Sharston Industrial Estate: Drainage Strategy – Response to LLFA for Discharge of Condition 8

333701647-STN-XX-XX-RP-D-0002 P01

Prepared for:
Kier Sharston Limited

Date:
28 May 2026

Prepared by:
Jay KARA

Project/File:
333701647



Stantec UK Limited

Revision Schedule

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
P01	Planning Issue	JK	28.05.26	CF	28.05.26	NB	28.05.26

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Prepared by:

Signature

Jay Kara

Printed Name

Reviewed by:

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Chloe Fell

Printed Name

Approved by:

Signature

Neil Byrne

Printed Name

The LLFA (Manchester City Council) has received and reviewed the document titled Sharston Industrial Estate: Drainage Strategy (Ref: 333701647-STN-XX-XX-RP-D-0001, Rev P04), dated 25 March 2026. The full list of comments received from the LLFA can be found in Appendix A. Stantec's responses can be found below.

For ease of reference the *Sharston Industrial Estate: Drainage Strategy (Ref: 333701647-STN-XX-XX-RP-D-0001, Rev P04)* – is referred to as the Drainage Strategy in this note.

1 Progression through the drainage hierarchy must be evidence based and supported by site investigation including assessments of ground conditions and infiltration testing in accordance with BRE365. Proposals of attenuation should achieve half drain down time within 24 hours.

Half drain down checks have been undertaken for the proposed attenuation features for the 1 in 30 year rainfall event. The results indicate half drain down times of 31.8 hours for Tank Unit 1, 27.7 hours for Tank Unit 2 and 3, and 33.4 hours for the porous paving, which marginally exceed the nominal 24-hour criterion. Table 1 below summarises the half drain down time calculations.

Table 1 – Half Drain down time calculations

Stormwater Control	Critical Storm Event	Max Resident Volume (m^3)	Max Outflow (L/s)	Half Drain Down Time (mins)	Half Drain Down Time (hours)
Tank Unit 1	1in 30yr – 1440 min Winter	319.415	1.6	1909	31.8
Tank Unit 2 and 3	1in 30yr – 1440 min Winter	275.458	1.4	1662	27.7
Porous Paving	1in 30yr – 1440 min Winter	8.961	0.1	2003	33.4

The proposed drainage strategy restricts discharge to the agreed greenfield rate of 3.6 l/s, representing a significant betterment over the existing unrestricted runoff regime. The attenuation tanks discharge via dedicated flow control chambers sized to achieve the agreed restricted discharge rate during the 1 in 100 year plus 45% climate change event.

It is also noted that the proposed drainage strategy does not utilise infiltration drainage techniques, with attenuation provided via restricted discharge systems. Increasing discharge rates to reduce the half drain down times would exceed the agreed greenfield discharge rate and conflict with the approved drainage strategy. No flooding occurs during the assessed design events.

2 Reviewing of Drg 25006-STN-EX-XX-XX-DR-C-00500 Rev 06 – 1. The foul water drainage pipe appears to be connected to surface water manholes (COMMH30 and COMMH32) located downstream of the flow control. Please clarify whether any measures have been implemented to prevent foul water from entering the attenuation tank in the event of a blockage. In addition, confirm that the system is capable of achieving a self-cleansing velocity. 2. The information provided for the attenuation tank is insufficient. Details of the tank dimensions should be included, and appropriate ventilation provisions should also be specified.

Discharge from surface water networks are restricted as below:

Flow from SW flow control SWMH18 = 1.8 l/s

Flow from SW flow control SWMH29 = 1.8 l/s

Foul flows entering COMMH30 have been calculated separately as 5.28 l/s. When combined with the modelled surface water flow of 1.8 l/s, the total flow downstream of COMMH30 is 7.08 l/s. Based on an estimated downstream pipe capacity of approximately 15.5 l/s, this equates to a combined flow/capacity ratio of approximately 0.46. The downstream pipe therefore retains significant spare hydraulic capacity, with the additional foul flow expected to increase velocities within the downstream pipework when compared with the surface water-only model results.

Foul flows entering COMMH32 have been calculated separately as 2.24 l/s via a backdrop connection. When combined with the modelled surface water flow of 1.8 l/s, the total flow downstream of COMMH32 is 4.04 l/s. Based on an estimated downstream pipe capacity of approximately 15.5 l/s, this equates to a combined flow/capacity ratio of approximately 0.26. The downstream pipe similarly retains significant spare hydraulic capacity, with the combined foul and surface water flows expected to improve flow velocities within the downstream pipework.

On this basis, surcharge conditions and subsequent backflow of foul water into the upstream attenuation system are not anticipated under the assessed design conditions so no additional measures (eg non return valves) are required.

Some surface water drains do not reach self-cleansing velocity but silt capture and a specified maintenance regime will ensure pipes do not silt up.

An updated drainage drawing showing the dimensions of the tanks, 25006-STN-EX-XX-DR-C-00500-C03 Proposed Drainage Layout, can be found in Appendix B, and hydraulic calculations can be found in Appendix C.

3 An existing and proposed impermeable areas drawing to accompany all discharge rate calculations

An existing and proposed impermeable areas drawing can be found in Appendix D.

The existing site surface water discharge rates have been derived using the UK Modified Rational Method (Q = 3.6 × Cv × I × A). Rainfall depths have been taken from FEH data for a 30-minute storm duration and converted to average rainfall intensities for the relevant return periods. The calculation is based on a contributing area of 0.574 hectare and an existing volumetric run-off coefficient (Cv) of 0.85. The resulting existing peak runoff rates are presented in the table 2 below.

Table 2 – Existing Discharge Rate Calculations

Return Period	Existing Discharge Rate, Q (l/s)
2 year	102.36
30 year	265.21
100 year + 40%	493.08

Existing brownfield rate calculations can be found in Appendix E.

4 A blockage risk assessment must be undertaken as part of the drainage strategy to support proposed flows less than 5l/s.

A blockage risk assessment has been undertaken for the proposed flow controls. The total restricted discharge from the site is 3.6 l/s, split between two Hydro-Brake flow controls each discharging at 1.8 l/s. The proposed Hydro-Brakes have outlet/orifice sizes of 54 mm and 58 mm respectively, both exceeding the commonly referenced 50 mm blockage risk threshold identified within current SuDS guidance and practice.

The Hydro-Brakes are located within accessible flow control chambers, allowing inspection and maintenance to be readily undertaken if required. In addition, vortex flow controls are inherently less susceptible to blockage than conventional small orifice controls due to their larger effective openings and self-cleansing flow characteristics. On this basis, the proposed flow controls are considered to present an acceptable blockage risk.

(Please note that the above is based on the design flow control and may be altered once the contractor's proposed flow control drawings are received – updated information to follow)

5 Drawing No. 333701647-STN-XX-XX-DR-C-0510, which details the overland flow route, has been received and reviewed. The proposal allows exceedance flows to be stored onsite within the parking areas. However, this arrangement presents a significant risk of foul water spillage. The applicant is required to address this concern and provide a suitable mitigation solution.

No exceedance from the foul sewer or combined sewer are anticipated due to availability of spare capacity within the network. Exceedance is only anticipated for the surface water drainage in the case of a major blockage. An updated Exceedance routing plan can be found in Appendix F.

6 Construction details of flow control and SuDS elements. The applicant has indicated, due to the presence of shallow groundwater, infiltration into the ground is not considered feasible. The applicant must confirm that the underground attenuation system is appropriately designed with consideration for flotation.

Construction details of the **designed flow control** and SuDS elements (permeable paving) can be found in Appendix G. Flotation calculations for the attenuation tanks can be found in Appendix H.

7 Construction details of the proposed flood resilience measures to be incorporated into the ground floor level of the proposed units.

The proposed drainage and site levels have been designed such that any exceedance or overland flow will be directed away from the building entrances and towards the yard/car park areas. The drainage system is designed such that exceedance would only be anticipated in the event of a blockage or similar unforeseen failure scenario.

It is not feasible to raise finished floor levels above surrounding external levels due to the operational requirements of the development and the need to maintain level access into the buildings. No other significant sources of flood risk have been identified at the site. On this basis, the proposed arrangement is considered to provide an appropriate and proportionate level of flood resilience.

8 Both proposed attenuation systems are located beneath the access road, adjacent to the site entrance from the public highway. The applicant is therefore required to confirm that the relevant loading calculations have been undertaken, checked, and approved by a qualified civil or structural engineer, in accordance with Eurocode 7 requirements. If the site has a high-water table, the calculations must also address flotation (buoyancy) in accordance with Eurocode 7.

A plan showing easements around SuDS features and attenuation tanks can be found in Appendix I. Flotation calculations for the tanks can be found is Appendix H.

Appendix A – FRM Response

Application details:	**Application number**: CDN/26/0307 **Proposal**: Discharge of Condition 8 (drainage) attached to planning permission referenced 143771/FO/2025 **Location**: Electrium Sales Ltd, Wylex Works, Sharston Road, Manchester, M22 4RA

LLFA Comments 15/05/2026

The following Information has been considered:

Planning Portal uploads:	30/03/2026
Further submission emails:	**From:** Steven Mccoombe <steven.mccoombe@manchester.gov.uk> **Sent:** 11 May 2026 13:57 **To:** Flood Risk Management <floodriskmanagement@manchester.gov.uk> **Cc:** Thomas Mawdsley < > **Subject:** Re: Invalid letter for application CDN/26/0307 I have requested that you are consulted formally, but in the meantime, I formally request that Flood Risk Management review the information submitted for the above condition discharge application. Thanks Steve McCoombe Senior Planner Development Management
Previous CDN attempts to discharge the Condition:	-

Any LLFA Comments to LPA
The LLFA has received and reviewed the document titled Sharston Industrial Estate: Drainage Strategy (Ref: 333701647-STN-XX-XX-RP-D-0001, Rev P04), dated 25 March 2026. The LLFA's comments are provided below.

Condition number	8
Decision Notice	143771/FO/2025

Decision Notice Clause	Contained in submission	Approvable standard	Further information required:
Progression through the drainage hierarchy must be evidence based and supported by site investigation including assessments of ground conditions and infiltration testing in accordance with BRE365. Proposals of attenuation should achieve half drain time within 24 hours.	Y	N	One of the information is not included in the report; the applicant is required to provide it. Please see below. 1. Statement to confirm the proposed attenuation tanks should achieve half drain time within 24 hours period.
CCTV survey to establish the condition and capacity of the suspected culverted watercourse.	N/A	N/A	The Lead Local Flood Authority (LLFA) has not granted permission for the proposed discharge into the suspected culvert after reviewing all information collected during the site investigation.
Where surface water is connected to the ordinary watercourse, agreement in principle from Manchester City Council as Lead Local Flood Authority is required. Please note that all new connections to the watercourses shall comply with reduction of flows to Greenfield runoff rates. An email of acceptance of proposed flows and/or new connection will suffice.	N/A	N/A	The Lead Local Flood Authority (LLFA) has not granted permission for the proposed discharge into the suspected culvert after reviewing all information collected during the site investigation.
Where surface water is connected to the public sewer, agreement in principle from United Utilities is required that there is adequate spare capacity in the existing system taking future development requirements into account. An email of	Y	Y	

acceptance of proposed flows and/or new connection will suffice.			
Maximised integration of green SuDS components (utilising infiltration or attenuation) if practicable.	Y	Y	The applicant has not considered a green SuDS and the reasons were mentioned in the report.
Details of surface water attenuation to align with the Manchester, Trafford and Salford Strategic Flood Risk Assessment. For brownfield sites a minimum of 50% betterment is required for reduction in runoff rate compared to the existing rates with the aim of reducing to the Greenfield runoff rates.	Y	Y	The proposed surface water runoff of 3.6 l/s is acceptable.
A finalised drainage layout showing all components, outfalls, levels and connectivity.	Y	N	Reviewing of Drg 25006-STN-EX-XX-DR-C-00500 Rev 06 – 1. The foul water drainage pipe appears to be connected to surface water manholes (COMMH30 and CHMMH32) located downstream of the flow control. Please clarify whether any measures have been implemented to prevent foul water from entering the attenuation tank in the event of a blockage. In addition, confirm that the system is capable of achieving a self-cleansing velocity. 2. The information provided for the attenuation tank is insufficient. Details of the tank dimensions should be included, and appropriate ventilation provisions should also be specified.
An existing and proposed impermeable areas drawing to accompany all discharge rate calculations.	N	N	This information is not included in the report; the applicant is required to provide it. This site must be considered as a brownfield.

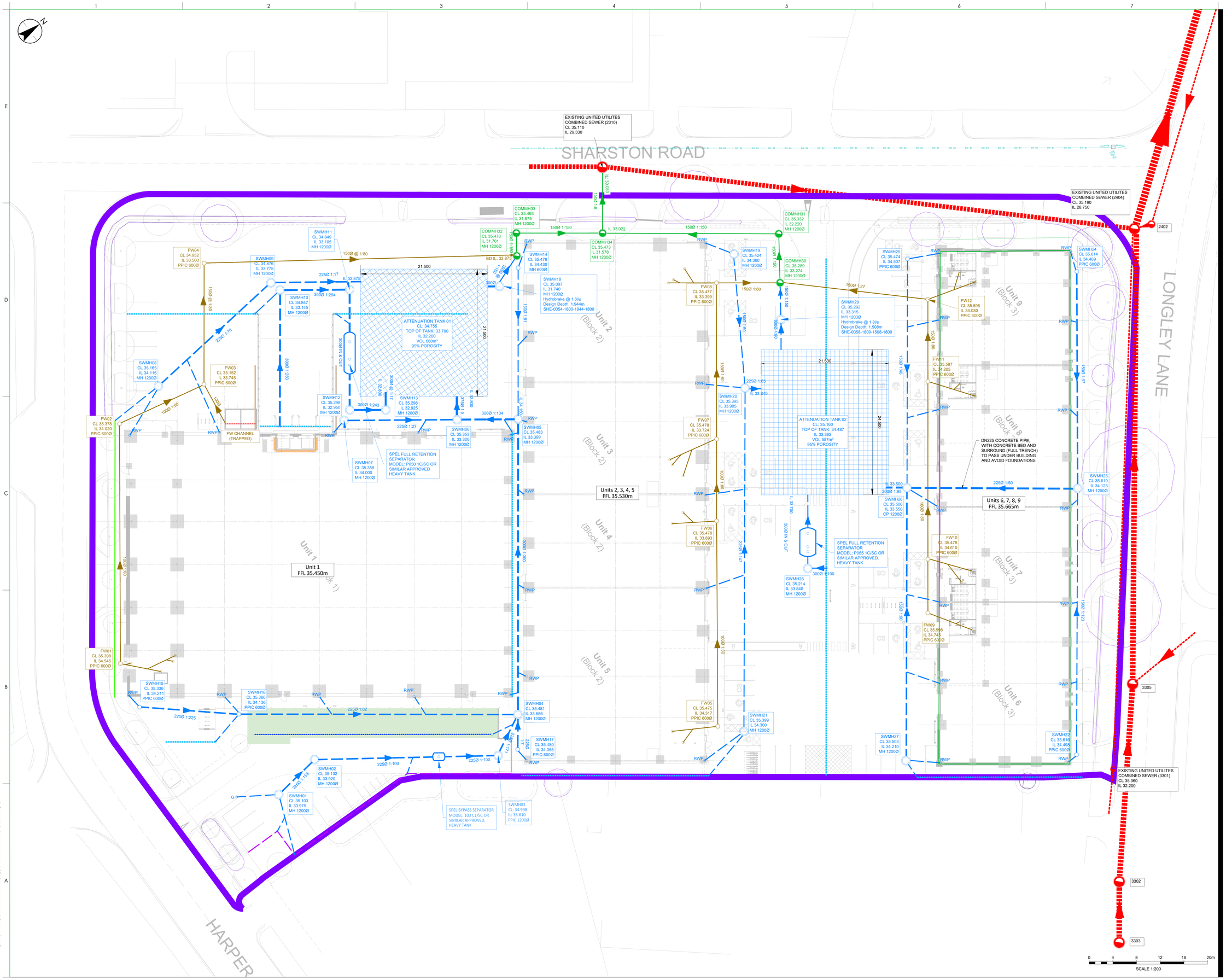
Hydraulic calculations of the proposed drainage system, including all design parameters. Calculations must Include Critical Storm Events for the 1 in 2, 1 in 30 and 1 in 100 + 45% Climate Change. Results must demonstrate no surcharge for the 1 in 2, no flooding in the 1 in 30 and no flooding of buildings for the 1 in 100 + 45% Climate Change.	Y	Y	Accepted the calculations.
A blockage risk assessment must be undertaken as part of the drainage strategy to support proposed flows less than 5 l/s.	N	N	This information is not included in the report; the applicant is required to provide it.
An assessment of surface water pollution risk in-line with CIRIA C753 and, where required, evidence of pollution control measures (preferably through SuDS) to treat surface water prior to discharge.	Y	Y	The applicant has adequately covered this in the report.
A plan indicating surface water overland flow routes for extreme events to ensure flows are diverted away from existing and proposed buildings (including basements). Finished floor levels illustrating the proposed raising of site levels above the maximum flood depth should be included on this plan.	Y	N	Drawing No. 333701647-STN-XX-XX-DR-C-0510, which details the overland flow route, has been received and reviewed. The proposal allows exceedance flows to be stored onsite within the parking areas. However, this arrangement presents a significant risk of foul water spillage. The applicant is required to address this concern and provide a suitable mitigation solution.
Construction details of flow control and SuDS elements.	N	N	This information is not included in the report; the applicant is required to provide it. The applicant has indicated, due to the presence of shallow groundwater infiltration into the ground is not considered feasible. The applicant must confirm that the underground attenuation system is appropriately designed with consideration for flotation.

