

Edgefold Homes

Drainage Strategy Report

**Site located at
Springside Road
Walmersley
Bury**

9 October 2025

(Revision C)

JSD/J292

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Appendix B:	Drainage Investigations
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J292/101C – ‘Stormwater Drainage Appraisal’
J292/102C – ‘Stormwater Drainage Scheme Areas’
J292/103E – ‘Drainage General Arrangement Plan’
J292/106A – ‘Typical Drainage Details’
J292/107B - ‘Overland Flood Flow Routing Plan’
J292/117A – ‘S104 - Control Manhole Details’

SCHEDULE OF REVISIONS

<u>Revision</u>	<u>Date</u>	<u>Description</u>
A	30/10/2025	Layout plan updated (water butts added).
B	20/02/2026	Layout plan updated (road and plot location adjusted).
C	29/05/2026	Layout plan updated (road and plot location adjusted).



1.0 Purpose of Report

- 1.1** Edgefold Homes are considering redeveloping the above site with 12 No. residential properties. The former pasture field, now only partly maintained, does not contain any formal drainage. An undrained tarmaced accessway, which is to be maintained as part of the development crosses the site.
- 1.2** The site is therefore considered ‘undeveloped’ i.e. Greenfield, from a drainage point of view.
- 1.3** The development has obtained outline planning approval (68815) dated 3 August 2023. A Drainage Strategy Report, by Hamilton Technical Services, was included in the submitted documents. The planning approval includes Condition 6 :-

6 Notwithstanding the submitted Drainage Strategy, as part of a reserved matters application, surface water drainage proposals shall be submitted to and approved in writing by the Local Planning Authority. The scheme should be in accordance with the a Surface Water Sustainable Drainage Assessment and must be based on the hierarchy of drainage options in the National Planning Practice Guidance and be designed in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015). This must include assessment of potential SuDS options for surface water drainage with appropriate calculations and test results to support the chosen solution. Details of proposed maintenance arrangements should also be provided. The approved scheme only shall be implemented prior to first occupation and thereafter maintained.

Reason. To promote sustainable development and reduce flood risk pursuant to Unitary Development Plan Policies EN5/1- New Development and Flood Risk , EN7/3 - Water Pollution and EN7/5 - Waste Water Management and chapter 14 - Meeting the challenge of climate change, flooding and coastal change of the NPPF.

- 1.4** Figure 1 shows the site being located in Flood Zone 1 [low probability], a residential development [more vulnerable] of less than 1ha, is considered appropriate under the sequential test and would not require a site specific Flood Risk Assessment (FRA).

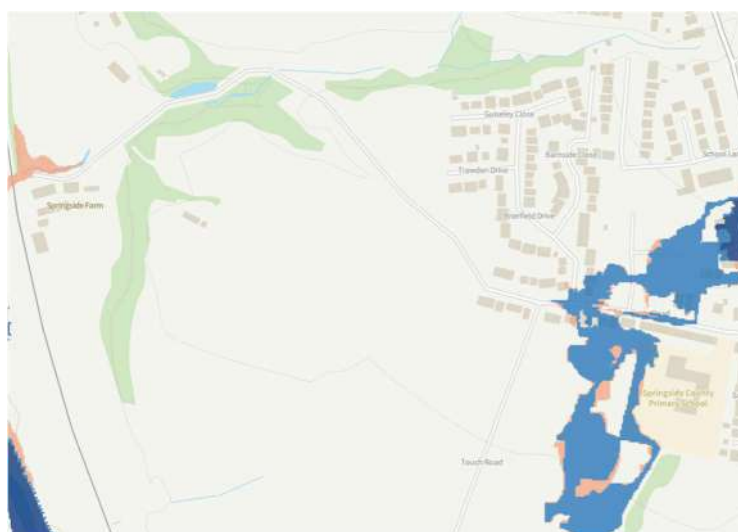


Figure 1 – Flood Zone Map

- 1.5** The drainage design should consider flood risk on site, ensure no increase in flood risk off-site due to the development and prepare the drainage strategy in accordance with the drainage hierarchy.

2.0 Site Location Details

- 2.1** The developable site, excluding the alterations to the end of the existing highway, of 0.526 Hectares (5,260sq.m), comprises the existing tarmacked accessway with fields either side.
- 2.2** The site is located to the West of Springside Road, Walmersley, Bury, BL9 5JQ. Site co-ordinates are 380186E, 413604N.
- 2.3** A Topographic survey of the site is in Appendix A.
- 2.4** Manor Architecture's Proposed Site Plan is also included in Appendix A.
- 2.5** Pluvial flood risk on and around the site is identified on Figure 2 and can be seen that only 'low risk' i.e. 1 in 1000 annual likelihood of flooding risk is noted on site, associated with the low area to the Northeast boundary to the site.



Figure 2 – Pluvial Flood Risk

- 2.6** No other significant sources of flood risk have been identified which could adversely affect the site.

3.0 Scheme Development – Surface Water Drainage Design

3.1 Drainage Strategy

- 3.1.1** The drainage scheme for the proposed residential development is to be carried out in accordance with the drainage hierarchy approach in Building Regulations 2000 Approved Document H – 'Drainage & Waste Disposal, Section H3 – Rainwater

Drainage', DEFRA Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015) and where possible aspects of DEFRA National standards for sustainable drainage systems (July 2025) i.e. re-use (as appropriate), infiltration, waterbody, surface water sewer, combined sewer.

3.2 Non-potable Water Use

- 3.2.1 The site, served by United Utilities, is not located within a seriously water stressed area, with no need for landscape irrigation and being individual private houses (no landlord or communal building owner) no demand for efficient water savings beyond Building Regulation requirements. However, water butts will be installed to each property giving the householders a suitable water re-use benefit, which is also accepted by United Utilities as a positive water saving action.

3.3 Use of Soakaways/Infiltration

- 3.3.1 With reference to the Drainage Strategy Report, by Hamilton Technical Services, within the Outline Planning Application, it has been confirmed that infiltration is not suitable for disposal of surface water. Whilst infiltration is not considered appropriate for the site, permeable paving is to be provided, as a source control benefit i.e. minimizing run-off during lighter rainfall events. The drainage system is however to be designed assuming zero infiltration from hardstandings. The permeable driveways account for 20% of the total site drained area.

3.4 Drain to Waterbody

- 3.4.1 A natural 'valley' is present off-site to the West which serves the site and surrounding area drainage run-off, which flows to the Walmersley brook to the Northwest. Whilst the 'valley' is dry at the point of proposed outfall, there is an existing land drain discharging nearby (which appears to serve a gully to the accessway). The 'valley' is therefore considered to be an Ordinary Watercourse which discharges to River Irwell (Main River). Agreement from the third-party landowner allows for new adoptable drainage to cross the off-site field to discharge to the Ordinary Watercourse, in accordance with the previous Drainage Strategy Report.
- 3.4.2 The United Utilities sewer records (refer to Appendix C) indicate a private drain crossing the site. The previous landowner, as part of the Outline Planning Application undertook site investigation trenching in the area of the drain and did not locate the drain. Edgefold Homes have also carried out similar site investigations and also have not located the drain. With reference to the sewer records, topographic survey and historic plans within the Phase 1 Desktop Study (refer to Outline Planning Application), no evidence of any such drain has been identified and there is no logical reason why such a drain would exist (it is shown not serving any purpose and flowing away from the nearby watercourse). As such the drain shown on the sewer records (private so United Utilities have no responsibility for it) is considered to be a historic mistake on the records, most probably occurring when paper records were updated to digital. Notwithstanding the above, the Contractor should take all reasonable precautions when carrying out the below ground construction on site. Refer to Appendix B for photographs of the original and subsequent trench investigations.
-

3.5 Surface Water Design Philosophy

3.5.1 Due to the previous Outline Planning agreed scheme together with the lack of any significant areas of open space, surface storage structures i.e. ponds are not considered appropriate storage, with below ground pipe storage the most suitable and adoptable (under Section 104) storage solution. Such a solution is also in accordance with the previous Drainage Strategy Report forming part of the Outline Planning application and approval.

3.5.2 A formal drainage easement across the third-party land will be required which is agreeable to the landowner.

3.5.3 Run-off Generated by the Development

As noted above, the site is essentially Greenfield, from a drainage point of view. Appendix E includes drawings J292/101C and 102C which confirms the site area of 5,475 sq.m, however the planning 'red line' also includes alteration works to the site entrance, meaning the actual developable area is reduced to 5,260sq.m (0.526ha). The proposed roof, drive and road drained areas of 1,003sq.m, 512sq.m and 1,077sq.m respectively, giving a total drained area of 2,592sq.m. Note that these areas are to be increased by an Urban Creep allowance, see below.

With reference to the previous Drainage Strategy Report the full site area is stated as 4,472sq.m, which the greenfield run-off rates are based on, whereas the actual developable site area is 5,260sq.m.

Appendix D includes the corrected Greenfield rates (MicroDrainage calculations) which confirm $Q_{\text{Bar}} = 4.3\text{l/s}$, $Q_1 = 3.8\text{l/s}$, $Q_2 = 4.0\text{l/s}$, $Q_{30} = 7.4\text{l/s}$ & $Q_{100} = 9.0\text{l/s}$. United Utilities require an adoptable drainage system to have an adequate self-cleansing flow and the risk of blockages in the system minimized. As such, their requirement of a minimum control orifice of 100mm (98mm actually used here which has been previously accepted by United Utilities), which generally results in a peak flow of circa 5.0l/s.

A detailed site specific drainage design has been carried out, with all drained areas increased by 10% to allow for any future urban creep resulting in the total design drained area to be 2,851sq.m. The proposed scheme design is also to be subject to 45% climate change allowance (DEFRA Irwell Management Catchment) and all storms up to and including the 100 year event be considered. Appendix D also includes a drainage schematic and detailed Site3D calculations (utilising site specific FEH2022 rainfall data) for the drainage scheme.

With reference to the drainage calculations within Appendix D it can be seen that for the 100 year event with an allowance of 45% for climate change and a total drained area of 2,860sq.m the peak flow is limited to 5.4l/s (utilising an adoptable Hydrobrake with 98mm orifice) and all water stored within the drainage system i.e. no flooding. The full analysis results are $Q_1 = 4.9\text{l/s}$, $Q_2 = 4.9\text{l/s}$, $Q_{30} = 5.1\text{l/s}$ & $Q_{100} = 5.4\text{l/s}$, demonstrating a significant reduction in peak flow for the more critical Q_{30} and Q_{100} storm events compared to the existing Greenfield rates.

The maximum water level within the storage part of the drainage system is 120.761m (for 100 year plus 45% c.c.) which is below the lowest drained point within the drainage system of 121.000m (Manhole S3 cover level) confirming that all storm water is contained within the drainage system. United Utilities require a 1.0m surcharge to the outfall pipe to be checked that no flooding occurs for the 15, 30 & 60min storms for the 30 year + climate change events, which has been carried out and confirmed.

Drawing J292/103E in Appendix E confirms the detailed drainage design layout.

The new outfall is therefore to be limited to 5.4l/s for the 100 year event, with a 45% climate change.

Whilst permeable paving is discounted as a 'formal' infiltration solution due to the underlying clay ground, permeable paving will be provided to private domestic driveways, which will under lighter rainfall prevent/minimize surface water flows and therefore volume entering the sewer network.

3.5.4 Assessment of Exceedance Flows

Exceedance flows have been assessed on drawing J292/107B and the houses are to be typically set 150mm (minimum) above adjacent ground level.

4.0 Foul Drainage Design

4.1 Foul drainage is also detailed on drawing J292/103E, utilising a pumped solution due to the shallow depth of the existing combined sewer in Springside Road and will comply with Building Regulations.

4.2 An appropriate S106 agreement will be required with United Utilities for the new proposed separate foul connection to the public sewer in Springside Road.

5.0 Maintenance

5.1 The main surface water drainage system is to be adopted by United Utilities, which noting the size of the development is considered appropriate. The adopted drainage infrastructure, pipe storage, silt traps and Hydrobrake would be maintained by United Utilities and individual householders would be responsible for their own localised drainage.

5.2 The site drainage is to comply with Building Regulations and would therefore be self-cleansing and fully accessible. Therefore, the proposed drainage system provides a robust design which can be easily maintained.

6.0 Conclusions and Recommendations

6.1 This drainage design is proposed to satisfy the requirements of the Outline Planning Application i.e. Condition 6. All relevant drainage and where appropriate, flood risk considerations have been addressed.

6.2 Exceedance flows have been catered for by ensuring a positive fall away from the properties which are to be set 150mm above external ground level. The overland

flow routes are to be maintained and mimic the existing flow routes thereby not increasing any off-site flood risk by the development works. As also noted above, betterment to critical Greenfield flow rates are also being provided by the drainage scheme, thus improving off-site flood risk.

- 6.3 Previous specific site investigation percolation testing confirms infiltration to be inadequate, resulting in a storage and attenuation drainage system to an existing watercourse within reasonable vicinity of the site. Proposed drained areas have been increased by 10% to allow for urban creep and to achieve adequate self-cleansing, the peak flow rate is to be limited to 5.4l/s (due to United Utilities adoptable control orifice requirements) with all water stored within the drainage system on site for up to the 100 year event with a 45% climate change allowance. Adoptable oversized pipe and a Hydrobrake control are to be used in the scheme as per the original Drainage Strategy.
- 6.4 Foul drainage is to be separate and discharge to the nearby combined water sewer in Springside Road.
- 6.5 All drainage and where appropriate, flood risk concerns associated with on and off-site sources have been addressed and demonstrate a sustainable, maintained and safe development.
- 6.6 This report is confined to the matters mentioned in Section 1 and no opinion is expressed or implied on matters not specifically mentioned.

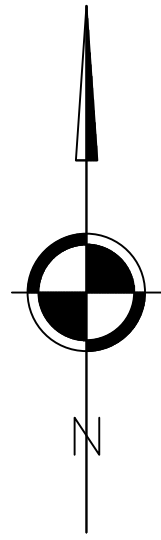
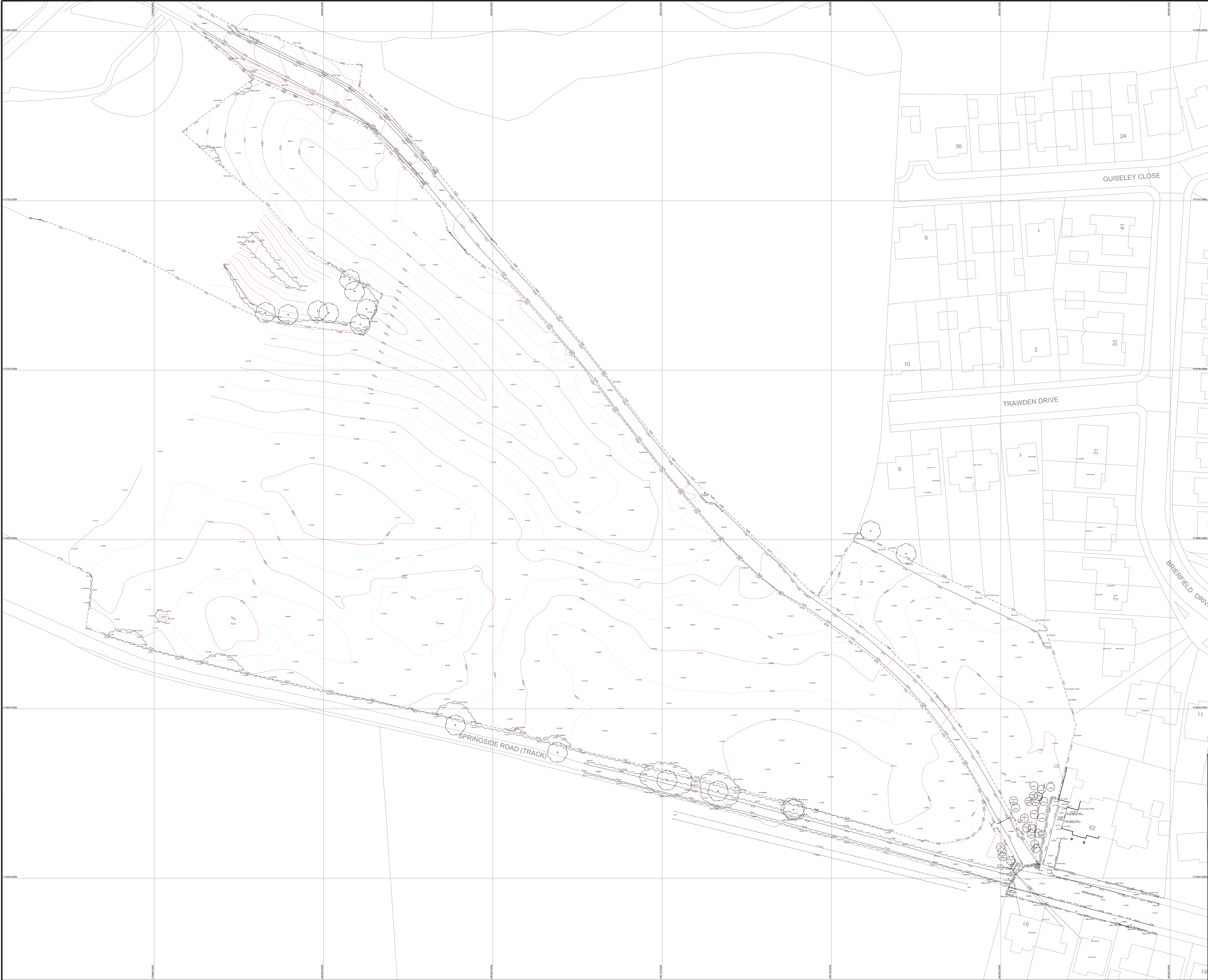


