | 101.2          | 100         | 5.46             | 53.2            |
| 2.005 | S8         | S5         | 1.817         | 0.600          | 84.092       | 84.074       | 0.018       | 100.9          | 100         | 5.50             | 53.0            |

| 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 | 0.330        | 2.6          | 0.4           | 0.500              | 0.702              | 0.002          | 0.0                      | 26                   | 0.235                    |
| 1.001 | 0.342        | 2.7          | 0.4           | 0.702              | 0.736              | 0.002          | 0.0                      | 25                   | 0.239                    |
| 1.002 | 0.336        | 2.6          | 0.7           | 0.736              | 0.965              | 0.004          | 0.0                      | 36                   | 0.288                    |
| 1.003 | 1.030        | 8.1          | 1.5           | 0.965              | 1.056              | 0.008          | 0.0                      | 29                   | 0.788                    |
| 1.004 | 0.441        | 7.8          | 2.7           | 1.056              | 1.112              | 0.015          | 0.0                      | 61                   | 0.402                    |
| 1.005 | 0.762        | 6.0          | 2.7           | 1.162              | 1.177              | 0.015          | 0.0                      | 47                   | 0.744                    |
| 2.000 | 1.000        | 20.8         | 0.4           | 0.000              | 0.000              | 0.002          | 0.0                      | 0                    | ∞                        |
| 2.001 | 1.000        | 20.8         | 0.4           | 0.000              | 0.000              | 0.002          | 0.0                      | 0                    | ∞                        |
| 2.002 | 5.111        | 40.1         | 0.4           | 0.070              | 0.500              | 0.002          | 0.0                      | 7                    | 1.649                    |
| 2.003 | 0.338        | 2.7          | 0.6           | 0.500              | 0.730              | 0.003          | 0.0                      | 32                   | 0.268                    |
| 2.004 | 0.764        | 6.0          | 0.6           | 0.730              | 0.938              | 0.003          | 0.0                      | 21                   | 0.476                    |
| 2.005 | 0.765        | 6.0          | 0.8           | 0.938              | 1.056              | 0.004          | 0.0                      | 24                   | 0.519                    |

**Pipeline Schedule**

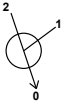
| Link  | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type               | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|-------|---------------|----------------|-------------|----------------------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 1.000 | 5.747         | 522.5          | 100         | Circular                   | 84.830       | 84.230       | 0.500           | 85.021       | 84.219       | 0.702           |
| 1.001 | 2.920         | 486.7          | 100         | Circular                   | 85.021       | 84.219       | 0.702           | 85.049       | 84.213       | 0.736           |
| 1.002 | 7.559         | 503.9          | 100         | Circular                   | 85.049       | 84.213       | 0.736           | 85.263       | 84.198       | 0.965           |
| 1.003 | 6.960         | 56.1           | 100         | Circular                   | 85.263       | 84.198       | 0.965           | 85.230       | 84.074       | 1.056           |
| 1.004 | 8.067         | 504.2          | 150         | Circular                   | 85.230       | 84.024       | 1.056           | 85.270       | 84.008       | 1.112           |
| 1.005 | 1.526         | 101.7          | 100         | Circular                   | 85.270       | 84.008       | 1.162           | 85.270       | 83.993       | 1.177           |
| 2.000 | 6.822         | 0.0            | 170         | ACO Multidrain M150PPD 0.0 | 84.740       | 84.570       | 0.000           | 84.740       | 84.570       | 0.000           |
| 2.001 | 1.000         | 0.0            | 170         | ACO Multidrain M150PPD 0.0 | 84.740       | 84.570       | 0.000           | 84.740       | 84.570       | 0.000           |
| 2.002 | 1.000         | 2.3            | 100         | Circular                   | 84.740       | 84.570       | 0.070           | 84.740       | 84.140       | 0.500           |
| 2.003 | 4.984         | 498.4          | 100         | Circular                   | 84.740       | 84.140       | 0.500           | 84.960       | 84.130       | 0.730           |
| 2.004 | 3.844         | 101.2          | 100         | Circular                   | 84.960       | 84.130       | 0.730           | 85.130       | 84.092       | 0.938           |
| 2.005 | 1.817         | 100.9          | 100         | Circular                   | 85.130       | 84.092       | 0.938           | 85.230       | 84.074       | 1.056           |

