

Project : **Heol y Glyn**Element : **Drainage - Surface Water - To Ordinary Watercourse****CALCULATION SHEET****Scope**

Enzo Homes are proposing to construct 80 dwellings on land off Heol y Glyn, Glynneath

Principles for discharging to ordinary watercourse have already been established through extant planning permission.

A greenfield discharge rate of 20l/s/ha has been agreed with NPTCBC to be applied on a pro-rata basis to total hardsranding contributing areas.

The proposed surface water system is to be retained under private ownership and not offered for adoption.

The proposed surface water drainage system is to be split into two separate networks;

SYSTEM 1: Plots east of the main spine road
 Contributing Area: 6520m²
 Restricted Discharge Rate: 13.0l/s

SYSTEM 2: Plots west of the main spine road
 Contributing Area: 7585m²
 Restricted Discharge Rate: 15.2l/s

Design Parameters

Site Location: 288580, 206957

M5 - 60: 20.4mm

Ratio, R: 0.20

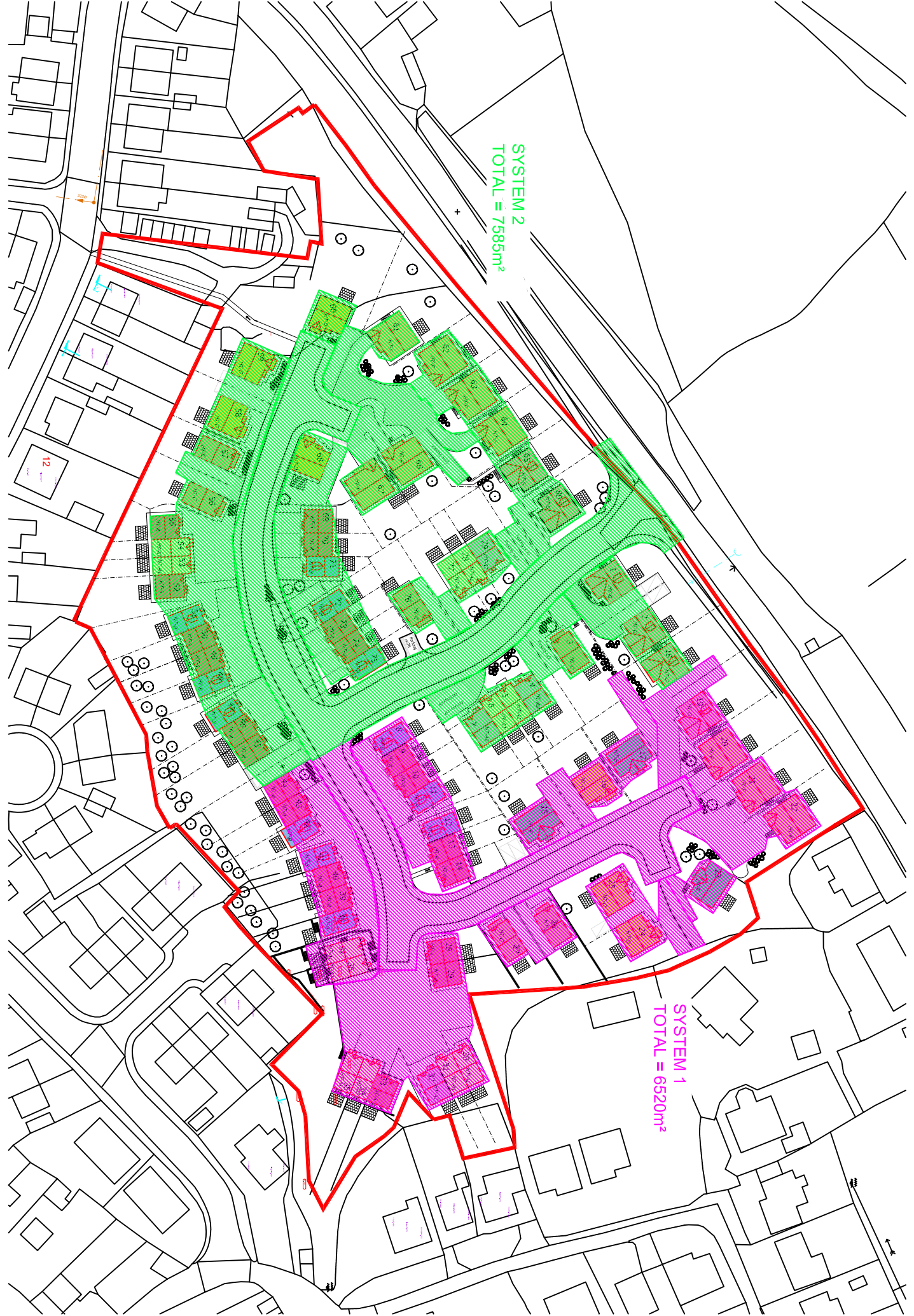
Assumed 100% run-off from impermeable contributing areas

Software, Procedure & Design Criteria

- i) For a 1 in 100 year return period - flows to be retained on site and within storage and upstream network, wholly below ground, for a critical storm duration, plus 30% allowance for climate change.