J S DICKINSON
B.Eng., C.Eng., M.I.Struct.E.
On behalf of D and D Consulting Engineers Ltd

APPENDICES

- Appendix A: Topo Survey & Proposed Site
- Appendix B: Drainage Investigations
- Appendix C: United Utilities Sewer Records
- Appendix D: Drainage Design Calculations
- Appendix E: Drainage Drawings

Appendix A
Topo Survey & Proposed Site



Topographical Survey Legend			
Bin	Litter bin	TL	Tie line
BH	Bore Hole	TP	Telegraph pole
Bol	Bollard	TPS	Tactile paving slabs
BS	Bus stop	TS	Traffic signal light
BT	British telecom ic	TV	Television cover
CPS	Concrete paving slabs	VP	Vent pipe
D	Drain	WM	Water meter
DR	Drain	WO	Wash Out
Elec	Electrical ic	UTL	Unable to lift
EP	Elec. pole		
ER	Earth rod	B/W	Barbed wire
FH	Fire Hydrant	C/B	Closed boarded
FT	Flagpole	C/I	Corrugated iron
FT	Floodlight	C/L	Chain link
G	Gully	C/P	Concrete panel
GP	Gate post	H/R	Hand rail
GV	Gas valve	I/R	Iron railings
IC	Inspection cover	O/B	Open boarded
JB	Junction box	P/C	Post & chain
KO	Kerb outlet	P/R	Post & rail
LB	Letter box	P/W	Post & wire
LP	Lamp post	W/M	Wire mesh
Mir	Mirror		
MP	Mile post	Level	Level profile descriptions
MW	Monitoring Well	AL	Arch level
NP	Name plate	BL	Bed level
PM	Parking meter	CL	Cover level
RE	Rodding eye	EH	Eaves level
RS	Road sign	FL	Floor level
rwp	Rain water pipe	IL	Invert level
SP	Sign post	PL	Parapet level
ST	Stop tap	RH	Roofridge level
SB	Service box	SL	Soffit level
SV	Stop valve	Spr	Arch springing level
TCB	Telephone call box	Top	Top of spigot/vent
TH	Trial Hole	WH	Wall height
		WL	Water level

BENCH MARK INFORMATION
All levels relate to O.S (Newlyn) Datum, Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

NOTES
ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN
DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS PRIOR TO WORK COMMENCING
Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.
TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE THE AVERAGE SPREAD.
THE DRIP LINE LAYER DENOTES THE TREES EXTREMITY

SURVEY STATIONS			
stn1	380210.781	413553.539	124.346
stn2	380279.042	413534.035	124.188

REVISIONS

REV	DESCRIPTION	SURVEYED	DRAWN	DATE

JLP Surveying

JLP Surveying Consultants Ltd,
Suite 45 Rodhey House,
King Street,
Wigan
WN1 1BT
Tel - 01942 243313
Fax - 01942 492230
Mobile - 07710 429498
EMAIL:- petechouston@jlp surveys.com

PROJECT
Springside Road
Warrersley

DRAWING TITLE
Topographical Land Survey

SCALE	SHEET SIZE	No. of SHEETS	DATE	REVISION
1 : 500	A1	1	23.04.2025	

DRAWING NUMBER
S25-0352



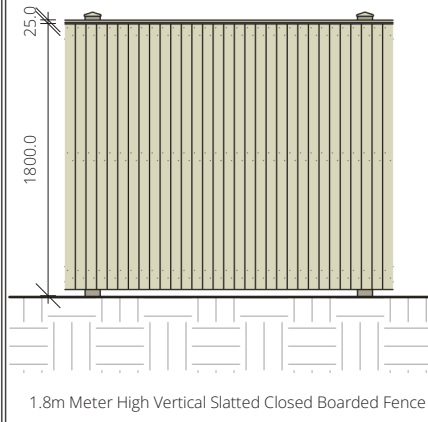
Existing Boundary Notes

- A > B No Physical Boundary
- B > C No Physical Boundary
- C > D 1.8m Meter High Vertical Slatted Closed Boarded Fence
- D > E No Physical Boundary
- E > F No Physical Boundary
- F > A Existing Hedge Row with 900mm Post and Wire Fence on Boundary Side

Proposed Boundary Notes

- A > B No Physical Boundary - As Existing
- B > C No Physical Boundary - As Existing
- C > D 1.8m Meter High Vertical Slatted Closed Boarded Fence - to be Retained
- D > E Newly Proposed 1.8m Meter High Vertical Slatted Closed Boarded Fence to Tie into and Match Existing
- E > F No Physical Boundary - As Existing
- F > A Existing Hedge Row to be Retained with 900mm Post and Wire Fence to be Removed and Replaced with 1.8m Meter High Vertical Slatted Closed Boarded Fence

Proposed Boundary Treatment Detail



0m2m5m10m

Scale = 1 : 200

Site Plan Legend and Key

●

Car Charging Input Location

●

Electric Meter Box Location

●

Gas Meter Box Location

Bin Store Location - Size and Colour as Per Local Authority's Requirements

●

200L Water Butt Location

7' X 5' Garden Shed

External Gate for Rear Garden Access Minimum 775mm Clear Opening Width

1200mm x 1200mm Level Landing Shown at a Minimum of 1No. Entrance (ADMA(2) 2.2a)

900mm Min. Clear Width

Approach Route (ADMA(1) 1.6c&d)

900mm Min. Clear Width Bin Dragging Route

Accommodation Schedule							
House Type	Building Type	Bedrooms	GIFA m ²	GIFA ft ²	Count	Total GIFA m ²	Total GIFA ft ²
Kenyon (Bay)	Detached	4	127.37	1371.00	1	127.37	1371.00
Lancaster	Detached	5	173.75	1870.23	3	521.25	5610.68
Lightshaw	Detached	3	109.07	1174.02	5	545.35	5870.09
Marley	Detached	4	132.55	1426.75	1	132.55	1426.75
Rivinton	Detached	3	105.12	1131.50	2	210.24	2263.00
					12	1536.76	16541.53

- M: 06/05/2026: General Site Rearrangement, Plot Swaps and House Type Mix Change in Association with Comments from Planning
- L: 29/03/2026: Access Road Updated to Match Approved Access Plan and Plots Swapped Out for Smaller Units
- K: 08/03/2026: Public Footpath & Plot 5 Parking Arrangement Updated
- J: 29/03/2026: Minor Updates to Plot One
- I: 12/03/2026: Landscaping Update to Front of Plots
- H: 11/02/2026: Minor Amendments
- G: 27/01/2026: Drainage Compound Size Updated, Turning Head Widened to 6.75m
- F: 19/01/2026: Road Width Widened to 6.75m Thoroughfare Site
- E: 19/10/2025: Water Butts Shown
- D: 24/09/2025: Vehicle Change Following Client Design Review Updated to MA(2) Standards
- C: 28/08/2025: Road End Correction & House Locations Adjusted
- B: 27/08/2025: Minor Amendments
- A: 22/08/2025: First Issue
- Rev: Date: Notes:

DRAWING NUMBER

ISSUE

J1192-WS-PL102 M

Proposed Site Plan

PROJECT

Springside Road, Walmersley

CLIENT

Edgefold Homes Ltd.

JOB NUMBER

DATE

SCALE

SIZE

1192

Aug '25

1 : 200

A1

INFORMATION



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All Survey Data, Dimensions, Accuracies, Levels, etc. are shown on this Drawing as they were found on the ground. No liability is accepted for any errors or omissions. The Client is responsible for the accuracy of the data provided. No liability is accepted for any errors or omissions. The Client is responsible for the accuracy of the data provided. No liability is accepted for any errors or omissions. The Client is responsible for the accuracy of the data provided.
This Drawing Must Not Be Used On Site Unless Issued For Construction.

Appendix B
Drainage Investigations

Trench Investigations to Locate Drain Indicated on Sewer Plan

Landowners Investigations (Outline Planning Application)

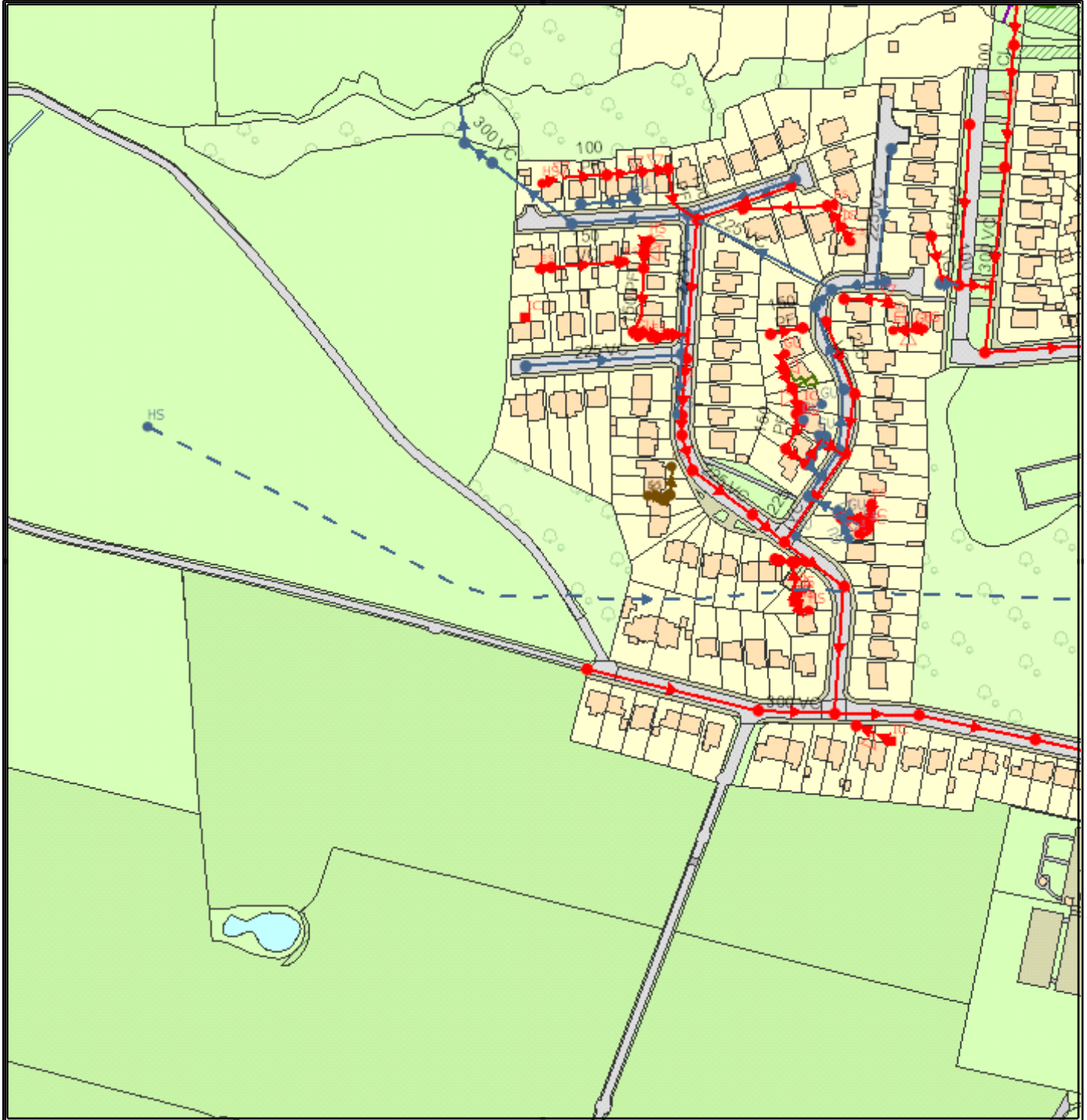


Edgefold Investigations (Reserved Matters Planning Application)





Appendix C
United Utilities Sewer Records

SEWER RECORD LAND AT SPRINGSIDE ROAD WALMERSLEY BURY BL9 5JA


The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded. United Utilities Water Limited will not accept any liability for any damage caused by the actual positions being different from those shown.

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Appendix D

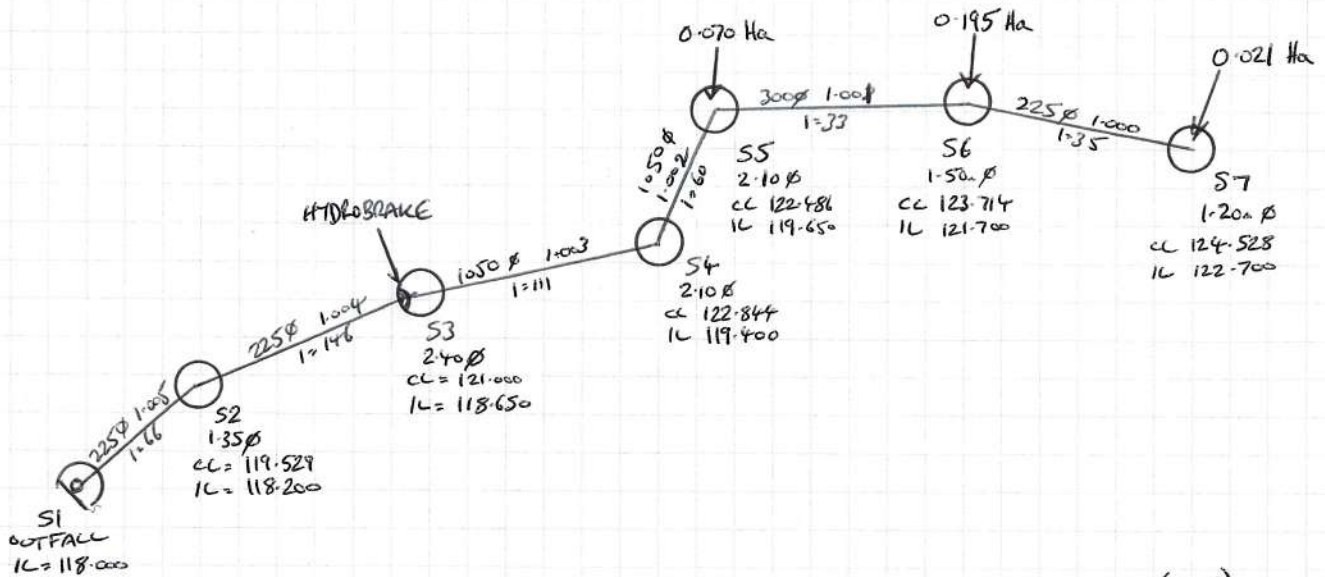
Drainage Design Calculations

D and D Consulting Engineers Ltd		Page 1
Labyrinth Business Centre 45 Middle Hillgate Stockport SK1 3DG		
Date 09/10/2025 09:46 File	Designed by jsd Checked by	
Micro Drainage		Source Control 2020.1
<u>ICP SUDS Mean Annual Flood</u> Input Return Period (years) 2 Soil 0.450 Area (ha) 0.526 Urban 0.000 SAAR (mm) 1200 Region Number Region 10 Results 1/s QBAR Rural 4.3 QBAR Urban 4.3 Q2 years 4.0 Q1 year 3.8 Q30 years 7.4 Q100 years 9.0		
©1982-2020 Innovyze		

Job Title

SPRINGSIDE ROAD, WALMSLEY

SURFACE WATER DRAINAGE SCHEMATIC



(N.T.S.)