Construction details of the proposed flood resilience measures to be incorporated into the ground floor level of the proposed units.	N	N	This information is not included in the report; the applicant is required to provide it.
A plan indicating easements. SuDS features (including attenuation tanks) should be appropriately positioned, including a 2.5m easement from the existing highway and a 5m easement from any dwellings, guaranteeing accessibility for future maintenance and contingency for asset failure. This practice is in accordance with SuDS Manual (C753).	N	N	Both proposed attenuation systems are located beneath the access road, adjacent to the site entrance from the public highway. The applicant is therefore required to confirm that the relevant loading calculations have been undertaken, checked, and approved by a suitably qualified civil or structural engineer, in accordance with Eurocode 7 requirements. If the site has a high-water table, the calculations must also address flotation (buoyancy) in accordance with Eurocode 7

% Complete submission:	66%
% At approvable standard:	46%
Refusal trigger points: Submission 1 = less than 20% complete. Submission 2 = not 100% approvable standard.	

LLFA Recommendation:	**Further information required (as detailed above).**

Appendix B Proposed Drainage Layout



Stantec

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4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL AND M&E SERVICES DRAWINGS AND SPECIFICATIONS.
5. ALL SURFACE WATER DRAINAGE PIPES TO BE LAID SOFFIT TO SOFFIT UNLESS STATED OTHERWISE
6. REFER TO DRAINAGE NOTES DRAWING FOR FURTHER REQUIREMENTS.

Legend

- SITE BOUNDARY
- PROPOSED SURFACE WATER PIPE
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED LINEAR DRAIN (CHANNEL/SLOT)
- PROPOSED KERB DRAIN
- PROPOSED PERMEABLE PAVING (REFER TO STANDARD DETAILS DRAWING 25006-STN-EX-XX-DR-C-01100-01104)
- PROPOSED FOUL PIPE
- PROPOSED FOUL MANHOLE
- PROPOSED INTERCEPTOR
- PROPOSED PERFORATED PIPE
- PROPOSED ATTENUATION TANK
- PROPOSED COMBINED SEWER
- PROPOSED GULLY
- PROPOSED FILTER DRAIN
- EXISTING SW DRAIN (FROM GPR)
- EXISTING UU COMBINED SEWER (FROM GPR AND UU SEWER RECORDS)
- EXISTING PRIVATE COMBINED SEWER (FROM GPR SURVEY)
- PROPOSED RAINWATER PIPE
- ROOT PROTECTION AREAS (REFER TO DRAWING 25006-HFR-AV-XXDR-A0101 PRODUCED BY ARBTECH)

C03	TANK DIMENSIONS CHANGED TO SUIT SUPPLIERS DETAILS	NM	NB	08.06.2026
C02	INVERT LEVELS RAISED TO SUIT COMMENTS	NM	NB	30.04.2026
C01	CONSTRUCTION ISSUE	NM	NB	21.04.2026
P04	DRAINAGE UPDATES; NEW DISCHARGE POINT FOR SURFACE AND FOUL WATER DRAINAGE	JK	NB	05.03.26
P03	DRAINAGE UPDATES	NM	NB	28.11.25
P04	LAYOUT AND DRAINAGE UPDATES	NM	NB	25.11.25
P03	LAYOUT AND DRAINAGE UPDATES	TF	NB	17.10.25
P02	LAYOUT UPDATED	JM	CF	07.08.25
P01	PLANNING ISSUE	NM	NB	31.07.25
Issued/Revision		By	Appd	DD.MM.YYYY
		NM	NB	JK	25.11.25
		Dwn.	Dsgn.	Chkd.	DD.MM.YYYY

Issue Status

S4 - SUITABLE FOR STAGE APPROVAL

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Title

PROPOSED DRAINAGE LAYOUT

Project No.	A0 Scale
35838	1:200
Revision	**Drawing No.**
C03	**25006-STN-EX-XX-DR-C-00500**

Plotted: 08.04.2026 09:23:06 PM By: Abdirisaq Adakhe
DRAWING PATH: I:\Jobs\35xxx\35838\Project Data\CDS\Revit\25006-STN-EX-XX-M3-A-35838.rvt

Appendix C Hydraulic Calculations

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		



Tank Unit 1

Type : Tank

Dimensions

Exceedance Level (m)	34.755
Depth (m)	2.555
Base Level (m)	32.200
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	95
Average Slope (1:X)	0.00
Total Volume (m³)	659.761

Depth (m)	Area (m²)	Volume (m³)
0.000	462.25	0.000
1.500	462.25	658.706

Inlets

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	SW1.005
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (4)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (22)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (5)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (6)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	21.500



Tank Unit 2 and 3

Type : Tank

Dimensions

Exceedance Level (m)	35.160
Depth (m)	1.798
Base Level (m)	33.362
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	95
Average Slope (1:X)	0.00
Total Volume (m³)	563.637

Depth (m)	Area (m²)	Volume (m³)
0.000	526.75	0.000
1.125	526.75	562.964

Inlets

Inlet (4)

Inlet Type	Point Inflow
Incoming Item(s)	SW11.000
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SW9.007
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Point Inflow
Incoming Item(s)	SW7.002
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (11)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	28.000

Porous Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	35.220
Depth (m)	0.500
Base Level (m)	34.720
Paving Layer Depth (mm)	130
Membrane Percolation (m/hr)	1.0
Porosity (%)	30
Length (m)	42.624
Long. Slope (1:X)	10000.00
Width (m)	5.119
Total Volume (m³)	24.747

Under Drain

Height Above Base (m)	0.100
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (1)

Inlet Type	Lateral Inflow
Incoming Item(s)	Car Park 6
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (13)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	216.0

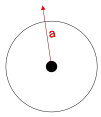
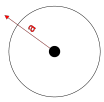
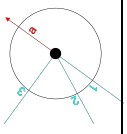
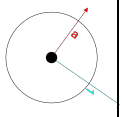
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
SW1.001	5.900	Pipe	7.468		0.6	225	35.480	34.355
SW4.000	19.072	Pipe	27.245		0.6	225	35.358	34.000
SW8.000	22.685	Pipe	49.858		0.6	150	35.424	34.360
SW1.004	10.330	Pipe	104.339		0.6	300	35.483	33.399
SW5.001	11.750	Pipe	293.760		0.6	300	34.847	33.145
SW6.001	25.778	Pipe	75.817		0.6	225	35.165	34.115
Pipe (1)	16.797	Pipe	225.000		0.6	225	35.336	34.211
SW1.000	8.441	Pipe	153.479		0.6	225	35.103	33.975
Pipe (5)	25.571	Pipe	91.326		0.6	150	35.483	34.430
Pipe (10)	28.817	Pipe	57.865		0.6	225	35.610	34.123
Pipe (4)	30.987	Pipe	99.959		0.6	225	35.132	33.920
Pipe (12)	7.695	Pipe	171.007		0.6	225	34.998	33.610
Pipe (13)	3.737	Pipe	3.088		0.6	150	35.224	34.820
Pipe (14)	90.441	Pipe	155.932		0.6	750	35.110	29.330
SW1.008	14.563	Pipe	150.135		0.6	150	35.463	31.675
Pipe (15)	57.993	Pipe	146.819		0.6	225	35.399	34.300
Pipe (16)	37.729	Pipe	46.752		0.6	150	35.474	34.507
Pipe (17)	46.063	Pipe	90.319		0.6	150	35.503	34.210
Pipe (18)	44.952	Pipe	119.872		0.6	150	35.616	34.498
Pipe (8)	36.632	Pipe	100.088		0.6	150	35.614	34.489
Pipe (9)	11.155	Pipe	7.446		0.6	150	35.473	31.578
Pipe (19)	29.739	Pipe	150.000		0.6	150	35.332	33.220
SW11.000	11.313	Pipe	80.806		0.6	300	35.214	33.840
Pipe (20)	49.839	Pipe	300.237		0.6	300	35.481	33.565
Pipe (6)	2.911	Pipe	6.329		0.6	300	34.755	32.200
Pipe (7)	20.300	Pipe	130.969		0.6	300	34.849	33.105
Pipe (21)	6.080	Pipe	243.211		0.6	300	35.298	32.950
Pipe (23)	5.920	Pipe	150.000		0.6	150	35.097	31.740
Pipe (24)	3.848	Pipe	150.710		0.6	150	35.478	31.701
Pipe (11)	4.490	Pipe	95.528		0.6	300	35.160	33.362
Pipe (25)	6.221	Pipe	151.735		0.6	150	35.292	33.315
Pipe (26)	8.246	Pipe	152.699		0.6	150	35.289	33.274
Pipe (2)	47.103	Pipe	82.441		0.6	225	35.386	34.136
SW9.007	4.766	Pipe	95.328		0.6	300	35.506	33.550
SW7.002	4.196	Pipe	64.562		0.6	225	35.395	33.905
SW1.005	4.606	Pipe	9.212		0.6	375	35.353	33.300
Pipe (22)	3.023	Pipe	16.796		0.6	300	35.298	32.980
Pipe	15.718	Pipe	17.464		0.6	225	34.876	33.775

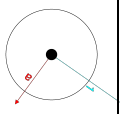
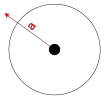
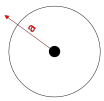
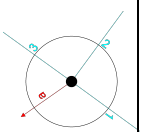
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance
SW1.001	35.481	33.565	None		(None)	(None)
SW4.000	35.353	33.300	None		(None)	(None)
SW8.000	35.395	33.905	None		(None)	(None)
SW1.004	35.353	33.300	None		(None)	(None)
SW5.001	34.849	33.105	None		(None)	(None)
SW6.001	34.876	33.775	None		(None)	(None)
Pipe (1)	35.386	34.136	None		(None)	(None)
SW1.000	35.132	33.920	None		(None)	(None)
Pipe (5)	35.483	34.150	None		(None)	(None)
Pipe (10)	35.506	33.625	None		(None)	(None)
Pipe (4)	34.998	33.610	None		(None)	(None)
Pipe (12)	35.481	33.565	None		(None)	(None)
Pipe (13)	34.998	33.610	None	0.0	(None)	(None)
Pipe (14)	35.190	28.750	None		(None)	(None)
SW1.008	35.473	31.578	None		(None)	(None)
Pipe (15)	35.395	33.905	None		(None)	(None)
Pipe (16)	35.506	33.700	None		(None)	(None)
Pipe (17)	35.506	33.700	None		(None)	(None)
Pipe (18)	35.610	34.123	None		(None)	(None)
Pipe (8)	35.610	34.123	None		(None)	(None)
Pipe (9)	35.110	30.080	None		(None)	(None)
Pipe (19)	35.473	33.022	None		(None)	(None)
SW11.000	35.160	33.700	All		(None)	(None)
Pipe (20)	35.483	33.399	None		(None)	(None)
Pipe (6)	35.097	31.740	None		(None)	(None)
Pipe (7)	35.298	32.950	None		(None)	(None)
Pipe (21)	35.298	32.925	None		(None)	(None)
Pipe (23)	35.478	31.701	None	2.0	(None)	(None)
Pipe (24)	35.463	31.675	None		(None)	(None)
Pipe (11)	35.292	33.315	None		(None)	(None)
Pipe (25)	35.289	33.274	None	2.0	(None)	(None)
Pipe (26)	35.332	33.220	None		(None)	(None)
Pipe (2)	35.481	33.565	None		(None)	(None)
SW9.007	35.160	33.500	All		(None)	(None)
SW7.002	35.160	33.840	All		(None)	(None)
SW1.005	34.755	32.800	All		(None)	(None)
Pipe (22)	34.755	32.800	All		(None)	(None)
Pipe	34.755	32.875	All		(None)	(None)

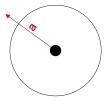
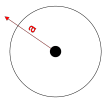
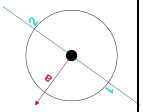
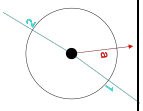
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH01	35.103 33.975		Diameter / Length: 1.200					Manhole
E:383260.760 N:389256.835	1.128			{a} SW1.000	Pipe	33.975	Diam/Width:225	Not Applicable
SWMH17	35.480 34.355		Diameter / Length: 0.600					Manhole
E:383278.268 N:389293.960	1.125			{a} SW1.001	Pipe	34.355	Diam/Width:225	Not Applicable
SWMH04	35.481 33.565		Diameter / Length: 1.200	{1} SW1.001 {2} Pipe (12) {3} Pipe (2)	Pipe Pipe Pipe	33.565 33.565 33.565	Diam/Width:225 Diam/Width:225 Diam/Width:225	Manhole
E:383273.505 N:389297.441	1.916			{a} Pipe (20)	Pipe	33.565	Diam/Width:300	Not Applicable
COMMH33	35.463 31.675		Diameter / Length: 1.200	{1} Pipe (24)	Pipe	31.675	Diam/Width:150	Manhole
E:383207.541 N:389344.924	3.788			{a} SW1.008	Pipe	31.675	Diam/Width:150	Not Applicable

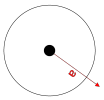
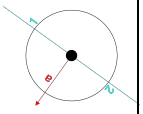
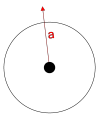
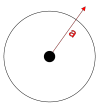
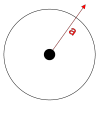
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
COMMH31	35.332 33.220		Diameter / Length: 1.200	{1} Pipe (26)	Pipe	33.220	Diam/Width:150	Manhole
E:383233.647 N:389380.717	2.112			{a} Pipe (19)	Pipe	33.220	Diam/Width:150	Not Applicable
SWMH22	35.616 34.498		Diameter / Length: 0.600					Manhole
E:383334.342 N:389369.823	1.118			{a} Pipe (18)	Pipe	34.498	Diam/Width:150	Not Applicable
SWMH27	35.503 34.210		Diameter / Length: 1.200					Manhole
E:383318.222 N:389345.861	1.293			{a} Pipe (17)	Pipe	34.210	Diam/Width:150	Not Applicable
SWMH26	35.506 33.550		Diameter / Length: 1.200	{1} Pipe (17) {2} Pipe (10) {3} Pipe (16)	Pipe Pipe Pipe	33.700 33.625 33.700	Diam/Width:150 Diam/Width:225 Diam/Width:150	Manhole
E:383281.057 N:389373.074	1.956			{a} SW9.007	Pipe	33.550	Diam/Width:300	Not Applicable

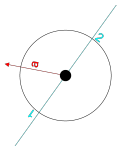
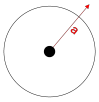
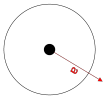
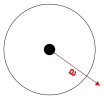
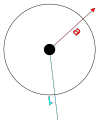
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH21	35.399 34.300		Diameter / Length: 1.200					Manhole
E:383298.222 N:389326.660	1.099			{a} Pipe (15)	Pipe	34.300	Diam/Width:225	Not Applicable
SWMH28	35.214 33.840		Diameter / Length: 1.200					Manhole
E:383282.279 N:389351.526	1.374			{a} SW11.000	Pipe	33.840	Diam/Width:300	Not Applicable
SWMH23	35.610 34.123		Diameter / Length: 1.200	{1} Pipe (18) {2} Pipe (8)	Pipe Pipe	34.123 34.123	Diam/Width:150 Diam/Width:150	Manhole
E:383298.050 N:389396.348	1.487			{a} Pipe (10)	Pipe	34.123	Diam/Width:225	Not Applicable
SWMH20	35.395 33.905		Diameter / Length: 1.200	{1} Pipe (15) {2} SW8.000	Pipe Pipe	33.905 33.905	Diam/Width:225 Diam/Width:150	Manhole
E:383251.376 N:389360.847	1.490			{a} SW7.002	Pipe	33.905	Diam/Width:225	Not Applicable

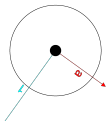
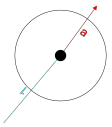
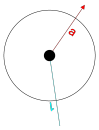
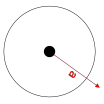
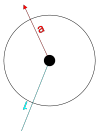
Trade City Sharston:	Date: 25/03/2026 Designed by: NM / Checked by: / Approved By:	
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW	

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH25	35.474 34.507		Diameter / Length: 0.600					Manhole
E:383250.519 N:389395.231	0.967			{a} Pipe (16)	Pipe	34.507	Diam/Width:150	Not Applicable
SWMH05	35.483 33.399		Diameter / Length: 1.200	{1} Pipe (5) {2} Pipe (20)	Pipe Pipe	34.150 33.399	Diam/Width:150 Diam/Width:300	Manhole
E:383233.177 N:389326.726	2.084			{a} SW1.004	Pipe	33.399	Diam/Width:300	Not Applicable
SWMH08	35.165 34.115		Diameter / Length: 1.200					Manhole
E:383193.005 N:389280.854	1.050			{a} SW6.001	Pipe	34.115	Diam/Width:225	Not Applicable
SWMH10	34.847 33.145		Diameter / Length: 1.200					Manhole
E:383191.937 N:389306.968	1.702			{a} SW5.001	Pipe	33.145	Diam/Width:300	Not Applicable
SWMH07	35.358 34.000		Diameter / Length: 1.200					Manhole
E:383216.087 N:389302.801	1.358			{a} SW4.000	Pipe	34.000	Diam/Width:225	Not Applicable

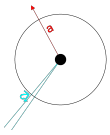
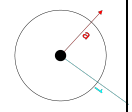
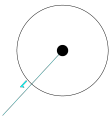
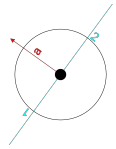
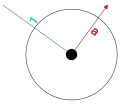
Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH06	35.353 33.300		Diameter / Length: 1.200	{1} SW4.000 {2} SW1.004	Pipe Pipe	33.300 33.300	Diam/Width:225 Diam/Width:300	Manhole
E:383227.164 N:389318.327	2.053			{a} SW1.005	Pipe	33.300	Diam/Width:375	Not Applicable
SWMH15	35.336 34.211		Diameter / Length: 0.600					Manhole
E:383235.022 N:389246.466	1.125			{a} Pipe (1)	Pipe	34.211	Diam/Width:225	Not Applicable
SWMH19	35.424 34.360		Diameter / Length: 1.200					Manhole
E:383231.970 N:389372.596	1.064			{a} SW8.000	Pipe	34.360	Diam/Width:150	Not Applicable
SWMH24	35.614 34.489		Diameter / Length: 0.600					Manhole
E:383268.304 N:389417.728	1.125			{a} Pipe (8)	Pipe	34.489	Diam/Width:150	Not Applicable
SWMH09	34.876 33.775		Diameter / Length: 1.200	{1} SW6.001	Pipe	33.775	Diam/Width:225	Manhole
E:383190.035 N:389306.460	1.101			{a} Pipe	Pipe	33.775	Diam/Width:225	Not Applicable