| Link  | US<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type | DS<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type |
|-------|------------|-------------|--------------|------------|------------|-------------|--------------|------------|
| 1.000 | S1         | 450         | Manhole      | Adoptable  | S2         | 450         | Manhole      | Adoptable  |
| 1.001 | S2         | 450         | Manhole      | Adoptable  | S3         | 450         | Manhole      | Adoptable  |
| 1.002 | S3         | 450         | Manhole      | Adoptable  | S4         | 450         | Manhole      | Adoptable  |
| 1.003 | S4         | 450         | Manhole      | Adoptable  | S5         | 450         | Manhole      | Adoptable  |
| 1.004 | S5         | 450         | Manhole      | Adoptable  | S6         | 450         | Manhole      | Adoptable  |
| 1.005 | S6         | 450         | Manhole      | Adoptable  | S7         | 1200        | Manhole      | Adoptable  |
| 2.000 | ACO 1      |             | Junction     |            | ACO 2      |             | Junction     |            |
| 2.001 | ACO 2      |             | Junction     |            | ACO 3      |             | Junction     |            |
| 2.002 | ACO 3      |             | Junction     |            | FD1        |             | Junction     |            |
| 2.003 | FD1        |             | Junction     |            | FD2        |             | Junction     |            |
| 2.004 | FD2        |             | Junction     |            | S8         | 450         | Manhole      | Adoptable  |
| 2.005 | S8         | 450         | Manhole      | Adoptable  | S5         | 450         | Manhole      | Adoptable  |

**Manhole Schedule**

| Node  | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections | Link                                     | IL<br>(m) | Dia<br>(mm) |
|-------|----------------|-----------------|-----------|--------------|-------------|-------------|------------------------------------------|-----------|-------------|
| ACO 1 | 530549.472     | 137245.060      | 84.740    | 0.170        |             |             |                                          |           |             |
| ACO 2 | 530543.070     | 137242.703      | 84.740    | 0.170        |             |             | 0 2.000 84.570 170<br>1 2.000 84.570 170 |           |             |
| ACO 3 | 530543.298     | 137242.084      | 84.740    | 0.170        |             |             | 0 2.001 84.570 170<br>1 2.001 84.570 170 |           |             |
| FD1   | 530543.157     | 137242.032      | 84.740    | 0.600        |             |             | 0 2.002 84.570 100<br>1 2.002 84.140 100 |           |             |
| FD2   | 530538.480     | 137240.309      | 84.960    | 0.830        |             |             | 0 2.003 84.140 100<br>1 2.003 84.130 100 |           |             |
| S1    | 530546.511     | 137249.863      | 84.830    | 0.600        | 450         |             | 0 2.004 84.130 100<br>0 1.000 84.230 100 |           |             |

**Manhole Schedule**

| Node | Easting (m) | Northing (m) | CL (m) | Depth (m) | Dia (mm) | Connections                                                                                    | Link  | IL (m) | Dia (mm) |
|------|-------------|--------------|--------|-----------|----------|------------------------------------------------------------------------------------------------|-------|--------|----------|
| S2   | 530541.070  | 137248.013   | 85.021 | 0.802     | 450      |  1           | 1.000 | 84.219 | 100      |
|      |             |              |        |           |          | 0                                                                                              | 1.001 | 84.219 | 100      |
| S3   | 530538.324  | 137247.020   | 85.049 | 0.836     | 450      |  1           | 1.001 | 84.213 | 100      |
|      |             |              |        |           |          | 0                                                                                              | 1.002 | 84.213 | 100      |
| S4   | 530531.198  | 137244.497   | 85.263 | 1.065     | 450      |  1           | 1.002 | 84.198 | 100      |
|      |             |              |        |           |          | 0                                                                                              | 1.003 | 84.198 | 100      |
| S5   | 530533.413  | 137237.899   | 85.230 | 1.206     | 450      |  2<br>1<br>0 | 1.005 | 84.074 | 100      |
|      |             |              |        |           |          | 2                                                                                              | 1.003 | 84.074 | 100      |
|      |             |              |        |           |          | 0                                                                                              | 1.004 | 84.024 | 150      |
| S6   | 530535.980  | 137230.251   | 85.270 | 1.262     | 450      |  1<br>0      | 1.004 | 84.008 | 150      |
|      |             |              |        |           |          | 0                                                                                              | 1.005 | 84.008 | 100      |
| S7   | 530537.016  | 137229.130   | 85.270 | 1.277     | 1200     |  1          | 1.005 | 83.993 | 100      |
| S8   | 530534.873  | 137238.981   | 85.130 | 1.038     | 450      |  1<br>0    | 2.004 | 84.092 | 100      |
|      |             |              |        |           |          | 0                                                                                              | 2.005 | 84.092 | 100      |

