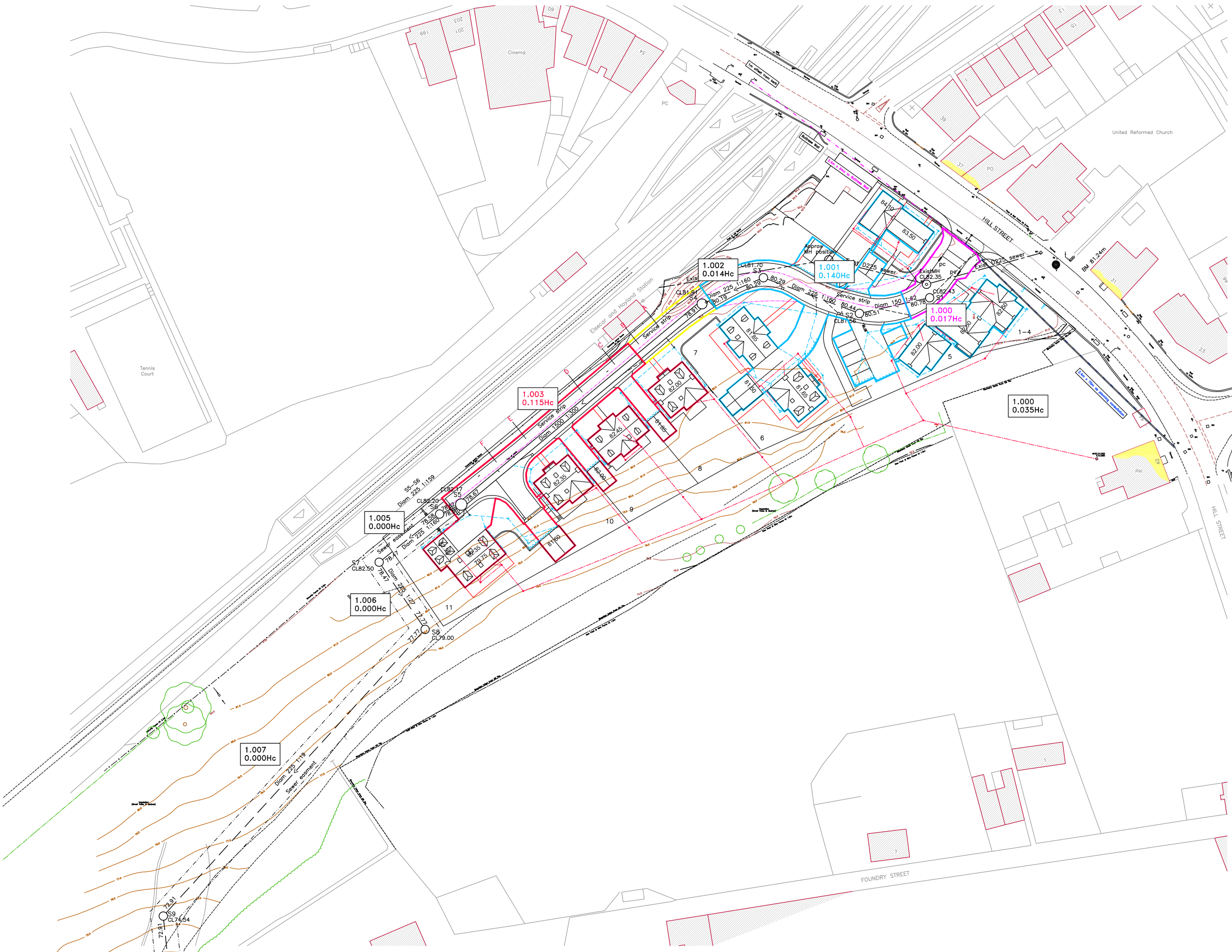


Manhole construction – refer to CPA technical bulletin Sept 2001 outlining changes to relevent Britishe Product Standards BS5911–200:1994.
All precast concret products are to be kitemarked or they will be rejected as part of an adoptable system.