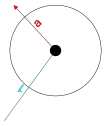
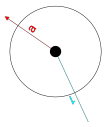
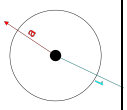
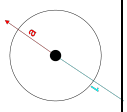
Trade City Sharston:	Date: 25/03/2026 Designed by: NM / Checked by: / Approved By:	
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW	

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH11	34.849 33.105		Diameter / Length: 1.200	{1} SW5.001	Pipe	33.105	Diam/Width:300	Manhole
E:383198.762 N:389316.534	1.744			{a} Pipe (7)	Pipe	33.105	Diam/Width:300	Not Applicable
SWMH16	35.386 34.136		Diameter / Length: 0.600	{1} Pipe (1)	Pipe	34.136	Diam/Width:225	Manhole
E:383245.815 N:389259.337	1.250			{a} Pipe (2)	Pipe	34.136	Diam/Width:225	Not Applicable
SWMH02	35.132 33.920		Diameter / Length: 1.200	{1} SW1.000	Pipe	33.920	Diam/Width:225	Manhole
E:383259.539 N:389265.187	1.212			{a} Pipe (4)	Pipe	33.920	Diam/Width:225	Not Applicable
SWMH14	35.483 34.430		Diameter / Length: 0.600					Manhole
E:383212.469 N:389341.729	1.053			{a} Pipe (5)	Pipe	34.430	Diam/Width:150	Not Applicable
FC SWMH18	35.097 31.740		Diameter / Length: 1.200	{1} Pipe (6)	Pipe	31.740	Diam/Width:300	Manhole
E:383213.184 N:389337.352	3.357			{a} Pipe (23)	Pipe	31.740	Diam/Width:150	Not Applicable

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH03	34.998 33.610		Diameter / Length: 1.200	{1} Pipe (4) {2} Pipe (13)	Pipe Pipe	33.610 33.610	Diam/Width:225 Diam/Width:150	Manhole
E:383277.167 N:389290.673	1.388			{a} Pipe (12)	Pipe	33.610	Diam/Width:225	Not Applicable
UU 2310	35.110 29.330		Diameter / Length: 1.800	{1} Pipe (9)	Pipe	30.080	Diam/Width:150	Manhole
E:383207.048 N:389363.229	5.780			{a} Pipe (14)	Pipe	29.330	Diam/Width:750	Not Applicable
UU 2404	35.190 28.750		Diameter / Length: 1.800	{1} Pipe (14)	Pipe	28.750	Diam/Width:750	Manhole
E:383268.204 N:389429.859	6.440							Not Applicable
COMMH34	35.473 31.578		Diameter / Length: 1.200	{1} SW1.008 {2} Pipe (19)	Pipe Pipe	31.578 33.022	Diam/Width:150 Diam/Width:150	Manhole
E:383216.098 N:389356.708	3.895			{a} Pipe (9)	Pipe	31.578	Diam/Width:150	Not Applicable
SWMH12	35.298 32.950		Diameter / Length: 1.200	{1} Pipe (7)	Pipe	32.950	Diam/Width:300	Manhole
E:383215.201 N:389304.623	2.348			{a} Pipe (21)	Pipe	32.950	Diam/Width:300	Not Applicable

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
				Outgoing Connections				Cover
SWMH13	35.298 32.925		Diameter / Length: 1.200	{1} Pipe (21)	Pipe	32.925	Diam/Width:300	Manhole
E:383218.769 N:389309.547	2.373			{a} Pipe (22)	Pipe	32.980	Diam/Width:300	Not Applicable
COMMH32	35.478 31.701		Diameter / Length: 1.200	{1} Pipe (23)	Pipe	31.701	Diam/Width:150	Manhole
E:383210.699 N:389342.725	3.777			{a} Pipe (24)	Pipe	31.701	Diam/Width:150	Not Applicable
FC SWMH29	35.292 33.315		Diameter / Length: 1.200	{1} Pipe (11)	Pipe	33.315	Diam/Width:300	Manhole
E:383245.566 N:389372.520	1.977			{a} Pipe (25)	Pipe	33.315	Diam/Width:150	Not Applicable
COMMH30	35.289 33.274		Diameter / Length: 1.200	{1} Pipe (25)	Pipe	33.274	Diam/Width:150	Manhole
E:383240.396 N:389375.980	2.015			{a} Pipe (26)	Pipe	33.274	Diam/Width:150	Not Applicable

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Inflow Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Car Park 1	SWMH16		Time of Concentration	0.026	100	0	100	0.026
Car Park 2	SWMH01		Time of Concentration	0.058	100	0	100	0.058
Car Park 3	SWMH02		Time of Concentration	0.016	100	0	100	0.016
Car Park 4	SWMH17		Time of Concentration	0.014	100	0	100	0.014
Car Park 5	SWMH02		Time of Concentration	0.017	100	0	100	0.017
Car Park 6	Porous Paving		Time of Concentration	0.022	100	0	100	0.022
Main Yard 1	SWMH28		Time of Concentration	0.087	100	0	100	0.087
Main Yard 2	SWMH28		Time of Concentration	0.089	100	0	100	0.089
Main Yard 3	SWMH28		Time of Concentration	0.094	100	0	100	0.094
Main Yard 4	SWMH28		Time of Concentration	0.079	100	0	100	0.079
Unit 1 Roof 1	SWMH08		Time of Concentration	0.075	100	0	100	0.075
Unit 1 Roof 2	SWMH07		Time of Concentration	0.079	100	0	100	0.079
Unit 1 Roof 3	SWMH04		Time of Concentration	0.079	100	0	100	0.079
Unit 1 Roof 4	SWMH15		Time of Concentration	0.075	100	0	100	0.075
Unit 1 Yard 1	SWMH10		Time of Concentration	0.078	100	0	100	0.078
Unit 1 Yard 2	SWMH10		Time of Concentration	0.045	100	0	100	0.045
Unit 1 Yard 3	SWMH10		Time of Concentration	0.112	100	0	100	0.112
Unit 2 Roof 1	SWMH19		Time of Concentration	0.037	100	0	100	0.037
Unit 2 Roof 2	SWMH14		Time of Concentration	0.037	100	0	100	0.037
Unit 3 Roof 1	SWMH20		Time of Concentration	0.029	100	0	100	0.029
Unit 3 Roof 2	SWMH14		Time of Concentration	0.029	100	0	100	0.029
Unit 4 Roof 1	SWMH21		Time of Concentration	0.025	100	0	100	0.025
Unit 4 Roof 2	SWMH04		Time of Concentration	0.025	100	0	100	0.025
Unit 5 Roof 1	SWMH21		Time of Concentration	0.046	100	0	100	0.046
Unit 5 Roof 2	SWMH17		Time of Concentration	0.046	100	0	100	0.046
Unit 6 Roof 1	SWMH22		Time of Concentration	0.040	100	0	100	0.040
Unit 6 Roof 2	SWMH27		Time of Concentration	0.034	100	0	100	0.034
Unit 7 Roof 1	SWMH22		Time of Concentration	0.022	100	0	100	0.022
Unit 7 Roof 2	SWMH26		Time of Concentration	0.018	100	0	100	0.018
Unit 8 Roof 1	SWMH24		Time of Concentration	0.032	100	0	100	0.032
Unit 8 Roof 2	SWMH25		Time of Concentration	0.027	100	0	100	0.027
Unit 9 Roof 1	SWMH24		Time of Concentration	0.029	100	0	100	0.029

Unit 9 Roof 2	SWMH25		Time of Concentration	0.025	100	0	100	0.025
TOTAL		**0.0**		**1.545**				**1.545**

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Outfall Details Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
UU 2404	Free Discharge			

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.0
Ratio R	0.385
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
2.0	0.000
30.0	0.000
100.0	0.000
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWMH01	FSR: 2 years: +0 %: 15 mins: Winter	35.103	33.975	34.053	0.078	9.4	0.088	0.000	9.1	4.328	OK
SWMH17	FSR: 2 years: +0 %: 15 mins: Winter	35.480	34.355	34.387	0.032	9.6	0.009	0.000	9.6	4.461	OK
SWMH04	FSR: 2 years: +0 %: 15 mins: Winter	35.481	33.565	33.770	0.205	53.2	0.232	0.000	47.2	26.481	OK
COMMH33	FSR: 2 years: +0 %: 60 mins: Summer	35.463	31.675	31.706	0.031	1.2	0.035	0.000	1.2	6.620	OK
COMMH31	FSR: 2 years: +0 %: 240 mins: Winter	35.332	33.220	33.252	0.032	1.4	0.036	0.000	1.4	33.256	OK
SWMH22	FSR: 2 years: +0 %: 15 mins: Winter	35.616	34.498	34.583	0.085	9.9	0.024	0.000	9.4	4.575	OK
SWMH27	FSR: 2 years: +0 %: 15 mins: Winter	35.503	34.210	34.263	0.053	5.5	0.060	0.000	4.9	2.541	OK
SWMH26	FSR: 2 years: +0 %: 15 mins: Winter	35.506	33.550	33.676	0.126	32.8	0.143	0.000	32.2	16.800	OK
SWMH21	FSR: 2 years: +0 %: 15 mins: Winter	35.399	34.300	34.376	0.076	11.4	0.086	0.000	10.6	5.273	OK
SWMH28	FSR: 2 years: +0 %: 15 mins: Winter	35.214	33.840	33.999	0.159	56.4	0.180	0.000	55.3	26.073	OK
SWMH23	FSR: 2 years: +0 %: 15 mins: Winter	35.610	34.123	34.203	0.080	18.8	0.090	0.000	17.1	9.059	OK
SWMH20	FSR: 2 years: +0 %: 15 mins: Winter	35.395	33.905	34.003	0.098	21.1	0.110	0.000	19.4	10.162	OK
SWMH25	FSR: 2 years: +0 %: 15 mins: Winter	35.474	34.507	34.565	0.058	8.3	0.016	0.000	7.8	3.838	OK
SWMH05	FSR: 2 years: +0 %: 15 mins: Winter	35.483	33.399	33.559	0.160	57.3	0.181	0.000	54.3	31.343	OK
SWMH08	FSR: 2 years: +0 %: 15 mins: Winter	35.165	34.115	34.188	0.073	12.1	0.082	0.000	11.7	5.590	OK
SWMH10	FSR: 2 years: +0 %: 15 mins: Winter	34.847	33.145	33.313	0.168	37.8	0.189	0.000	37.0	17.459	OK
SWMH07	FSR: 2 years: +0 %: 15 mins: Winter	35.358	34.000	34.054	0.054	12.7	0.061	0.000	12.5	5.868	OK
SWMH06	FSR: 2 years: +0 %: 15 mins: Winter	35.353	33.300	33.394	0.094	66.8	0.107	0.000	65.7	37.190	OK
SWMH15	FSR: 2 years: +0 %: 15 mins: Winter	35.336	34.211	34.305	0.094	12.1	0.027	0.000	11.9	5.606	OK
SWMH19	FSR: 2 years: +0 %: 15 mins: Winter	35.424	34.360	34.409	0.049	5.9	0.055	0.000	5.8	2.744	OK
SWMH24	FSR: 2 years: +0 %: 15 mins: Winter	35.614	34.489	34.569	0.080	9.8	0.023	0.000	9.4	4.520	OK
SWMH09	FSR: 2 years: +0 %: 15 mins: Winter	34.876	33.775	33.822	0.047	11.7	0.053	0.000	11.3	5.583	OK
SWMH11	FSR: 2 years: +0 %: 15 mins: Winter	34.849	33.105	33.244	0.139	37.0	0.157	0.000	35.7	17.459	OK
SWMH16	FSR: 2 years: +0 %: 15 mins: Winter	35.386	34.136	34.214	0.078	16.1	0.022	0.000	15.3	7.568	OK
SWMH02	FSR: 2 years: +0 %: 15 mins: Winter	35.132	33.920	33.999	0.079	14.6	0.089	0.000	14.0	6.833	OK
SWMH14	FSR: 2 years: +0 %: 15 mins: Winter	35.483	34.430	34.513	0.083	10.7	0.023	0.000	10.1	4.926	OK
FC SWMH18	FSR: 2 years: +0 %: 960 mins: Winter	35.097	31.740	32.554	0.814	1.5	0.921	0.000	1.2	123.898	Surcharged
SWMH03	FSR: 2 years: +0 %: 15 mins: Winter	34.998	33.610	33.777	0.167	14.0	0.189	0.000	11.7	6.811	OK
UU 2310	FSR: 2 years: +0 %: 960 mins: Winter	35.110	29.330	29.358	0.028	2.5	0.070	0.000	2.5	258.786	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

UU 2404	FSR: 2 years: +0 %: 960 mins: Winter	35.190	28.750	28.778	0.028	2.5	0.000	0.000	2.5	258.786	OK
COMMH34	FSR: 2 years: +0 %: 960 mins: Winter	35.473	31.578	31.599	0.021	2.5	0.023	0.000	2.5	259.059	OK
SWMH12	FSR: 2 years: +0 %: 15 mins: Winter	35.298	32.950	33.113	0.163	35.7	0.184	0.000	34.6	17.356	OK
SWMH13	FSR: 2 years: +0 %: 15 mins: Winter	35.298	32.925	33.067	0.142	34.6	0.161	0.000	34.2	17.257	OK
COMMH32	FSR: 2 years: +0 %: 960 mins: Winter	35.478	31.701	31.731	0.031	1.2	0.035	0.000	1.2	123.819	OK
FC SWMH29	FSR: 2 years: +0 %: 960 mins: Winter	35.292	33.315	33.623	0.308	1.4	0.349	0.000	1.4	135.552	Surcharged
COMMH30	FSR: 2 years: +0 %: 360 mins: Winter	35.289	33.274	33.306	0.032	1.4	0.036	0.000	1.4	50.645	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWMH01	FSR: 30 years: +0 %: 15 mins: Winter	35.103	33.975	34.091	0.116	17.7	0.132	0.000	17.0	8.188	OK
SWMH17	FSR: 30 years: +0 %: 15 mins: Winter	35.480	34.355	34.400	0.045	18.2	0.013	0.000	18.2	8.429	OK
SWMH04	FSR: 30 years: +0 %: 15 mins: Winter	35.481	33.565	34.038	0.473	93.4	0.534	0.000	91.0	50.153	Surcharged
COMMH33	FSR: 30 years: +0 %: 1440 mins: Winter	35.463	31.675	31.709	0.034	1.4	0.038	0.000	1.4	215.037	OK
COMMH31	FSR: 30 years: +0 %: 30 mins: Summer	35.332	33.220	33.252	0.032	1.4	0.036	0.000	1.4	3.695	OK
SWMH22	FSR: 30 years: +0 %: 15 mins: Winter	35.616	34.498	34.652	0.154	18.7	0.044	0.000	16.8	8.641	Surcharged
SWMH27	FSR: 30 years: +0 %: 15 mins: Winter	35.503	34.210	34.288	0.078	10.4	0.088	0.000	9.4	4.811	OK
SWMH26	FSR: 30 years: +0 %: 1440 mins: Winter	35.506	33.550	33.912	0.362	3.4	0.409	0.000	3.4	115.882	Surcharged
SWMH21	FSR: 30 years: +0 %: 15 mins: Winter	35.399	34.300	34.409	0.109	21.6	0.123	0.000	20.3	9.968	OK
SWMH28	FSR: 30 years: +0 %: 15 mins: Winter	35.214	33.840	34.091	0.251	106.8	0.284	0.000	104.6	49.327	OK
SWMH23	FSR: 30 years: +0 %: 15 mins: Winter	35.610	34.123	34.239	0.116	34.3	0.131	0.000	32.8	17.156	OK
SWMH20	FSR: 30 years: +0 %: 15 mins: Winter	35.395	33.905	34.053	0.148	40.1	0.167	0.000	37.5	19.237	OK
SWMH25	FSR: 30 years: +0 %: 15 mins: Winter	35.474	34.507	34.591	0.084	15.7	0.024	0.000	14.9	7.269	OK
SWMH05	FSR: 30 years: +0 %: 15 mins: Winter	35.483	33.399	33.645	0.246	109.7	0.279	0.000	106.5	59.400	OK
SWMH08	FSR: 30 years: +0 %: 15 mins: Winter	35.165	34.115	34.218	0.103	22.9	0.117	0.000	22.3	10.575	OK
SWMH10	FSR: 30 years: +0 %: 15 mins: Winter	34.847	33.145	33.412	0.267	71.5	0.302	0.000	70.0	33.034	OK
SWMH07	FSR: 30 years: +0 %: 15 mins: Winter	35.358	34.000	34.075	0.075	24.0	0.084	0.000	23.7	11.098	OK
SWMH06	FSR: 30 years: +0 %: 15 mins: Winter	35.353	33.300	33.441	0.141	130.2	0.160	0.000	128.4	70.473	OK
SWMH15	FSR: 30 years: +0 %: 15 mins: Winter	35.336	34.211	34.350	0.139	23.0	0.039	0.000	22.5	10.610	OK
SWMH19	FSR: 30 years: +0 %: 15 mins: Winter	35.424	34.360	34.429	0.069	11.2	0.078	0.000	11.0	5.192	OK
SWMH24	FSR: 30 years: +0 %: 15 mins: Winter	35.614	34.489	34.621	0.132	18.5	0.037	0.000	17.5	8.541	OK
SWMH09	FSR: 30 years: +0 %: 15 mins: Winter	34.876	33.775	33.841	0.066	22.3	0.075	0.000	21.6	10.567	OK
SWMH11	FSR: 30 years: +0 %: 15 mins: Winter	34.849	33.105	33.319	0.214	70.0	0.242	0.000	67.8	33.034	OK
SWMH16	FSR: 30 years: +0 %: 15 mins: Winter	35.386	34.136	34.252	0.116	30.5	0.033	0.000	29.5	14.280	OK
SWMH02	FSR: 30 years: +0 %: 15 mins: Winter	35.132	33.920	34.079	0.159	27.3	0.180	0.000	16.4	12.922	OK
SWMH14	FSR: 30 years: +0 %: 15 mins: Winter	35.483	34.430	34.569	0.139	20.2	0.039	0.000	18.7	9.319	OK
FC SWMH18	FSR: 30 years: +0 %: 1440 mins: Winter	35.097	31.740	32.927	1.187	1.6	1.343	0.000	1.4	215.183	Surcharged

