



THE HOUSING LAYOUT SHOWN ON THIS PLAN IS TAKEN FROM ACUMEN DESIGNERS AND ARCHITECTS SITE LAYOUT REFERENCED 2492-PH4-100 DATED AUGUST 2018.

THE TOPOGRAPHICAL SURVEY SHOWN ON THIS PLAN IS TAKEN FROM ELLAM LAND SURVEYS PLAN 7538-20/1 DATED JULY 2017.

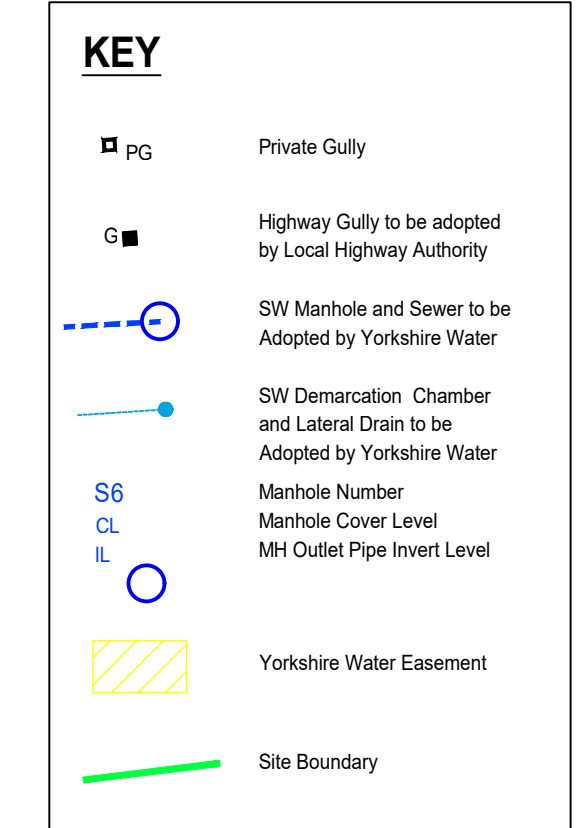
THE COORDINATE SYSTEM USED FOR THE PRIMARY CONTROL IS OSGB36 (15)

PHASE 1 OF THE DEVELOPMENT ALREADY APPROVED AND SEWERS TO BE CONSTRUCTED UNDER YORKSHIRE WATER SECTION 104 AGREEMENT REFERENCE H-3-264-249

Manhole Number	Cover Level	Connections	Pipe			Manhole Size	Types	
			Code	Inverts	Diams		Manhole	Cover
S6	207.085	1	1	lateral	205.773	150		
E. 409114.482	1.142	1				1200	B1E	D400
N. 410700.458		0	0	3.000	205.773	150		
S7	206.820	1	1	3.000	205.289	150		
E. 409084.474	1.381	1				1200	B1E	D400
N. 410699.563		0	0	3.001	205.289	150		
S8	207.128	2	1	1.002	204.249	150		
E. 409088.189	2.729	2	2	3.001	204.249	150		
N. 410698.010		0	0	1.003	204.249	150		
S9	206.438	1	1	1.003	203.569	150		
E. 409085.420	2.719	1				1200	B	D400
N. 410704.842		0	0	1.004	203.569	150		
S10	205.416	2	1	4.001	201.152	800		
E. 409084.601	4.164	2	2	1.004	202.302	150		
N. 410717.835		0	0	1.005	201.102	150		
S11	205.337	1	1	1.005	200.990	150		
E. 409087.070	4.197	1				1200	A	D400
N. 410718.025		0	0	1.006	200.990	150		
S12	204.925	1				1200(turret)		
E. 409063.351	1.793	1				See Aquaspira dwg 19-58-D1 for details		D400
N. 410724.158		0	0	4.000	201.182	1950		
S13	205.214	1	1	1.006	200.514	150		
E. 409086.486	4.550	1				1200	A	D400
N. 410724.273		0	0	1.007	200.514	150		
S14	202.953	1	1	1.007	200.119	150		
E. 409119.227	2.684	1				1200	B	D400
N. 410728.832		0	0	1.008	200.119	150		
S15	198.300	1	1	1.008	197.060	150		
E. 409118.153	2.670	1				1200	B (Exg.)	D400
N. 410759.403		0	0	1.009	195.480	150		
S16	N/A	1	1	1.009	194.250	150		
E. 409117.803	N/A	1				N/A	Headwall (Exg.)	N/A
N. 410772.673		0	0					