**Simulation Settings**

|                      |          |                                         |        |                         |   |
|----------------------|----------|-----------------------------------------|--------|-------------------------|---|
| Rainfall Methodology | FEH-22   | Analysis Speed                          | Normal | Starting Level (m)      |   |
| Rainfall Events      | Singular | Skip Steady State                       | x      | Check Discharge Rate(s) | x |
| Summer CV            | 1.000    | Drain Down Time (mins)                  | 10080  | Check Discharge Volume  | x |
| Winter CV            | 1.000    | Additional Storage (m <sup>3</sup> /ha) | 0.0    |                         |   |

**Storm Durations**

|    |     |     |     |     |      |      |      |      |       |
|----|-----|-----|-----|-----|------|------|------|------|-------|
| 15 | 60  | 180 | 360 | 600 | 960  | 2160 | 4320 | 7200 | 10080 |
| 30 | 120 | 240 | 480 | 720 | 1440 | 2880 | 5760 | 8640 |       |

| 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                    | 35                    | 0                     | 0                     |
| 10                    | 0                     | 0                     | 0                     | 100                   | 0                     | 0                     | 0                     |
| 30                    | 0                     | 0                     | 0                     | 100                   | 40                    | 5                     | 0                     |

**Node S6 Online Orifice Control**

|                          |        |                   |       |                       |       |
|--------------------------|--------|-------------------|-------|-----------------------|-------|
| Flap Valve               | x      | Design Depth (m)  | 0.632 | Discharge Coefficient | 0.600 |
| Replaces Downstream Link | x      | Design Flow (l/s) | 0.1   |                       |       |
| Invert Level (m)         | 84.008 | Diameter (m)      | 0.020 |                       |       |

**Node S2 Link Surround Storage Structure**

|                             |         |                           |        |                |          |
|-----------------------------|---------|---------------------------|--------|----------------|----------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 0.30   | Link           | 1.000    |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 84.219 | Surround Shape | (Trench) |
| Safety Factor               | 2.0     | Time to half empty (mins) | 252    | Diameter (mm)  | 1000     |

**Node S4 Link Surround Storage Structure**

|                             |         |                           |        |                |          |
|-----------------------------|---------|---------------------------|--------|----------------|----------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 0.30   | Link           | 1.002    |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 84.198 | Surround Shape | (Trench) |
| Safety Factor               | 2.0     | Time to half empty (mins) | 264    | Diameter (mm)  | 1000     |

**Node S5 Link Surround Storage Structure**

|                             |         |                           |        |                |          |
|-----------------------------|---------|---------------------------|--------|----------------|----------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 0.30   | Link           | 1.003    |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 84.074 | Surround Shape | (Trench) |
| Safety Factor               | 2.0     | Time to half empty (mins) | 300    | Diameter (mm)  | 1000     |

**Node S6 Link Surround Storage Structure**

|                             |         |                           |        |                |          |
|-----------------------------|---------|---------------------------|--------|----------------|----------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 0.30   | Link           | 1.004    |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 84.008 | Surround Shape | (Trench) |
| Safety Factor               | 2.0     | Time to half empty (mins) | 332    | Diameter (mm)  | 1000     |

**Node FD2 Link Surround Storage Structure**

|                             |         |                           |        |                |          |
|-----------------------------|---------|---------------------------|--------|----------------|----------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 0.30   | Link           | 2.003    |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 84.130 | Surround Shape | (Trench) |
| Safety Factor               | 2.0     | Time to half empty (mins) | 288    | Diameter (mm)  | 500      |