SWMH03	FSR: 30 years: +0 %: 15 mins: Winter	34.998	33.610	34.047	0.437	16.4	0.494	0.000	14.3	12.906	Surcharged
UU 2310	FSR: 30 years: +0 %: 1440 mins: Summer	35.110	29.330	29.358	0.028	2.6	0.071	0.000	2.6	410.770	OK
UU 2404	FSR: 30 years: +0 %: 1440 mins: Summer	35.190	28.750	28.778	0.028	2.6	0.000	0.000	2.6	410.770	OK
COMMH34	FSR: 30 years: +0 %: 1440 mins: Summer	35.473	31.578	31.599	0.021	2.6	0.023	0.000	2.6	411.062	OK
SWMH12	FSR: 30 years: +0 %: 15 mins: Winter	35.298	32.950	33.178	0.228	67.8	0.258	0.000	66.1	32.928	OK
SWMH13	FSR: 30 years: +0 %: 15 mins: Winter	35.298	32.925	33.110	0.185	66.1	0.209	0.000	65.5	32.827	OK
COMMH32	FSR: 30 years: +0 %: 1440 mins: Winter	35.478	31.701	31.734	0.034	1.4	0.038	0.000	1.4	215.097	OK
FC SWMH29	FSR: 30 years: +0 %: 1440 mins: Winter	35.292	33.315	33.912	0.597	1.4	0.675	0.000	1.4	194.846	Surcharged
COMMH30	FSR: 30 years: +0 %: 60 mins: Winter	35.289	33.274	33.306	0.032	1.4	0.036	0.000	1.4	8.171	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWMH01	FSR: 100 years: +0 %: 15 mins: Winter	35.103	33.975	34.399	0.424	22.9	0.480	0.000	18.5	10.576	Surcharged
SWMH17	FSR: 100 years: +0 %: 15 mins: Winter	35.480	34.355	34.406	0.051	23.6	0.014	0.000	23.5	10.895	OK
SWMH04	FSR: 100 years: +0 %: 15 mins: Winter	35.481	33.565	34.251	0.686	113.9	0.776	0.000	109.4	64.816	Surcharged
COMMH33	FSR: 100 years: +0 %: 1440 mins: Winter	35.463	31.675	31.710	0.035	1.5	0.040	0.000	1.5	232.503	OK
COMMH31	FSR: 100 years: +0 %: 15 mins: Summer	35.332	33.220	33.252	0.032	1.4	0.036	0.000	1.4	1.624	OK
SWMH22	FSR: 100 years: +0 %: 15 mins: Winter	35.616	34.498	34.885	0.387	24.1	0.109	0.000	20.2	11.160	Surcharged
SWMH27	FSR: 100 years: +0 %: 15 mins: Winter	35.503	34.210	34.302	0.092	13.5	0.104	0.000	12.2	6.217	OK
SWMH26	FSR: 100 years: +0 %: 1440 mins: Winter	35.506	33.550	34.095	0.545	4.3	0.616	0.000	4.2	146.084	Surcharged
SWMH21	FSR: 100 years: +0 %: 15 mins: Winter	35.399	34.300	34.428	0.128	27.9	0.144	0.000	26.3	12.874	OK
SWMH28	FSR: 100 years: +0 %: 15 mins: Winter	35.214	33.840	34.257	0.417	138.0	0.471	0.000	136.4	63.742	Surcharged
SWMH23	FSR: 100 years: +0 %: 15 mins: Winter	35.610	34.123	34.253	0.130	41.0	0.147	0.000	39.8	22.201	OK
SWMH20	FSR: 100 years: +0 %: 1440 mins: Winter	35.395	33.905	34.095	0.190	2.6	0.215	0.000	2.6	89.631	OK
SWMH25	FSR: 100 years: +0 %: 15 mins: Winter	35.474	34.507	34.608	0.101	20.3	0.028	0.000	19.3	9.389	OK
SWMH05	FSR: 100 years: +0 %: 15 mins: Winter	35.483	33.399	33.706	0.307	132.4	0.347	0.000	126.6	76.787	Surcharged
SWMH08	FSR: 100 years: +0 %: 15 mins: Winter	35.165	34.115	34.235	0.120	29.6	0.136	0.000	28.9	13.665	OK
SWMH10	FSR: 100 years: +0 %: 15 mins: Winter	34.847	33.145	33.511	0.366	92.4	0.413	0.000	91.1	42.670	Surcharged
SWMH07	FSR: 100 years: +0 %: 15 mins: Winter	35.358	34.000	34.086	0.086	31.0	0.097	0.000	30.6	14.338	OK
SWMH06	FSR: 100 years: +0 %: 15 mins: Winter	35.353	33.300	33.460	0.160	157.2	0.181	0.000	156.7	91.099	OK
SWMH15	FSR: 100 years: +0 %: 15 mins: Winter	35.336	34.211	34.392	0.181	29.7	0.051	0.000	24.1	13.715	OK
SWMH19	FSR: 100 years: +0 %: 15 mins: Winter	35.424	34.360	34.440	0.080	14.5	0.091	0.000	14.2	6.703	OK
SWMH24	FSR: 100 years: +0 %: 15 mins: Winter	35.614	34.489	34.787	0.298	23.9	0.084	0.000	20.8	11.034	Surcharged
SWMH09	FSR: 100 years: +0 %: 15 mins: Winter	34.876	33.775	33.851	0.076	28.9	0.087	0.000	28.1	13.656	OK
SWMH11	FSR: 100 years: +0 %: 15 mins: Winter	34.849	33.105	33.378	0.273	91.1	0.309	0.000	87.2	42.672	OK
SWMH16	FSR: 100 years: +0 %: 15 mins: Winter	35.386	34.136	34.397	0.261	34.5	0.074	0.000	26.0	18.460	Surcharged
SWMH02	FSR: 100 years: +0 %: 15 mins: Winter	35.132	33.920	34.382	0.462	31.7	0.523	0.000	27.6	16.693	Surcharged
SWMH14	FSR: 100 years: +0 %: 15 mins: Winter	35.483	34.430	34.761	0.331	26.1	0.094	0.000	23.0	12.044	Surcharged
FC SWMH18	FSR: 100 years: +0 %: 1440 mins: Winter	35.097	31.740	33.175	1.435	1.8	1.623	0.000	1.5	232.658	Surcharged

SWMH03	FSR: 100 years: +0 %: 15 mins: Winter	34.998	33.610	34.277	0.667	27.6	0.755	0.000	23.7	16.668	Surcharged
UU 2310	FSR: 100 years: +0 %: 1440 mins: Winter	35.110	29.330	29.359	0.029	2.9	0.074	0.000	2.9	433.249	OK
UU 2404	FSR: 100 years: +0 %: 1440 mins: Winter	35.190	28.750	28.779	0.029	2.9	0.000	0.000	2.9	433.249	OK
COMMH34	FSR: 100 years: +0 %: 1440 mins: Winter	35.473	31.578	31.600	0.022	2.9	0.025	0.000	2.9	433.539	OK
SWMH12	FSR: 100 years: +0 %: 15 mins: Winter	35.298	32.950	33.221	0.271	87.2	0.307	0.000	85.0	42.567	OK
SWMH13	FSR: 100 years: +0 %: 1440 mins: Winter	35.298	32.925	33.175	0.250	4.5	0.283	0.000	4.5	153.542	OK
COMMH32	FSR: 100 years: +0 %: 1440 mins: Winter	35.478	31.701	31.736	0.035	1.5	0.040	0.000	1.5	232.566	OK
FC SWMH29	FSR: 100 years: +0 %: 1440 mins: Winter	35.292	33.315	34.095	0.780	1.4	0.882	0.000	1.4	201.284	Surcharged
COMMH30	FSR: 100 years: +0 %: 120 mins: Summer	35.289	33.274	33.306	0.032	1.4	0.036	0.000	1.4	16.094	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWMH01	FSR: 100 years: +45 %: 15 mins: Winter	35.103	33.975	35.086	1.111	33.2	1.257	0.000	24.3	15.369	Flood Risk
SWMH17	FSR: 100 years: +45 %: 15 mins: Winter	35.480	34.355	34.917	0.562	34.2	0.159	0.000	27.1	15.799	Surcharged
SWMH04	FSR: 100 years: +45 %: 15 mins: Winter	35.481	33.565	34.887	1.322	145.9	1.495	0.000	138.9	93.577	Surcharged
COMMH33	FSR: 100 years: +45 %: 1440 mins: Winter	35.463	31.675	31.713	0.038	1.8	0.043	0.000	1.8	264.881	OK
COMMH31	FSR: 100 years: +45 %: 1440 mins: Winter	35.332	33.220	33.254	0.034	1.6	0.038	0.000	1.6	236.917	OK
SWMH22	FSR: 100 years: +45 %: 15 mins: Winter	35.616	34.498	35.449	0.951	35.0	0.269	0.000	28.5	16.180	Flood Risk
SWMH27	FSR: 100 years: +45 %: 1440 mins: Winter	35.503	34.210	34.478	0.268	0.9	0.303	0.000	0.9	32.455	Surcharged
SWMH26	FSR: 100 years: +45 %: 1440 mins: Winter	35.506	33.550	34.478	0.928	6.3	1.049	0.000	6.1	211.073	Surcharged
SWMH21	FSR: 100 years: +45 %: 1440 mins: Winter	35.399	34.300	34.478	0.178	2.0	0.201	0.000	2.0	67.198	OK
SWMH28	FSR: 100 years: +45 %: 15 mins: Winter	35.214	33.840	34.542	0.702	200.1	0.794	0.000	196.8	92.400	Surcharged
SWMH23	FSR: 100 years: +45 %: 1440 mins: Winter	35.610	34.123	34.478	0.355	3.4	0.401	0.000	3.4	115.035	Surcharged
SWMH20	FSR: 100 years: +45 %: 1440 mins: Winter	35.395	33.905	34.478	0.573	3.8	0.648	0.000	3.9	127.613	Surcharged
SWMH25	FSR: 100 years: +45 %: 15 mins: Winter	35.474	34.507	34.665	0.158	29.5	0.045	0.000	26.2	13.426	Surcharged
SWMH05	FSR: 100 years: +45 %: 15 mins: Winter	35.483	33.399	34.037	0.638	171.8	0.721	0.000	168.5	110.964	Surcharged
SWMH08	FSR: 100 years: +45 %: 15 mins: Winter	35.165	34.115	34.268	0.153	42.9	0.173	0.000	41.9	19.814	OK
SWMH10	FSR: 100 years: +45 %: 15 mins: Winter	34.847	33.145	33.953	0.808	134.0	0.914	0.000	129.3	61.876	Surcharged
SWMH07	FSR: 100 years: +45 %: 15 mins: Winter	35.358	34.000	34.106	0.106	45.0	0.119	0.000	44.4	20.788	OK
SWMH06	FSR: 100 years: +45 %: 1440 mins: Winter	35.353	33.300	33.683	0.383	14.1	0.433	0.000	14.1	489.687	Surcharged
SWMH15	FSR: 100 years: +45 %: 15 mins: Winter	35.336	34.211	35.243	1.032	43.0	0.292	0.000	32.8	19.876	Flood Risk

SWMH19	FSR: 100 years: +45 %: 1440 mins: Winter	35.424	34.360	34.478	0.118	1.0	0.133	0.000	1.0	34.985	OK
SWMH24	FSR: 100 years: +45 %: 15 mins: Winter	35.614	34.489	35.287	0.798	34.6	0.226	0.000	29.0	16.001	Surcharged
SWMH09	FSR: 100 years: +45 %: 15 mins: Winter	34.876	33.775	33.870	0.095	41.9	0.107	0.000	40.8	19.803	OK
SWMH11	FSR: 100 years: +45 %: 15 mins: Winter	34.849	33.105	33.711	0.606	129.3	0.686	0.000	126.0	61.877	Surcharged
SWMH16	FSR: 100 years: +45 %: 15 mins: Winter	35.386	34.136	35.160	1.024	47.9	0.290	0.000	38.3	26.777	Flood Risk
SWMH02	FSR: 100 years: +45 %: 15 mins: Winter	35.132	33.920	35.059	1.139	43.0	1.288	0.000	43.5	24.243	Flood Risk
SWMH14	FSR: 100 years: +45 %: 15 mins: Winter	35.483	34.430	35.219	0.789	37.8	0.223	0.000	32.9	17.462	Flood Risk
FC SWMH18	FSR: 100 years: +45 %: 1440 mins: Winter	35.097	31.740	33.683	1.943	1.8	2.198	0.000	1.8	265.050	Surcharged
SWMH03	FSR: 100 years: +45 %: 15 mins: Winter	34.998	33.610	34.900	1.290	43.7	1.459	0.000	53.7	24.509	Flood Risk
UU 2310	FSR: 100 years: +45 %: 1440 mins: Winter	35.110	29.330	29.361	0.031	3.4	0.079	0.000	3.4	501.414	OK
UU 2404	FSR: 100 years: +45 %: 1440 mins: Winter	35.190	28.750	28.782	0.032	3.4	0.000	0.000	3.4	501.414	OK
COMMH34	FSR: 100 years: +45 %: 1440 mins: Winter	35.473	31.578	31.601	0.023	3.4	0.027	0.000	3.4	501.741	OK
SWMH12	FSR: 100 years: +45 %: 1440 mins: Winter	35.298	32.950	33.683	0.733	6.5	0.829	0.000	6.5	219.471	Surcharged
SWMH13	FSR: 100 years: +45 %: 1440 mins: Winter	35.298	32.925	33.683	0.758	6.5	0.857	0.000	6.5	218.648	Surcharged
COMMH32	FSR: 100 years: +45 %: 1440 mins: Winter	35.478	31.701	31.739	0.038	1.8	0.043	0.000	1.8	264.950	OK
FC SWMH29	FSR: 100 years: +45 %: 1440 mins: Winter	35.292	33.315	34.478	1.163	1.6	1.315	0.000	1.6	237.142	Surcharged
COMMH30	FSR: 100 years: +45 %: 1440 mins: Winter	35.289	33.274	33.309	0.035	1.6	0.039	0.000	1.6	237.046	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank Unit 1	FSR: 2 years: +0 %: 960 mins: Winter	32.554	32.554	0.354	0.354	9.4	155.539	0.000	0.000	1.5	124.804	76.425	OK
Tank Unit 2 and 3	FSR: 2 years: +0 %: 960 mins: Winter	33.623	33.623	0.261	0.261	8.3	130.754	0.000	0.000	1.4	135.800	76.802	OK
Porous Paving	FSR: 2 years: +0 %: 1440 mins: Winter	34.821	34.820	0.096	0.100	0.2	6.390	0.000	0.000	0.0	0.000	74.179	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank Unit 1	FSR: 30 years: +0 %: 1440 mins: Winter	32.927	32.927	0.727	0.727	12.2	319.419	0.000	0.000	1.6	216.394	51.586	OK
Tank Unit 2 and 3	FSR: 30 years: +0 %: 1440 mins: Winter	33.912	33.912	0.550	0.550	10.7	275.003	0.000	0.000	1.4	195.455	51.209	OK
Porous Paving	FSR: 30 years: +0 %: 1440 mins: Winter	34.872	34.833	0.148	0.113	0.3	8.954	0.000	0.000	0.1	4.080	63.818	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank Unit 1	FSR: 100 years: +0 %: 1440 mins: Winter	33.175	33.175	0.975	0.975	15.6	428.275	0.000	0.000	1.8	234.135	35.086	OK
Tank Unit 2 and 3	FSR: 100 years: +0 %: 1440 mins: Winter	34.095	34.095	0.733	0.733	13.5	366.737	0.000	0.000	1.4	202.108	34.934	OK
Porous Paving	FSR: 100 years: +0 %: 1440 mins: Winter	34.902	34.840	0.177	0.120	0.4	10.316	0.000	0.000	0.1	6.997	58.314	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank Unit 1	FSR: 100 years: +45 %: 1440 mins: Winter	33.683	33.683	1.483	1.483	22.8	651.244	0.000	0.000	1.8	267.081	1.291	OK
Tank Unit 2 and 3	FSR: 100 years: +45 %: 1440 mins: Winter	34.478	34.478	1.116	1.116	19.6	558.367	0.000	0.000	1.6	238.362	0.935	OK
Porous Paving	FSR: 100 years: +45 %: 960 mins: Winter	34.953	34.859	0.228	0.139	0.8	12.918	0.000	0.000	0.4	11.335	47.801	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.001	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH17	SWMH04	35.480	34.387	0.118	4.461	0.5	0.05	9.6	OK
SW4.000	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH07	SWMH06	35.358	34.054	0.074	5.868	1.1	0.12	12.5	OK
SW8.000	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH19	SWMH20	35.424	34.409	0.073	2.744	0.7	0.23	5.8	OK
SW1.004	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH05	SWMH06	35.483	33.559	0.127	31.343	1.9	0.5	54.3	OK
SW5.001	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH10	SWMH11	34.847	33.313	0.153	17.459	1.0	0.57	37.0	OK
SW6.001	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH08	SWMH09	35.165	34.188	0.060	5.590	1.4	0.2	11.7	OK
Pipe (1)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH15	SWMH16	35.336	34.305	0.086	5.606	0.8	0.34	11.9	OK
SW1.000	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH01	SWMH02	35.103	34.053	0.078	4.328	0.7	0.22	9.1	OK
Pipe (5)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH14	SWMH05	35.483	34.513	0.080	4.926	1.0	0.54	10.1	OK
Pipe (10)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH23	SWMH26	35.610	34.203	0.078	9.059	1.4	0.25	17.1	OK
Pipe (4)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH02	SWMH03	35.132	33.999	0.123	6.833	0.7	0.27	14.0	OK
Pipe (12)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH03	SWMH04	34.998	33.777	0.186	6.811	0.4	0.29	11.7	OK
Pipe (13)	FSR: 2 years: +0 %: 15 mins: Summer	Pipe	Porous Paving	SWMH03	35.224	34.742	0.079	0.000	0.0	0	0.0	OK
Pipe (14)	FSR: 2 years: +0 %: 960 mins: Winter	Pipe	UU 2310	UU 2404	35.110	29.358	0.028	258.786	0.5	0	2.5	OK
SW1.008	FSR: 2 years: +0 %: 960 mins: Winter	Pipe	COMMH33	COMMH34	35.463	31.706	0.026	123.765	0.7	0.08	1.2	OK
Pipe (15)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH21	SWMH20	35.399	34.376	0.087	5.273	0.7	0.25	10.6	OK
Pipe (16)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH25	SWMH26	35.474	34.565	0.057	3.838	1.3	0.3	7.8	OK
Pipe (17)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH27	SWMH26	35.503	34.263	0.053	2.541	0.9	0.26	4.9	OK
Pipe (18)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH22	SWMH23	35.616	34.583	0.082	4.575	0.9	0.58	9.4	OK