SYSTEM 1
TOTAL = 6520m²

SYSTEM 2
TOTAL = 7585m²



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5-6 Deryn Court Wharfedale Road Pentwyn CF23 7HB	9610 SYS1 R0	
Date 30/07/2020 File CDGA-9610-CALCS-SWS-SYS...	Designed by LKJ Checked by	
Innovyze	Network 2020.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	63.300	4.600	13.8	0.313	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	13.500	0.725	18.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	22.600	1.200	18.8	0.111	5.00	0.0	0.600	o	225	Pipe/Conduit	
2.001	15.200	0.725	21.0	0.111	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	14.700	1.550	9.5	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
3.000	20.300	0.150	135.3	0.119	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	2.500	0.060	41.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	0.00	5.30	73.550	0.313	0.0	0.0	0.0	3.55	141.0	0.0
1.001	0.00	5.37	68.950	0.313	0.0	0.0	0.0	3.05	121.1	0.0
2.000	0.00	5.12	70.150	0.111	0.0	0.0	0.0	3.03	120.5	0.0
2.001	0.00	5.21	68.950	0.222	0.0	0.0	0.0	2.87	114.1	0.0
1.002	0.00	5.42	68.150	0.535	0.0	0.0	0.0	5.13	362.9	0.0
3.000	0.00	5.30	66.750	0.119	0.0	0.0	0.0	1.12	44.6	0.0
1.003	0.00	5.44	66.600	0.654	0.0	0.0	0.0	2.03	80.8	0.0

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: FLOW CONTROL, DS/PN: 1.003, Volume (m³): 4.8

Unit Reference	MD-SHE-0158-1300-1400-1300
Design Head (m)	1.400
Design Flow (l/s)	13.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	158
Invert Level (m)	66.600
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.400	13.0
Flush-Flo™	0.418	13.0
Kick-Flo®	0.902	10.5
Mean Flow over Head Range	-	11.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	5.7	1.200	12.0	3.000	18.6	7.000	27.9
0.200	11.9	1.400	13.0	3.500	20.0	7.500	28.9
0.300	12.7	1.600	13.8	4.000	21.4	8.000	29.8
0.400	13.0	1.800	14.6	4.500	22.6	8.500	30.7
0.500	12.9	2.000	15.3	5.000	23.8	9.000	31.5
0.600	12.7	2.200	16.1	5.500	24.9	9.500	32.4
0.800	11.7	2.400	16.7	6.000	25.9		
1.000	11.1	2.600	17.4	6.500	27.0		

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Offline Controls for Storm

Pipe Manhole: FLOW CONTROL, DS/PN: 1.003, Loop to PN: None

Diameter (m)	0.225	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	150.0	Coefficient of Contraction	0.600
Length (m)	5.000	Upstream Invert Level (m)	67.950

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Storage Structures for Storm

Cellular Storage Manhole: FLOW CONTROL, DS/PN: 1.003

Invert Level (m) 66.600 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	308.0	308.0	1.401	0.0	408.8
1.400	308.0	408.8			