Manhole covers to have a clear opening of 600 x 600mm and shall be class D400 to BSEN124 with 150mm deep frames.
Filled ground must be filled and consolidated under the supervision of YW before any sewer works are carried out.
All adoptable sewers should be a minimum 1m and manholes 0.5m from kerb faces.
Sewers must have 5m clearance from trees
Manhole cover slabs to BS5911

Aco channel or similar
All run off from private drives to be prevented from discharging onto the highway.

SHE–0075–3200–1800–3200
Optimum Hydrobrake with bypass door from
Hydro International UK
Shearwater House
Clevedon Hall Estate
Victoria Road
Clevedon BS21 7RD
Tel 01275 878371
Head 1.80m
Flow 3.20 lt/sec

225mm diam. penstock by
Express Valve Services
Unit 18 / 19
The Wallows Industrial Estate
Dudley Road
Brierley Hill DY5 1HR

ALL LEVELS ARE RELATED TO
OS BM on 31 Hill Street 81.24m
COORDINATE GRID IS BASED ON
OSGB36 COORDINATE SYSTEM (GPS)

Floor levels are preliminary and subject to part M of the building regulations and private drainage check.

OS NORTH

(a) Sub base foundation design should not vary frequently along the road. You should select an appropriate value for each significant change in the subgrade properties.
(b) Where the equilibrium CBR falls between values in the above table, you should round down the value to the lower value.
(c) When the subgrade CBR is sufficiently below 2% that capping with sub–base is not sufficient to support the pavement, special measures will be required. Note that the use of geo–textile will only be acceptable in certain situations. You can find advice in DMRB 7.2.2 HD25/94.
Frost susceptibility
4.68 Material within 450mm of the finished road surface must not be frost susceptible.
Capping materials
4.69 You will need approval for each site for the capping layer which must comply with our SHW Table 6/1, Type 6F2 or 6F3. You must test the capping layer as necessary to demonstrate that it has an in–situ CBR of 15% (or equivalent test result). We may approve other materials as long as you have previously demonstrated to us that they will achieve an in–situ CBR of 15% (or equivalent test results).
Sub–base
4.70 Sub–base must be Type 1 to Clause 803 of the Highways Agency Specification.

A01. These notes are intended to augment drawings and specifications. Where conflict of requirements exists the order of precedence shall be as shown in the specification. Otherwise the strictest provision shall govern.

A02. This drawing to be read in conjunction with all other relevant engineers and architects drawings.

A03. Drawings not to be scaled. All dimensions to be checked on site by the contractor. Any discrepancies to be notified to the Engineer and further instructions obtained before work is commenced.

No part of this drawing may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior permission in writing from RAB Engineering LTD

Manhole construction – refer to CPA technical bulletin Sept 2001 outlining changes to relevant British Product Standards BS5911–200:1994. All precast concrete products are to be kite marked or they will be rejected as part of an adoptable system. Manhole cover slabs to BS5911
Manhole covers to have a clear opening of 600 x 600mm and shall be class D400 to BSEN124 with 150mm deep frames.
Filled ground must be filled and consolidated under the supervision of YW before any sewer works are carried out. All adoptable sewers to be BSI kitemarked, (certified to WIS–4–35–01)

Plastic channels are not acceptable

All custom built ironwork to be hot dipped galvanised prior to final fitting.

Adoptable sewer pipes to be laid in max 3m lengths unless there is a specific operational need to lay longer lengths.

Yorkshire water are not obliged to accept filter drain / land drainage runoff into the public sewernetwork or adoptable drainage network (directly or indirectly). An alternative method of disposal of land drainage runoff will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run–off.

Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.

Sulphate resistant cement (C20–DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

"Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".

Sewers to be laid in class S bedding (150mm granular bed and surround. Where depth of cover is less then 1.2m in highways and verges (or less then 900mm in non vehicle access areas) then a concrete slab should be provided above the granular bed and surround.

The chamber size of manholes with more then one connection in them may need to be increased one increment to accommodate the connection and bends.

Yorkshire Water policy is not to accept type C brick manholes and 1050mm diameter manhole rings. Instead it is preferred to use a type B manhole construction with a 1200 or 1500mm cover slab with the opening sited over the channel where the depth of cover to pipe soffit is 1.0–1.5m.