Pipe (8)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH24	SWMH23	35.614	34.569	0.080	4.520	1.0	0.53	9.4	OK
Pipe (9)	FSR: 2 years: +0 %: 960 mins: Winter	Pipe	COMMH34	UU 2310	35.473	31.599	0.020	259.059	1.8	0.04	2.5	OK
Pipe (19)	FSR: 2 years: +0 %: 240 mins: Winter	Pipe	COMMH31	COMMH34	35.332	33.252	0.031	33.256	0.5	0.09	1.4	OK
SW11.000	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH28	Tank Unit 2 and 3	35.214	33.999	0.149	26.073	1.6	0.45	55.3	OK
Pipe (20)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH04	SWMH05	35.481	33.770	0.182	26.481	1.1	0.74	47.2	OK
Pipe (6)	FSR: 2 years: +0 %: 60 mins: Summer	Pipe	Tank Unit 1	FC SWMH18	34.755	32.390	0.300	7.635	0.4	0.01	3.9	OK
Pipe (7)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH11	SWMH12	34.849	33.244	0.151	17.459	1.0	0.37	35.7	OK
Pipe (21)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH12	SWMH13	35.298	33.113	0.153	17.356	1.0	0.49	34.6	OK
Pipe (23)	FSR: 2 years: +0 %: 960 mins: Winter	Pipe	FC SWMH18	COMMH32	35.097	32.554	0.031	123.864	0.5	0.08	1.2	Surcharged
Pipe (24)	FSR: 2 years: +0 %: 960 mins: Winter	Pipe	COMMH32	COMMH33	35.478	31.731	0.031	123.819	0.5	0.08	1.2	OK
Pipe (11)	FSR: 2 years: +0 %: 30 mins: Winter	Pipe	Tank Unit 2 and 3	FC SWMH29	35.160	33.496	0.157	3.867	0.2	0.01	1.5	OK
Pipe (25)	FSR: 2 years: +0 %: 240 mins: Winter	Pipe	FC SWMH29	COMMH30	35.292	33.592	0.032	33.437	0.5	0.09	1.4	Surcharged
Pipe (26)	FSR: 2 years: +0 %: 240 mins: Winter	Pipe	COMMH30	COMMH31	35.289	33.306	0.032	33.381	0.5	0.09	1.4	OK
Pipe (2)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH16	SWMH04	35.386	34.214	0.141	7.568	0.6	0.27	15.3	OK
SW9.007	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH26	Tank Unit 2 and 3	35.506	33.676	0.117	16.800	1.3	0.28	32.2	OK
SW7.002	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH20	Tank Unit 2 and 3	35.395	34.003	0.091	10.162	1.3	0.3	19.4	OK
SW1.005	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH06	Tank Unit 1	35.353	33.394	0.087	37.190	3.4	0.1	65.7	OK
Pipe (22)	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH13	Tank Unit 1	35.298	33.067	0.080	17.257	2.3	0.13	34.2	OK
Pipe	FSR: 2 years: +0 %: 15 mins: Winter	Pipe	SWMH09	Tank Unit 1	34.876	33.822	0.046	5.583	1.9	0.09	11.3	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.001	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH17	SWMH04	35.480	34.400	0.225	8.429	0.5	0.09	18.2	OK
SW4.000	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH07	SWMH06	35.358	34.075	0.108	11.098	1.3	0.24	23.7	OK
SW8.000	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH19	SWMH20	35.424	34.429	0.108	5.192	0.8	0.43	11.0	OK
SW1.004	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH05	SWMH06	35.483	33.645	0.194	59.400	2.2	0.98	106.5	OK
SW5.001	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH10	SWMH11	34.847	33.412	0.241	33.034	1.2	1.09	70.0	OK
SW6.001	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH08	SWMH09	35.165	34.218	0.085	10.575	1.6	0.37	22.3	OK
Pipe (1)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH15	SWMH16	35.336	34.350	0.127	10.610	1.0	0.65	22.5	OK
SW1.000	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH01	SWMH02	35.103	34.091	0.138	8.188	0.7	0.41	17.0	OK
Pipe (5)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH14	SWMH05	35.483	34.569	0.131	9.319	1.1	1.01	18.7	OK
Pipe (10)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH23	SWMH26	35.610	34.239	0.113	17.156	1.6	0.48	32.8	OK
Pipe (4)	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	SWMH02	SWMH03	35.132	34.035	0.225	11.528	0.6	0.43	22.4	OK
Pipe (12)	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	SWMH03	SWMH04	34.998	33.878	0.225	16.942	0.5	0.46	18.3	Surcharged
Pipe (13)	FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	Porous Paving	SWMH03	35.224	34.857	0.014	3.962	0.4	0	0.1	OK
Pipe (14)	FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	UU 2310	UU 2404	35.110	29.358	0.028	410.770	0.5	0	2.6	OK

SW1.008	FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	COMMH 33	COMMH 34	35.463	31.709	0.027	215.037	0.7	0.1	1.4	OK
Pipe (15)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 1	SWMH2 0	35.399	34.409	0.128	9.968	0.9	0.47	20.3	OK
Pipe (16)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 5	SWMH2 6	35.474	34.591	0.083	7.269	1.5	0.57	14.9	OK
Pipe (17)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 7	SWMH2 6	35.503	34.288	0.076	4.811	1.0	0.5	9.4	OK
Pipe (18)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 2	SWMH2 3	35.616	34.652	0.135	8.641	1.0	1.03	16.8	Surch arged
Pipe (8)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 4	SWMH2 3	35.614	34.621	0.124	8.541	1.1	0.99	17.5	OK
Pipe (9)	FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	COMMH 34	UU 2310	35.473	31.599	0.021	411.062	1.8	0.04	2.6	OK
Pipe (19)	FSR: 30 years: +0 %: 30 mins: Summer	Pipe	COMMH 31	COMMH 34	35.332	33.252	0.031	3.695	0.5	0.09	1.4	OK
SW11.000	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 8	Tank Unit 2 and 3	35.214	34.091	0.231	49.327	1.8	0.85	104.6	OK
Pipe (20)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH0 4	SWMH0 5	35.481	34.038	0.300	50.153	1.3	1.43	91.0	Surch arged
Pipe (6)	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	Tank Unit 1	FC SWMH1 8	34.755	32.533	0.300	4.629	0.2	0.02	8.4	Surch arged
Pipe (7)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH1 1	SWMH1 2	34.849	33.319	0.221	33.034	1.2	0.7	67.8	OK
Pipe (21)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH1 2	SWMH1 3	35.298	33.178	0.207	32.928	1.3	0.93	66.1	OK
Pipe (23)	FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	FC SWMH1 8	COMMH 32	35.097	32.927	0.034	215.146	0.5	0.1	1.4	Surch arged
Pipe (24)	FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	COMMH 32	COMMH 33	35.478	31.734	0.034	215.097	0.5	0.1	1.4	OK
Pipe (11)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	Tank Unit 2 and 3	FC SWMH2 9	35.160	33.559	0.220	2.227	0.4	0.02	1.9	OK
Pipe (25)	FSR: 30 years: +0 %: 30 mins: Summer	Pipe	FC SWMH2 9	COMMH 30	35.292	33.591	0.032	3.878	0.5	0.09	1.4	Surch arged

Pipe (26)	FSR: 30 years: +0 %: 120 mins: Winter	Pipe	COMMH 30	COMMH 31	35.289	33.306	0.032	16.667	0.5	0.09	1.4	OK
Pipe (2)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH1 6	SWMH0 4	35.386	34.252	0.225	14.280	0.7	0.51	29.5	OK
SW9.007	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 6	Tank Unit 2 and 3	35.506	33.735	0.170	31.777	1.5	0.53	60.9	OK
SW7.002	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH2 0	Tank Unit 2 and 3	35.395	34.053	0.135	19.237	1.5	0.58	37.5	OK
SW1.005	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH0 6	Tank Unit 1	35.353	33.441	0.127	70.473	3.9	0.19	128.4	OK
Pipe (22)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH1 3	Tank Unit 1	35.298	33.110	0.115	32.827	2.6	0.24	65.5	OK
Pipe	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWMH0 9	Tank Unit 1	34.876	33.841	0.065	10.567	2.3	0.17	21.6	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.001	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH17	SWMH04	35.480	34.406	0.225	10.895	0.6	0.12	23.5	OK
SW4.000	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH07	SWMH06	35.358	34.086	0.123	14.338	1.4	0.31	30.6	OK
SW8.000	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH19	SWMH20	35.424	34.440	0.129	6.703	0.9	0.56	14.2	OK
SW1.004	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH05	SWMH06	35.483	33.706	0.233	76.787	2.2	1.16	126.6	Surcharged
SW5.001	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH10	SWMH11	34.847	33.511	0.300	42.670	1.3	1.41	91.1	Surcharged
SW6.001	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH08	SWMH09	35.165	34.235	0.098	13.665	1.7	0.48	28.9	OK
Pipe (1)	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWMH15	SWMH16	35.336	34.375	0.165	12.243	0.9	0.79	27.4	OK
SW1.000	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH01	SWMH02	35.103	34.399	0.225	10.576	0.7	0.44	18.5	Surcharged
Pipe (5)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH14	SWMH05	35.483	34.761	0.150	12.044	1.3	1.24	23.0	Surcharged
Pipe (10)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH23	SWMH26	35.610	34.253	0.135	22.201	1.6	0.58	39.8	OK
Pipe (4)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH02	SWMH03	35.132	34.382	0.225	16.693	0.7	0.53	27.6	Surcharged
Pipe (12)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH03	SWMH04	34.998	34.277	0.225	16.668	0.6	0.6	23.7	Surcharged
Pipe (13)	FSR: 100 years: +0 %: 960 mins: Winter	Pipe	Porous Paving	SWMH03	35.224	34.876	0.021	5.395	0.4	0	0.1	OK
Pipe (14)	FSR: 100 years: +0 %: 1440 mins: Winter	Pipe	UU 2310	UU 2404	35.110	29.359	0.029	433.249	0.5	0	2.9	OK

SW1.008	FSR: 100 years: +0 %: 1440 mins: Winter	Pipe	COMMH 33	COMMH 34	35.463	31.710	0.028	232.503	0.7	0.11	1.5	OK
Pipe (15)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 1	SWMH2 0	35.399	34.428	0.153	12.874	0.9	0.61	26.3	OK
Pipe (16)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 5	SWMH2 6	35.474	34.608	0.098	9.389	1.6	0.74	19.3	OK
Pipe (17)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 7	SWMH2 6	35.503	34.302	0.090	6.217	1.1	0.65	12.2	OK
Pipe (18)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 2	SWMH2 3	35.616	34.885	0.150	11.160	1.1	1.25	20.2	Surch arged
Pipe (8)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 4	SWMH2 3	35.614	34.787	0.150	11.034	1.2	1.17	20.8	Surch arged
Pipe (9)	FSR: 100 years: +0 %: 1440 mins: Winter	Pipe	COMMH 34	UU 2310	35.473	31.600	0.021	433.539	1.8	0.04	2.9	OK
Pipe (19)	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	COMMH 31	COMMH 34	35.332	33.252	0.031	1.624	0.5	0.09	1.4	OK
SW11.000	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 8	Tank Unit 2 and 3	35.214	34.257	0.300	63.742	1.9	1.1	136.4	Surch arged
Pipe (20)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH0 4	SWMH0 5	35.481	34.251	0.300	64.816	1.5	1.72	109.4	Surch arged
Pipe (6)	FSR: 100 years: +0 %: 30 mins: Summer	Pipe	Tank Unit 1	FC SWMH1 8	34.755	32.589	0.300	4.815	0.8	0.01	3.8	Surch arged
Pipe (7)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH1 1	SWMH1 2	34.849	33.378	0.272	42.672	1.3	0.9	87.2	OK
Pipe (21)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH1 2	SWMH1 3	35.298	33.221	0.240	42.567	1.4	1.2	85.0	OK
Pipe (23)	FSR: 100 years: +0 %: 1440 mins: Winter	Pipe	FC SWMH1 8	COMMH 32	35.097	33.175	0.035	232.619	0.5	0.11	1.5	Surch arged
Pipe (24)	FSR: 100 years: +0 %: 1440 mins: Winter	Pipe	COMMH 32	COMMH 33	35.478	31.736	0.035	232.566	0.5	0.11	1.5	OK
Pipe (11)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	Tank Unit 2 and 3	FC SWMH2 9	35.160	33.617	0.278	2.388	0.4	0.02	2.2	OK
Pipe (25)	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	FC SWMH2 9	COMMH 30	35.292	33.589	0.032	1.806	0.5	0.09	1.4	Surch arged

Pipe (26)	FSR: 100 years: +0 %: 120 mins: Summer	Pipe	COMMH 30	COMMH 31	35.289	33.306	0.032	16.094	0.5	0.09	1.4	OK
Pipe (2)	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWMH1 6	SWMH0 4	35.386	34.303	0.225	16.472	0.7	0.48	27.3	OK
SW9.007	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 6	Tank Unit 2 and 3	35.506	33.766	0.198	40.968	1.6	0.67	76.8	OK
SW7.002	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH2 0	Tank Unit 2 and 3	35.395	34.084	0.162	24.853	1.6	0.75	48.8	OK
SW1.005	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH0 6	Tank Unit 1	35.353	33.460	0.142	91.099	4.1	0.24	156.7	OK
Pipe (22)	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH1 3	Tank Unit 1	35.298	33.133	0.133	42.466	2.8	0.31	84.3	OK
Pipe	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWMH0 9	Tank Unit 1	34.876	33.851	0.074	13.656	2.4	0.22	28.1	OK

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Flow

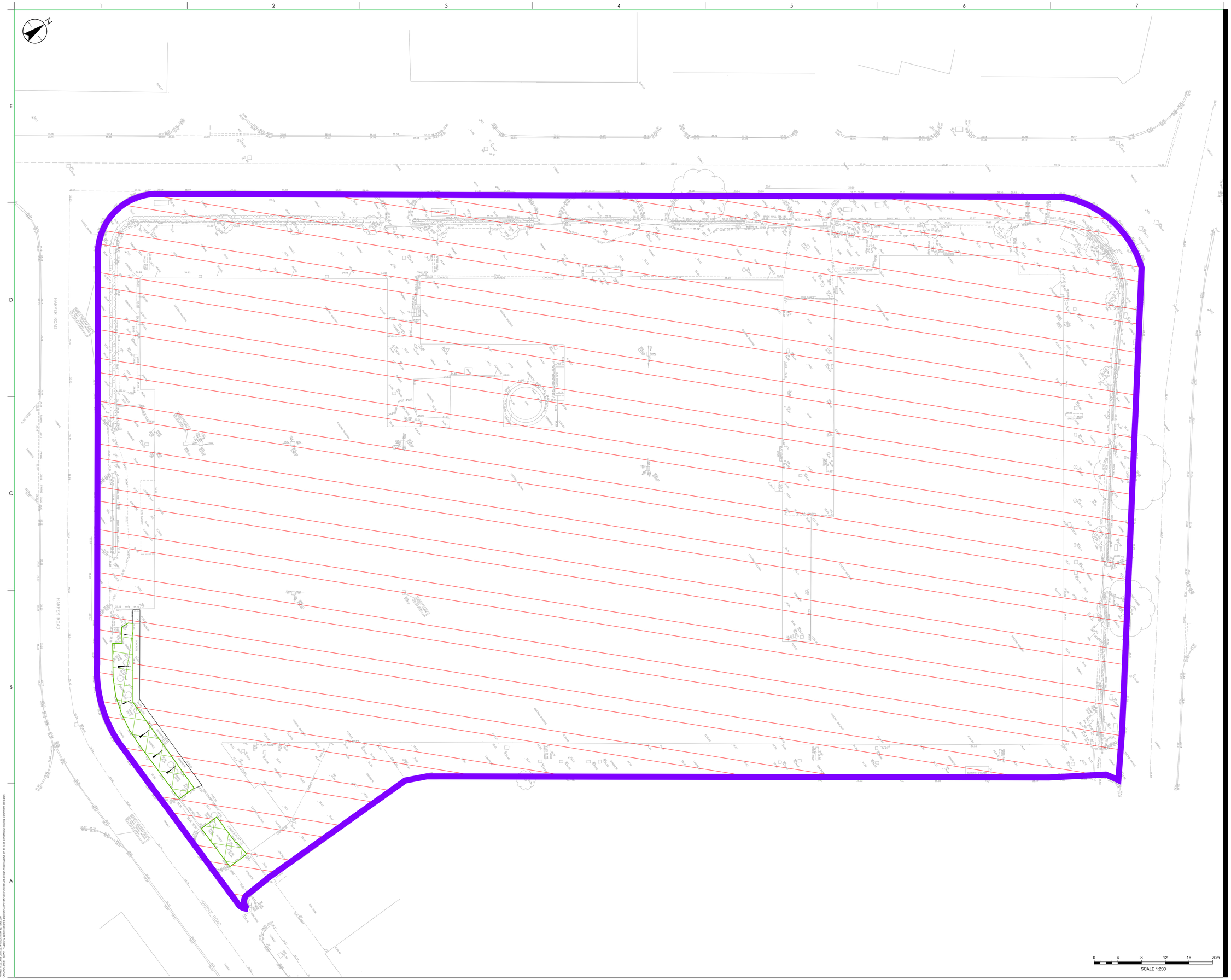
Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW1.001	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH17	SWMH04	35.480	34.917	0.225	15.799	0.7	0.14	27.1	Surcharged
SW4.000	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH07	SWMH06	35.358	34.106	0.151	20.788	1.6	0.44	44.4	OK
SW8.000	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWMH19	SWMH20	35.424	34.462	0.150	8.673	1.1	0.78	19.6	OK
SW1.004	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH05	SWMH06	35.483	34.037	0.300	110.964	2.4	1.55	168.5	Surcharged
SW5.001	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH10	SWMH11	34.847	33.953	0.300	61.876	1.8	2.01	129.3	Surcharged
SW6.001	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH08	SWMH09	35.165	34.268	0.124	19.814	1.9	0.7	41.9	OK
Pipe (1)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH15	SWMH16	35.336	35.243	0.225	19.876	0.8	0.95	32.8	Flood Risk
SW1.000	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH01	SWMH02	35.103	35.086	0.225	15.369	0.7	0.58	24.3	Flood Risk
Pipe (5)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH14	SWMH05	35.483	35.219	0.150	17.462	1.9	1.77	32.9	Flood Risk
Pipe (10)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH23	SWMH26	35.610	34.291	0.189	31.909	1.6	0.81	55.8	OK
Pipe (4)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH02	SWMH03	35.132	35.059	0.225	24.243	1.1	0.84	43.5	Flood Risk
Pipe (12)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH03	SWMH04	34.998	34.900	0.225	23.752	1.4	1.36	53.7	Flood Risk
Pipe (13)	FSR: 100 years: +45 %: 960 mins: Winter	Pipe	Porous Paving	SWMH03	35.224	34.917	0.032	11.217	0.5	0	0.4	OK
Pipe (14)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	UU 2310	UU 2404	35.110	29.361	0.031	501.414	0.5	0	3.4	OK