9610

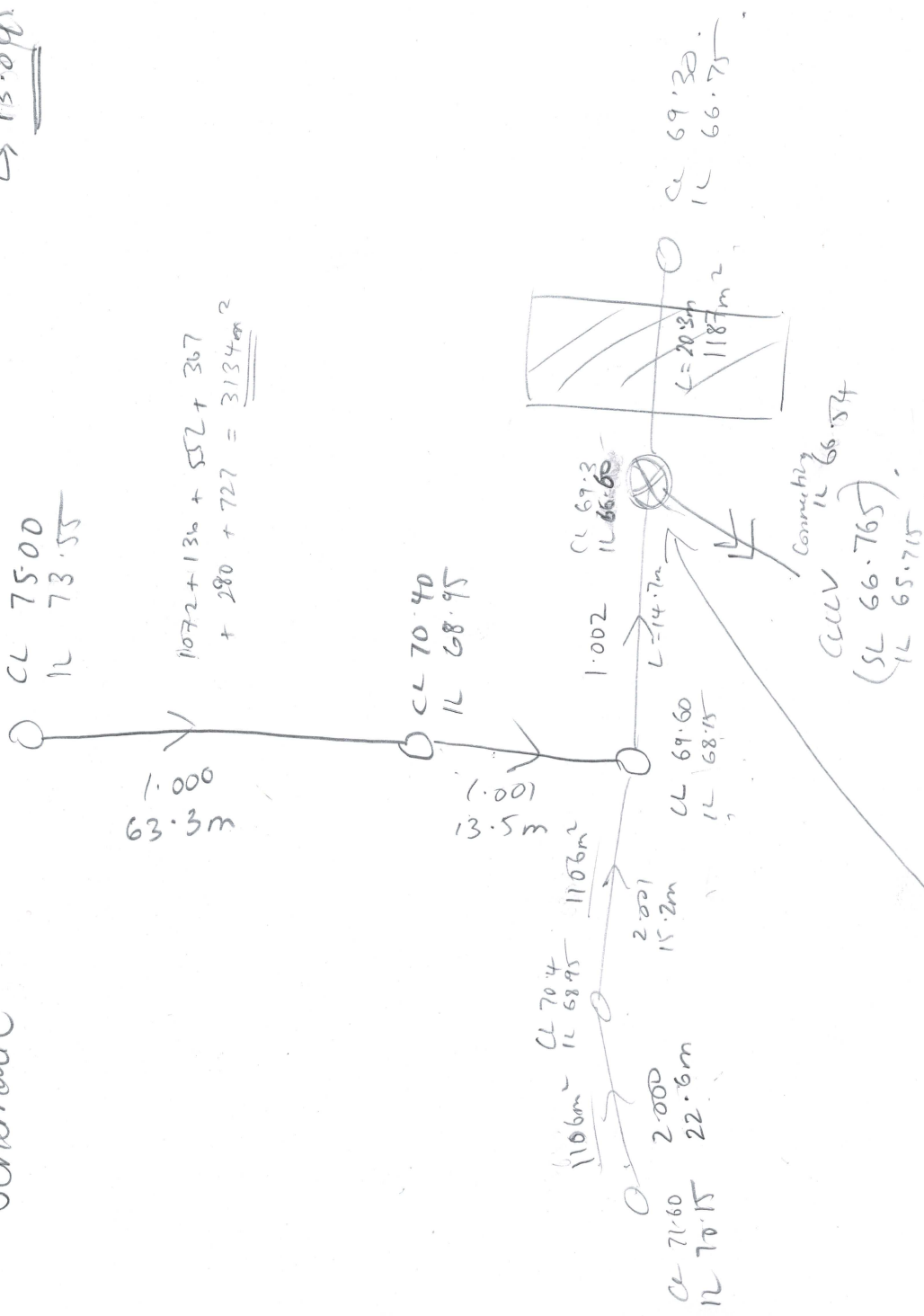
System 1

Schematic

$$\Sigma A_{\text{rect}} = 6526 \text{ m}^2$$

2011/1a

$\rightarrow \underline{\underline{13.04s.}}$



[Contest Fee 68.00]

From Center
max of head 1148 (67.95)
MD - SME - 0158 - 1300 - 1400 - 1300
o/From @ 67.95
(132157)

max WL
Q100 + 30% ce
67.911.

Storage box 'D'
Muss Area 308m² 1' 4m DEEP

1050p Cull A Grad 1:66

Technical Specification

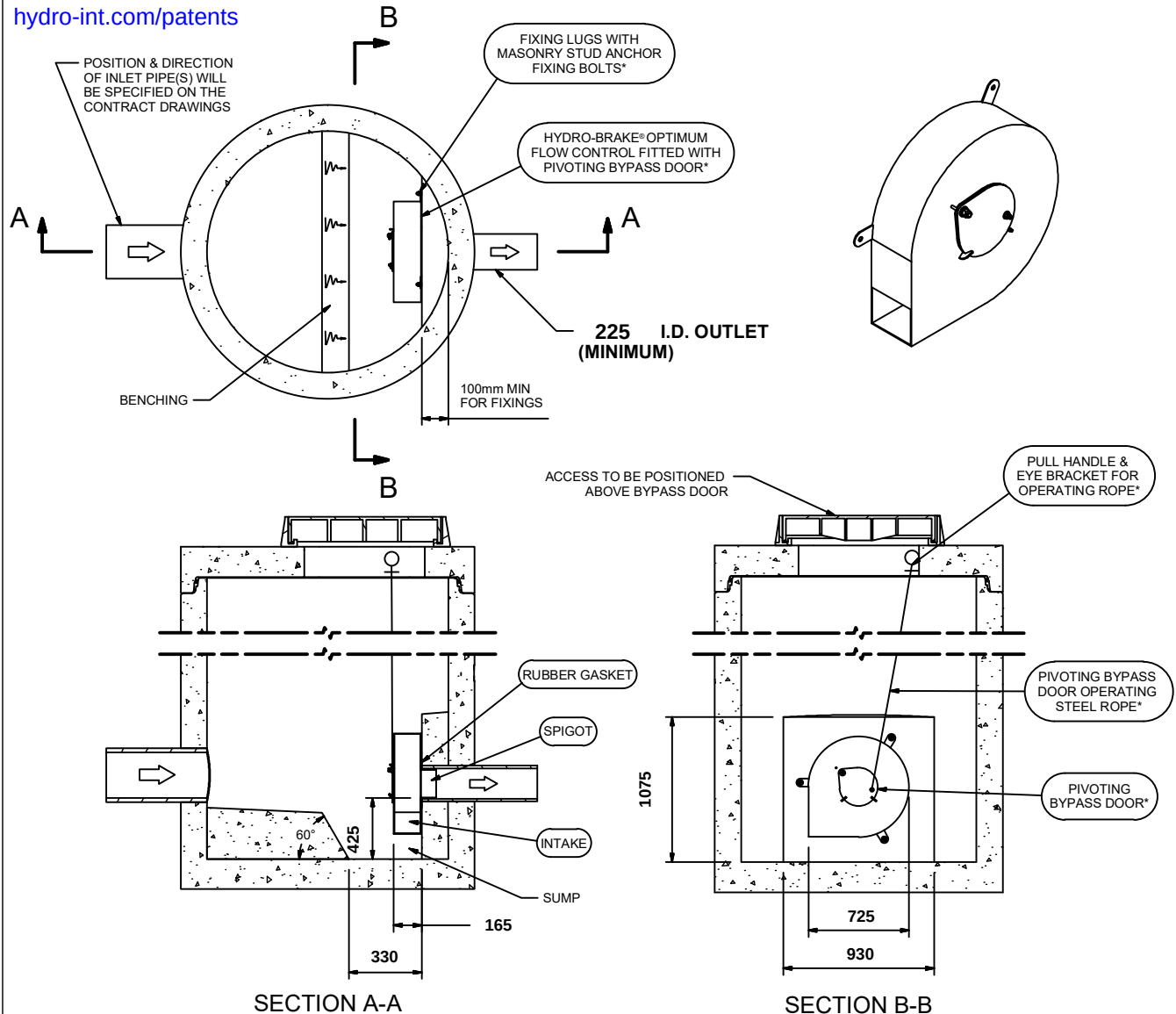
Control Point	Head (m)	Flow (l/s)
Primary Design	1.400	13.000
Flush-Flo™	0.418	12.968
Kick-Flo®	0.902	10.530
Mean Flow		11.253