**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  | ACO 1   | 11          | 84.608    | 0.038     | 0.4          | 0.0000        | 0.0000     | OK         |
| 15 minute summer  | ACO 2   | 12          | 84.597    | 0.027     | 0.4          | 0.0000        | 0.0000     | OK         |
| 15 minute summer  | ACO 3   | 12          | 84.577    | 0.007     | 0.4          | 0.0000        | 0.0000     | OK         |
| 120 minute summer | FD1     | 84          | 84.223    | 0.083     | 0.3          | 0.0000        | 0.0000     | OK         |
| 120 minute summer | FD2     | 84          | 84.223    | 0.093     | 0.3          | 0.0549        | 0.0000     | OK         |
| 15 minute summer  | S1      | 11          | 84.257    | 0.027     | 0.4          | 0.0043        | 0.0000     | OK         |
| 15 minute summer  | S2      | 12          | 84.251    | 0.032     | 0.4          | 0.0473        | 0.0000     | OK         |
| 15 minute summer  | S3      | 12          | 84.249    | 0.036     | 0.7          | 0.0057        | 0.0000     | OK         |
| 15 minute summer  | S4      | 12          | 84.225    | 0.027     | 1.4          | 0.0475        | 0.0000     | OK         |
| 120 minute summer | S5      | 82          | 84.223    | 0.199     | 1.3          | 0.2036        | 0.0000     | SURCHARGED |
| 120 minute summer | S6      | 84          | 84.223    | 0.215     | 0.9          | 0.4916        | 0.0000     | SURCHARGED |
| 120 minute summer | S7      | 84          | 84.010    | 0.017     | 0.4          | 0.0000        | 0.0000     | OK         |
| 120 minute summer | S8      | 84          | 84.223    | 0.131     | 0.4          | 0.0208        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer               | ACO 1   | 2.000 | ACO 2   | 0.4           | 0.299          | 0.019    | 0.0127        |                    |
| 15 minute summer               | ACO 2   | 2.001 | ACO 3   | 0.4           | 0.621          | 0.019    | 0.0008        |                    |
| 15 minute summer               | ACO 3   | 2.002 | FD1     | 0.4           | 0.424          | 0.009    | 0.0018        |                    |
| 120 minute summer              | FD1     | 2.003 | FD2     | 0.3           | 0.312          | 0.109    | 0.0363        |                    |
| 120 minute summer              | FD2     | 2.004 | S8      | 0.3           | 0.300          | 0.042    | 0.0296        |                    |
| 15 minute summer               | S1      | 1.000 | S2      | 0.4           | 0.252          | 0.152    | 0.0108        |                    |
| 15 minute summer               | S2      | 1.001 | S3      | 0.4           | 0.171          | 0.136    | 0.0068        |                    |
| 15 minute summer               | S3      | 1.002 | S4      | 0.7           | 0.324          | 0.260    | 0.0160        |                    |
| 15 minute summer               | S4      | 1.003 | S5      | 1.3           | 0.700          | 0.163    | 0.0314        |                    |
| 120 minute summer              | S5      | 1.004 | S6      | 0.9           | 0.174          | 0.115    | 0.1420        |                    |
| 120 minute summer              | S6      | 1.005 | S7      | 0.4           | 0.406          | 0.062    | 0.0014        | 2.1                |
| 120 minute summer              | S8      | 2.005 | S5      | 0.3           | 0.366          | 0.052    | 0.0142        |                    |

**Results for 10 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event       | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status     |
|------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|------------|
| 15 minute summer | ACO 1      | 11             | 84.618       | 0.048        | 0.7             | 0.0000           | 0.0000        | OK         |
| 15 minute summer | ACO 2      | 11             | 84.606       | 0.036        | 0.7             | 0.0000           | 0.0000        | OK         |
| 15 minute summer | ACO 3      | 11             | 84.579       | 0.009        | 0.8             | 0.0000           | 0.0000        | OK         |
| 60 minute summer | FD1        | 59             | 84.328       | 0.188        | 0.7             | 0.0000           | 0.0000        | SURCHARGED |
| 60 minute summer | FD2        | 59             | 84.328       | 0.198        | 0.5             | 0.1324           | 0.0000        | SURCHARGED |
| 60 minute summer | S1         | 58             | 84.328       | 0.098        | 0.5             | 0.0156           | 0.0000        | OK         |
| 60 minute summer | S2         | 58             | 84.328       | 0.109        | 0.5             | 0.1824           | 0.0000        | SURCHARGED |
| 60 minute summer | S3         | 58             | 84.328       | 0.115        | 1.0             | 0.0183           | 0.0000        | SURCHARGED |
| 60 minute summer | S4         | 58             | 84.328       | 0.130        | 1.9             | 0.2805           | 0.0000        | SURCHARGED |
| 60 minute summer | S5         | 59             | 84.328       | 0.304        | 2.5             | 0.4325           | 0.0000        | SURCHARGED |
| 60 minute summer | S6         | 59             | 84.328       | 0.320        | 1.4             | 0.7623           | 0.0000        | SURCHARGED |
| 60 minute summer | S7         | 59             | 84.012       | 0.019        | 0.5             | 0.0000           | 0.0000        | OK         |
| 60 minute summer | S8         | 59             | 84.328       | 0.236        | 0.6             | 0.0375           | 0.0000        | SURCHARGED |