SW1.008	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	COMMH 33	COMMH 34	35.463	31.713	0.031	264.881	0.7	0.12	1.8	OK
Pipe (15)	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWMH2 1	SWMH2 0	35.399	34.461	0.217	16.641	0.9	0.84	36.0	OK
Pipe (16)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH2 5	SWMH2 6	35.474	34.665	0.146	13.426	1.5	1	26.2	Surch arged
Pipe (17)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH2 7	SWMH2 6	35.503	34.337	0.131	8.870	1.1	0.98	18.4	OK
Pipe (18)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH2 2	SWMH2 3	35.616	35.449	0.150	16.180	1.6	1.76	28.5	Flood Risk
Pipe (8)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH2 4	SWMH2 3	35.614	35.287	0.150	16.001	1.6	1.63	29.0	Surch arged
Pipe (9)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	COMMH 34	UU 2310	35.473	31.601	0.023	501.741	1.9	0.05	3.4	OK
Pipe (19)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	COMMH 31	COMMH 34	35.332	33.254	0.034	236.917	0.5	0.11	1.6	OK
SW11.000	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH2 8	Tank Unit 2 and 3	35.214	34.542	0.300	92.400	2.8	1.59	196.8	Surch arged
Pipe (20)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH0 4	SWMH0 5	35.481	34.887	0.300	93.577	2.0	2.18	138.9	Surch arged
Pipe (6)	FSR: 100 years: +45 %: 120 mins: Winter	Pipe	Tank Unit 1	FC SWMH1 8	34.755	33.171	0.300	21.159	0.4	0.01	6.1	Surch arged
Pipe (7)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH1 1	SWMH1 2	34.849	33.711	0.300	61.877	1.8	1.3	126.0	Surch arged
Pipe (21)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH1 2	SWMH1 3	35.298	33.368	0.300	61.776	1.8	1.76	124.7	Surch arged
Pipe (23)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	FC SWMH1 8	COMMH 32	35.097	33.683	0.038	265.008	0.5	0.12	1.8	Surch arged
Pipe (24)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	COMMH 32	COMMH 33	35.478	31.739	0.038	264.950	0.5	0.12	1.8	OK
Pipe (11)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	Tank Unit 2 and 3	FC SWMH2 9	35.160	33.732	0.300	2.566	0.4	0.02	2.7	Surch arged
Pipe (25)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	FC SWMH2 9	COMMH 30	35.292	34.478	0.035	237.103	0.5	0.11	1.6	Surch arged

Trade City Sharston:	Date: 25/03/2026		
	Designed by: NM	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	100 Barbirolli Square : Manchester United Kingdom M2 3PW		

Pipe (26)	FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	COMMH30	COMMH31	35.289	33.309	0.034	237.046	0.5	0.11	1.6	OK
Pipe (2)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH16	SWMH04	35.386	35.160	0.225	26.777	1.0	0.67	38.3	Flood Risk
SW9.007	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH26	Tank Unit 2 and 3	35.506	33.834	0.256	58.814	1.7	0.93	106.1	OK
SW7.002	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH20	Tank Unit 2 and 3	35.395	34.216	0.225	36.051	1.8	1.08	70.3	Surcharged
SW1.005	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH06	Tank Unit 1	35.353	33.496	0.170	131.710	4.3	0.32	211.0	OK
Pipe (22)	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH13	Tank Unit 1	35.298	33.178	0.170	61.674	3.0	0.45	123.8	OK
Pipe	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWMH09	Tank Unit 1	34.876	33.870	0.092	19.803	2.7	0.33	40.8	OK

Appendix D – Existing and Proposed Catchment areas plan



Stantec

Stantec Hydrock Limited
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Notes

1. THIS DRAWING IS JUST FOR INFORMATION PURPOSES ONLY AND UNDER NO CIRCUMSTANCES SHALL IT BE USED FOR CONSTRUCTION.

Legend

- SITE BOUNDARY (17496m²)
- EXISTING IMPERMEABLE AREA (17373m²)
- EXISTING PERMEABLE AREA (123m²)

P01 PLANNING ISSUE	JK	NB	19.05.2024
Issued/Revision	By	Appd	DD.MM.YYYY
	JK	JK	NB	19.05.2024
	Dwn.	Dsgn.	Chkd.	DD.MM.YYYY

Issue Status

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SHARSTON ROAD
WYTHENSHAWE, MANCHESTER

Title

EXISTING CATCHMENT AREA PLAN

Project No.	A0 Scale
333701647	1:200
Revision	Drawing No.
P01	**25006-STN-EX-XX-DR-C-00640**

Plotted: 19.05.2024 09:37:19 AM By: Kate, Jay
DWGNet, SHEET - BLACK - \\gb1-fs01.global.stantec.com\projects\333701\active\333701647\cad\model\25_Design_Model\25006-STN-ex-xx-dr-c-00640.dwg, existing catchment area plan



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Notes

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Legend

- SITE BOUNDARY (17496m²)
- PROPOSED IMPERMEABLE AREA (16211m²)
- PROPOSED PERMEABLE AREA (1285m²)

P01 PLANNING ISSUE	JK	NB	19.05.2026
Issued/Revision	By	Appd	DD.MM.YYYY
	JK	JK	NB	19.05.2026
	Dwn.	Dsgn.	Chkd.	DD.MM.YYYY

Issue Status

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SHARSTON INDUSTRIAL ESTATE

SHARSTON ROAD
WYTHENSHAWE, MANCHESTER

Title

PROPOSED CATCHMENT AREA PLAN

Project No.	A0 Scale
333701647	1:200
Revision	Drawing No.
P01	**25006-STN-EX-XX-DR-C-00650**

Plotted: 19.05.2026 09:17:14 BST By: Kate, Jay
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Appendix E – Brownfield Rate Calculations

333701647 Sharston Industrial Estate : Global Runoff Rates

Hydrock now Stantec

Manchester
100 Barbirolli Square
0161 245 8900

Duration (min)	30			
Return period	2	30	100	100+cc
Total depth rainfall (mm) (FEH data)	9.56	24.77	31.76	46.052
Average intensity (mm/hr)	19.12	49.54	63.52	92.104
Existing Q (l/s)	102.36	265.21	340.05	493.08

Calculation & Parameters Used

Q = 3.6CvIA

I — mm/hr — average rainfall intensity during the time of concentration

A = 1.750 ha — Total Site Area

Cv = PR/PIMP
when whole catchment is being considered

Cv (ex) = 0.85 — Volumetric co-efficient

Cv = taken as 0.85
when impermeable area alone being considered

Cv = 0.85 — Volumetric co-efficient

PR = 0.829PIMP +25.0SOIL + 0.078UCWI - 20.7

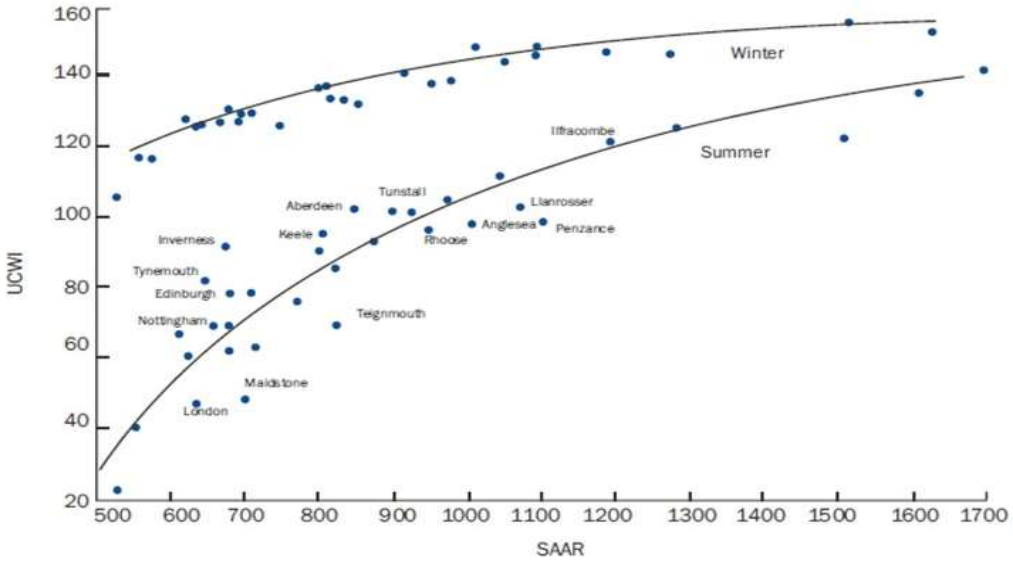
PIMP (existing) = 100.00 % — % of surface currently draining to the storm sewer

PR = 83.51

SOIL = 0.4 - — Soil Type Host Class 19 - SPR value 41.13%

UCWI = 145 mm — antecedent wetness conditions (degree of wetness at start of storm event) taken as winter - worst case
Ref Figure 4.6 of SUDS Manual

SAAR = 1117 mm



Appendix F – Exceedance Plan

SHARSTON ROAD

SW- B4 SW- B4 SW- B4 SW- B4 SW- B4 SW- B4 SW- B4

IN THE EVENT OF A MAJOR BLOCKAGE AT THE OUTFALL - WATER WOULD SPILL OUT OF THE SITE AS SHOWN.THIS IS FOR INFORMATION ONLY AND THE DESIGN AND MAINTENANCE SCHEDULE AIM TO PREVENT THIS

IN THE EVENT OF A MAJOR BLOCKAGE OF THE SURFACE WATER NETWORK - WATER WOULD BE RETAINED WITHIN THE SITE AS SHOWN.THIS IS FOR INFORMATION ONLY AND THE DESIGN AND MAINTENANCE SCHEDULE AIM TO PREVENT THIS

IN THE EVENT OF A MAJOR BLOCKAGE OF THE SURFACE WATER NETWORK - WATER WOULD BE RETAINED WITHIN THE SITE AS SHOWN.THIS IS FOR INFORMATION ONLY AND THE DESIGN AND MAINTENANCE SCHEDULE AIM TO PREVENT THIS

IN THE EVENT OF A MAJOR BLOCKAGE OF THE SURFACE WATER NETWORK - WATER WOULD BE RETAINED WITHIN THE SITE VIA KERB AS SHOWN. THIS IS FOR INFORMATION ONLY AND THE DESIGN AND MAINTENANCE SCHEDULE AIM TO PREVENT THIS

BD IL: 32.875

Unit 1 (Block 1)
Unit 2 (Block 2)
Unit 3 (Block 2)
Unit 4 (Block 2)
Unit 5 (Block 2)
Unit 6 (Block 3)
Unit 7 (Block 3)
Unit 8 (Block 3)
Unit 9 (Block 3)

LONGLEY LANE

HARPER ROA

NO EXCEEDANCE IN THE 1:100 YEAR + 45% CLIMATE CHANGE STORM, ALL SURFACE WATER WOULD BE CONTAINED WITHIN THE SITE. IN THE EVENT OF A MORE SEVERE STORM, SURFACE WATER WOULD BE HELD WITHIN YARD AND CAR PARK AREAS ON THE SURFACE UNTIL THE WATER LEVEL SUBSIDES, AFTER WHICH THE WATER HELD ON THE SURFACE WOULD DISCHARGE THROUGH THE DRAINAGE SYSTEM. IN THE EVENT OF A MAJOR BLOCKAGE AT THE OUTFALL - WATER WOULD SPILL OUT OF THE SITE AS SHOWN. THIS IS FOR INFORMATION ONLY AND THE DESIGN AND MAINTENANCE SCHEDULE AIM TO PREVENT THIS

0 4 8 12 16 20m
SCALE 1:200

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2. THE DRAWING HAS BEEN PRODUCED BASED ON A 1:100 YEAR EVENT WITH 45% CLIMATE CHANGE ALLOWANCE.

Legend

- FLOW ARROW
- 0.1m CONTOUR
- 0.5m CONTOUR
- EVENT OF A MAJOR BLOCKAGE AT THE OUTFALL

Issued/Revision	By	Appd	
P04 PLANNING ISSUE	JK	NB	21.05.26
P03 PLANNING ISSUE	JK	NB	25.03.26
P02 PLANNING ISSUE	NM	NB	25.11.25
P01 PLANNING ISSUE	NM	NB	31.07.25
	NM Dwn.	NM Dsgn.	JK Chkd.	25.11.25 DD.MM.YYYY

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SHARSTON ROAD

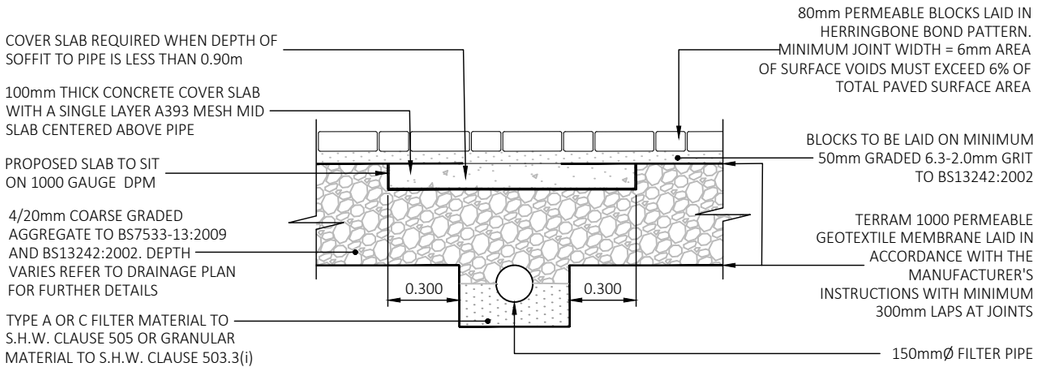
Title

OVERLAND FLOW ROUTE PLAN

Project No.	A0 Scale
333701647	1:200
Revision	Drawing No.
P04	333701647-STN-XX-XX-DR-C-0510

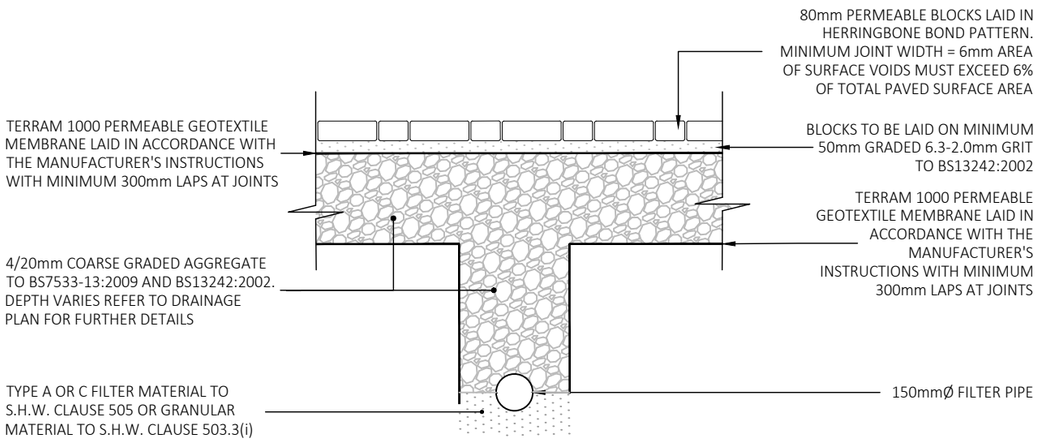
Plotted: 21.05.2026 20:52:27 - 2:28:3 File By: Kate Jiw
Dropbox (SHEF) - SCAD - \\gb1-shd-pdc01\shared_projects\333701647\cad\model\3D_design_model\20260514-sw-ex-dr-c-0510.dwg overland flow route plan