Pipe Bedding Notes in Accordance with S1A:

- Where the flow of groundwater is likely to transport fine soil particles, water stops of puddle clay extending up through the bedding and side fill shall be placed across the trench and immediately downstream of any temporary works. Water stops shall be placed at 15m intervals or at intervals agreed with the local water authority.
- In bad ground conditions, where migration of the pipes granular surround into the ground may occur or where fines may be moved from the surround material into the bedding material causing a lack of support of the bedding, the surround shall be wrapped in geotextile membrane (see BS 5295:2010 Clause A.13, Figures A.5 and A.6). Similar mitigation works shall apply to manholes surround and bedding.



HYDROBRAKE DETAILS					
MANHOLE	RING SIZE	COVER LEVEL	INV IN LEVEL	INV OUT LEVEL	SUMP LEVEL
S10	1800	205.416	201.152	201.102	200.652
Unit Type	Hydro Brake Optimum MD-SHE-0098-5000-1500-5000				
Design Head	1.5m				
Design Flow	5 L/sec				

GENERAL NOTES

- All adoptable sewer works and material to be in accordance with 'Sewers for Adoption' 6th Edition, the relevant British/European and Yorkshire Waters Standards/Requirements/Addendum and Kitemarked.
- All custom built ironwork to be hot dipped galvanised prior to final fixing.

Demarcation Chambers										
Surface Water										
Ref (SD)	Cover Level	Invert Level	Depth to Invert (m)	Depth to Soffit (m)	Diameter (mm)	Cover Type	Cover Size	Chamber Type	Lateral Diameter (mm)	Lateral Length (m)
SD1	207.750	205.822	1.928	1.778	450	B125	450x450	RAPPIC	150	3.89
SD2	207.200	205.640	1.560	1.410	450	B125	450x450	RAPPIC	150	3.97
SD3	206.600	205.250	1.350	1.200	450	B125	450x450	PPIC	150	4.83
SD4	205.480	204.485	0.995	0.845	450	B125	450x450	PPIC	150	5.05
SD5	205.420	204.070	1.350	1.200	450	B125	450x450	PPIC	150	2.95
SD6	204.785	203.009	1.626	1.476	450	B125	600x600	Type B	150	2.38
SD7	198.350	196.830	2.520	2.370	1200	B125	600x600	Type B	150	3.62

Demarcation Chambers to be WAVIN OSMAL ULTRARIB POLYPROPYLENE Inspection Chambers