| Link Event<br>(Upstream Depth) | US<br>Node | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute summer               | ACO 1      | 2.000 | ACO 2      | 0.7              | 0.349             | 0.033    | 0.0195           |                       |
| 15 minute summer               | ACO 2      | 2.001 | ACO 3      | 0.8              | 0.744             | 0.039    | 0.0013           |                       |
| 15 minute summer               | ACO 3      | 2.002 | FD1        | 0.7              | 0.484             | 0.017    | 0.0041           |                       |
| 60 minute summer               | FD1        | 2.003 | FD2        | 0.5              | 0.295             | 0.202    | 0.0390           |                       |
| 60 minute summer               | FD2        | 2.004 | S8         | 0.4              | 0.357             | 0.071    | 0.0301           |                       |
| 60 minute summer               | S1         | 1.000 | S2         | 0.5              | 0.245             | 0.189    | 0.0449           |                       |
| 60 minute summer               | S2         | 1.001 | S3         | 0.5              | 0.159             | 0.171    | 0.0228           |                       |
| 60 minute summer               | S3         | 1.002 | S4         | 0.9              | 0.341             | 0.356    | 0.0591           |                       |
| 60 minute summer               | S4         | 1.003 | S5         | 1.8              | 0.530             | 0.219    | 0.0545           |                       |
| 60 minute summer               | S5         | 1.004 | S6         | 1.4              | 0.275             | 0.179    | 0.1420           |                       |
| 60 minute summer               | S6         | 1.005 | S7         | 0.5              | 0.430             | 0.076    | 0.0016           | 3.9                   |
| 60 minute summer               | S8         | 2.005 | S5         | 0.5              | 0.350             | 0.083    | 0.0142           |                       |

**Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event        | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status     |
|-------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|------------|
| 15 minute summer  | ACO 1      | 11             | 84.624       | 0.054        | 0.9             | 0.0000           | 0.0000        | OK         |
| 15 minute summer  | ACO 2      | 11             | 84.614       | 0.044        | 0.9             | 0.0000           | 0.0000        | OK         |
| 15 minute summer  | ACO 3      | 11             | 84.580       | 0.010        | 1.3             | 0.0000           | 0.0000        | OK         |
| 120 minute winter | FD1        | 94             | 84.401       | 0.261        | 0.4             | 0.0000           | 0.0000        | SURCHARGED |
| 120 minute winter | FD2        | 94             | 84.401       | 0.271        | 0.3             | 0.1874           | 0.0000        | SURCHARGED |
| 120 minute winter | S1         | 94             | 84.402       | 0.172        | 0.3             | 0.0273           | 0.0000        | SURCHARGED |
| 120 minute winter | S2         | 94             | 84.402       | 0.183        | 0.3             | 0.3211           | 0.0000        | SURCHARGED |
| 120 minute winter | S3         | 94             | 84.402       | 0.189        | 0.5             | 0.0300           | 0.0000        | SURCHARGED |
| 120 minute winter | S4         | 94             | 84.401       | 0.203        | 0.9             | 0.4597           | 0.0000        | SURCHARGED |
| 120 minute winter | S5         | 94             | 84.401       | 0.377        | 1.1             | 0.5973           | 0.0000        | SURCHARGED |
| 120 minute winter | S6         | 94             | 84.401       | 0.393        | 0.8             | 0.9511           | 0.0000        | SURCHARGED |
| 120 minute winter | S7         | 94             | 84.013       | 0.020        | 0.5             | 0.0000           | 0.0000        | OK         |
| 120 minute winter | S8         | 94             | 84.401       | 0.309        | 0.3             | 0.0492           | 0.0000        | SURCHARGED |