Hydro-Brake® Optimum Flow Control including:

- 3 mm grade 304L stainless steel
- Integral stainless steel pivoting by-pass door allowing clear line of sight through to outlet, c/w stainless steel operating rope
- Beed blasted finish to maximise corrosion resistance
- Stainless steel fixings
- Rubber gasket to seal outlet



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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® FLOW CONTROL & HYDRO-BRAKE® OPTIMUM FLOW CONTROL ARE REGISTERED TRADEMARKS 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-0158-1300-1400-1300 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®

DATE 7/31/2020 6:53 AM

SITE

DESIGNER Laura Jones

REF 9610 - System 1

SHE-0158-1300-1400-1300

Hydro-Brake® Optimum

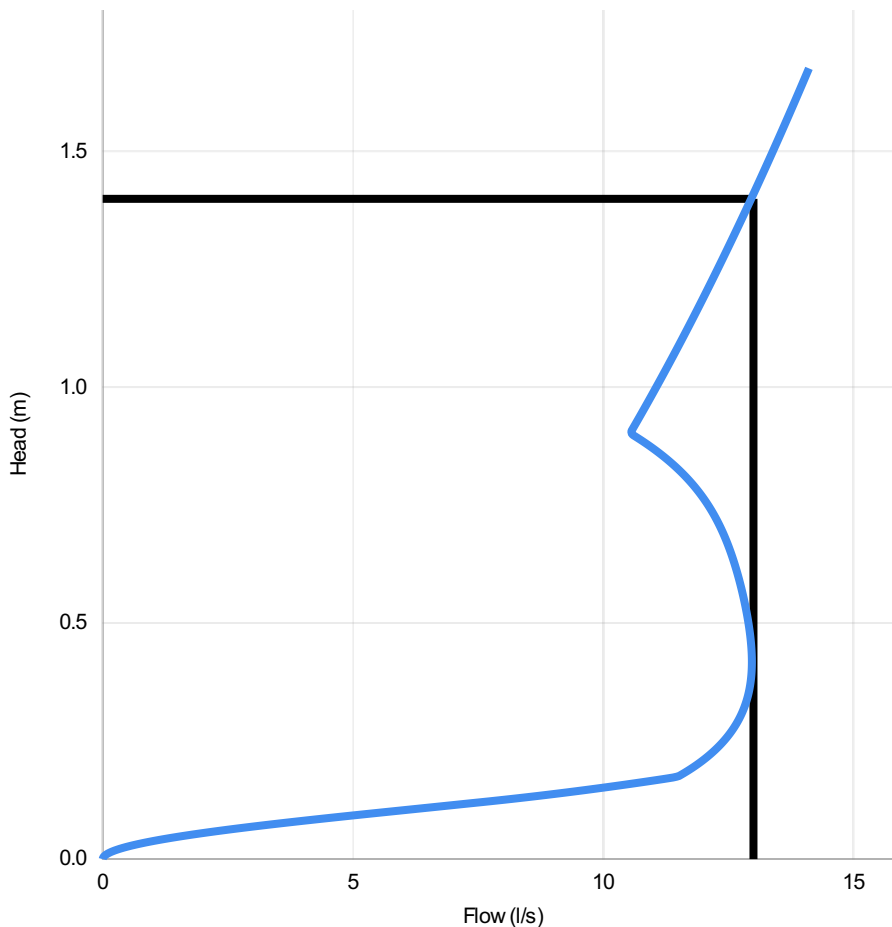
Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.400	13.000
Flush-Flo	0.418	12.968
Kick-Flo®	0.902	10.530
Mean Flow		11.253



PT/329/0412

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Head (m)	Flow (l/s)
0.000	0.000
0.048	1.556
0.097	5.354
0.145	9.522
0.193	11.773
0.241	12.328
0.290	12.673
0.338	12.868
0.386	12.954
0.434	12.965
0.483	12.924
0.531	12.848
0.579	12.746
0.628	12.618
0.676	12.455
0.724	12.241
0.772	11.951
0.821	11.555
0.869	11.017
0.917	10.614
0.966	10.873
1.014	11.125
1.062	11.371
1.110	11.612
1.159	11.847
1.207	12.077
1.255	12.303
1.303	12.524
1.352	12.741
1.400	12.954