DRAINED AREAS

$S7 = 0.021$
 $S6 = 0.195$
 $S5 = 0.070$
TOTAL = 0.286 Ha

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S7	0.021	1200	Type B	124.528	122.700	1.603	380205.189	413562.720
S6	0.195	1500	Type B	123.714	121.700	1.714	380189.858	413591.455
S5	0.070	2100	Type B	122.486	119.650	1.786	380159.807	413622.090
S4	0.000	2100	Type B	122.844	119.400	2.394	380145.295	413618.347
S3	0.000	2400	Type B	121.000	118.650	2.125	380084.895	413675.583
S2	0.000	1350	Type C	119.529	118.200	1.104	380032.014	413714.824
S1	0.000	225	Unknown	118.250	118.000	0.025	380018.928	413715.344

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S7	122.700	S6	121.775	Circ	225	32.569	35	0.600	1.603	1.714
1.001	S6	121.700	S5	120.400	Circ	300	42.913	33	0.600	1.714	1.786
1.002	S5	119.650	S4	119.400	Circ	1050	14.987	60	0.600	1.786	2.394
1.003	S4	119.400	S3	118.650	Circ	1050	83.211	111	0.600	2.394	1.300
1.004	S3	118.650	S2	118.200	Circ	225	65.851	146	0.600	2.125	1.104
1.005	S2	118.200	S1	118.000	Circ	225	13.096	65	0.600	1.104	0.025

Outfall Details

Outfall Manhole S1 : Free Discharge

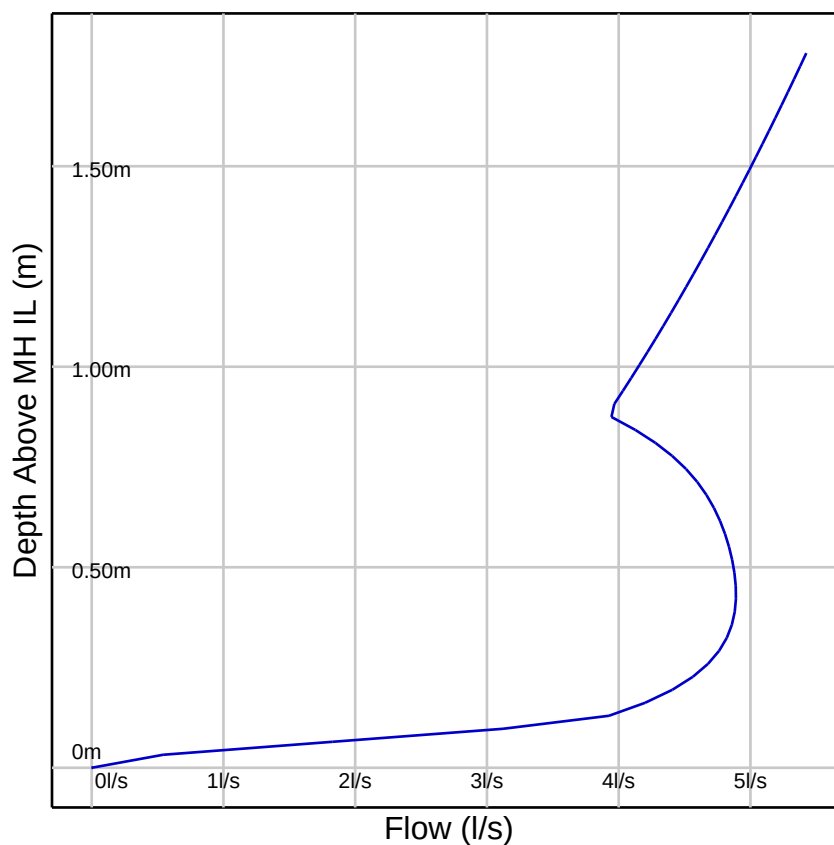
Flow Control Details

Controls within Manhole S3

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0098-5000-1500-5000	1.500	5.000	0.000	0.432	4.890	0.879	3.910

Hydro-Brake® Optimum Control from S3 to S2



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_380186_413613_v5_1_0.xml

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Periods (yrs) + Climate Change: (1, +45%), (2, +45%), (30, +45%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr+45% 15Min Winter	20.162	0.00	0.00	30Yr+45% 15Min Summer	98.368	0.00	0.00
1Yr+45% 15Min Summer	20.162	0.00	0.00	30Yr+45% 15Min Winter	98.368	0.00	0.00
1Yr+45% 30Min Winter	13.346	0.00	0.00	30Yr+45% 30Min Summer	67.732	0.00	0.00
1Yr+45% 30Min Summer	13.346	0.00	0.00	30Yr+45% 30Min Winter	67.732	0.00	0.00
1Yr+45% 60Min Winter	8.890	0.00	0.00	30Yr+45% 60Min Summer	44.891	0.00	0.00
1Yr+45% 60Min Summer	8.890	0.00	0.00	30Yr+45% 60Min Winter	44.891	0.00	0.00
1Yr+45% 120Min Summer	7.156	0.00	0.00	30Yr+45% 120Min Summer	27.021	0.00	0.00
1Yr+45% 120Min Winter	7.156	0.00	0.00	30Yr+45% 120Min Winter	27.021	0.00	0.00
1Yr+45% 180Min Winter	6.149	0.00	0.00	30Yr+45% 180Min Summer	19.906	0.00	0.00
1Yr+45% 180Min Summer	6.149	0.00	0.00	30Yr+45% 180Min Winter	19.906	0.00	0.02
1Yr+45% 240Min Winter	5.260	0.00	0.00	30Yr+45% 240Min Summer	16.227	0.00	0.02
1Yr+45% 240Min Summer	5.260	0.00	0.00	30Yr+45% 240Min Winter	16.227	0.00	0.00
1Yr+45% 360Min Summer	4.276	0.00	0.00	30Yr+45% 360Min Summer	12.029	0.00	0.02
1Yr+45% 360Min Winter	4.276	0.00	0.00	30Yr+45% 360Min Winter	12.029	0.00	0.00
1Yr+45% 480Min Winter	3.672	0.00	0.00	30Yr+45% 480Min Summer	9.719	0.00	0.00
1Yr+45% 480Min Summer	3.672	0.00	0.00	30Yr+45% 480Min Winter	9.719	0.00	0.00
1Yr+45% 600Min Winter	3.224	0.00	0.00	30Yr+45% 600Min Summer	8.256	0.00	0.00
1Yr+45% 600Min Summer	3.224	0.00	0.00	30Yr+45% 600Min Winter	8.256	0.00	0.00
1Yr+45% 720Min Winter	2.882	0.00	0.00	30Yr+45% 720Min Summer	7.231	0.00	0.00
1Yr+45% 720Min Summer	2.882	0.00	0.00	30Yr+45% 720Min Winter	7.231	0.00	0.00
1Yr+45% 960Min Summer	2.417	0.00	0.00	30Yr+45% 960Min Summer	5.869	0.00	0.00
1Yr+45% 960Min Winter	2.417	0.00	0.00	30Yr+45% 960Min Winter	5.869	0.00	0.00
1Yr+45% 1440Min Summer	1.883	0.00	0.00	30Yr+45% 1440Min Summer	4.396	0.00	0.00
1Yr+45% 1440Min Winter	1.883	0.00	0.00	30Yr+45% 1440Min Winter	4.396	0.00	0.00
1Yr+45% 2160Min Summer	1.480	0.00	0.00	30Yr+45% 2160Min Summer	3.338	0.00	0.00
1Yr+45% 2160Min Winter	1.480	0.00	0.00	30Yr+45% 2160Min Winter	3.338	0.00	0.00
1Yr+45% 2880Min Winter	1.258	0.00	0.00	30Yr+45% 2880Min Summer	2.760	0.00	0.00
1Yr+45% 2880Min Summer	1.258	0.00	0.00	30Yr+45% 2880Min Winter	2.760	0.00	0.00
1Yr+45% 4320Min Summer	1.016	0.00	0.00	30Yr+45% 4320Min Summer	2.109	0.00	0.00
1Yr+45% 4320Min Winter	1.016	0.00	0.00	30Yr+45% 4320Min Winter	2.109	0.00	0.00
1Yr+45% 5760Min Summer	0.881	0.00	0.00	30Yr+45% 5760Min Summer	1.738	0.00	0.00
1Yr+45% 5760Min Winter	0.881	0.00	0.00	30Yr+45% 5760Min Winter	1.738	0.00	0.00
1Yr+45% 7200Min Winter	0.795	0.00	0.00	30Yr+45% 7200Min Summer	1.502	0.00	0.00
1Yr+45% 7200Min Summer	0.795	0.00	0.00	30Yr+45% 7200Min Winter	1.502	0.00	0.00
1Yr+45% 8640Min Summer	0.735	0.00	0.00	30Yr+45% 8640Min Summer	1.339	0.00	0.00
1Yr+45% 8640Min Winter	0.735	0.00	0.00	30Yr+45% 8640Min Winter	1.339	0.00	0.00
1Yr+45% 10080Min Summer	0.691	0.00	0.00	30Yr+45% 10080Min Summer	1.218	0.00	0.00
1Yr+45% 10080Min Winter	0.691	0.00	0.00	30Yr+45% 10080Min Winter	1.218	0.00	0.00
2Yr+45% 15Min Summer	40.159	0.00	0.00	100Yr+45% 15Min Summer	123.033	0.00	0.00
2Yr+45% 15Min Winter	40.159	0.00	0.00	100Yr+45% 15Min Winter	123.033	0.00	0.04
2Yr+45% 30Min Summer	26.916	0.00	0.00	100Yr+45% 30Min Summer	86.156	0.00	0.00
2Yr+45% 30Min Winter	26.916	0.00	0.00	100Yr+45% 30Min Winter	86.156	0.00	0.00
2Yr+45% 60Min Summer	17.663	0.00	0.00	100Yr+45% 60Min Summer	57.516	0.00	0.00
2Yr+45% 60Min Winter	17.663	0.00	0.00	100Yr+45% 60Min Winter	57.516	0.00	-0.04
2Yr+45% 120Min Summer	12.155	0.00	0.00	100Yr+45% 120Min Summer	33.833	0.00	0.00
2Yr+45% 120Min Winter	12.155	0.00	0.00	100Yr+45% 120Min Winter	33.833	0.00	-0.07
2Yr+45% 180Min Summer	9.698	0.00	0.00	100Yr+45% 180Min Summer	24.581	0.00	0.00
2Yr+45% 180Min Winter	9.698	0.00	0.00	100Yr+45% 180Min Winter	24.581	0.00	-0.04
2Yr+45% 240Min Summer	8.092	0.00	0.00	100Yr+45% 240Min Summer	20.006	0.00	0.00
2Yr+45% 240Min Winter	8.092	0.00	0.00	100Yr+45% 240Min Winter	20.006	0.00	-0.04
2Yr+45% 360Min Winter	6.280	0.00	0.00	100Yr+45% 360Min Summer	14.786	0.00	0.00
2Yr+45% 360Min Summer	6.280	0.00	0.00	100Yr+45% 360Min Winter	14.786	0.00	-0.03
2Yr+45% 480Min Summer	5.234	0.00	0.00	100Yr+45% 480Min Summer	11.942	0.00	0.00
2Yr+45% 480Min Winter	5.234	0.00	0.00	100Yr+45% 480Min Winter	11.942	0.00	0.00

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
2Yr+45% 600Min Summer	4.519	0.00	0.00	100Yr+45% 600Min Summer	10.168	0.00	0.00
2Yr+45% 600Min Winter	4.519	0.00	0.00	100Yr+45% 600Min Winter	10.168	0.00	0.00
2Yr+45% 720Min Winter	3.994	0.00	0.00	100Yr+45% 720Min Summer	8.936	0.00	0.00
2Yr+45% 720Min Summer	3.994	0.00	0.00	100Yr+45% 720Min Winter	8.936	0.00	0.00
2Yr+45% 960Min Summer	3.286	0.00	0.00	100Yr+45% 960Min Summer	7.303	0.00	0.00
2Yr+45% 960Min Winter	3.286	0.00	0.00	100Yr+45% 960Min Winter	7.303	0.00	0.00
2Yr+45% 1440Min Summer	2.503	0.00	0.00	100Yr+45% 1440Min Summer	5.533	0.00	0.00
2Yr+45% 1440Min Winter	2.503	0.00	0.00	100Yr+45% 1440Min Winter	5.533	0.00	0.00
2Yr+45% 2160Min Summer	1.929	0.00	0.00	100Yr+45% 2160Min Summer	4.233	0.00	0.00
2Yr+45% 2160Min Winter	1.929	0.00	0.00	100Yr+45% 2160Min Winter	4.233	0.00	0.00
2Yr+45% 2880Min Summer	1.615	0.00	0.00	100Yr+45% 2880Min Summer	3.503	0.00	0.00
2Yr+45% 2880Min Winter	1.615	0.00	0.00	100Yr+45% 2880Min Winter	3.503	0.00	0.00
2Yr+45% 4320Min Summer	1.272	0.00	0.00	100Yr+45% 4320Min Summer	2.659	0.00	0.00
2Yr+45% 4320Min Winter	1.272	0.00	0.00	100Yr+45% 4320Min Winter	2.659	0.00	0.00
2Yr+45% 5760Min Summer	1.084	0.00	0.00	100Yr+45% 5760Min Summer	2.169	0.00	0.00
2Yr+45% 5760Min Winter	1.084	0.00	0.00	100Yr+45% 5760Min Winter	2.169	0.00	0.00
2Yr+45% 7200Min Summer	0.965	0.00	0.00	100Yr+45% 7200Min Summer	1.855	0.00	0.00
2Yr+45% 7200Min Winter	0.965	0.00	0.00	100Yr+45% 7200Min Winter	1.855	0.00	0.00
2Yr+45% 8640Min Winter	0.883	0.00	0.00	100Yr+45% 8640Min Summer	1.638	0.00	0.00
2Yr+45% 8640Min Summer	0.883	0.00	0.00	100Yr+45% 8640Min Winter	1.638	0.00	0.00
2Yr+45% 10080Min Summer	0.822	0.00	0.00	100Yr+45% 10080Min Winter	1.476	0.00	0.00
2Yr+45% 10080Min Winter	0.822	0.00	0.00	100Yr+45% 10080Min Summer	1.476	0.00	0.00

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S7	15 min Winter	9	122.723	0.023	1.849		OK
S6	15 min Winter	8	121.764	0.064	19.968		OK
S5	15 min Winter	8	119.708	0.058	26.039		OK
S4	15 min Winter	9	119.468	0.068	25.793		OK
S3	180 min Winter	124	119.120	0.470	4.879		Surcharged
S2	180 min Winter	125	118.242	0.042	4.889		OK
S1	180 min Winter	125	118.041	0.041	4.889		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	9	S7	S6	0.022	0.919	1.891	0.022	OK
1.001	15 min Winter	8	S6	S5	0.063	1.799	19.542	0.101	OK
1.002	15 min Winter	9	S5	S4	0.063	1.251	25.837	0.007	OK
1.003	180 min Winter	122	S4	S3	0.251	0.396	10.215	0.004	OK
1.004	180 min Winter	125	S3	S2	0.047	0.810	4.889	0.114	OK
1.005	180 min Winter	125	S2	S1	0.041	0.974	4.889	0.076	OK

Return Period (yrs) + Climate Change (%):

2yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S7	15 min Winter	8	122.732	0.032	3.885		OK
S6	15 min Winter	8	121.791	0.091	39.845		OK
S5	15 min Winter	8	119.732	0.082	52.126		OK
S4	180 min Winter	138	119.504	0.104	4.018		OK
S3	180 min Winter	137	119.504	0.854	3.397		Surcharged
S2	720 min Summer	466	118.242	0.042	4.890		OK
S1	600 min Summer	418	118.041	0.041	4.890		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S7	S6	0.031	1.125	3.773	0.043	OK
1.001	15 min Winter	8	S6	S5	0.090	2.187	39.177	0.202	OK
1.002	15 min Winter	9	S5	S4	0.088	1.507	51.822	0.013	OK
1.003	180 min Winter	136	S4	S3	0.477	0.441	16.116	0.006	OK
1.004	720 min Summer	466	S3	S2	0.047	0.811	4.890	0.114	OK
1.005	720 min Summer	466	S2	S1	0.041	0.974	4.890	0.076	OK