| Link Event<br>(Upstream Depth) | US<br>Node | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute summer               | ACO 1      | 2.000 | ACO 2      | 0.9              | 0.292             | 0.043    | 0.0244           |                       |
| 15 minute summer               | ACO 2      | 2.001 | ACO 3      | 1.3              | 0.965             | 0.061    | 0.0017           |                       |
| 15 minute summer               | ACO 3      | 2.002 | FD1        | 0.9              | 0.495             | 0.022    | 0.0041           |                       |
| 120 minute winter              | FD1        | 2.003 | FD2        | 0.3              | 0.259             | 0.114    | 0.0390           |                       |
| 120 minute winter              | FD2        | 2.004 | S8         | 0.2              | 0.343             | 0.034    | 0.0301           |                       |
| 120 minute winter              | S1         | 1.000 | S2         | 0.3              | 0.206             | 0.102    | 0.0450           |                       |
| 120 minute winter              | S2         | 1.001 | S3         | 0.2              | 0.135             | 0.076    | 0.0228           |                       |
| 120 minute winter              | S3         | 1.002 | S4         | 0.4              | 0.269             | 0.159    | 0.0591           |                       |
| 120 minute winter              | S4         | 1.003 | S5         | 0.8              | 0.486             | 0.097    | 0.0545           |                       |
| 120 minute winter              | S5         | 1.004 | S6         | 0.8              | 0.232             | 0.101    | 0.1420           |                       |
| 120 minute winter              | S6         | 1.005 | S7         | 0.5              | 0.443             | 0.085    | 0.0018           | 6.2                   |
| 120 minute winter              | S8         | 2.005 | S5         | 0.3              | 0.281             | 0.044    | 0.0142           |                       |

**Results for 30 year +35% CC 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  | ACO 1   | 10          | 84.631    | 0.061     | 1.3          | 0.0000        | 0.0000     | OK         |
| 15 minute winter  | ACO 2   | 11          | 84.620    | 0.050     | 1.1          | 0.0000        | 0.0000     | OK         |
| 15 minute summer  | ACO 3   | 11          | 84.582    | 0.012     | 1.3          | 0.0000        | 0.0000     | OK         |
| 120 minute summer | FD1     | 96          | 84.525    | 0.385     | 0.9          | 0.0000        | 0.0000     | FLOOD RISK |
| 120 minute summer | FD2     | 96          | 84.525    | 0.395     | 0.6          | 0.2799        | 0.0000     | SURCHARGED |
| 120 minute summer | S1      | 96          | 84.526    | 0.296     | 0.6          | 0.0470        | 0.0000     | SURCHARGED |
| 120 minute summer | S2      | 96          | 84.526    | 0.306     | 0.5          | 0.5544        | 0.0000     | SURCHARGED |
| 120 minute summer | S3      | 96          | 84.525    | 0.312     | 0.6          | 0.0497        | 0.0000     | SURCHARGED |
| 120 minute summer | S4      | 96          | 84.525    | 0.327     | 1.4          | 0.7604        | 0.0000     | SURCHARGED |
| 120 minute summer | S5      | 96          | 84.525    | 0.501     | 1.9          | 0.8756        | 0.0000     | SURCHARGED |
| 120 minute summer | S6      | 96          | 84.525    | 0.517     | 1.3          | 1.2702        | 0.0000     | SURCHARGED |
| 120 minute summer | S7      | 96          | 84.014    | 0.021     | 0.6          | 0.0000        | 0.0000     | OK         |
| 120 minute summer | S8      | 96          | 84.525    | 0.433     | 0.7          | 0.0688        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer               | ACO 1   | 2.000 | ACO 2   | 1.3           | 0.369          | 0.060    | 0.0285        |                    |
| 15 minute winter               | ACO 2   | 2.001 | ACO 3   | 1.7           | 0.980          | 0.082    | 0.0020        |                    |
| 15 minute summer               | ACO 3   | 2.002 | FD1     | 1.2           | 0.496          | 0.031    | 0.0042        |                    |
| 120 minute summer              | FD1     | 2.003 | FD2     | 0.6           | 0.259          | 0.243    | 0.0390        |                    |
| 120 minute summer              | FD2     | 2.004 | S8      | 0.4           | 0.345          | 0.065    | 0.0301        |                    |
| 120 minute summer              | S1      | 1.000 | S2      | 0.4           | 0.222          | 0.155    | 0.0450        |                    |
| 120 minute summer              | S2      | 1.001 | S3      | -0.3          | 0.124          | -0.108   | 0.0228        |                    |
| 120 minute summer              | S3      | 1.002 | S4      | 0.5           | 0.262          | 0.178    | 0.0591        |                    |
| 120 minute summer              | S4      | 1.003 | S5      | 0.8           | 0.487          | 0.102    | 0.0545        |                    |
| 120 minute summer              | S5      | 1.004 | S6      | 1.3           | 0.232          | 0.172    | 0.1420        |                    |
| 120 minute summer              | S6      | 1.005 | S7      | 0.6           | 0.461          | 0.098    | 0.0019        | 8.4                |
| 120 minute summer              | S8      | 2.005 | S5      | 0.4           | 0.281          | 0.072    | 0.0142        |                    |

**Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event        | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status     |
|-------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|------------|
| 15 minute summer  | ACO 1      | 10             | 84.629       | 0.059        | 1.2             | 0.0000           | 0.0000        | OK         |
| 15 minute summer  | ACO 2      | 11             | 84.615       | 0.045        | 1.2             | 0.0000           | 0.0000        | OK         |
| 15 minute summer  | ACO 3      | 11             | 84.581       | 0.011        | 1.3             | 0.0000           | 0.0000        | OK         |
| 120 minute summer | FD1        | 92             | 84.502       | 0.362        | 0.8             | 0.0000           | 0.0000        | FLOOD RISK |
| 120 minute summer | FD2        | 92             | 84.502       | 0.372        | 0.6             | 0.2629           | 0.0000        | SURCHARGED |
| 120 minute summer | S1         | 92             | 84.503       | 0.273        | 0.5             | 0.0433           | 0.0000        | SURCHARGED |
| 120 minute summer | S2         | 92             | 84.503       | 0.284        | 0.5             | 0.5114           | 0.0000        | SURCHARGED |
| 120 minute summer | S3         | 92             | 84.503       | 0.290        | 0.6             | 0.0460           | 0.0000        | SURCHARGED |
| 120 minute summer | S4         | 92             | 84.503       | 0.305        | 1.2             | 0.7051           | 0.0000        | SURCHARGED |
| 120 minute summer | S5         | 92             | 84.502       | 0.478        | 1.7             | 0.8241           | 0.0000        | SURCHARGED |
| 120 minute summer | S6         | 92             | 84.502       | 0.494        | 1.2             | 1.2113           | 0.0000        | SURCHARGED |
| 120 minute summer | S7         | 92             | 84.014       | 0.021        | 0.6             | 0.0000           | 0.0000        | OK         |
| 120 minute summer | S8         | 92             | 84.502       | 0.410        | 0.6             | 0.0652           | 0.0000        | SURCHARGED |

| Link Event<br>(Upstream Depth) | US<br>Node | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute summer               | ACO 1      | 2.000 | ACO 2      | 1.2              | 0.369             | 0.055    | 0.0270           |                       |
| 15 minute summer               | ACO 2      | 2.001 | ACO 3      | 1.3              | 0.857             | 0.063    | 0.0018           |                       |
| 15 minute summer               | ACO 3      | 2.002 | FD1        | 1.1              | 0.491             | 0.028    | 0.0042           |                       |
| 120 minute summer              | FD1        | 2.003 | FD2        | 0.6              | 0.258             | 0.217    | 0.0390           |                       |
| 120 minute summer              | FD2        | 2.004 | S8         | 0.4              | 0.344             | 0.059    | 0.0301           |                       |
| 120 minute summer              | S1         | 1.000 | S2         | 0.3              | 0.210             | 0.124    | 0.0450           |                       |
| 120 minute summer              | S2         | 1.001 | S3         | -0.3             | 0.137             | -0.102   | 0.0228           |                       |
| 120 minute summer              | S3         | 1.002 | S4         | 0.5              | 0.283             | 0.206    | 0.0591           |                       |
| 120 minute summer              | S4         | 1.003 | S5         | 0.9              | 0.487             | 0.110    | 0.0545           |                       |
| 120 minute summer              | S5         | 1.004 | S6         | 1.2              | 0.269             | 0.150    | 0.1420           |                       |
| 120 minute summer              | S6         | 1.005 | S7         | 0.6              | 0.458             | 0.096    | 0.0019           | 7.9                   |
| 120 minute summer              | S8         | 2.005 | S5         | 0.4              | 0.281             | 0.065    | 0.0142           |                       |