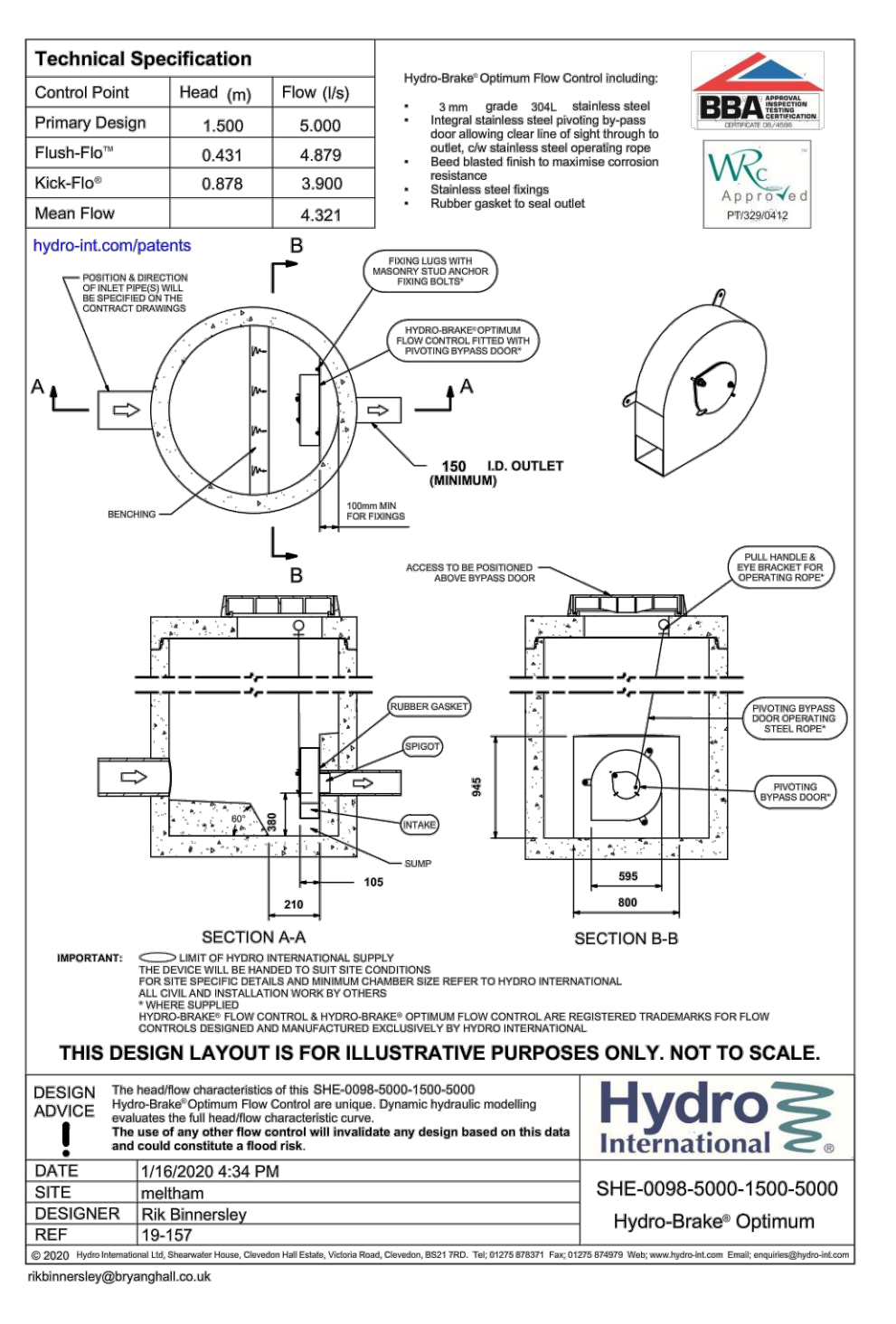
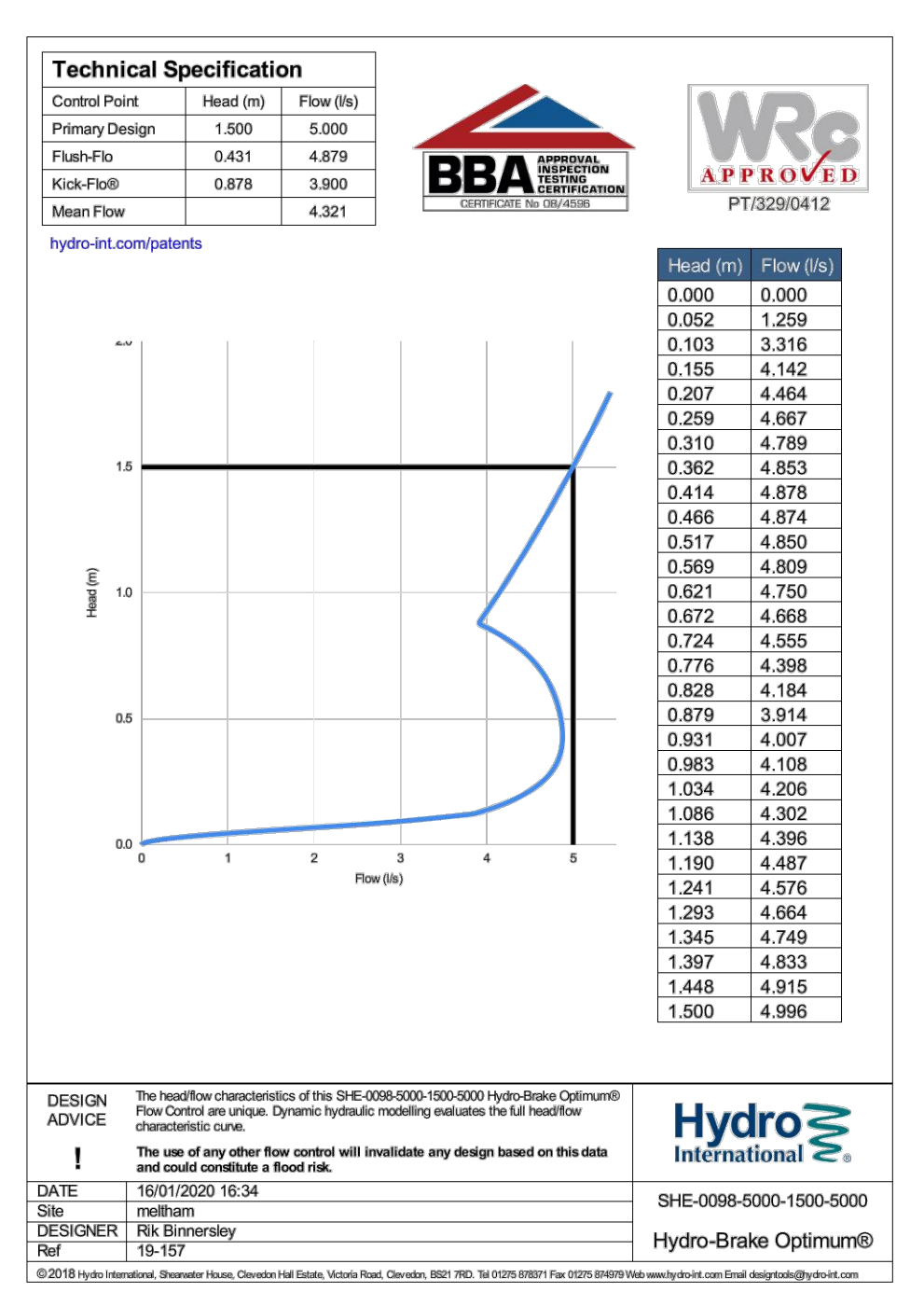
Demarcation chambers to be constructed as a TYPE B manhole if depth to soffit exceeds 2.0m