Return Period (yrs) + Climate Change (%):

30yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S7	15 min Winter	8	122.749	0.049	9.524		OK
S6	15 min Winter	8	121.851	0.151	97.862		OK
S5	120 min Winter	113	120.243	0.593	5.670		OK
S4	120 min Winter	113	120.243	0.843	4.832		OK
S3	120 min Winter	115	120.246	1.596	12.144		Surcharged
S2	120 min Winter	116	118.243	0.043	5.059		OK
S1	120 min Winter	116	118.042	0.042	5.063		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S7	S6	0.062	1.253	9.423	0.107	OK
1.001	15 min Winter	8	S6	S5	0.148	2.770	96.514	0.497	OK
1.002	120 min Winter	113	S5	S4	0.718	1.373	92.419	0.024	OK
1.003	120 min Winter	113	S4	S3	0.946	0.622	39.896	0.014	OK
1.004	120 min Winter	117	S3	S2	0.048	0.819	5.065	0.118	OK
1.005	120 min Winter	116	S2	S1	0.042	0.983	5.063	0.079	OK

Return Period (yrs) + Climate Change (%):

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S7	15 min Winter	8	122.755	0.055	11.914		OK
S6	15 min Winter	8	121.873	0.173	122.433		OK
S5	240 min Winter	202	120.761	1.111	5.600		Surcharged
S4	240 min Winter	202	120.761	1.361	5.702		Surcharged
S3	240 min Winter	205	120.761	2.111	4.431		Flood Risk
S2	240 min Winter	157	118.244	0.044	5.424		OK
S1	180 min Winter	122	118.043	0.043	5.424		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S7	S6	0.077	1.252	11.797	0.134	OK
1.001	240 min Winter	175	S6	S5	0.170	1.936	25.201	0.130	OK
1.002	180 min Winter	141	S5	S4	1.050	1.288	78.700	0.020	OK
1.003	120 min Winter	80	S4	S3	1.050	0.648	50.068	0.018	OK
1.004	180 min Winter	121	S3	S2	0.050	0.835	5.424	0.127	OK
1.005	240 min Winter	157	S2	S1	0.044	1.003	5.424	0.084	OK

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S7	0.021	1200	Type B	124.528	122.700	1.603	380205.189	413562.720
S6	0.195	1500	Type B	123.714	121.700	1.714	380189.858	413591.455
S5	0.070	2100	Type B	122.486	119.650	1.786	380159.807	413622.090
S4	0.000	2100	Type B	122.844	119.400	2.394	380145.295	413618.347
S3	0.000	2400	Type B	121.000	118.650	2.125	380084.895	413675.583
S2	0.000	1350	Type C	119.529	118.200	1.104	380032.014	413714.824
S1	0.000	225	Unknown	118.250	118.000	0.025	380018.928	413715.344

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S7	122.700	S6	121.775	Circ	225	32.569	35	0.600	1.603	1.714
1.001	S6	121.700	S5	120.400	Circ	300	42.913	33	0.600	1.714	1.786
1.002	S5	119.650	S4	119.400	Circ	1050	14.987	60	0.600	1.786	2.394
1.003	S4	119.400	S3	118.650	Circ	1050	83.211	111	0.600	2.394	1.300
1.004	S3	118.650	S2	118.200	Circ	225	65.851	146	0.600	2.125	1.104
1.005	S2	118.200	S1	118.000	Circ	225	13.096	65	0.600	1.104	0.025

Outfall Details

Outfall Manhole S1 : Surcharged (Constant Level)

Surcharged Constant

Water Elevation (m)	Water Depth (m)
119.225	1.225

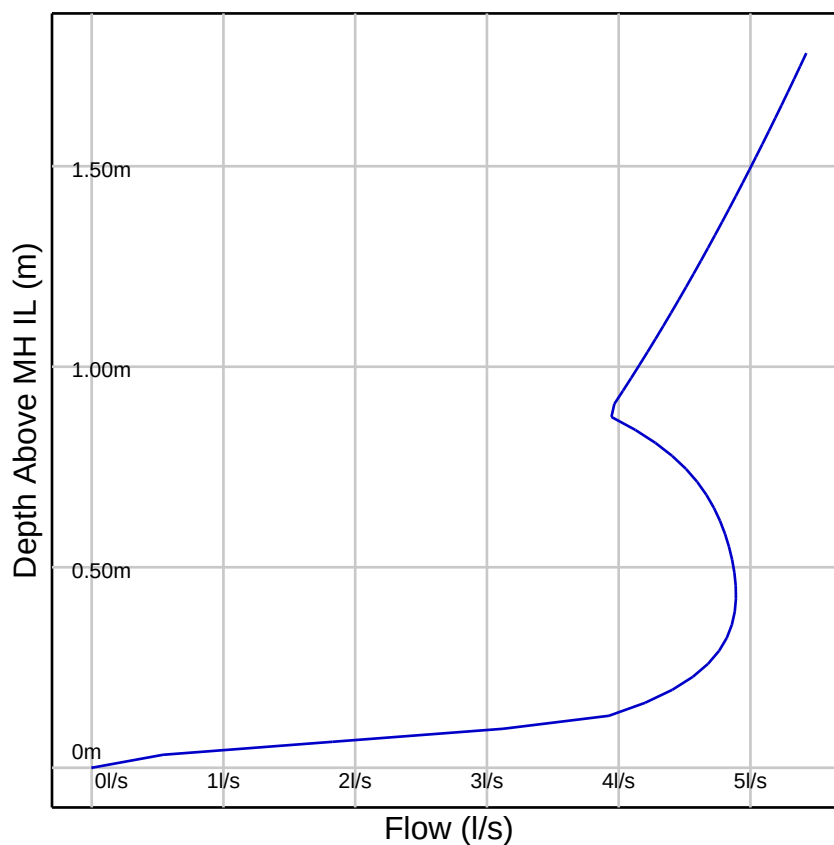
Flow Control Details

Controls within Manhole S3

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0098-5000-1500-5000	1.500	5.000	0.000	0.432	4.890	0.879	3.910

Hydro-Brake® Optimum Control from S3 to S2



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_380186_413613_v5_1_0.xml

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60

Return Periods (yrs) + Climate Change: (30, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
30Yr+45% 15Min Winter	98.368	0.00	2.78	30Yr+45% 30Min Summer	67.732	0.00	2.30
30Yr+45% 15Min Summer	98.368	0.00	3.00	30Yr+45% 60Min Winter	44.891	0.00	1.61
30Yr+45% 30Min Winter	67.732	0.00	2.10	30Yr+45% 60Min Summer	44.891	0.00	1.78

Simulation Results

Return Period (yrs) + Climate Change (%):

30yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S7	15 min Winter	8	122.749	0.049	9.524		OK
S6	15 min Winter	8	121.851	0.151	97.858		OK
S5	60 min Winter	60	120.277	0.627	4.726		OK
S4	60 min Winter	60	120.276	0.876	16.335		OK
S3	60 min Winter	61	120.281	1.631	0.000		Surcharged
S2	15 min Summer	8	119.230	1.030	0.059		Flood Risk
S1	15 min Winter	0	119.225	1.225	81.788		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S7	S6	0.062	1.252	9.420	0.107	OK
1.001	15 min Winter	8	S6	S5	0.148	2.770	96.505	0.497	OK
1.002	60 min Winter	60	S5	S4	0.752	1.538	94.399	0.024	OK
1.003	60 min Winter	60	S4	S3	0.963	0.285	68.090	0.024	OK
1.004	15 min Summer	12	S3	S2	0.225	0.123	4.891	0.114	OK
1.005	15 min Summer	12	S2	S1	0.225	0.129	5.141	0.080	OK

Technical Specification

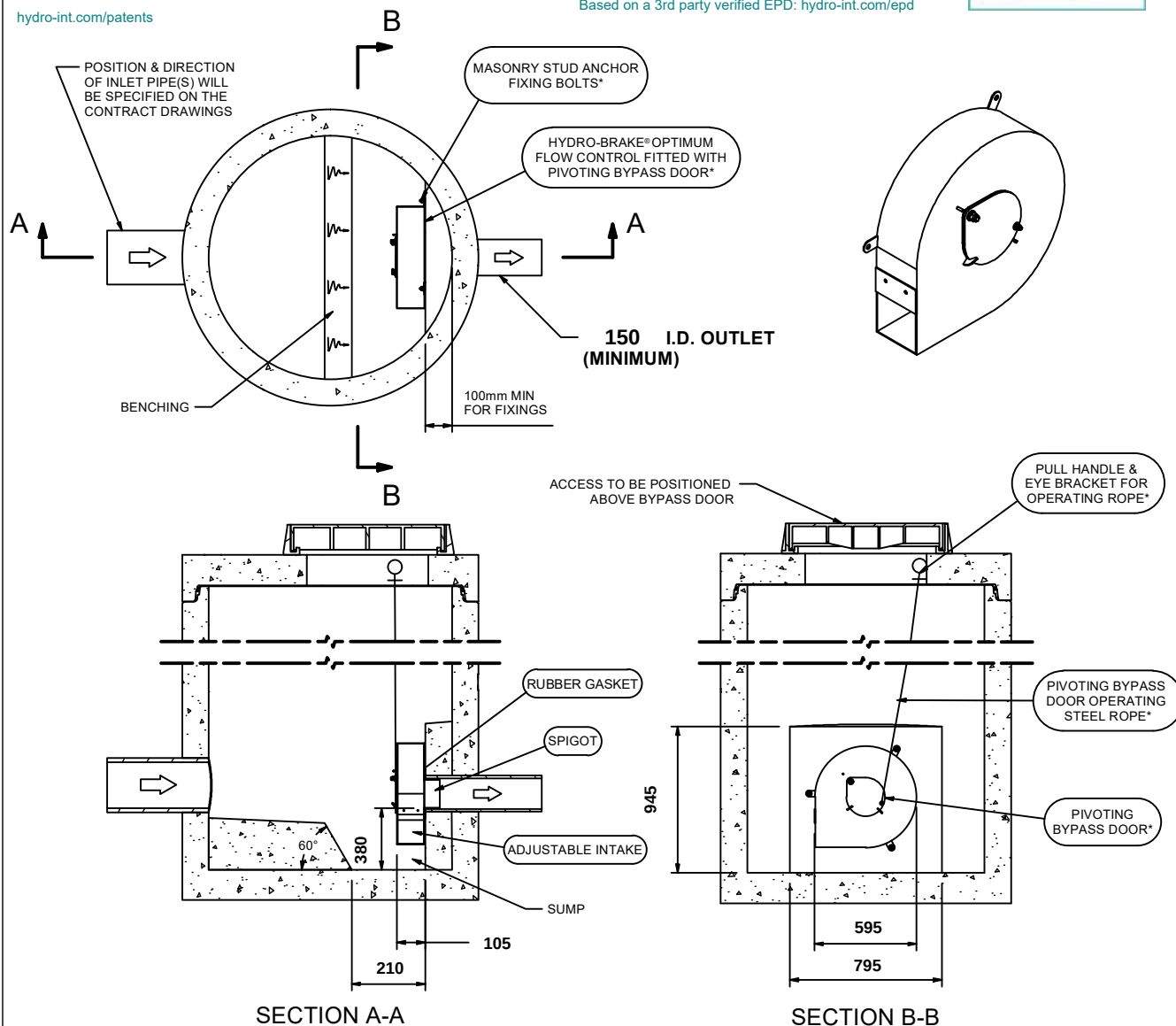
Control Point	Head (m)	Flow (l/s)
Primary Design	1.500	5.000
Flush-Flo™	0.432	4.890
Kick-Flo®	0.879	3.910
Mean Flow		4.331

hydro-int.com/patents

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: 20 kg
- Product Carbon Footprint: 81.87 kgCO2e

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



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-0098-5000-1500-5000 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

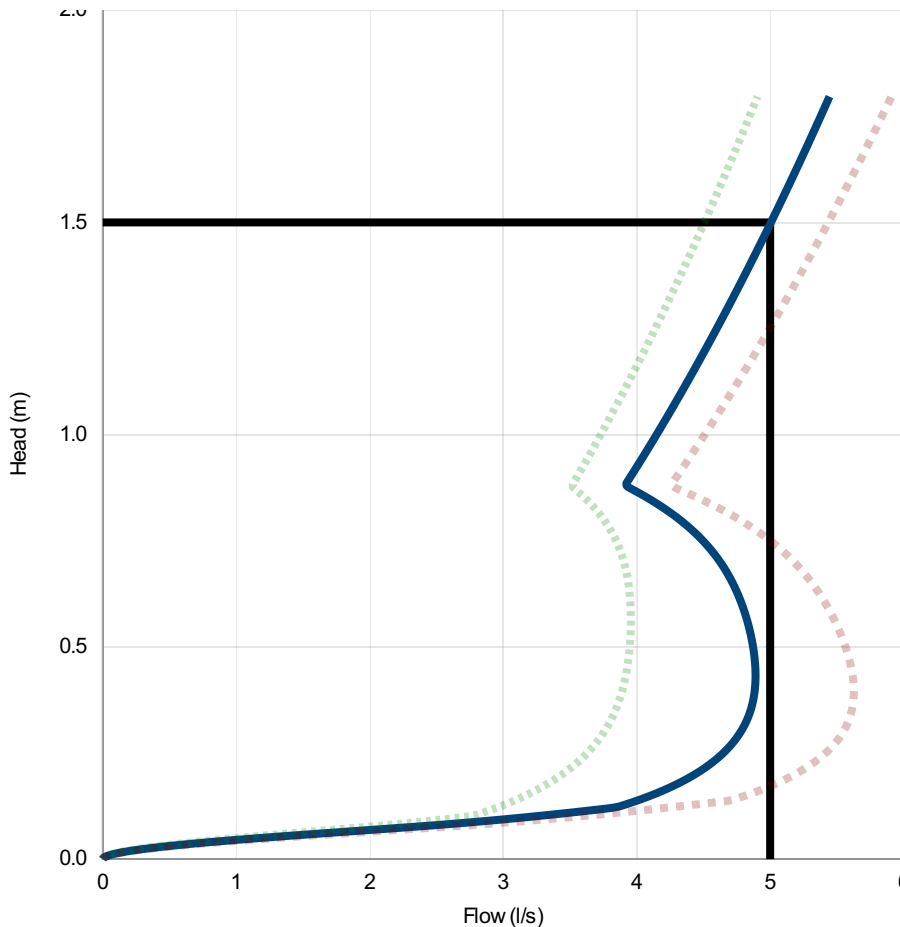
DATE	08/10/2025 09:59	SHE-0098-5000-1500-5000 Hydro-Brake® Optimum
SITE	23 21 5586 Springside Road, Bury	
DESIGNER		
REF	HQT-198459	

Technical Specification

	Original Setting		Minimum Setting		Maximum Setting	
Control Point	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
Primary Design	1.500	5.000	1.500	4.507	1.500	5.435
Flush-Flo™	0.432	4.890	0.563	3.956	0.395	5.627
Kick-Flo®	0.879	3.910	0.877	3.510	0.878	4.250
Mean Flow		4.331		3.692		4.830



hydro-int.com/patents



Head (m)	Flow (l/s)
0.000	0.000
0.052	1.260
0.103	3.321
0.155	4.149
0.207	4.473
0.259	4.677
0.310	4.799
0.362	4.864
0.414	4.889
0.466	4.886
0.517	4.862
0.569	4.821
0.621	4.763
0.672	4.681
0.724	4.568
0.776	4.412
0.828	4.200
0.879	3.926
0.931	4.015
0.983	4.116
1.034	4.215
1.086	4.311
1.138	4.404
1.190	4.496
1.241	4.585
1.293	4.673
1.345	4.759
1.397	4.843
1.448	4.925
1.500	5.006

DESIGN ADVICE



The head/flow characteristics of this SHE-0098-5000-1500-5000 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.