Contractors should be aware of significantly large diameter pipes and manhole chamber rings proposed in this design and precautions should be taken in movement and placing of such items. Also to be considered is the depth of excavation of the drainage works especially the large diameter components up to 8m deep excavations.

All adoptable sewer works and materials to be in accordance with Sewers for Adoption 6th edition. The relevant British / European and Yorkshire Water standards / requirements / addendum & Kitemarked.

The adoptable sewers shall be a min 1.0m and manholes 0.5m from the curb and service margins.

Sewers must have 5m clearance from trees and hedges see SfA6 for restrictions on tree planting / types.

Bedding and backfill material to conform with the Water Industry specification 4–08–02 (table A2)

B. Revised as client instruction, SW outfall added. plot 11 floor level adjusted 15–11–18
A. Redrawn as current layout & client comments 1–11–18

R.A.B. ENGINEERING DESIGN LTD
12 BERRY HOLME CLOSE
SHEFFIELD S35 1AB
TEL.(0114)2464871

JVN

Hill Street, Elsecar
Engineering layout
Impermeable areas

DRAWN BY rab
SCALE 1:500 DATE Oct 18
DRAWING No 1057-1-IMP REV B

PRELIMINARY ONLY

Technical Specification

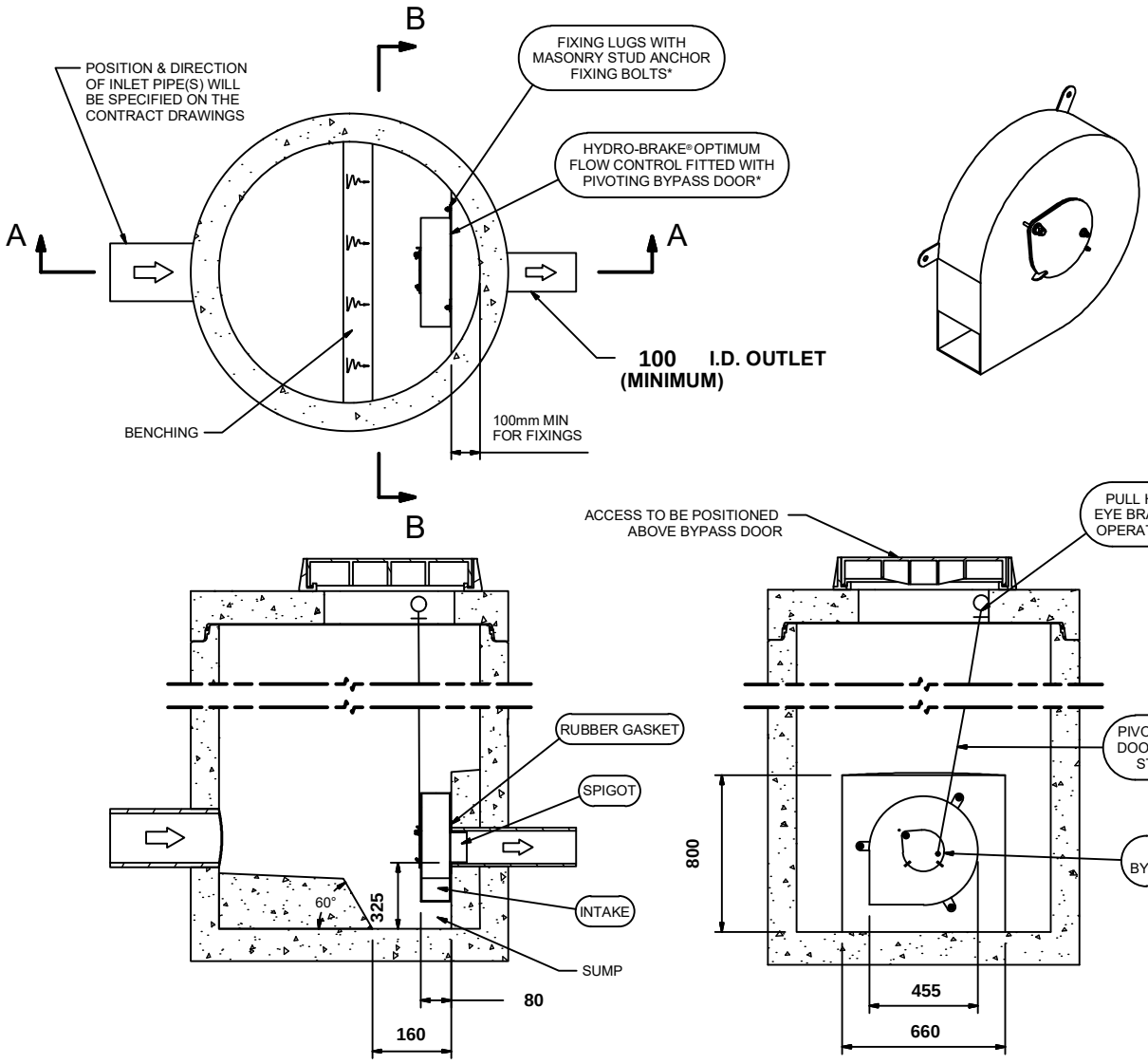
Control Point	Head (m)	Flow (l/s)
Primary Design	1.800	3.200
Flush-Flo™	0.327	2.509
Kick-Flo®	0.664	2.029
Mean Flow		2.482