Lateral Drains to be WAVIN OSMAL ULTRARIB UPVC Pipes

PPIC Chambers with cover 1.2m or less to Soffit Level

RAPPIC Chambers with cover over 1.2m to Soffit Level

S17	205.010	2	1	2	5.000	201.161	1950			
	2.949	1	0	4.001	201.161	900				
E. 409083.611										
N. 410726.542										
S18	204.620	1	1	1	5.000	201.179	1950			
	1.491	1	0							
E. 409100.900										
N. 410728.505										



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It is the contractors responsibility to ensure full compliance with the Building Regulations. Do not scale from this drawing, use figured dimensions only. It is the contractors responsibility to check and verify all dimensions on site. Any discrepancies to be reported immediately.

IF IN DOUBT ASK

Materials not in conformity with relevant British or European Standards/Codes of practice or materials known to be deleterious to health & safety must not be used or specified on this project.

NOTES:

YORKSHIRE WATER NOTES

- All adoptable sewer works and materials to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
- Manhole covers shall must have a clear opening of 600mm and shall be class D400 to BS EN 124 with 150mm deep frames in highways.
- Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
- Yorkshire Water is not obliged to accept filter drain/land drainage runoff into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of the land drainage runoff will therefore be required and you will have to liaise with the Local Authority Land Drain Section with regard to the disposal of the filter drain/land drainage runoff.
- 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 load 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 providing proof that such precautions are not necessary.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- 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 to top of the sewer is less than 1.2m in highways and verges (or less than 800mm in more vehicular access a concrete slab should be provided above the granular bed and surround.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
- The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
- Yorkshire Water policy is not to accept Type "C" brick manholes and 1000mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sized over the channel where depth of cover to pipe soffit is 1 - 1.5m.
- Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01 and BS EN 13476) Adoptable plastic sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the bedding.
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SITE LOCATION PLAN

1:250

G 15.01.20 Drawing amended in accordance with Y.W. comments RPB RPB
F 15.12.19 Storage configuration amended to send to Y.W. for comment JI RPB
E 07.10.19 Pipe 4.000 altered to 3.0m as per Aquaspira design JI RPB
D 03.10.19 Man hole schedule updated following external levels update JI RPB
C 10.09.19 Drainage layout amended following chambers and flow calls JI RPB
B 04.09.19 Drainage layout amended to suit new position of flow control JI RPB
A 28.08.19 Demarcation chamber references and schedule added RPB RPB

Rev: Date: Amendment: DRN CHK

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Client: Pennine Developments Limited

Status: FOR APPROVAL

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Project: Proposed Development at Land Off Mill Moor Road, Meltham, Hamfirth

Title: Section 104 Drainage Layout and Schedules

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