Appendix G – Typical SuDS Details and Hydrobrake Flow Control Details



TYPICAL PERMEABLE PAVING DETAIL WITH SLAB PROTECTION

SCALE: 1:25



TYPICAL PERMEABLE PAVING DETAIL WITHOUT SLAB PROTECTION

0 500 1000 1500 2000 2500mm

SCALE 1:25

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Client/Project:
KIER SHARSTON LTD

SHARSTON ROAD

Prepared:	Checked:	Date:
JK	NB	19.05.2026

Title
TYPICAL SuDS DETAILS

Revision:	Figure
P01	25006-STN-EX-XX-DR-C-00660

Plotted: 19.05.2026 2026.05.19 2:24:53 PM By: Kara. Jay
ORIGINAL SHEET - ISOA3 \\gb1042-ppfss01\shared_projects\333701647\civil\model\2d_design_model\25006-stn-ex-xx-dr-c-00660-p01 permeable paving detail

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.508	1.800
Flush-Flo™	0.253	1.358
Kick-Flo®	0.515	1.109
Mean Flow		1.379

This Hydro-Brake® Optimum includes:

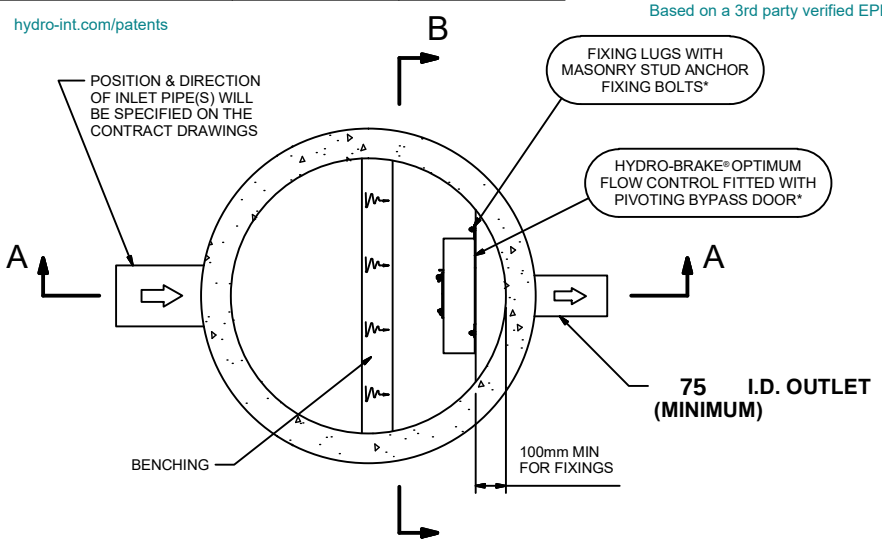
- •All in 3 mm Grade 304L stainless steel
- • Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- • Media blasted for corrosion resistance
- • Variable flow rate post installation via adjustable inlet (if necessary)
- • Indicative Weight: 10 kg
- • Product Carbon Footprint: 28.07 kgCO2e

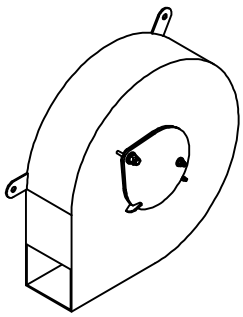
Based on a 3rd party verified EPD: hydro-int.com/epd

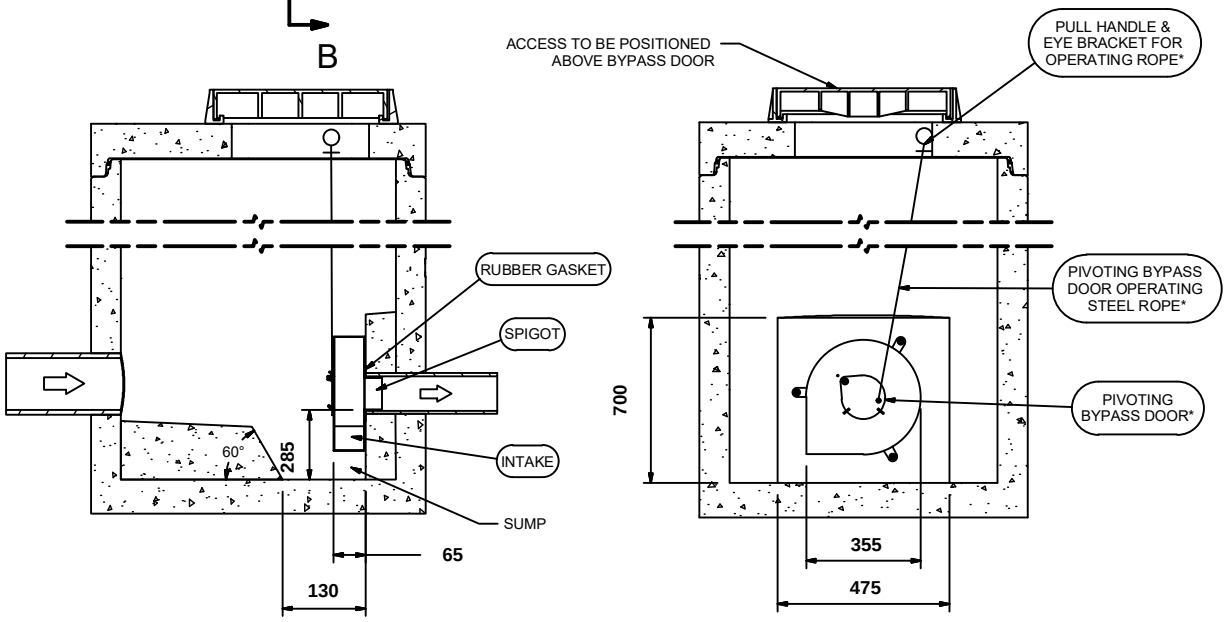
BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4596

wrc approved PT/503/0422 Valid: 01/04/2022 - 31/03/2027

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SECTION A-A SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® IS A REGISTERED TRADEMARK FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

The head/flow characteristics of this SHE-0058-1800-1508-1800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International A CRH COMPANY

DATE	19/05/2026 10:49
SITE	Sharston Industrial Estate
DESIGNER	Jay Kara
REF	333701647

SHE-0058-1800-1508-1800
Hydro-Brake® Optimum

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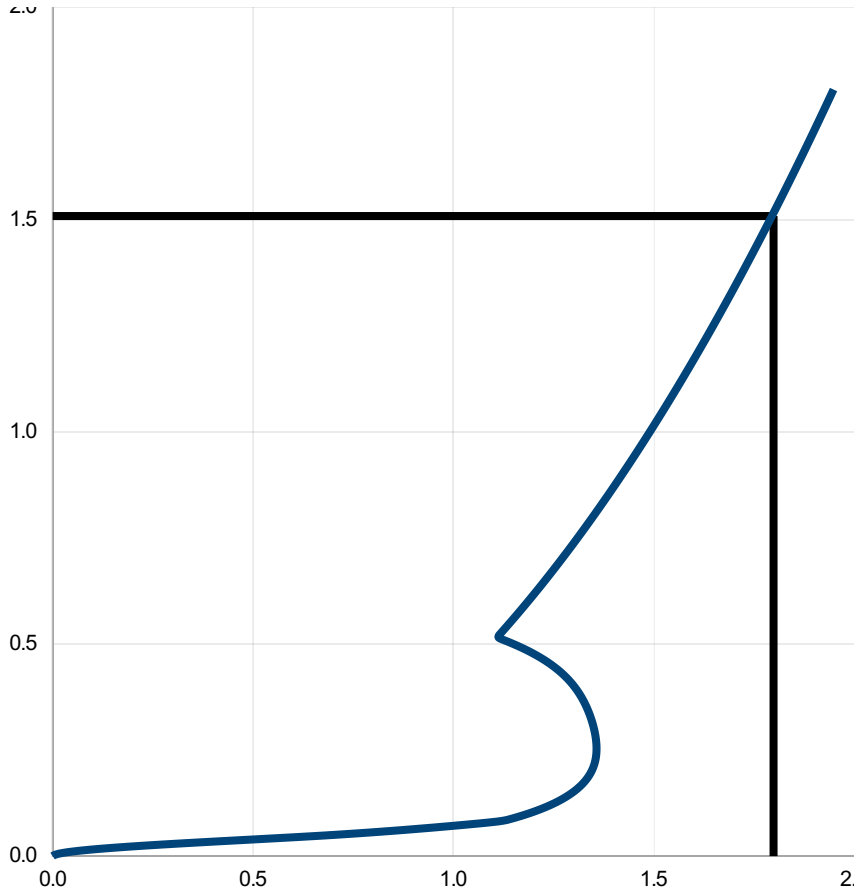
jaykara@hydrock.com

Technical Specification		
Control Point	Head (m)	Flow (l/s)
Primary Design	1.508	1.800
Flush-Flo™	0.253	1.358
Kick-Flo®	0.515	1.109
Mean Flow		1.379

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE No 08/4596

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PT/503/0422
Valid: 01/04/2022 - 31/03/2027

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Head (m)	Flow (l/s)
0.000	0.000
0.052	0.736
0.104	1.200
0.156	1.307
0.208	1.349
0.260	1.358
0.312	1.348
0.364	1.326
0.416	1.288
0.468	1.217
0.520	1.114
0.572	1.162
0.624	1.208
0.676	1.252
0.728	1.294
0.780	1.334
0.832	1.373
0.884	1.411
0.936	1.448
0.988	1.483
1.040	1.518
1.092	1.552
1.144	1.585
1.196	1.617
1.248	1.648
1.300	1.679
1.352	1.709
1.404	1.739
1.456	1.768
1.508	1.796

DESIGN ADVICE

The head/flow characteristics of this SHE-0058-1800-1508-1800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International
A CRH COMPANY

DATE	19/05/2026 10:49
Site	Sharston Industrial Estate
DESIGNER	Jay Kara
Ref	333701647

SHE-0058-1800-1508-1800

Hydro-Brake® Optimum

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Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.944	1.800
Flush-Flo™	0.235	1.179
Kick-Flo®	0.483	0.961
Mean Flow		1.326

This Hydro-Brake® Optimum includes:

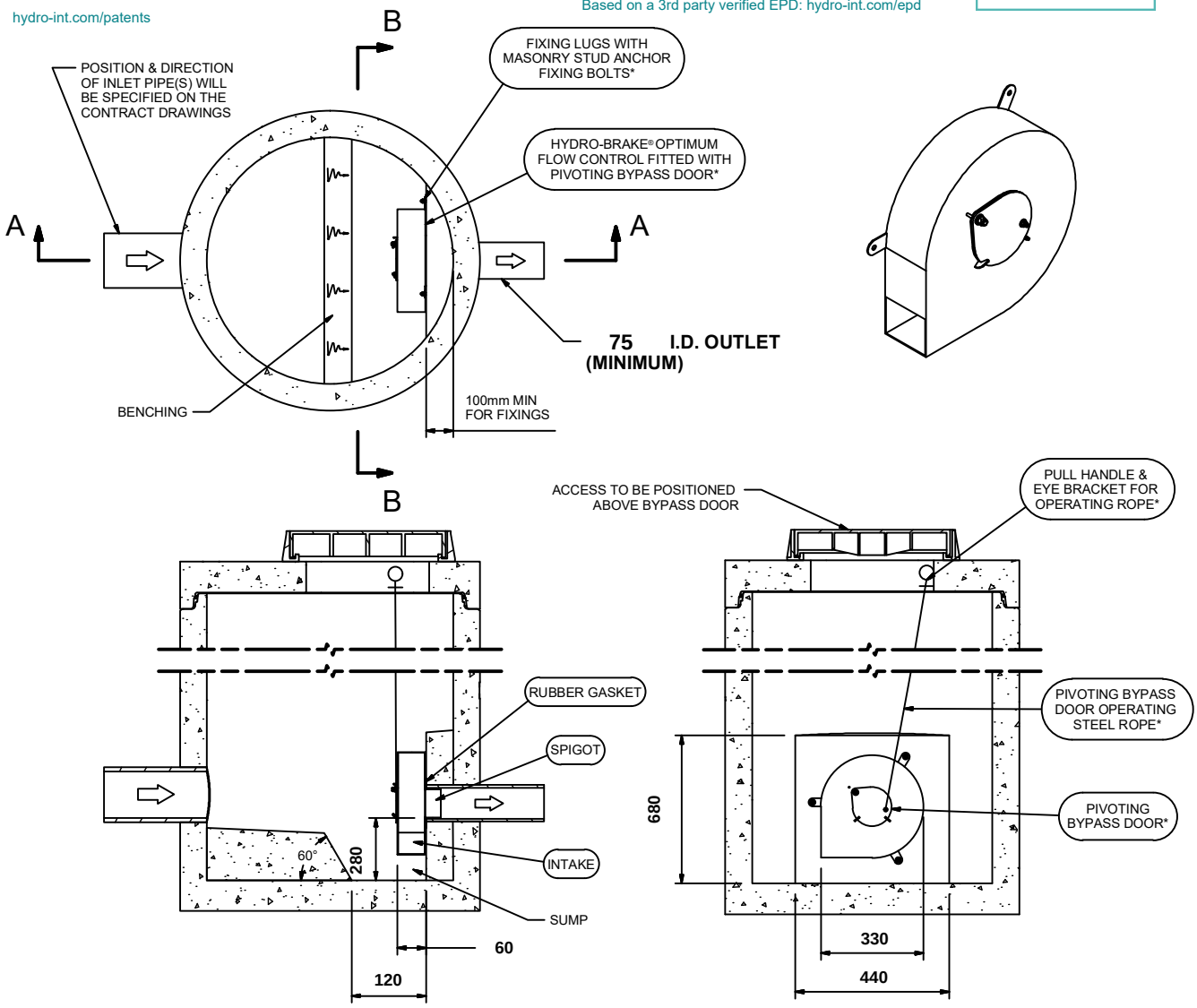
- •All in 3 mm Grade 304L stainless steel
- • Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- • Media blasted for corrosion resistance
- • Variable flow rate post installation via adjustable inlet (if necessary)
- • Indicative Weight: 10 kg
- • Product Carbon Footprint: 24.85 kgCO2e

Based on a 3rd party verified EPD: hydro-int.com/epd

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4596

wrc approved PT/503/0422 Valid: 01/04/2022 - 31/03/2027

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SECTION A-A

SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
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DESIGN ADVICE

The head/flow characteristics of this SHE-0054-1800-1944-1800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International A CRH COMPANY

DATE	19/05/2026 10:51
SITE	Sharston Industrial Estate
DESIGNER	Jay Kara
REF	333701647

SHE-0054-1800-1944-1800
Hydro-Brake® Optimum

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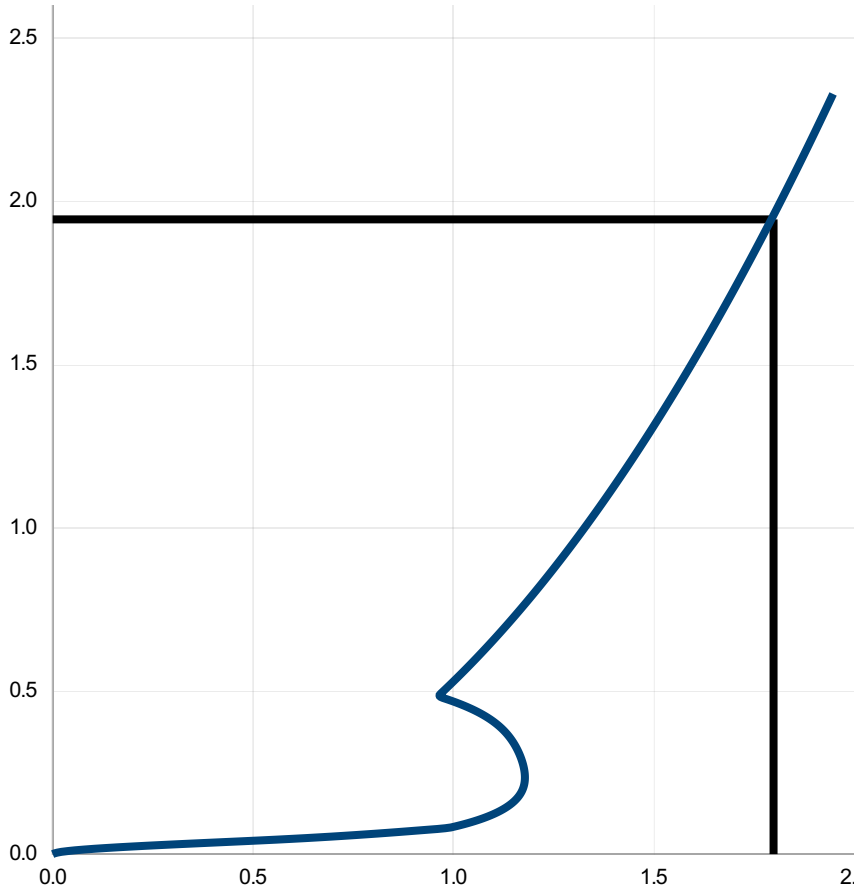
jaykara@hydrock.com

Technical Specification		
Control Point	Head (m)	Flow (l/s)
Primary Design	1.944	1.800
Flush-Flo™	0.235	1.179
Kick-Flo®	0.483	0.961
Mean Flow		1.326

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE No 08/4596

wrc approved™
PT/503/0422
Valid: 01/04/2022 - 31/03/2027

hydro-int.com/patents



Head (m)	Flow (l/s)
0.000	0.000
0.067	0.856
0.134	1.120
0.201	1.174
0.268	1.176
0.335	1.153
0.402	1.105
0.469	0.996
0.536	1.007
0.603	1.061
0.670	1.111
0.737	1.159
0.804	1.205
0.871	1.249
0.938	1.291
1.006	1.332
1.073	1.371
1.140	1.409
1.207	1.446
1.274	1.481
1.341	1.516
1.408	1.550
1.475	1.583
1.542	1.615
1.609	1.646
1.676	1.677
1.743	1.707
1.810	1.737
1.877	1.766
1.944	1.795