DATE	08/10/2025 09:59
Site	23_21_5586 Springside Road, Bury
DESIGNER	
Ref	HQT-198459

SHE-0098-5000-1500-5000
Hydro-Brake® Optimum

Appendix E

Drainage Drawings :-

J292/101C – ‘Stormwater Drainage Appraisal’

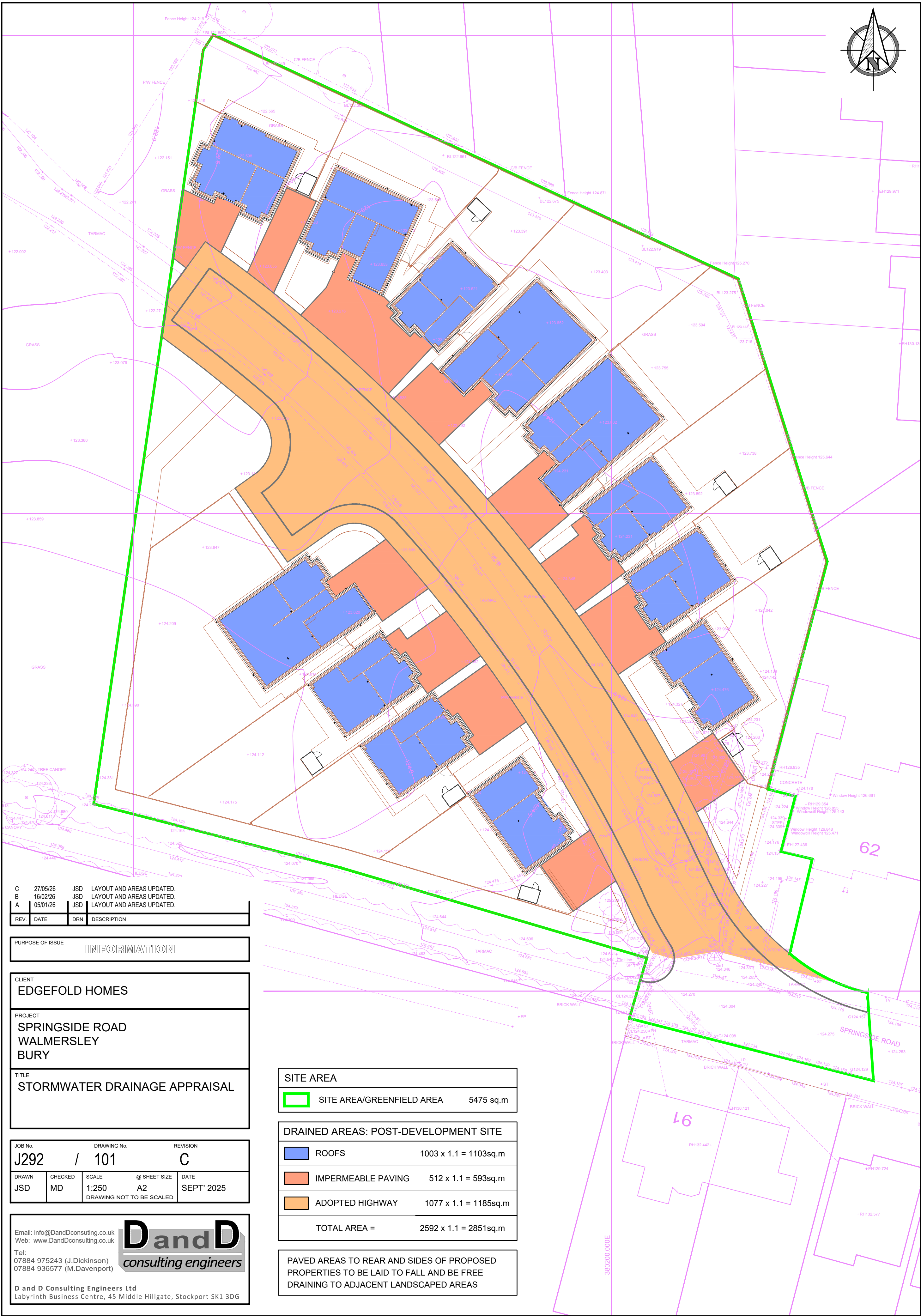
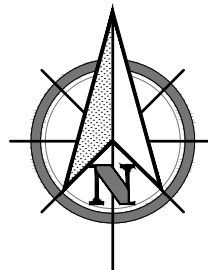
J292/102C – ‘Stormwater Drainage Scheme Areas’

J292/103E – ‘Drainage General Arrangement Plan’

J292/106A – ‘Typical Drainage Details’

J292/107B - ‘Overland Flood Flow Routing Plan’

J292/117A – ‘S104 - Control Manhole Details’



C	27/05/26	JSD	LAYOUT AND AREAS UPDATED.
B	16/02/26	JSD	LAYOUT AND AREAS UPDATED.
A	05/01/26	JSD	LAYOUT AND AREAS UPDATED.
REV.	DATE	DRN	DESCRIPTION

PURPOSE OF ISSUE	INFORMATION
------------------	-------------

CLIENT	EDGEFOLD HOMES
PROJECT	SPRINGSIDE ROAD WALMERSLEY BURY
TITLE	STORMWATER DRAINAGE APPRAISAL

JOB No.		DRAWING No.		REVISION	
J292		/ 101		C	
DRAWN	CHECKED	SCALE	@ SHEET SIZE	DATE	
JSD	MD	1:250	A2	SEPT' 2025	
DRAWING NOT TO BE SCALED					

Email: info@DandDconsulting.co.uk
Web: www.DandDconsulting.co.uk
Tel: 07884 975243 (J.Dickinson)
07884 936577 (M.Davenport)

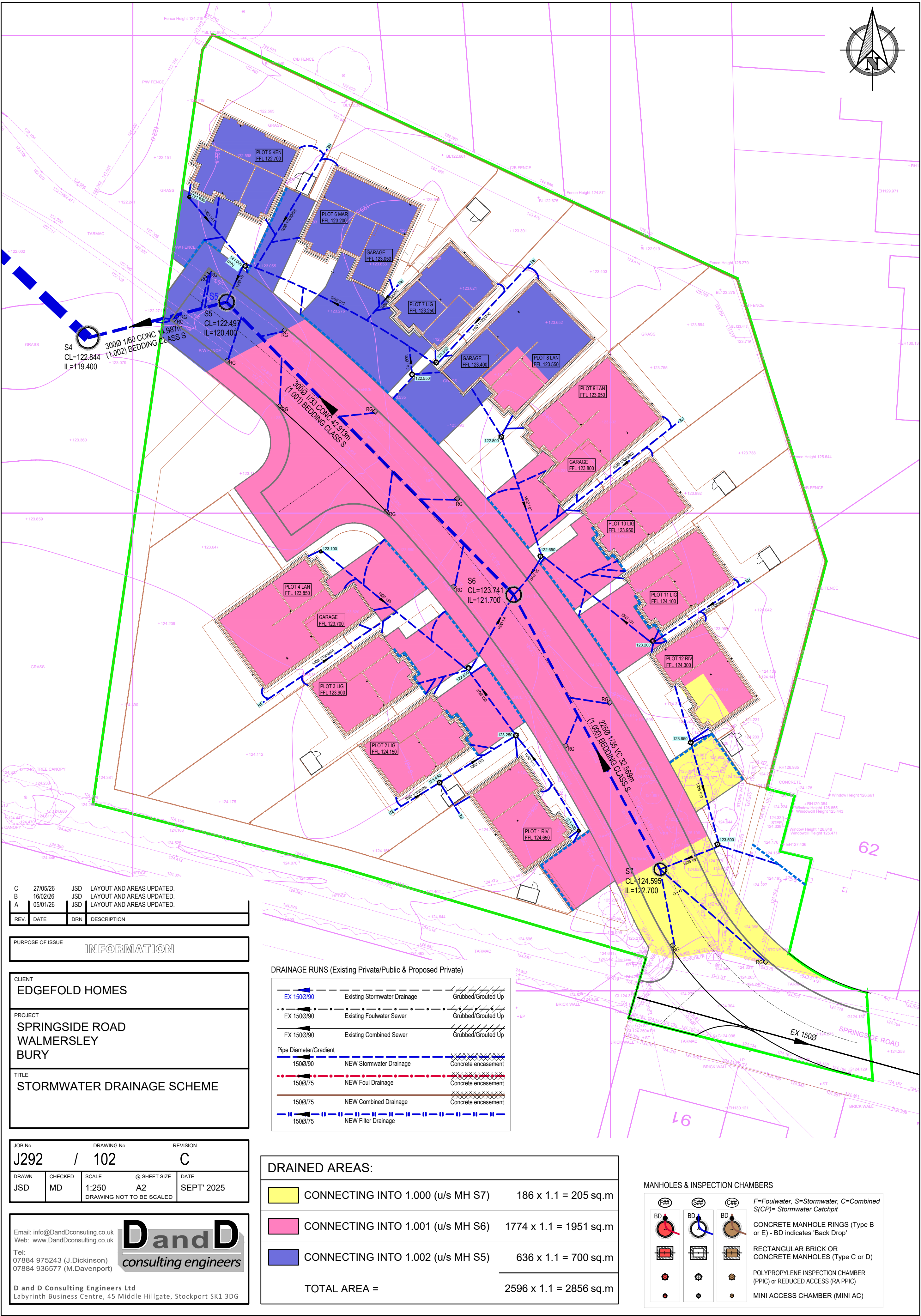
DandD

consulting engineers

D and D Consulting Engineers Ltd
Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DG

SITE AREA	
SITE AREA/GREENFIELD AREA	5475 sq.m
DRAINED AREAS: POST-DEVELOPMENT SITE	
ROOFS	1003 x 1.1 = 1103sq.m
IMPERMEABLE PAVING	512 x 1.1 = 593sq.m
ADOPTED HIGHWAY	1077 x 1.1 = 1185sq.m
TOTAL AREA =	2592 x 1.1 = 2851sq.m

PAVED AREAS TO REAR AND SIDES OF PROPOSED PROPERTIES TO BE LAID TO FALL AND BE FREE DRAINING TO ADJACENT LANDSCAPED AREAS



C	27/05/26	JSD	LAYOUT AND AREAS UPDATED.
B	16/02/26	JSD	LAYOUT AND AREAS UPDATED.
A	05/01/26	JSD	LAYOUT AND AREAS UPDATED.
REV.	DATE	DRN	DESCRIPTION

PURPOSE OF ISSUE	INFORMATION
------------------	-------------

CLIENT	EDGEFOLD HOMES
PROJECT	SPRINGSIDE ROAD WALMERSLEY BURY
TITLE	STORMWATER DRAINAGE SCHEME

JOB No.		DRAWING No.		REVISION	
J292		/ 102		C	
DRAWN	CHECKED	SCALE	@ SHEET SIZE	DATE	
JSD	MD	1:250	A2	SEPT' 2025	
DRAWING NOT TO BE SCALED					

Email: info@DandDconsulting.co.uk
Web: www.DandDconsulting.co.uk

Tel:
07884 975243 (J.Dickinson)
07884 936577 (M.Davenport)

DandD

consulting engineers

D and D Consulting Engineers Ltd
Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DG

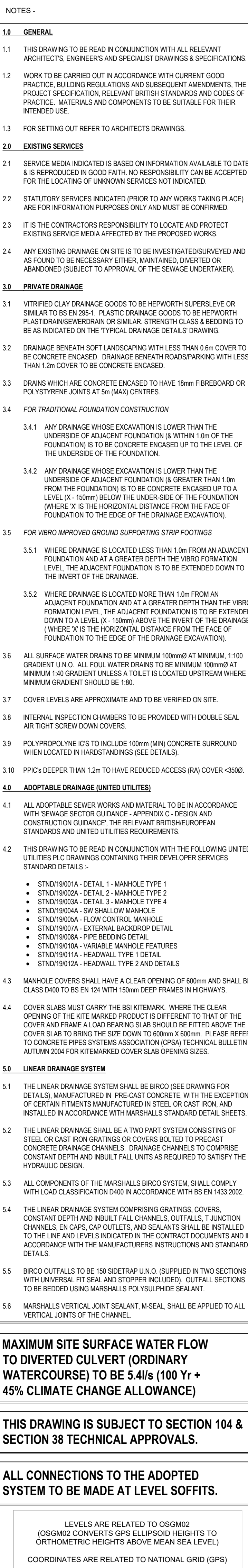
DRAINAGE RUNS (Existing Private/Public & Proposed Private)

EX 1500/90	Existing Stormwater Drainage	Grubbed/Grouted Up
EX 1500/90	Existing Foulwater Sewer	Grubbed/Grouted Up
EX 1500/90	Existing Combined Sewer	Grubbed/Grouted Up
Pipe Diameter/Gradient		
1500/90	NEW Stormwater Drainage	Concrete encasement
1500/75	NEW Foul Drainage	Concrete encasement
1500/75	NEW Combined Drainage	Concrete encasement
1500/75	NEW Filter Drainage	Concrete encasement

DRAINED AREAS:	
CONNECTING INTO 1.000 (u/s MH S7)	186 x 1.1 = 205 sq.m
CONNECTING INTO 1.001 (u/s MH S6)	1774 x 1.1 = 1951 sq.m
CONNECTING INTO 1.002 (u/s MH S5)	636 x 1.1 = 700 sq.m
TOTAL AREA =	2596 x 1.1 = 2856 sq.m

MANHOLES & INSPECTION CHAMBERS

F#	S#	C#	F=Foulwater, S=Stormwater, C=Combined S(CP)= Stormwater Catchpit
BD	BD	BD	CONCRETE MANHOLE RINGS (Type B or E) - BD indicates 'Back Drop'
			RECTANGULAR BRICK OR CONCRETE MANHOLES (Type C or D)
			POLYPROPYLENE INSPECTION CHAMBER (PPIC) or REDUCED ACCESS (RA PPIC)
			MINI ACCESS CHAMBER (MINI AC)



ACCESS FITTINGS/CONNECTIONS

SEWAGEWATER	RW = RAWWATER PIPE (AKO) RO = ROAD GULLY YD = YARD GULLY IS = ISSUING PIPE L = LINEAR DRAINAGE S = SINK	FOLLOWWATER	FG = FLOOR GULLY BG = BACKINLET GULLY SP = SLOE PIPE SQ = SOLI USE PIPE WO = WASTE OUTLET
-------------	--	-------------	---

(SP, RW, IS) INDICATES INTENT, R/O/DABLE ARE TO BE PROVIDED

DRAINAGE RUNS (Existing Private/Public & Proposed Private)

EX 10007R
Existing Stormwater Drainage
Undergrounded Up

EX 10007R
Existing Combined Sewer
Undergrounded Up

Point Diameter/Gradient
150/300
New Stormwater Drainage
Concrete encasement

100/300
New Fire Damage
Concrete encasement

100/300
New Combined Drainage
Concrete encasement

100/300
New Fire Damage
Concrete encasement

MANHOLES & INSPECTION CHAMBERS

Legend: B = Fire/Follower, S = Stormwater, C = Combined, F = Concrete Stormwater Catchpit

CONCRETE MANHOLE RINGS (Type B or C) - 60 inch x 60 inch

RECTANGULAR BRICK OR CONCRETE MANHOLES (Type C or D)

POLYURETHANE INSPECTION CHAMBER (PVC) or REDUCED ACCESS (RM-PC)

MINI ACCESS CHAMBER (MINI AC)

GENERAL

133.50

PROPOSED LEVELS

PROPOSED HANDS/STANDING GRADIENTS

SLOPE CHANGE (W/ RIDGE, VALLEY OR FOLD)