DESIGN ADVICE



The head/flow characteristics of this SHE-0158-1300-1400-1300 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

DATE 31/07/2020 06:53

Site

DESIGNER Laura Jones

Ref 9610 - System 1

SHE-0158-1300-1400-1300

Hydro-Brake Optimum®

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Innovyze	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
 Number of Online Controls 1 Number of Time/Area Diagrams 0
 Number of Offline Controls 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.200
 Return Period (years) 100 Cv (Summer) 0.750
 Region England and Wales Cv (Winter) 0.840
 M5-60 (mm) 20.400

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
 Analysis Timestep Fine Inertia Status ON
 DTS Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,
 720, 960, 1440, 2160, 2880, 4320, 5760,
 7200, 8640, 10080
 Sensitivity flows(s) (%) 0, +30

PN	US/MH Name	Storm	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	S1/00	15 Winter	+30%	+30%/15 Summer				73.967
1.001	S1/01	15 Winter	+30%	+0%/15 Winter				69.592
2.000	S2/00	15 Winter	+30%					70.259
2.001	S2/01	15 Winter	+30%	+30%/15 Summer				69.239
1.002	S1/02	15 Winter	+30%					68.350
3.000	S3/00	480 Winter	+30%	+0%/15 Winter				67.916
1.003	FLOW CONTROL	480 Winter	+30%	+0%/15 Summer			0	67.911

PN	US/MH Name	Surcharged	Flooded			Half Drain	Pipe	Status
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	
1.000	S1/00	0.192	0.000	0.97			132.4	SURCHARGED
1.001	S1/01	0.417	0.000	1.26			132.5	SURCHARGED
2.000	S2/00	-0.116	0.000	0.47			51.4	OK
2.001	S2/01	0.064	0.000	1.03			103.3	SURCHARGED
1.002	S1/02	-0.100	0.000	0.78			235.4	OK
3.000	S3/00	0.941	0.000	0.25			10.1	SURCHARGED
1.003	FLOW CONTROL	1.086	0.000	0.37	0.0	376	12.9	SURCHARGED

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5-6 Deryn Court	9610	
Wharfedale Road	SYS1	
Pentwyn CF23 7HB	R0	
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Level Exceeded
1.000	S1/00	
1.001	S1/01	
2.000	S2/00	
2.001	S2/01	
1.002	S1/02	
3.000	S3/00	
1.003	FLOW CONTROL	

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Innovyze	Network 2020.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	38.700	3.200	12.1	0.079	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	20.500	1.700	12.1	0.096	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	21.750	1.225	17.8	0.072	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.003	21.600	1.300	16.6	0.008	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.004	18.930	1.600	11.8	0.148	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.005	17.870	1.400	12.8	0.083	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.006	39.300	2.400	16.4	0.101	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.000	15.100	1.300	11.6	0.082	5.00	0.0	0.600	o	225	Pipe/Conduit	
S2.001	25.700	2.600	9.9	0.090	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.007	3.000	0.050	60.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	0.00	5.17	76.950	0.079	0.0	0.0	0.0	3.78	150.4	0.0
S1.001	0.00	5.26	73.750	0.175	0.0	0.0	0.0	3.79	150.7	0.0
S1.002	0.00	5.38	72.050	0.247	0.0	0.0	0.0	3.12	124.1	0.0
S1.003	0.00	5.47	70.750	0.255	0.0	0.0	0.0	3.88	274.0	0.0
S1.004	0.00	5.54	69.450	0.403	0.0	0.0	0.0	4.60	324.8	0.0
S1.005	0.00	5.61	67.850	0.486	0.0	0.0	0.0	4.42	312.7	0.0
S1.006	0.00	5.77	66.450	0.587	0.0	0.0	0.0	3.90	276.0	0.0
S2.000	0.00	5.07	67.950	0.082	0.0	0.0	0.0	3.86	153.5	0.0
S2.001	0.00	5.17	66.650	0.172	0.0	0.0	0.0	4.19	166.5	0.0
S1.007	0.00	5.80	64.050	0.759	0.0	0.0	0.0	1.69	67.3	0.0

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: SS10/07, DS/PN: S1.007, Volume (m³): 5.1

Unit Reference	MD-SHE-0176-1520-1000-1520
Design Head (m)	1.000
Design Flow (l/s)	15.2
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	176
Invert Level (m)	64.050
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	15.2
Flush-Flo™	0.321	15.2
Kick-Flo®	0.702	12.9
Mean Flow over Head Range	-	12.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.2	1.200	16.6	3.000	25.7	7.000	38.6
0.200	14.6	1.400	17.8	3.500	27.6	7.500	39.9
0.300	15.2	1.600	19.0	4.000	29.5	8.000	41.2
0.400	15.1	1.800	20.1	4.500	31.2	8.500	42.4
0.500	14.8	2.000	21.1	5.000	32.8	9.000	43.6
0.600	14.2	2.200	22.1	5.500	34.4	9.500	44.8
0.800	13.7	2.400	23.1	6.000	35.8		
1.000	15.2	2.600	24.0	6.500	37.2		