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

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4596

WRc Approved PT/329/0412



SECTION A-A

SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® 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-0075-3200-1800-3200 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	11/15/2018 11:30 AM
SITE	hill street elsecar
DESIGNER	richard bland
REF	

SHE-0075-3200-1800-3200
Hydro-Brake® Optimum

© 2018 Hydro International Ltd, Shearwater House, Clevedon Hall Estate, Victoria Road, Clevedon, BS21 7RD. Tel; 01275 878371 Fax; 01275 874979 Web; www.hydro-int.com Email; enquiries@hydro-int.com

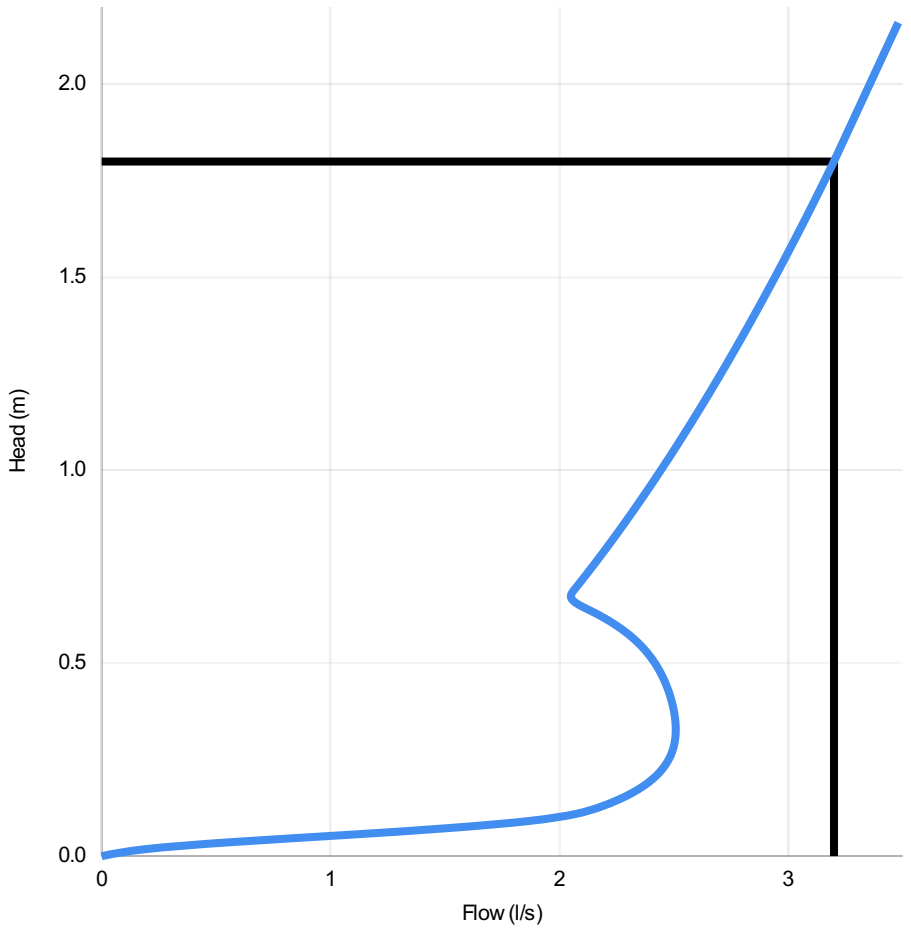
rabengineering@hotmail.co.uk

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.800	3.200
Flush-Flo™	0.327	2.509
Kick-Flo®	0.664	2.029
Mean Flow		2.482

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE No 08/4596

WRc APPROVED
PT/329/0412



Head (m)	Flow (l/s)
0.000	0.000
0.062	1.281
0.124	2.166
0.186	2.380
0.248	2.477
0.310	2.508
0.372	2.502
0.434	2.473
0.497	2.422
0.559	2.334
0.621	2.186
0.683	2.055
0.745	2.137
0.807	2.216
0.869	2.292
0.931	2.365
0.993	2.436
1.055	2.504
1.117	2.570
1.179	2.635
1.241	2.697
1.303	2.758
1.366	2.818
1.428	2.876
1.490	2.932
1.552	2.988