**Results for 100 year +40% CC +5% 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     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 180 minute summer | ACO 1   | 132         | 84.689    | 0.119     | 0.6          | 0.0000        | 0.0000     | OK         |
| 180 minute summer | ACO 2   | 132         | 84.689    | 0.119     | 0.6          | 0.0000        | 0.0000     | OK         |
| 180 minute summer | ACO 3   | 132         | 84.689    | 0.119     | 1.8          | 0.0000        | 0.0000     | FLOOD RISK |
| 180 minute summer | FD1     | 132         | 84.689    | 0.549     | 0.9          | 0.0000        | 0.0000     | FLOOD RISK |
| 180 minute summer | FD2     | 132         | 84.689    | 0.559     | 1.0          | 0.4024        | 0.0000     | FLOOD RISK |
| 180 minute summer | S1      | 132         | 84.689    | 0.459     | 0.6          | 0.0730        | 0.0000     | FLOOD RISK |
| 180 minute summer | S2      | 132         | 84.689    | 0.470     | 0.5          | 0.8626        | 0.0000     | SURCHARGED |
| 180 minute summer | S3      | 132         | 84.689    | 0.476     | 0.6          | 0.0757        | 0.0000     | SURCHARGED |
| 180 minute summer | S4      | 132         | 84.689    | 0.491     | 1.4          | 1.1569        | 0.0000     | SURCHARGED |
| 180 minute summer | S5      | 132         | 84.689    | 0.665     | 1.9          | 1.2436        | 0.0000     | SURCHARGED |
| 180 minute summer | S6      | 132         | 84.689    | 0.681     | 1.3          | 1.6933        | 0.0000     | SURCHARGED |
| 180 minute summer | S7      | 132         | 84.016    | 0.023     | 0.7          | 0.0000        | 0.0000     | OK         |
| 180 minute summer | S8      | 132         | 84.689    | 0.597     | 0.7          | 0.0949        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 180 minute summer              | ACO 1   | 2.000 | ACO 2   | 0.6           | 0.233          | 0.029    | 0.0898        |                    |
| 180 minute summer              | ACO 2   | 2.001 | ACO 3   | 0.7           | 0.753          | 0.035    | 0.0132        |                    |
| 180 minute summer              | ACO 3   | 2.002 | FD1     | -1.6          | 0.337          | -0.040   | 0.0078        |                    |
| 180 minute summer              | FD1     | 2.003 | FD2     | 0.8           | 0.201          | 0.292    | 0.0390        |                    |
| 180 minute summer              | FD2     | 2.004 | S8      | 0.4           | 0.359          | 0.068    | 0.0301        |                    |
| 180 minute summer              | S1      | 1.000 | S2      | 0.4           | 0.235          | 0.158    | 0.0450        |                    |
| 180 minute summer              | S2      | 1.001 | S3      | -0.2          | 0.111          | -0.062   | 0.0228        |                    |
| 180 minute summer              | S3      | 1.002 | S4      | 0.3           | 0.235          | 0.122    | 0.0591        |                    |
| 180 minute summer              | S4      | 1.003 | S5      | 0.6           | 0.487          | 0.079    | 0.0545        |                    |
| 180 minute summer              | S5      | 1.004 | S6      | 1.3           | 0.237          | 0.165    | 0.1420        |                    |
| 180 minute summer              | S6      | 1.005 | S7      | 0.7           | 0.479          | 0.113    | 0.0022        | 12.9               |
| 180 minute summer              | S8      | 2.005 | S5      | 0.6           | 0.279          | 0.101    | 0.0142        |                    |