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Offline Controls for Storm

Pipe Manhole: SS10/07, DS/PN: S1.007, Loop to PN: None

Diameter (m)	0.150	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	150.0	Coefficient of Contraction	0.600
Length (m)	5.000	Upstream Invert Level (m)	65.100

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Storage Structures for Storm

Cellular Storage Manhole: SS10/07, DS/PN: S1.007

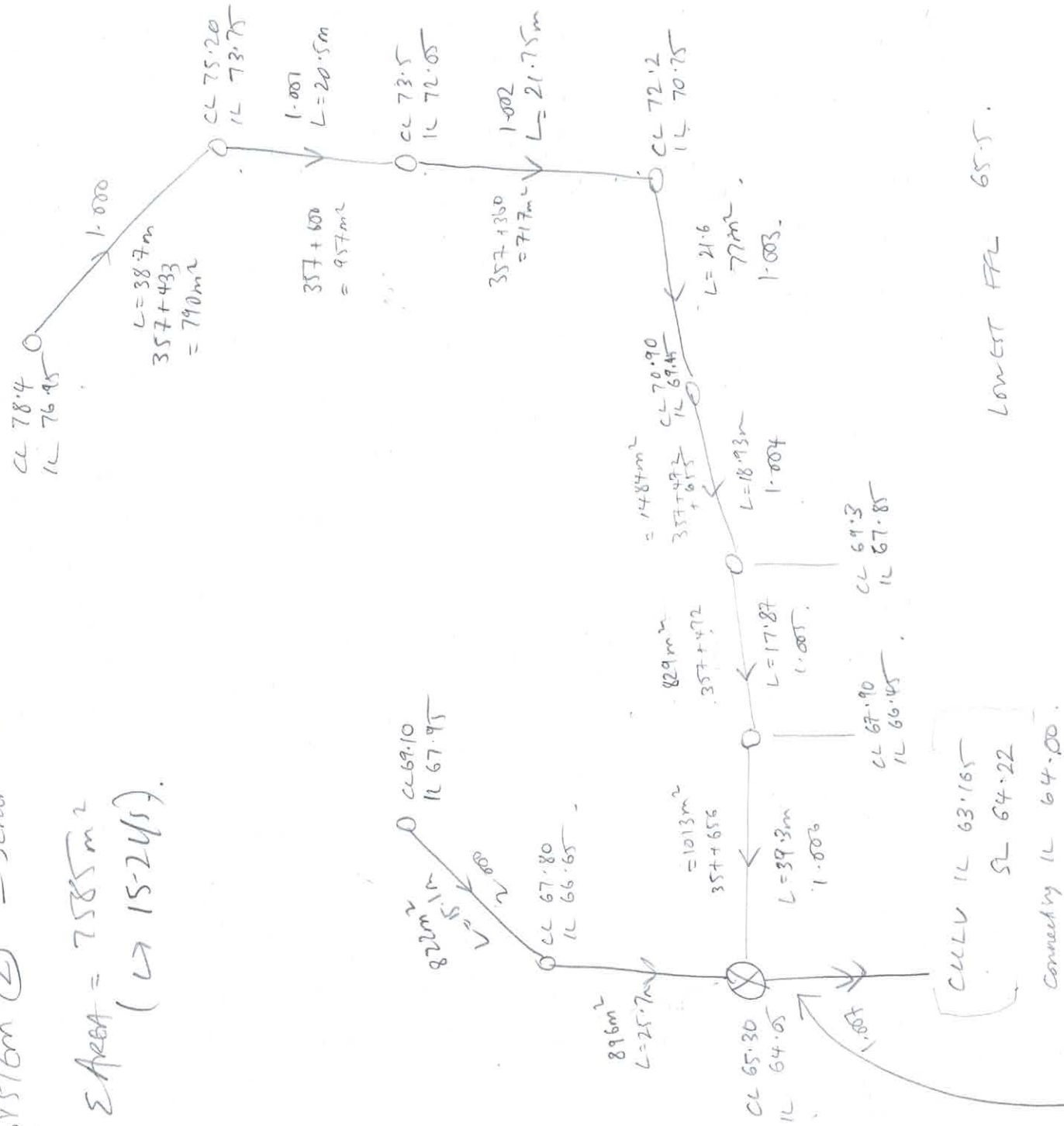
Invert Level (m) 64.050 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	480.0	480.0	1.001	0.0	596.0
1.000	480.0	596.0			

SYSTEM ② - SCHEMATIC

$$\Sigma \text{Area} = 7585 \text{ m}^2$$

$$(\rightarrow 15.24 \text{ s})$$



STORAGE TANK
480m³ 1m DEEP

600 ✓
400

2a

$$2b \quad 13 \times 5 = 75 \text{ m}^2$$

MD-SME-0716-1520-1520

o/kow IL 65.05

15.21/15.