DESIGN ADVICE

The head/flow characteristics of this SHE-0054-1800-1944-1800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International
A CRH COMPANY

DATE	19/05/2026 10:51
Site	Sharston Industrial Estate
DESIGNER	Jay Kara
Ref	333701647

SHE-0054-1800-1944-1800

Hydro-Brake® Optimum

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Appendix H – Attenuation tank flotation calculations

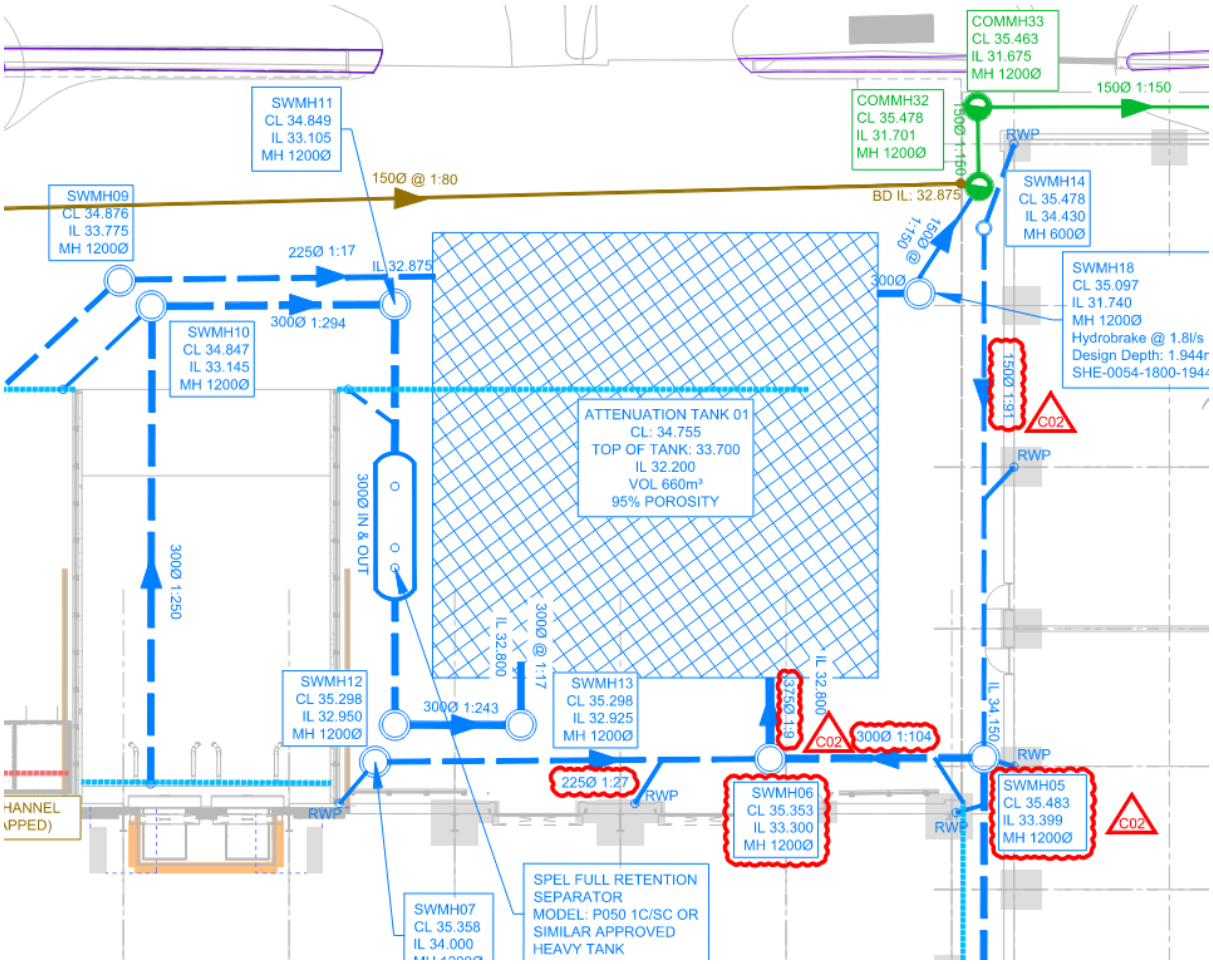
Sharston Development **26/5/26**

Flotation check for attenuation tanks

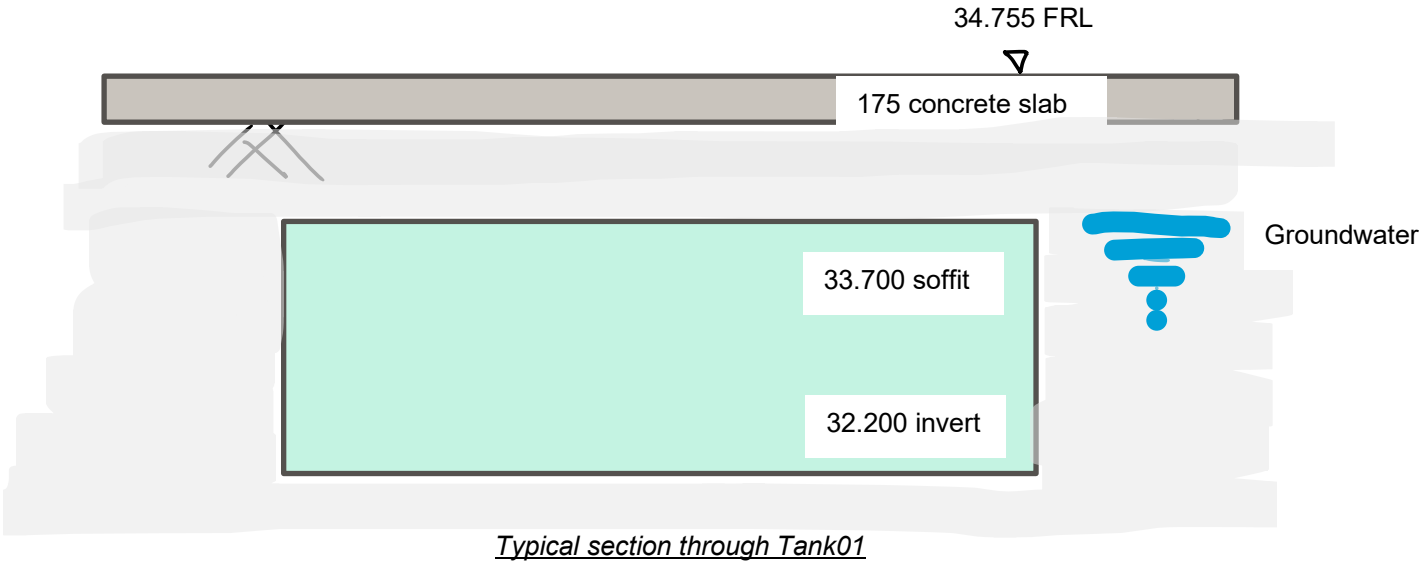
	SPECIFICATIONS		
Material	Recycled Rigid PVC		
Colour	Dark grey to black		
Standard length of a block	2000 mm	2000 mm	2000 mm
Standard width of a block	500 mm	500 mm	500 mm
Standard height of a block*	750 mm	750 mm	750 mm
	*Other block sizes available on request		
Void Ratio	> 95%	> 95%	> 95%
Compressive Strength	420 kN/m²	610 kN/m²	800 kN/m²

Product - SDS Geolight – extract shows standard unit sizes

Tank 01 is as shown below -



Plan layout of Tank 01



Typical section through Tank01

Consider 1 x 1 metre plan area, worst case is groundwater is at the top of the tank – permanent case only

Uplift pressure = 1.5 x 10kM/m2 = 15kN/m2

Depth of fill above tank = 34.755-33.700 = 1.055m

Of which 175mm is concrete slab, 880mm is sub base / fill

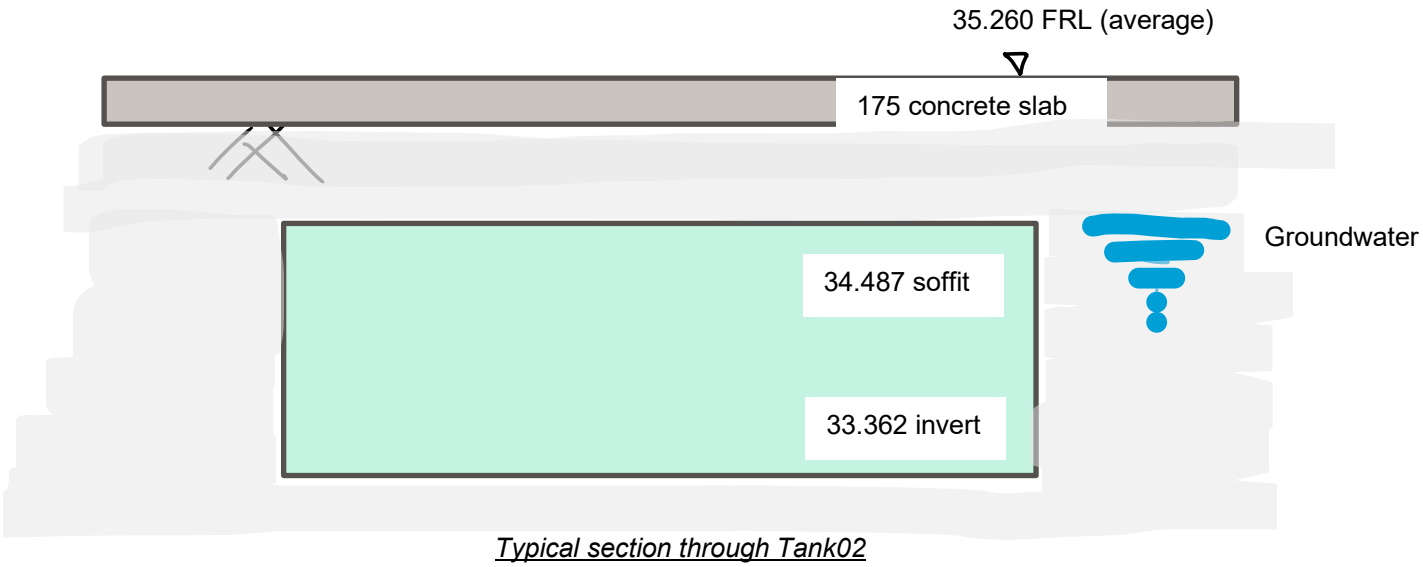
Assume unit weight of fill and sub base above tank = 18kN/m3, unit weight of concrete = 24kN/m3

Weight of fill above tank = (18 x 0.88) + (24 x 0.175) = 15.84+4.2 = 20.2kN/m2

Factor of safety against floating = $\frac{\text{Restoring force}}{\text{Uplift force}} = \frac{20.2}{15} = \mathbf{1.35}$

1.35 > 1.2, therefore OK

TANK02



Typical section through Tank02

Consider 1 x 1 metre plan area, worst case is groundwater is at the top of the tank – permanent case only

Uplift pressure = 1.125 x 10kM/m2 = 11.25kN/m2

Depth of fill above tank = 35.260-34.487 = 0.773m

Of which 175mm is concrete slab, 598mm is sub base / fill

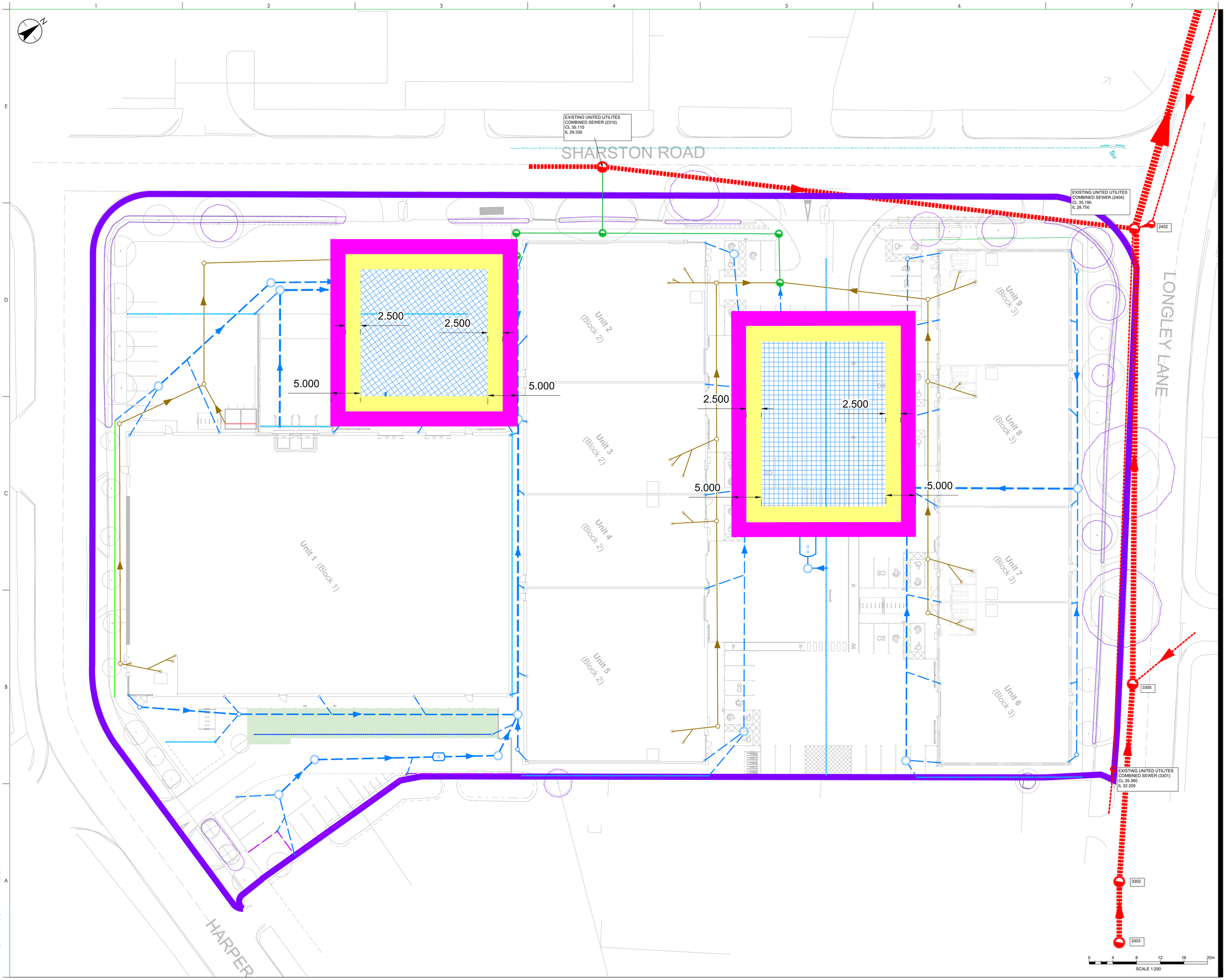
Assume unit weight of fill and sub base above tank = 18kN/m3, unit weight of concrete = 24kN/m3

Weight of fill above tank = (18 x 0.598) + (24 x 0.175) = 10.76+4.2 = 14.96kN/m2

Factor of safety against floating = $\frac{\text{Restoring force}}{\text{Uplift force}} = \frac{14.96}{11.25} =$ **1.33**

1.33 > 1.2, therefore OK

Appendix I SuDS Easement Plan



Stantec

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4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL AND M&E SERVICES DRAWINGS AND SPECIFICATIONS.
5. ALL SURFACE WATER DRAINAGE PIPES TO BE LAID SOFFIT TO SOFFIT UNLESS STATED OTHERWISE
6. REFER TO DRAINAGE NOTES DRAWING FOR FURTHER REQUIREMENTS.

Legend

- SITE BOUNDARY
- PROPOSED SURFACE WATER PIPE
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED LINEAR DRAIN (CHANNEL/SLOT)
- PROPOSED KERB DRAIN
- PROPOSED PERMEABLE PAVING (REFER TO STADARD DETAILS DRAWING 25006-STN-EX-XX-DR-C-01100-01104)
- PROPOSED FOUL PIPE
- PROPOSED FOUL MANHOLE
- PROPOSED INTERCEPTOR
- PROPOSED PERFORATED PIPE
- PROPOSED ATTENUATION TANK
- PROPOSED COMBINED SEWER
- PROPOSED GULLY
- PROPOSED FILTER DRAIN
- EXISTING SW DRAIN (FROM GPR)
- EXISTING UU COMBINED SEWER (FROM GPR AND UU SEWER RECORDS)
- EXISTING PRIVATE COMBINED SEWER (FROM GPR SURVEY)
- PROPOSED RAINWATER PIPE
- ROOT PROTECTION AREAS (REFER TO DRAWING 25006-HFR-AV-XXDR-A0101 PRODUCED BY ARBTECH)
- 2.5m SuDS Easement
- 5m SuDS Easement

P01 PLANNING ISSUE		JK	NB	19.05.2026
Issued/Revision		By	Appd	DD.MM.YYYY
	JK	JK	NB	19.05.2026
	Dwn.	Dsgn.	Chkd.	DD.MM.YYYY

Issue Status

S4 - SUITABLE FOR STAGE APPROVAL

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KIER SHARSTON Ltd

SHARSTON INDUSTRIAL ESTATE

SHARSTON ROAD
WYTHENSHAWE, MANCHESTER

Title

SuDS Easement Plan

Project No.	A0 Scale
35838	1:200
Revision	Drawing No.
P01	25006-STN-EX-XX-DR-C-00670

Plotted: 19.05.2026 09:25:21 PM By: Kate_Ahr
DWGRef: SHEET - SCALE - \\gb1-fs6.gpdhcl1.onmicrosoft.com\projects\335\STN\arf\Civil\model\25_design_model\25006-stn-ex-xx-dr-c-00670.pdf, suds easement plan

Stantec

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