- | | |
|----|---|
| 10 | GENERAL |
| 11 | THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT REGULATIONS, ENGINEERS AND SPECIFIC DRAWINGS & SPECIFICATIONS |
| 12 | WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT CODES OF PRACTICE AND STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 13 | FOR SETTING OUT REFER TO ARCHITECTS DRAWINGS |
| 14 | EXISTING SERVICES |
| 15 | SERVICE MEDIA INDICATED IS BASED ON INFORMATION AVAILABLE TO DATE & IS NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 16 | STATIONARY SERVICES INDICATED (PRIOR TO ANY WORKS TAKEN PLACE) ARE FOR INFORMATION PURPOSES ONLY AND MUST BE CONFIRMED |
| 17 | IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT EXISTING SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 18 | ANY EXISTING DRAINAGE ON SITE IS TO BE INVESTIGATED, DISRUPTED AND AS NECESSARY EITHER REINSTATED, OVERLAIN OR REMOVED AND REAPPROPRIATED |
| 19 | PRIVATE DRAINAGE |
| 20 | VERIFIED CLAY DRAINAGE COVERS TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. PLASTIC DRAINAGE COVERS TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 21 | DRAINAGE BENEATH SLOP & LANDSCAPED WALKWAYS LESS THAN 6m COVER TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 22 | DRAINS WHICH ARE CONCRETE ENCHARGES TO HAVE 15mm FIBRE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 23 | FOR TRADITIONAL FOUNDATION CONSTRUCTION |
| 24 | ANY DRAINAGE WHICH EXCAVATION IS LOWER THAN THE UNDERPOSE OF ADEQUANT FOUNDATION & WITHIN 150mm OF THE EXISTING FOUNDATION TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 25 | ANY DRAINAGE WHICH EXCAVATION IS LOWER THAN THE UNDERPOSE OF ADEQUANT FOUNDATION & GREATER THAN 150mm OF THE EXISTING FOUNDATION TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 26 | ANY DRAINAGE WHICH EXCAVATION IS LOWER THAN THE UNDERPOSE OF ADEQUANT FOUNDATION & GREATER THAN 150mm OF THE EXISTING FOUNDATION TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 27 | FOR IMPROVED GROUND SUPPORTING STRUT FOOTINGS |
| 28 | WHERE DRAINAGE IS LOCATED LESS THAN 150mm FROM AN ADEQUANT FOUNDATION TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 29 | WHERE DRAINAGE IS LOCATED MORE THAN 150mm FROM AN ADEQUANT FOUNDATION TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 30 | ANY DRAINAGE FOUNDATION TO BE GREATER DEPTH THAN THE VIBRI REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 31 | ANY DRAINAGE FOUNDATION TO BE GREATER DEPTH THAN THE VIBRI REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 32 | ANY DRAINAGE FOUNDATION TO BE GREATER DEPTH THAN THE VIBRI REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 33 | ANY DRAINAGE FOUNDATION TO BE GREATER DEPTH THAN THE VIBRI REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 34 | ANY DRAINAGE FOUNDATION TO BE GREATER DEPTH THAN THE VIBRI REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 35 | COVER LIES ARE APPROPRIATE AND TO BE REINFORCED SURFISSE/LEAF OR SIMILAR BS EN 29611. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 36 | INTERNAL NIPPLES APPROXIMATE AND TO BE PROVIDED WITH DOUBLE SEAL AIR TIGHT SCREEN COVERINGS |
| 37 | POLYPROPYLENE CTS TO INCLUDE 100mm x 100mm x 10mm SUBSOIL SURROUND WHEN LOCATED IN HARDSTANDINGS (SEE DETAILS) |
| 38 | PICPS DELETED IN 1/20m HAD REDUCED ACCESS (SEE COVER-0000) |
| 39 | ADAPTABLE DRAINAGE (UNITED STATES) |
| 40 | ALL ADAPTABLE SEWER WORKS AND MATERIALS TO BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS: (SEE DETAILS) DESIGN AND CONSTRUCTION GUIDANCE: THE RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE AND STANDARDS AND COMPONENTS TO BE SUBMITTED FOR THEIR INTERPRETATION |
| 41 | THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING UNITED STATES PIPES DRAWINGS CONTAINING THEIR DEVELOPER SPECIFICATIONS STANDARD DETAILS: |
| 42 | • STD/NO187A-1/2" - MANHOLE TYPE 1 |
| 43 | • STD/NO187A-2" - MANHOLE TYPE 2 |
| 44 | • STD/NO187A-3" - MANHOLE TYPE 3 |
| 45 | • STD/NO187A-4" - MANHOLE TYPE 4 |
| 46 | • STD/NO187A-5" - MANHOLE TYPE 5 |
| 47 | • STD/NO187A-6" - MANHOLE TYPE 6 |
| 48 | • STD/NO187A-7" - MANHOLE TYPE 7 |
| 49 | • STD/NO187A-8" - MANHOLE TYPE 8 |
| 50 | • STD/NO187A-9" - MANHOLE TYPE 9 |
| 51 | • STD/NO187A-10" - MANHOLE TYPE 10 |
| 52 | • STD/NO187A-11" - MANHOLE TYPE 11 |
| 53 | • STD/NO187A-12" - MANHOLE TYPE 12 |
| 54 | • STD/NO187A-13" - MANHOLE TYPE 13 |
| 55 | • STD/NO187A-14" - MANHOLE TYPE 14 |
| 56 | • STD/NO187A-15" - MANHOLE TYPE 15 |
| 57 | • STD/NO187A-16" - MANHOLE TYPE 16 |
| 58 | • STD/NO187A-17" - MANHOLE TYPE 17 |
| 59 | • STD/NO187A-18" - MANHOLE TYPE 18 |
| 60 | • STD/NO187A-19" - MANHOLE TYPE 19 |
| 61 | • STD/NO187A-20" - MANHOLE TYPE 20 |
| 62 | • STD/NO187A-21" - MANHOLE TYPE 21 |
| 63 | • STD/NO187A-22" - MANHOLE TYPE 22 |
| 64 | • STD/NO187A-23" - MANHOLE TYPE 23 |
| 65 | • STD/NO187A-24" - MANHOLE TYPE 24 |
| 66 | • STD/NO187A-25" - MANHOLE TYPE 25 |
| 67 | • STD/NO187A-26" - MANHOLE TYPE 26 |
| 68 | • STD/NO187A-27" - MANHOLE TYPE 27 |
| 69 | • STD/NO187A-28" - MANHOLE TYPE 28 |
| 70 | • STD/NO187A-29" - MANHOLE TYPE 29 |
| 71 | • STD/NO187A-30" - MANHOLE TYPE 30 |
| 72 | • STD/NO187A-31" - MANHOLE TYPE 31 |
| 73 | • STD/NO187A-32" - MANHOLE TYPE 32 |
| 74 | • STD/NO187A-33" - MANHOLE TYPE 33 |
| 75 | • STD/NO187A-34" - MANHOLE TYPE 34 |
| 76 | • STD/NO187A-35" - MANHOLE TYPE 35 |
| 77 | • STD/NO187A-36" - MANHOLE TYPE 36 |
| 78 | • STD/NO187A-37" - MANHOLE TYPE 37 |
| 79 | • STD/NO187A-38" - MANHOLE TYPE 38 |
| 80 | • STD/NO187A-39" - MANHOLE TYPE 39 |
| 81 | • STD/NO187A-40" - MANHOLE TYPE 40 |
| 82 | • STD/NO187A-41" - MANHOLE TYPE 41 |
| 83 | • STD/NO187A-42" - MANHOLE TYPE 42 |
| 84 | • STD/NO187A-43" - MANHOLE TYPE 43 |
| | |

**MAXIMUM SITE SURFACE WATER FLOW
TO DIVERTED CULVERT (ORDINARY
WATERCOURSE) TO BE 5.4l/s (100 Yr +
45% CLIMATE CHANGE ALLOWANCE)**

**THIS DRAWING IS SUBJECT TO SECTION 104 &
SECTION 38 TECHNICAL APPROVALS.**

**ALL CONNECTIONS TO THE ADOPTED
SYSTEM TO BE MADE AT LEVEL SOFFITS.**

LEVELS ARE RELATED TO OSGM02
(OSGM02 CONVERTS GPS ELLIPSOID HEIGHTS TO
ORTHOMETRIC HEIGHTS ABOVE MEAN SEA LEVEL)

COORDINATES ARE RELATED TO NATIONAL GRID (GPS)

E	27/05/26	JSD	LAYOUT AND DRAINAGE UPDATED.
D	17/02/26	JSD	LAYOUT AND DRAINAGE UPDATED.
C	05/01/26	JSD	LAYOUT UPDATED AND PLOT DRAINAGE ADDED.
B	30/10/25	JSD	LAYOUT UPDATED (WATER BUTTS ADDED).
A	09/10/25	JSD	FOUL DRAINAGE/IRISING MAIN UPDATED.
REV.	DATE	DRN	DESCRIPTION

PURPOSE OF ISSUE: PRELIMINARY

CLIENT	EDGEFOLD HOMES
PROJECT	SPRINGSIDE ROAD WALMERSLEY BURY

EXTERNAL WORKS G.A.
SURFACE WATER & FOUL DRAINAGE

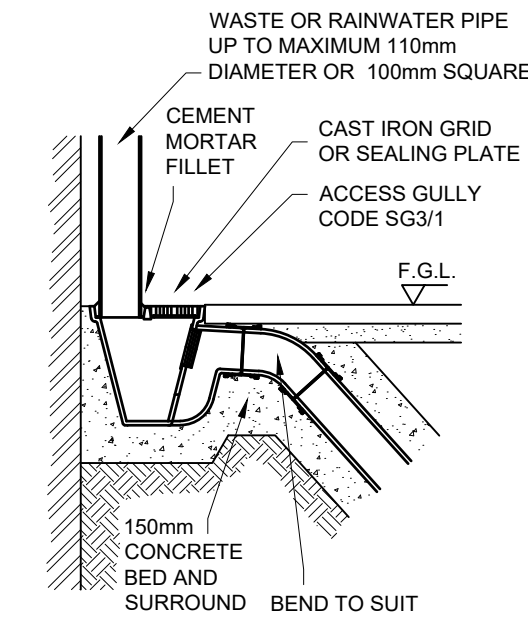
JOB No.		DRAWING No.		REVISION
J292		/ 103		E
DRAWN	CHECKED	SCALE	@ SHEET SIZE	DATE
JSD	MD	1:200	A0	SEPT 2025

D and D
consulting engineers

Email: info@DandDconsulting.co.uk
Web: www.DandDconsulting.co.uk

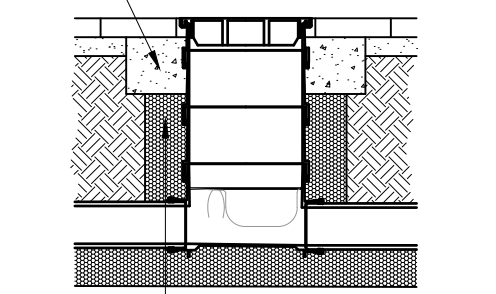
Tel:
07884 975243 (J.Dickinson)
07884 936577 (M.Davenport)

D and D Consulting Engineers Ltd
Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DN

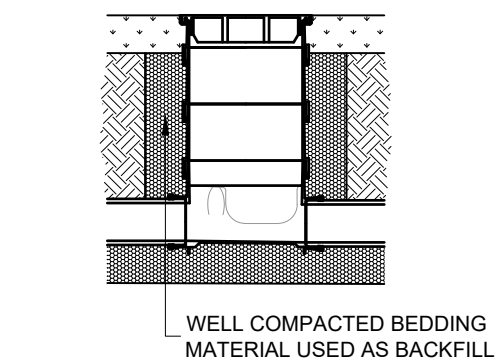


ACCESS GULLY CONNECTION
SCALE - 1:20

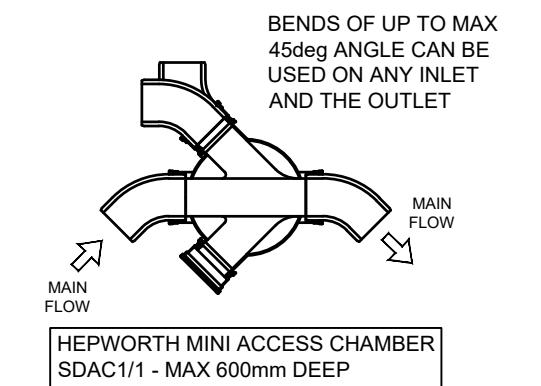
150mm x 150mm DEEP INSITU CONCRETE PLINTH TO SUPPORT FINISH (SEE NOTE 1)



MINI ACCESS CHAMBER (PAVED AREAS)
SCALE - 1:20



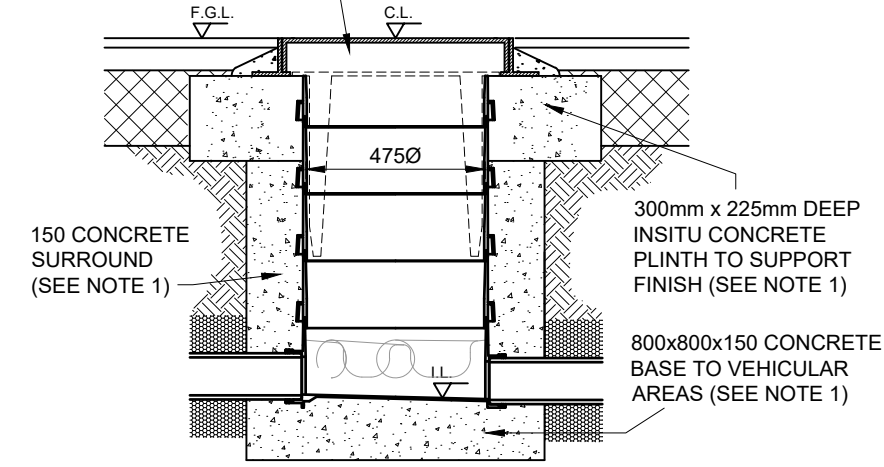
MINI ACCESS CHAMBER (SOFT LANDSCAPED AREAS)
SCALE - 1:20



WHERE CHAMBERS ARE FITTED ON 90° CORNERS ALWAYS USE THE MAIN CHANNEL BY FITTING A 45deg BEND ON INLET & OUTLET.

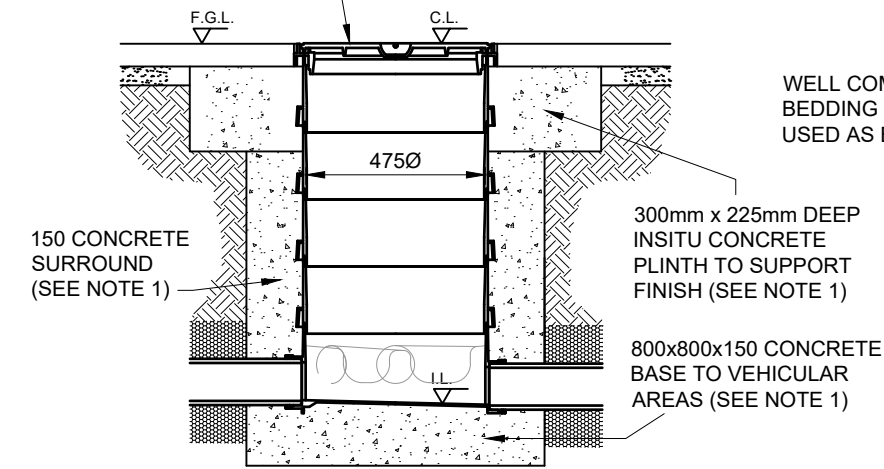
PLAN ON MINI ACCESS CHAMBER
SCALE - 1:20

M.H. COVER & FRAME (TO BS EN124) TO PROVIDE 600x600 CLEAR OPENING, BEDDED AND HAUNCHED WITH 1:3 CEMENT:SAND MORTAR. COVER TO BE CLASS C250 (SUITABLE FOR USE IN CAR PARKS, FORECOURTS & AREAS WITH SLOW MOVING TRAFFIC). FOR REDUCED ACCESS (RA) PPIC's A SEPARATE REDUCED ACCESS COVER (OR OTHER MEANS OF RESTRICTED ENTRY) IS ALSO TO BE PROVIDED AT THE LOWER LEVEL.