Technical Specification

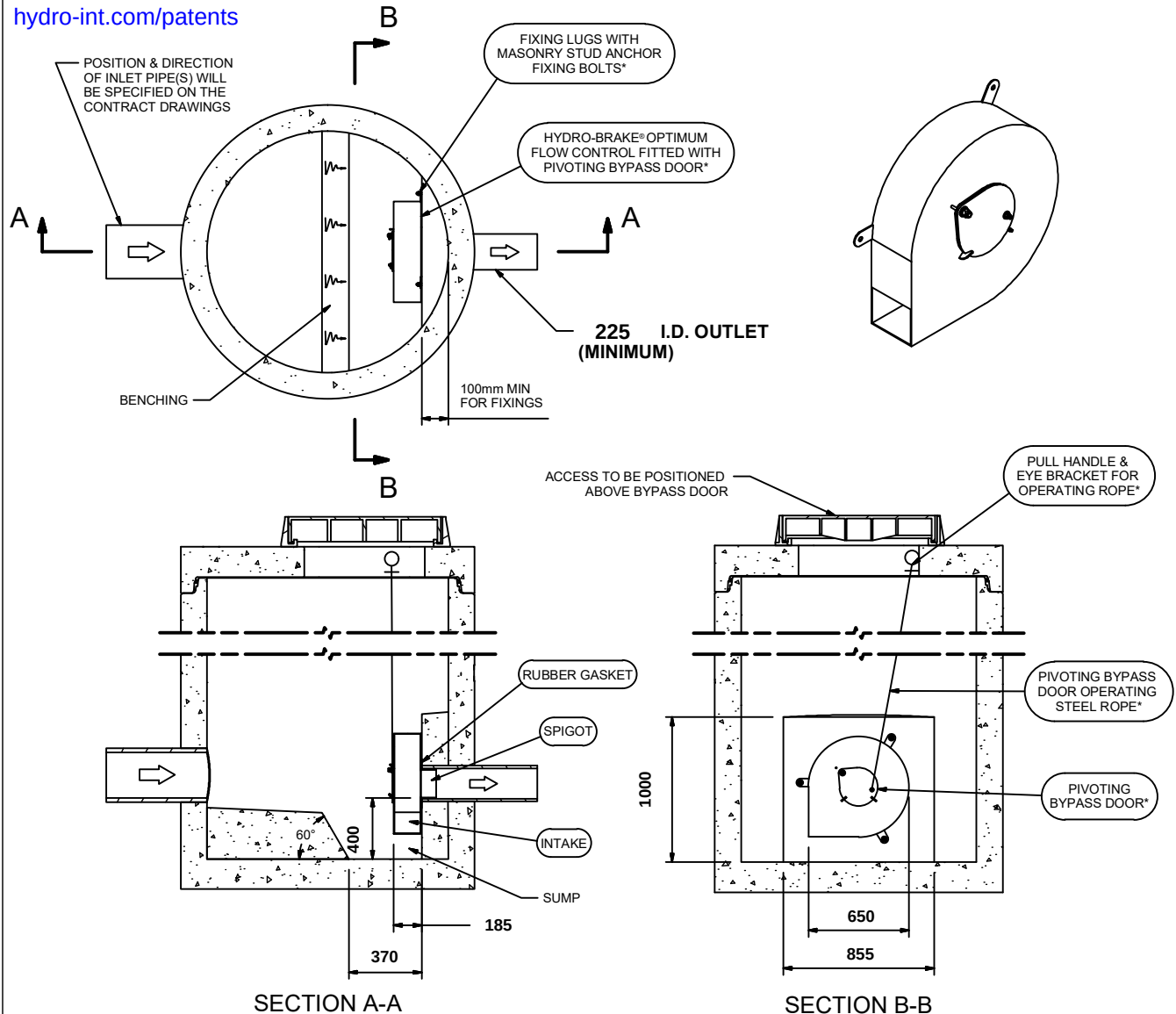
Control Point	Head (m)	Flow (l/s)
Primary Design	1.000	15.200
Flush-Flo™	0.321	15.177
Kick-Flo®	0.702	12.859
Mean Flow		12.895

Hydro-Brake® Optimum Flow Control including:

- 3 mm grade 304L stainless steel
- Integral stainless steel pivoting by-pass door allowing clear line of sight through to outlet, c/w stainless steel operating rope
- Beed blasted finish to maximise corrosion resistance
- Stainless steel fixings
- Rubber gasket to seal outlet



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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® FLOW CONTROL & HYDRO-BRAKE® OPTIMUM FLOW CONTROL ARE REGISTERED TRADEMARKS 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-0176-1520-1000-1520 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.