1.614	3.042
1.676	3.096
1.738	3.148
1.800	3.200

DESIGN ADVICE

The head/flow characteristics of this SHE-0075-3200-1800-3200 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	15/11/2018 11:30
SITE	hill street elsecar
DESIGNER	richard bland
REF	

SHE-0075-3200-1800-3200

Hydro-Brake Optimum®

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Simulation Criteria for ELSECAR SW 29-10-18.SWS

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	15
Ratio R	0.356		

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Online Controls for ELSECAR SW 29-10-18.SWS

Hydro-Brake® Optimum Manhole: 5, DS/PN: 1.004, Volume (m³): 146.5

Unit Reference	MD-SHE-0075-3200-1800-3200
Design Head (m)	1.800
Design Flow (l/s)	3.2
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	75
Invert Level (m)	78.616
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	3.2	Kick-Flo®	0.664	2.0
Flush-Flo™	0.327	2.5	Mean Flow over Head Range	-	2.5

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	2.0	1.200	2.7	3.000	4.1	7.000	6.0
0.200	2.4	1.400	2.8	3.500	4.4	7.500	6.2
0.300	2.5	1.600	3.0	4.000	4.6	8.000	6.4
0.400	2.5	1.800	3.2	4.500	4.9	8.500	6.6
0.500	2.4	2.000	3.4	5.000	5.2	9.000	6.8
0.600	2.2	2.200	3.5	5.500	5.4	9.500	7.0
0.800	2.2	2.400	3.7	6.000	5.6		
1.000	2.4	2.600	3.8	6.500	5.8		