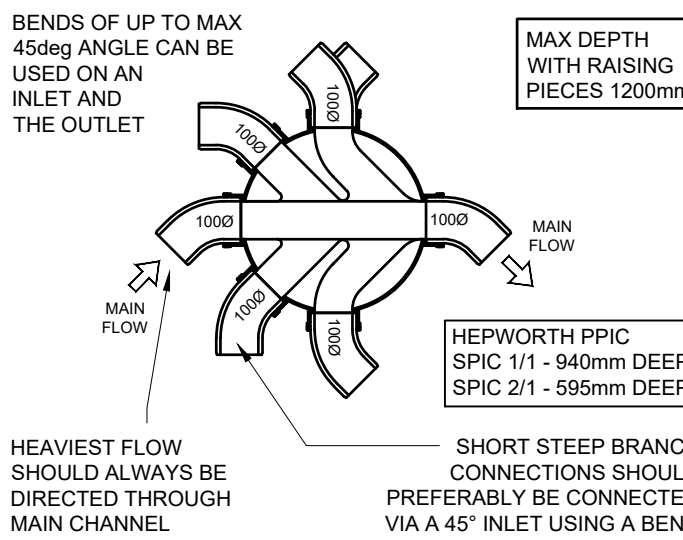


POLYPROPYLENE INSPECTION CHAMBER LOCATED IN 'SHARED ACCESS' AREAS (ACCESSABLE TO BIN WAGONS ETC)
SCALE - 1:20

ROUND DUCTILE IRON COVER AND FRAME TO BS EN 124 FOOTPATHS & PAVED AREAS & CAR PARKING - CLASS B125



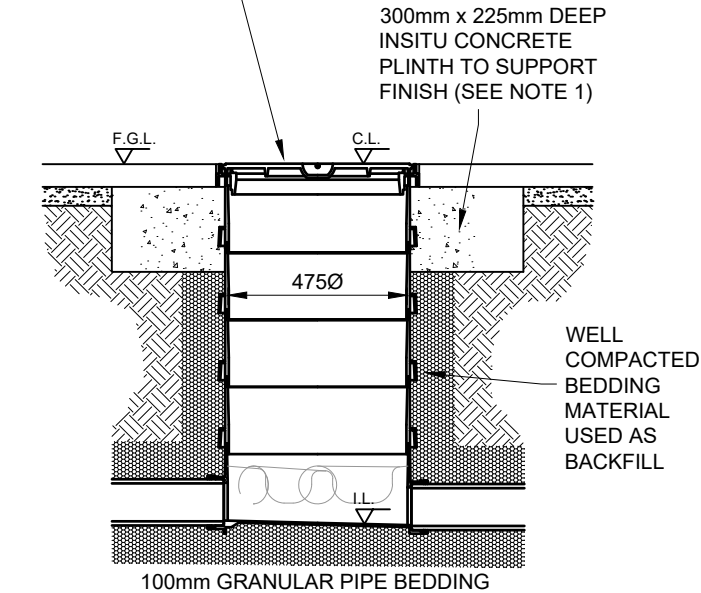
POLYPROPYLENE INSPECTION CHAMBER LOCATED IN PRIVATE DRIVEWAY AREAS (ACCESSABLE TO DOMESTIC VEHICLES)
SCALE - 1:20



WHERE CHAMBERS ARE FITTED ON 90° CORNERS ALWAYS USE THE MAIN CHANNEL BY FITTING A 45deg BEND ON INLET & OUTLET.

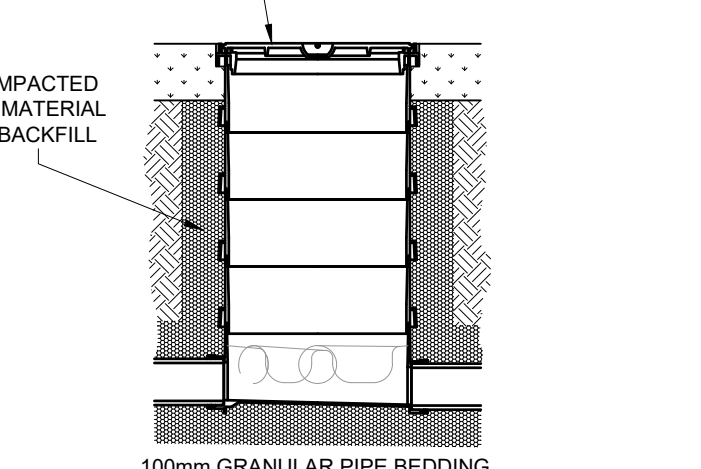
PLAN ON PREFORMED BENCHING TO POLYPROPYLENE INSPECTION CHAMBER
SCALE - 1:20

ROUND DUCTILE IRON COVER AND FRAME TO BS EN 124 FOOTPATHS & PAVED AREAS & CAR PARKING - CLASS B125

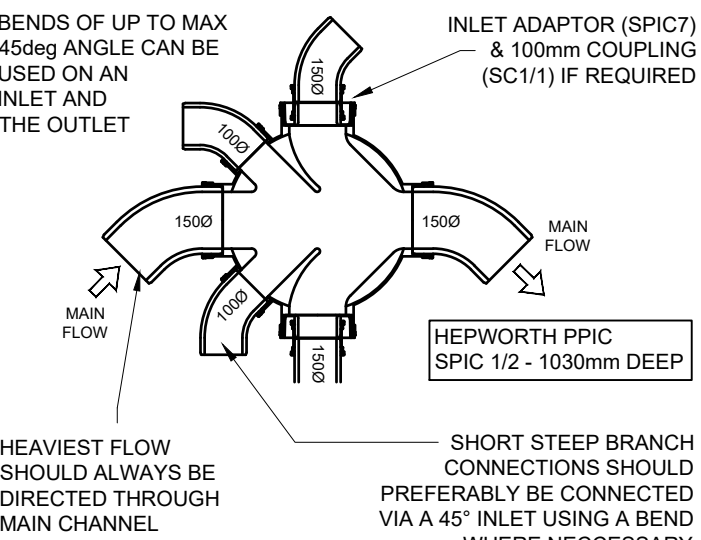


POLYPROPYLENE INSPECTION CHAMBER LOCATED IN HARD LANDSCAPED AREAS (NOT ACCESSABLE TO WHEELED VEHICLES)
SCALE - 1:20

ROUND DUCTILE IRON COVER AND FRAME SECURED WITH CLIPS PROVIDED.



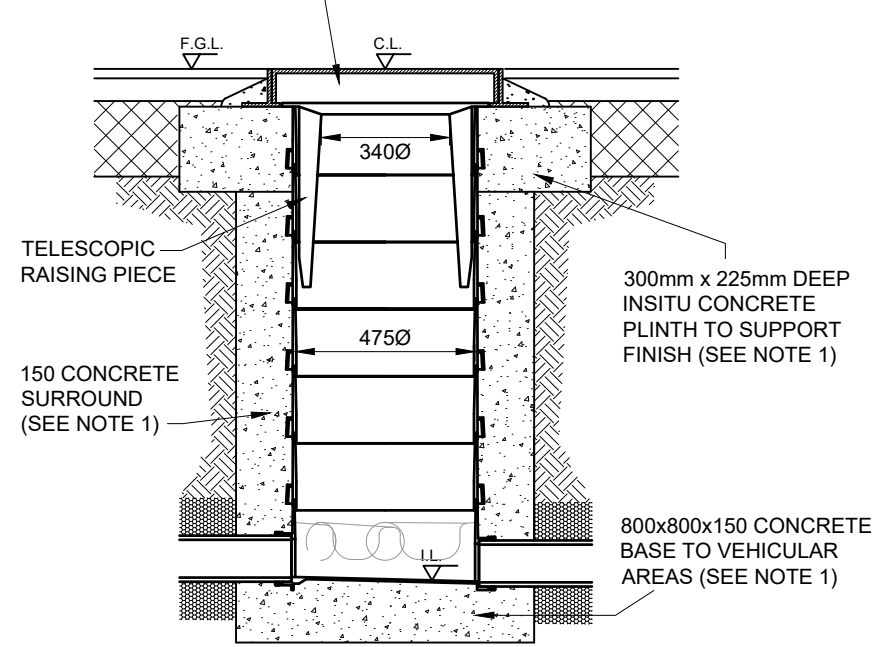
POLYPROPYLENE INSPECTION CHAMBER LOCATED IN SOFT LANDSCAPED AREAS
SCALE - 1:20



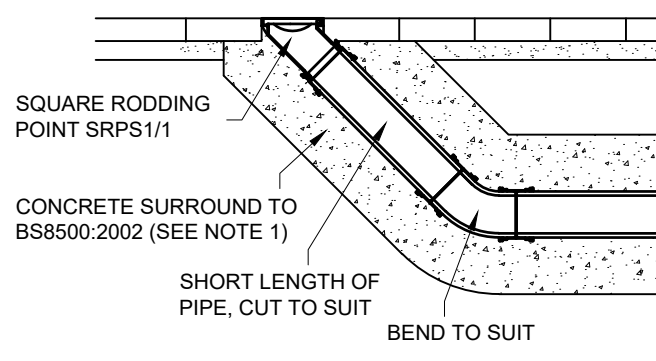
WHERE CHAMBERS ARE FITTED ON 90° CORNERS ALWAYS USE THE MAIN CHANNEL BY FITTING A 45deg BEND ON INLET & OUTLET.

PLAN ON PREFORMED BENCHING TO POLYPROPYLENE INSPECTION CHAMBER
SCALE - 1:20

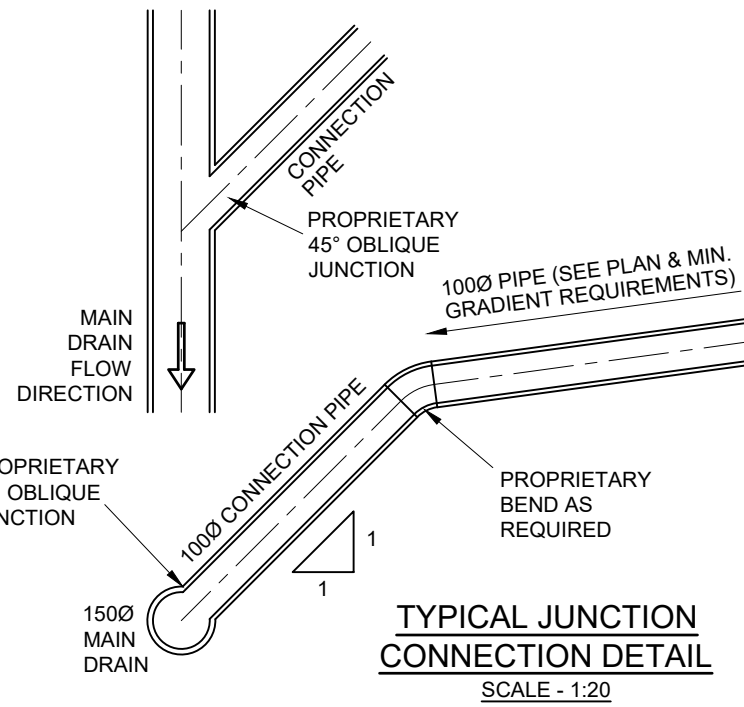
M.H. COVER & FRAME (TO BS EN124) TO PROVIDE 600x600 CLEAR OPENING. BEDDED AND HAUNCHED WITH 1:3 CEMENT:SAND MORTAR. COVER TO BE AS DETAILED IN MANHOLE SCHEDULE. FOR REDUCED ACCESS (RA) PPIC's A SEPARATE REDUCED ACCESS COVER (OR OTHER MEANS OF RESTRICTED ENTRY) IS ALSO TO BE PROVIDED AT THE LOWER LEVEL.



REDUCED ACCESS POLYPROPYLENE INSPECTION CHAMBER
SCALE - 1:20



DETAILS OF RODDING EYE (RE)
SCALE - 1:20



TYPICAL JUNCTION CONNECTION DETAIL
SCALE - 1:20

GULLY POT SIZE Ø450mm x 900mm DEEP (P1) OR Ø375mm x 750mm DEEP (P2)

VITRIFIED CLAY TO BS 65 OR PRECAST CONCRETE TO BS 5911 PART 230 OR INSITU CONCRETE GULLY. GULLY TO BE PROVIDED WITH RODDING EYE AND STOPPER

NOTES:

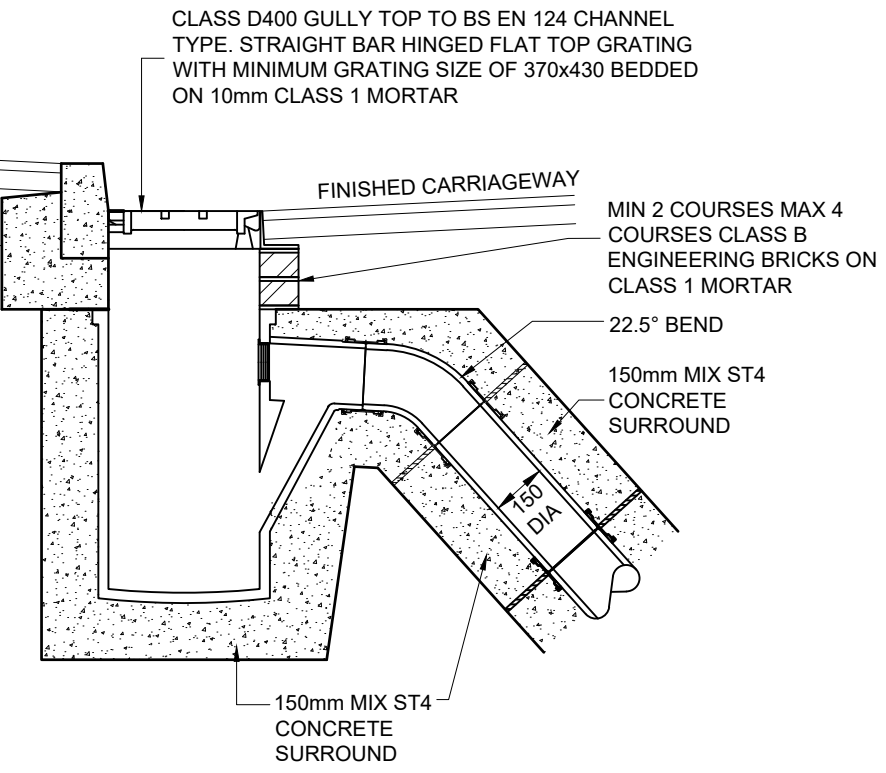
GULLY GRATING AND FRAME TO COMPLY WITH BS EN 124

BACKFILL TO GULLY CONNECTIONS BELOW FORMATION IN CARRIAGEWAYS SHALL BE TYPE 1 SUB-BASE MATERIAL. WHERE MECHANICAL COMPACTION IS IMPRACTICABLE THE BACKFILLING SHALL BE MIX ST4 CONCRETE

GULLY GRATING AND FRAME TO BE HINGED TYPE

INSITU GULLY TO BE SURROUNDED BY A MINIMUM OF 150mm GRADE ST4 CONCRETE

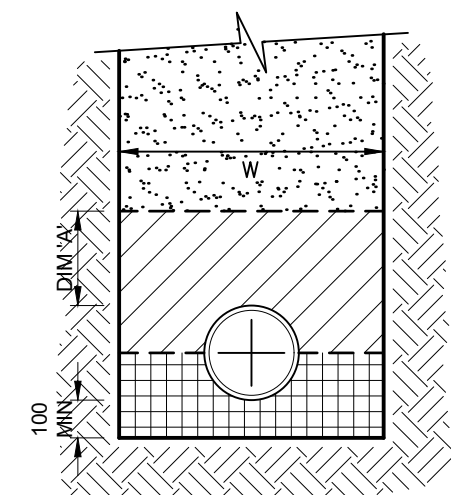
ROAD GULLY DETAIL
SCALE - 1:20



1.0 GENERAL

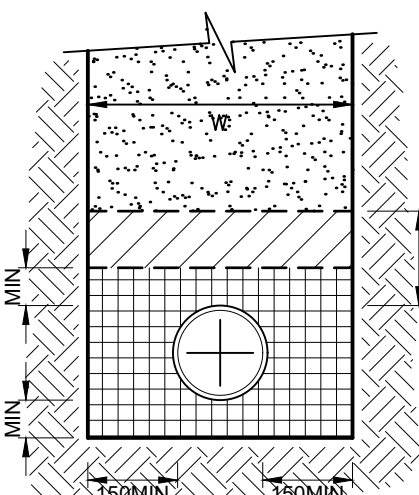
- 1.1 THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S & SPECIALIST'S DRAWINGS & SPECIFICATIONS.
- 1.2 WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT GOOD PRACTICE, BUILDING REGULATIONS AND SUBSEQUENT AMENDMENTS, THE PROJECT SPECIFICATION, RELEVANT BRITISH STANDARDS AND CODES OF PRACTICE. MATERIALS AND COMPONENTS TO BE SUITABLE FOR THEIR INTENDED USE.