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International®

DATE 7/31/2020 6:54 AM

SITE

DESIGNER Laura Jones

REF 9610 - System 2

SHE-0176-1520-1000-1520

Hydro-Brake® Optimum

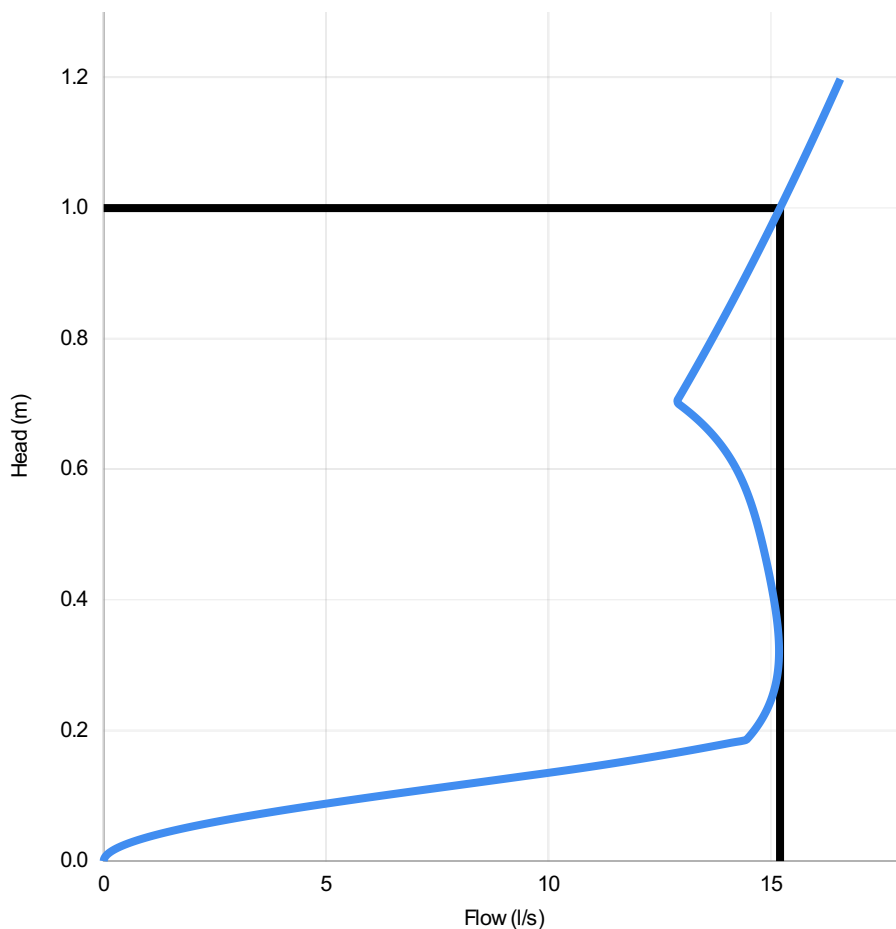
Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.000	15.200
Flush-Flo	0.321	15.177
Kick-Flo®	0.702	12.859
Mean Flow		12.895



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Head (m)	Flow (l/s)
0.000	0.000
0.034	0.875
0.069	3.234
0.103	6.586
0.138	10.286
0.172	13.409
0.207	14.692
0.241	14.966
0.276	15.117
0.310	15.174
0.345	15.165
0.379	15.111
0.414	15.028
0.448	14.927
0.483	14.814
0.517	14.685
0.552	14.528
0.586	14.324
0.621	14.045
0.655	13.656
0.690	13.118
0.724	13.050
0.759	13.339
0.793	13.622
0.828	13.898
0.862	14.169
0.897	14.434
0.931	14.694
0.966	14.949
1.000	15.199

DESIGN ADVICE



The head/flow characteristics of this SHE-0176-1520-1000-1520 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

DATE 31/07/2020 06:54

Site

DESIGNER Laura Jones

Ref 9610 - System 2

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Hydro-Brake Optimum®

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Date 30/07/2020 File CDGA-9610-CALCS-SWS-SYS...	Designed by LKJ Checked by	
Innovyze	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
 Number of Online Controls 1 Number of Time/Area Diagrams 0
 Number of Offline Controls 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.200
 Return Period (years) 100 Cv (Summer) 0.750
 Region England and Wales Cv (Winter) 0.840
 M5-60 (mm) 20.400

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
 Analysis Timestep Fine Inertia Status ON
 DTS Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,
 720, 960, 1440, 2160, 2880, 4320, 5760,
 7200, 8640, 10080
 Sensitivity flows(s) (%) 0, +30

PN	US/MH Name	Storm	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	SS10/00	15 Winter	+30%					77.028
S1.001	SS10/01	15 Winter	+30%					73.878
S1.002	SS10/02	15 Winter	+30%	+30%/15 Summer				72.380
S1.003	SS10/03	15 Winter	+30%					70.901
S1.004	SS10/04	15 Winter	+30%					69.634
S1.005	SS10/05	15 Winter	+30%					68.096
S1.006	SS10/06	15 Winter	+30%	+30%/15 Summer				67.091
S2.000	SS11/00	15 Winter	+30%					68.032
S2.001	SS11/01	15 Winter	+30%					66.768
S1.007	SS10/07	480 Winter	+30%	+0%/15 Summer			0	65.049

PN	US/MH Name	Depth (m)	Surcharged Volume (m ³)	Flooded Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	SS10/00	-0.147	0.000	0.26		36.6	OK	
S1.001	SS10/01	-0.097	0.000	0.61		83.8	OK	
S1.002	SS10/02	0.105	0.000	1.03		116.4	SURCHARGED	
S1.003	SS10/03	-0.149	0.000	0.50		120.3	OK	

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)						
S1.004	SS10/04	-0.116	0.000	0.68			191.4	OK	
S1.005	SS10/05	-0.054	0.000	0.86			230.5	OK	
S1.006	SS10/06	0.341	0.000	1.07			272.9	SURCHARGED	
S2.000	SS11/00	-0.143	0.000	0.28			38.0	OK	
S2.001	SS11/01	-0.107	0.000	0.53			82.2	OK	
S1.007	SS10/07	0.774	0.000	0.48	0.0	360	15.2	FLOOD RISK	