



Surface water outfall to existing watercourse at restricted rate equivalent to greenfield run-off.

**Surface Water Catchment / Equivalent Greenfield Area:**

Area - 1.396ha  
(0.960ha + 0.436ha)

Peak Discharge to Watercourse from Network Inc. 40% CC:

Q1 - 6.70 l/s  
Q30 - 6.70 l/s  
Q100 - 6.70 l/s

Discharge Volume to Watercourse from Network Inc. 40% CC:

Q100 - 360 Minute - 251.86m³  
Q100 - 1440 Minute - 988.37m³

**Flow Control Chamber**

Control - Hydro-Brake  
Type - Optimum SW  
Invert - 53.888  
Head - 1.412  
Flow - 6.70 l/s  
Diameter - 115mm  
Unit Reference: MD-SHE-0115-6700-1412-6700

**Surface Water Attenuation Pond**

Pond Invert - 53.900  
Max. Water Level - 55.108  
Min. Pond Depth - 1.400m  
Pond Base Area - 570m²  
Pond Outer Area - 1070m²  
Side Slope Grad. - 1 in 3  
Approx. Volume - 1150m³

Surface water run-off to discharge to existing / previously built attenuation pond. Pond levels, attenuation volumes, and restricted surface water discharge rate to be confirmed.

**Surface Water Catchment Area:**

Area - 2.486ha

Peak Flow Rates to Pond from Network Inc. 40% CC:

Q1 - 329.10 l/s  
Q30 - 1119.40 l/s  
Q100 - 1321.70 l/s

Discharge Volume to Pond from Network Inc. 40% CC:

Q100 - 360 Minute - 2265.37m³  
Q100 - 1440 Minute - 3279.32m³

Area in abeyance subject to confirmation of pond and inlet manhole details

Foul water pumping station to adoptable standards. Pump station to be in accordance with Sewers for Adoption 7th Edition Part D. Where Type 3 pump station is specified as incoming peak design flow is greater than 1 l/s (more than 20 dwellings), and pumps rated no more than 30 Kw. Pumping station to be minimum of 15m from any dwelling. Wet well to be designed in accordance with Sewers for Adoption 7th Edition, Section D4.5, where minimum storage is 160 litres / dwelling = 160 x 68 = 10.88m³. Pumping station layout to be in accordance with Sewers for Adoption 7th Edition, Figure D.3. Pump discharge rate based on Sewers for Adoption 7th Edition, Section B5 where flow rates to be 4000 litres per dwelling per day = (4000 x 68) / (24 x 60 x 60) = 3.15 l/s

**Flow Meter / Valve Chamber**

10m x 3.8m Tanker Space

**Surface Water Attenuation Tank**

Type - Cellular unit  
Make - Wavin AquaCell  
Area - 120.00m²  
Depth - 1.50m  
Volume - 192.00m³  
Invert - 51.900  
Overall Depth - 2.600m  
Crown - 53.500  
Cover - 600mm

**S11 - SW Pump Station**

Cover Level - 54.000  
Inlet Level - 51.900  
Outlet Level - 51.900  
Base Level - 51.400  
Diameter - 2.100m  
Overall Depth - 2.600m  
Pump Discharge - 8.00 l/s

Note: Dual pumps (duty and stand-by required) in addition to a high level alarm, control kiosk, power supply and ventilation pipe.

Pumped surface water from low-lying areas of development to discharge to manhole at a maximum rise of 8.0 l/s via rising main and private inspection chamber

**Standard Notes**

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

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**Notes and Keys**

**GENERAL NOTES**

1. ALL MATERIALS AND WORKMANSHIP IS TO COMPLY WITH CIVIC ENGINEERS STANDARD SPECIFICATION & ALL RELEVANT BRITISH & EUROPEAN STANDARDS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, M & E CONSULTANTS AND CIVIC ENGINEERS DRAWINGS.
3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.

**DRAINAGE NOTES**

1. MAIN DRAINAGE NETWORK SHOWN ONLY. PLOT DRAINAGE DETAILS TO BE CONFIRMED AT DETAILED DESIGN STAGE.
2. SURFACE WATER NETWORK DESIGNED WITH 40% CLIMATE CHANGE, AND DESIGNED FOR NO FLOODING DURING 1 IN 30-YEAR EVENTS, AND MINOR CONTROLLED / CONTAINED FLOODING DURING 1 IN 100-YEAR EVENT.
3. DISCHARGE TO EXISTING POND AND WATERCOURSE TO BE AGREED WITH LOCAL AUTHORITY

- Proposed SW Drainage
- Proposed FW Drainage
- Existing SW Drainage
- Existing FW Drainage
- FW Rising Main

Date	Rev	Description	Drawn	Chkd
11.01.19	P4	Updated Layout	PJC	PM
08.11.18	P3	Surface Water Network 2 Amended	MDS	PM
25.09.18	P2	Amended to Suit Revised Site Layout	MDS	PM
30.08.18	P1	Draft Stage 3 Issue	MDS	PM

**Civic Engineers**

MANCHESTER: 77 Dale Street, Manchester, M1 3BG, Tel: 0161 228 6751  
 LONDON: 100 Broad Street, London EC2R 2EJ, Tel: 020 7573 2971  
 LEEDS: 100 Park Row, Leeds LS1 5RU, Tel: 0113 243 1100

www.civicengineers.com

Project: Residential Housing Whalley, Lancashire

Title: Below Ground Drainage Layout Sheet 2

Status: **STAGE 3 ISSUE**

Scale @ A1	Date Created	Drawn	Checked	
1:500	Aug-18	MDS	PM	
Project Number	Originator	Discipline	Drawing Number	Revision
1040-01	CE	D	D0102	P4