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Summary of Results for 15 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.821	-0.113	0.000	0.13		2.8	OK
1.001	2	80.563	-0.099	0.000	0.59		22.3	OK
1.002	3	80.420	-0.091	0.000	0.67		24.2	OK
1.003	4	79.089	-1.323	0.000	0.01		38.0	OK
1.004	5	79.089	0.248	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 30 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.816	-0.118	0.000	0.11		2.2	OK
1.001	2	80.551	-0.111	0.000	0.50		19.0	OK
1.002	3	80.408	-0.103	0.000	0.57		20.7	OK
1.003	4	79.146	-1.267	0.000	0.01		33.0	OK
1.004	5	79.146	0.305	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 60 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.810	-0.124	0.000	0.07		1.5	OK
1.001	2	80.531	-0.131	0.000	0.36		13.7	OK
1.002	3	80.386	-0.125	0.000	0.41		14.9	OK
1.003	4	79.194	-1.219	0.000	0.01		23.9	OK
1.004	5	79.194	0.353	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 120 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.805	-0.129	0.000	0.05		1.0	OK
1.001	2	80.511	-0.151	0.000	0.24		9.0	OK
1.002	3	80.365	-0.146	0.000	0.27		9.8	OK
1.003	4	79.221	-1.191	0.000	0.00		15.7	OK
1.004	5	79.222	0.381	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 180 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.802	-0.132	0.000	0.04		0.8	OK
1.001	2	80.502	-0.160	0.000	0.18		7.0	OK
1.002	3	80.356	-0.155	0.000	0.21		7.6	OK
1.003	4	79.221	-1.191	0.000	0.00		12.2	OK
1.004	5	79.221	0.380	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 240 minute 1 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.801	-0.133	0.000	0.03		0.6	OK
1.001	2	80.495	-0.167	0.000	0.15		5.8	OK
1.002	3	80.349	-0.162	0.000	0.17		6.3	OK
1.003	4	79.215	-1.197	0.000	0.00		10.1	OK
1.004	5	79.215	0.374	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 15 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	81.197	0.263	0.000	0.44		9.2	SURCHARGED
1.001	2	81.173	0.511	0.000	1.64		61.7	SURCHARGED
1.002	3	80.743	0.232	0.000	1.85		67.2	SURCHARGED
1.003	4	79.398	-1.015	0.000	0.03		107.3	OK
1.004	5	79.398	0.557	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 30 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.910	-0.024	0.000	0.28		5.8	OK
1.001	2	80.886	0.224	0.000	1.31		49.5	SURCHARGED
1.002	3	80.621	0.110	0.000	1.48		53.8	SURCHARGED
1.003	4	79.534	-0.879	0.000	0.03		85.5	OK
1.004	5	79.534	0.693	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.922	-0.212	0.000	0.01		2.5	OK
1.009	10	66.579	-0.182	0.000	0.08		2.5	OK

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Summary of Results for 60 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.826	-0.108	0.000	0.17		3.6	OK
1.001	2	80.609	-0.053	0.000	0.90		34.1	OK
1.002	3	80.489	-0.022	0.000	1.00		36.2	OK
1.003	4	79.666	-0.746	0.000	0.02		58.3	OK
1.004	5	79.667	0.826	0.000	0.08		2.5	SURCHARGED
1.005	6	78.619	-0.187	0.000	0.07		2.5	OK
1.006	7	78.492	-0.200	0.000	0.03		2.5	OK
1.007	8	77.790	-0.202	0.000	0.02		2.5	OK
1.008	9	72.923	-0.211	0.000	0.01		2.5	OK
1.009	10	66.580	-0.181	0.000	0.08		2.5	OK

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Summary of Results for 120 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.817	-0.117	0.000	0.11		2.3	OK
1.001	2	80.558	-0.104	0.000	0.57		21.3	OK
1.002	3	80.417	-0.094	0.000	0.64		23.2	OK
1.003	4	79.780	-0.633	0.000	0.01		37.3	OK
1.004	5	79.780	0.939	0.000	0.09		2.6	SURCHARGED
1.005	6	78.620	-0.186	0.000	0.07		2.6	OK
1.006	7	78.492	-0.200	0.000	0.03		2.6	OK
1.007	8	77.790	-0.202	0.000	0.02		2.6	OK
1.008	9	72.923	-0.211	0.000	0.01		2.6	OK
1.009	10	66.581	-0.180	0.000	0.09		2.6	OK

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Summary of Results for 180 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.813	-0.121	0.000	0.08		1.7	OK
1.001	2	80.540	-0.122	0.000	0.43		16.1	OK
1.002	3	80.396	-0.115	0.000	0.48		17.5	OK
1.003	4	79.822	-0.590	0.000	0.01		28.2	OK
1.004	5	79.822	0.981	0.000	0.09		2.7	SURCHARGED
1.005	6	78.621	-0.185	0.000	0.07		2.7	OK
1.006	7	78.492	-0.200	0.000	0.03		2.7	OK
1.007	8	77.790	-0.202	0.000	0.02		2.7	OK
1.008	9	72.923	-0.211	0.000	0.01		2.7	OK
1.009	10	66.581	-0.180	0.000	0.09		2.7	OK