CLASS 'B' HALF DEPTH GRANULAR SURROUND
a) LAY AND COMPACT TO A THICKNESS NOT LESS THAN 100mm OVER FULL WIDTH OF TRENCH. WHERE TRENCH BOTTOM IS UNEVEN DUE TO HARD SPOTS INCREASE DEPTH BY 100mm. LAY PIPES DIGGING SLIGHTLY INTO BED AND RESTING UNIFORMLY. ADJUST TO LINE AND GRADIENT.
b) LAY & COMPACT GRANULAR MATERIAL UNIFORMLY TO HALFWAY UP EACH SIDE OF PIPE.
c) BACKFILL WITH SELECTED CUSHION OF 'SELECTED FILL'. COMPACT BY HAND IN 100mm LAYERS TO 150mm (250mm FOR ADAPTABLE SEWERS) ABOVE CROWN OF PIPE.



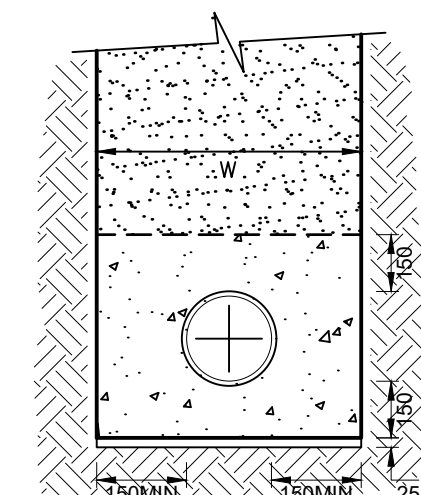
CLASS 'B' HALF DEPTH GRANULAR SURROUND FOR VITRIFIED CLAY PIPEWORK
COVER > 1200mm in ROADS/PARKING
COVER > 600mm in SOFT LANDSCAPING
SCALE - 1:20

CLASS 'S' GRANULAR SURROUND
a) LAY AND COMPACT TO A THICKNESS NOT LESS THAN 100mm OVER FULL WIDTH OF TRENCH. WHERE TRENCH BOTTOM IS UNEVEN DUE TO HARD SPOTS INCREASE DEPTH BY 100mm. LAY PIPES DIGGING SLIGHTLY INTO BED AND RESTING UNIFORMLY. ADJUST TO LINE AND GRADIENT.
b) LAY & COMPACT GRANULAR MATERIAL IN 100mm LAYERS TO 100mm ABOVE CROWN OF PIPE. SIDEFILL MATERIAL TO BE PLACED EVENLY ON BOTH SIDES OF PIPE TAKING CARE TO WORK THE MATERIAL UNDER THE LOWER QUADRANT OF THE PIPE (ENSURING THE PIPE IS NOT LIFTED). BOTH SIDES OF THE TRENCH SHOULD BE FILLED SIMULTANEOUSLY TO AVOID HORIZONTAL MOVEMENT OF THE PIPE.
c) BACKFILL WITH SELECTED CUSHION OF 'SELECTED FILL'. COMPACT BY HAND IN 100mm LAYERS TO 150mm (250mm FOR ADAPTABLE SEWERS) ABOVE CROWN OF PIPE.



CLASS 'S' GRANULAR SURROUND FOR PVC STRUCTURED PIPES
COVER > 1200mm in ROADS/PARKING
COVER > 600mm in SOFT LANDSCAPING
SCALE - 1:20

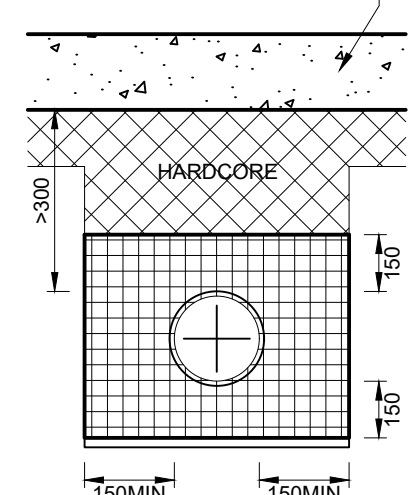
CLASS 'Z' CONCRETE SURROUND
a) FOR CONCRETE MIX SEE NOTE 2
b) LAY CONCRETE BLINDING, 25mm THICK OVER FULL WIDTH OF TRENCH & ALLOW TO SET.
c) LAY PIPES ON BLINDING ON FOLDING WEDGES OF COMPRESSIBLE BOARD TO GIVE MIN 150mm CLEARANCE UNDER THE PIPE.
d) FORM VERTICAL CONSTRUCTION JOINTS IN SURROUND AT FACE OF FLEXIBLE PIPE JOINTS AT MAX 5m c/c USING 18mm THICK COMPRESSIBLE BOARD PRECUT TO PROFILE OF PIPE. FILL ANY GAP BETWEEN SPIGOT AND SOCKET WITH RESILIENT MATERIAL TO PREVENT ENTRY OF CONCRETE.
e) AFTER INITIAL TESTING, PLACE AND COMPACT MORE CONCRETE FOR FULL WIDTH OF TRENCH TO ENCASE PIPE TO 150mm ABOVE CROWN.



CLASS 'Z' CONCRETE SURROUND
COVER > 1200mm in ROADS/PARKING
COVER > 600mm in SOFT LANDSCAPING
SCALE - 1:20

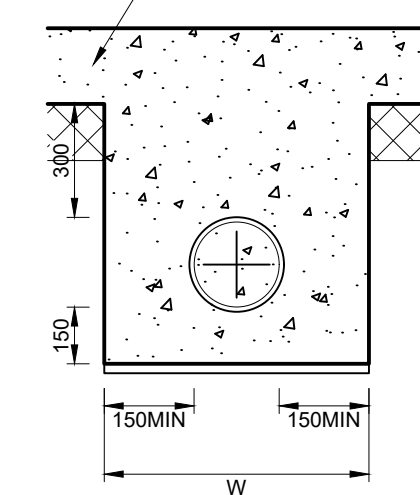
PIPE DIA.	WIDTH
150	600
225	700
300	750
375	1050
400	1100
450	1150
525	1200
600	1350
675	1450
750	1500
900	1900

DIM 'A'
MIN 250 (ADAPTABLE)
MIN 150 (GENERALLY)



PIPE BEDDING DETAIL BELOW SLAB
(WHERE MORE THAN 300mm COVER)
SCALE - 1:20

CLASS 'Y' CONCRETE SURROUND
a) WHERE CROWN OF PIPE IS LESS THAN 300mm BELOW UNDERSIDE OF SLAB, ENCASE PIPE IN CONCRETE OF SAME MIX AS SLAB AND CAST INTEGRALLY WITH SLAB. EXTEND LENGTH OF CONCRETE TO WITHIN 150mm OF NEAREST FLEXIBLE JOINT.
b) EXCAVATE TRENCH AFTER HARDWARE HAS BEEN LAID AND COMPACTED.
c) LAY CONCRETE BLINDING, 25mm THICK OVER FULL WIDTH OF TRENCH & ALLOW TO SET.
d) LAY PIPES ON BLINDING ON FOLDING WEDGES OF COMPRESSIBLE BOARD TO GIVE A MINIMUM 150mm CLEARANCE UNDER THE PIPE.



CLASS 'Y' CONCRETE SURROUND BELOW SLAB
(WHERE LESS THAN 300mm COVER)
SCALE - 1:20



GENERAL FILL MATERIALS
TRENCHES SHALL BE BACKFILLED WITH MATERIAL EXCAVATED FROM WITHIN THE SITE OR IMPORTED ON TO THE SITE WHICH MEETS THE REQUIREMENTS OF A CLASS 1, 2 OR 3 GENERAL FILL MATERIAL COMPLYING WITH OF THE 'SPECIFICATION FOR HIGHWAY WORK, SERIES 600, TABLE 6/1. MECHANICAL COMPACTION OF MAIN BACKFILL MATERIAL SHOULD NOT BE COMMENCED UNTIL THERE IS A TOTAL COVER DEPTH OF 300mm ABOVE THE CROWN OF PIPE.



SELECTED FILL (FILL SELECTED FROM EXCAVATED MATERIAL)
SELECTED FILL FROM EXCAVATED MATERIAL SHOULD BE READILY COMPACTABLE BY HAND AND FREE FROM TIMBER, FROZEN MATERIAL, VEGETABLE MATTER AND FOREIGN MATTER AND EXCLUDE HARD LUMPS OF CLAY RETAINED ON A 100mm SIEVE AND STONES RETAINED ON A 40mm SIEVE.



GRANULAR PIPE BEDDING PRIVATE PIPEWORK
FOR PIPE SIZE DN100 & DN150, GRANULAR SUPPORT TO COMPLY WITH THE REQUIREMENTS OF A MATERIAL OF DESIGNATION TYPE 4/10 TO BS EN 12620:2002 (i.e. 10mm SINGLE SIZED). FOR PIPE SIZE DN225 & DN300, GRANULAR SUPPORT TO COMPLY WITH THE REQUIREMENTS OF A MATERIAL OF DESIGNATION TYPE 4/20 TO BS EN 12620:2002 (i.e. THE MATERIAL SHOULD HAVE A PARTICLE SIZE THAT IS PREDOMINANTLY WITHIN THE RANGE OF 5 TO 20mm).
ADOPTED PIPEWORK
BEDDING AND SIDEFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF WATER INDUSTRY SPECIFICATION (WIS) 4-06-02 - 'SPECIFICATION FOR BEDDING AND SIDEFILL MATERIALS INCLUDING RECYCLED AGGREGATES FOR BURIED PIPELINES' (FEBRUARY 1994, INCORPORATING NOVEMBER 2008 AMMENDMENTS).

PIPE SIZE / STRENGTH CLASS / BEDDING
FOR EACH PIPE SIZE THE STRENGTH CLASS AND BEDDING/SIDEFILL (DEPENDANT ON COVER PROVIDED AND DESIGNATION OF SURFACING ie ROADS/PARKING, SOFT LANDSCAPING) SHOULD BE AS FOLLOWS -

CLAY PIPEWORK
VITRIFIED CLAY DRAINAGE GOODS TO BE HEPWORTH SUPERSLEVE OR SIMILAR APPROVED TO BS EN 295-1 (KITEMARKED).

PVC-U PIPEWORK
PVC-U DRAINAGE GOODS TO BE HEPWORTH PLASTIDRAIN (110 to 1600), HEPWORTH SEWERDRAIN (200 to 6300) OR SIMILAR APPROVED TO BS 4660:2000 AND BS EN 1401-1:1998.

SIZE:	DN 100	DN150	DN225	DN300
STRENGTH:	FN 40	FN 40	FN 45	FN 72
BEDDING:	CLASS 'B'	CLASS 'B'	CLASS 'B'	CLASS 'B'

A	27/05/26	JSD	TYPICAL JUNCTION DETAIL ADDED.
REV	DATE	DRN	DESCRIPTION

PURPOSE OF ISSUE	PRELIMINARY
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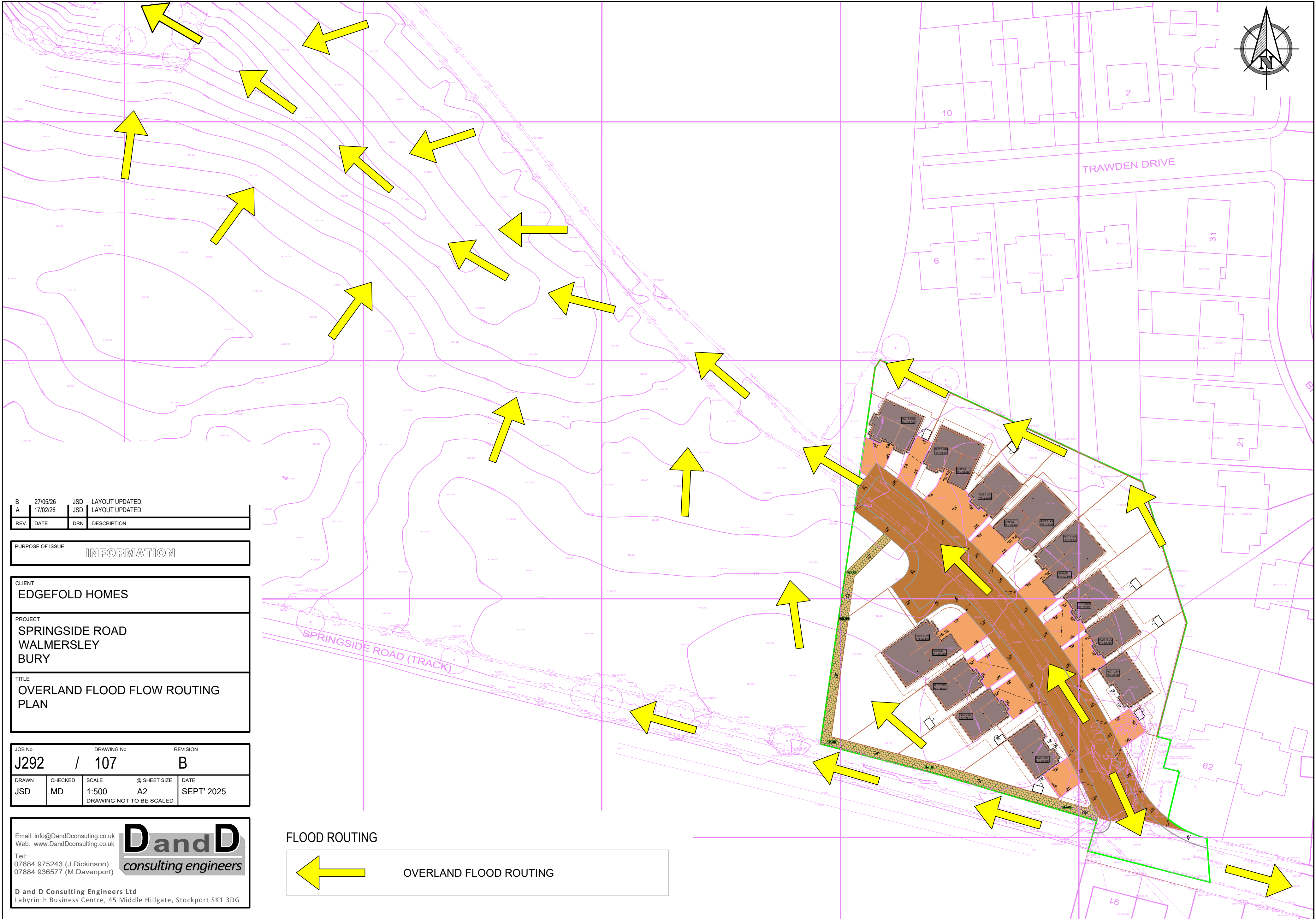
CLIENT	EDGEFOLD HOMES
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PROJECT	SPRINGSIDE ROAD WALMERSLEY BURY
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TITLE	TYPICAL DRAINAGE DETAILS (PRIVATE)
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JOB No.	DRAWING No.	REVISION
J292	/ 106	A
DRAWN	CHECKED	@ SHEET SIZE
JSD	MD	AS NOTED A1
DATE	DRAWING NOT TO BE SCALED	
SEPT' 2025		

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Web: www.DandDConsulting.co.uk
Tel: 07884 975243 (J.Dickinson)
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DandD consulting engineers
D and D Consulting Engineers Ltd
Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DG



B	27/05/26	JSD	LAYOUT UPDATED.
A	17/02/26	JSD	LAYOUT UPDATED.
REV.	DATE	DRN	DESCRIPTION

PURPOSE OF ISSUE INFORMATION

CLIENT
EDGEFOLD HOMES

PROJECT
SPRINGSIDE ROAD
WALMERSLEY
BURY

TITLE
OVERLAND FLOOD FLOW ROUTING
PLAN

JOB No.	DRAWING No.	REVISION
J292	/ 107	B
DRAWN	CHECKED	SCALE
JSD	MD	1:500
		@ SHEET SIZE A2
		DATE
		SEPT' 2025
		DRAWING NOT TO BE SCALED

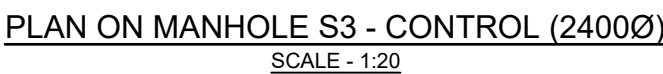
Email: info@DandDconsulting.co.uk
Web: www.DandDconsulting.co.uk
Tel: 07884 975243 (J.Dickinson)
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Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DG

FLOOD ROUTING

OVERLAND FLOOD ROUTING



BENCHING DETAILS FOR OVERSIZED SEWERS
 TO BE IN ACCORDANCE WITH UNITED UTILITIES
 STANDARD DRAWING NUMBERS STND/19/002
 REV A, 004 REV A & 010 REV A.

D and D Consulting Engineers Ltd
Labyrinth Business Centre, 45 Middle Hillgate, Stockport SK1 3DG