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Summary of Results for 240 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.809	-0.125	0.000	0.07		1.4	OK
1.001	2	80.528	-0.134	0.000	0.35		13.1	OK
1.002	3	80.384	-0.127	0.000	0.39		14.2	OK
1.003	4	79.837	-0.576	0.000	0.01		22.9	OK
1.004	5	79.837	0.996	0.000	0.09		2.7	SURCHARGED
1.005	6	78.621	-0.185	0.000	0.07		2.7	OK
1.006	7	78.492	-0.200	0.000	0.03		2.7	OK
1.007	8	77.790	-0.202	0.000	0.02		2.7	OK
1.008	9	72.923	-0.211	0.000	0.01		2.7	OK
1.009	10	66.581	-0.180	0.000	0.09		2.7	OK

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Summary of Results for 360 minute 30 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.805	-0.129	0.000	0.05		1.0	OK
1.001	2	80.514	-0.148	0.000	0.26		9.6	OK
1.002	3	80.368	-0.143	0.000	0.29		10.5	OK
1.003	4	79.823	-0.590	0.000	0.00		16.9	OK
1.004	5	79.823	0.982	0.000	0.09		2.7	SURCHARGED
1.005	6	78.621	-0.185	0.000	0.07		2.7	OK
1.006	7	78.492	-0.200	0.000	0.03		2.7	OK
1.007	8	77.790	-0.202	0.000	0.02		2.7	OK
1.008	9	72.923	-0.211	0.000	0.01		2.7	OK
1.009	10	66.581	-0.180	0.000	0.09		2.7	OK

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Summary of Results for 180 minute 100 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.817	-0.117	0.000	0.11		2.3	OK
1.001	2	80.558	-0.104	0.000	0.56		21.1	OK
1.002	3	80.416	-0.095	0.000	0.63		23.0	OK
1.003	4	80.252	-0.160	0.000	0.01		37.0	OK
1.004	5	80.252	1.411	0.000	0.10		3.1	SURCHARGED
1.005	6	78.624	-0.182	0.000	0.08		3.1	OK
1.006	7	78.494	-0.198	0.000	0.03		3.1	OK
1.007	8	77.791	-0.201	0.000	0.03		3.1	OK
1.008	9	72.925	-0.209	0.000	0.02		3.1	OK
1.009	10	66.584	-0.177	0.000	0.10		3.1	OK

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Summary of Results for 240 minute 100 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.814	-0.120	0.000	0.09		1.8	OK
1.001	2	80.543	-0.119	0.000	0.45		17.0	OK
1.002	3	80.400	-0.111	0.000	0.51		18.5	OK
1.003	4	80.335	-0.077	0.000	0.01		29.9	OK
1.004	5	80.335	1.494	0.000	0.10		3.1	SURCHARGED
1.005	6	78.625	-0.181	0.000	0.08		3.1	OK
1.006	7	78.494	-0.198	0.000	0.03		3.1	OK
1.007	8	77.791	-0.201	0.000	0.03		3.1	OK
1.008	9	72.926	-0.208	0.000	0.02		3.1	OK
1.009	10	66.584	-0.177	0.000	0.10		3.1	OK

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Summary of Results for 360 minute 100 year Winter (ELSECAR SW 29-10-18.SWS)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	80.809	-0.125	0.000	0.06		1.4	OK
1.001	2	80.526	-0.136	0.000	0.33		12.5	OK
1.002	3	80.381	-0.130	0.000	0.38		13.6	OK
1.003	4	80.333	-0.079	0.000	0.01		21.9	OK
1.004	5	80.333	1.492	0.000	0.10		3.1	SURCHARGED
1.005	6	78.625	-0.181	0.000	0.08		3.1	OK
1.006	7	78.494	-0.198	0.000	0.03		3.1	OK
1.007	8	77.791	-0.201	0.000	0.03		3.1	OK
1.008	9	72.926	-0.208	0.000	0.02		3.1	OK
1.009	10	66.584	-0.177	0.000	0.10		3.1	OK

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