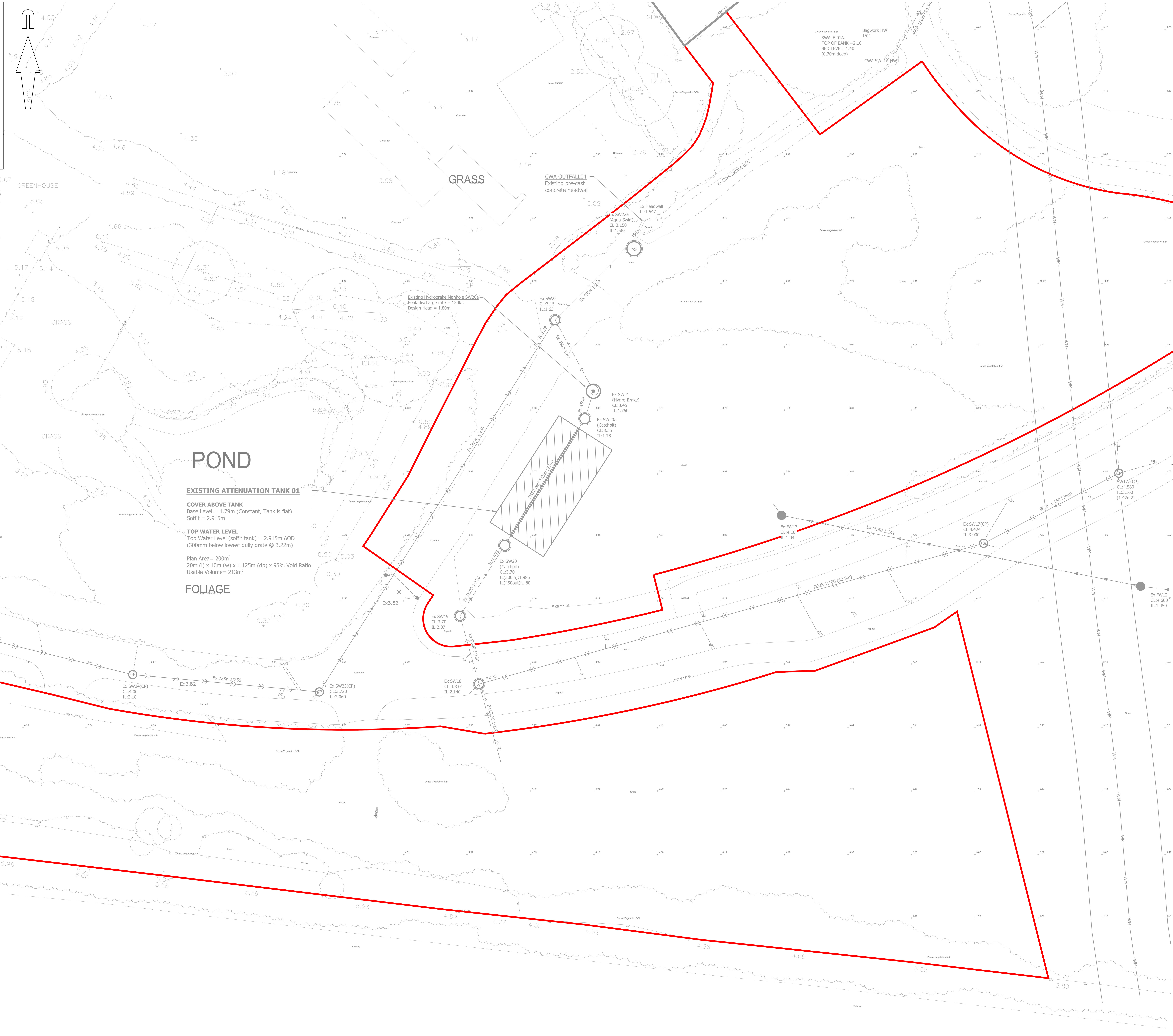
APPENDIX E: Phase 6b - Topographic Survey

KEY

- EXSITING FOUL WATER SEWER AND MANHOLE
- EXISTING SURFACE WATER SEWER AND MANHOLE
- EXISTING HIGHWAY DRAIN AND CATCHPIT
- EXISTING ATTENUATION TANK
- EXISTING HYDROBRAKE
- EXISTING AQUASWIRL
- EXISTING GULLY AND GULLY LEAD
- EXISTING WATER MAIN

NOTES:

1. This drawing is a combination of the following information:
   - Topographic Survey undertaken by Subvision Survey in March 2022, drawing reference SS-PH-013.
   - Drone Topographic Survey undertaken by Survey Solutions in Novemeber 2024 drawing reference 71849BWLS-02_13.
   - Mayer Brown Drainage design undertaken in Novemeber 2023 drawing reference PHLITTLEMAIN.2/20-1 to 3.



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A0 ORIGINAL

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KEY TO HEALTH AND SAFETY SYMBOLS

- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION.
- INDICATES A RESIDUAL RISK FOR INFORMATION.
- INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION.
- INDICATES A RESIDUAL RISK AS A WARNING.

FOR INFORMATION
NOT FOR CONSTRUCTION

rev.	amendment	checked	date
P1	Initial Issue. (TC)	SF	01/12/2025

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project: PHASE 6B LITTLEHAMPTON

scale	drawn by	checked by
1:200	TC	SF

date	cad file
NOVEMBER 2025	100.DWG

title: TOPOGRAPHIC SURVEY AND EXISTING DRAINAGE

Mayer Brown Limited jobcode	suitability	revision
	-	P1

drawing number: PHLITTLEPH6B.2/100

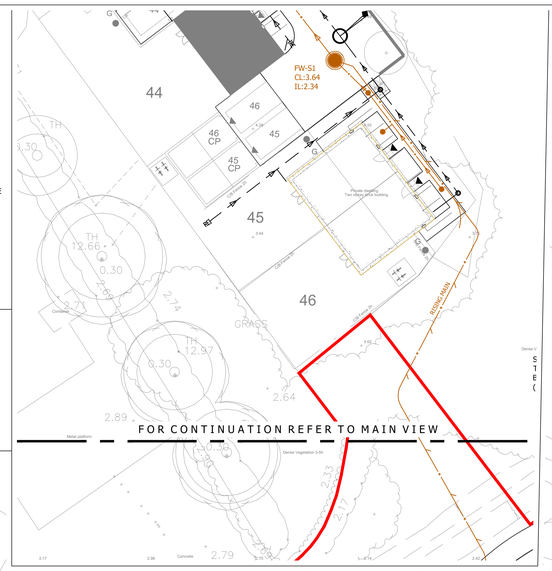
APPENDIX F: Phase 6b - Drainage General Arrangement Plan

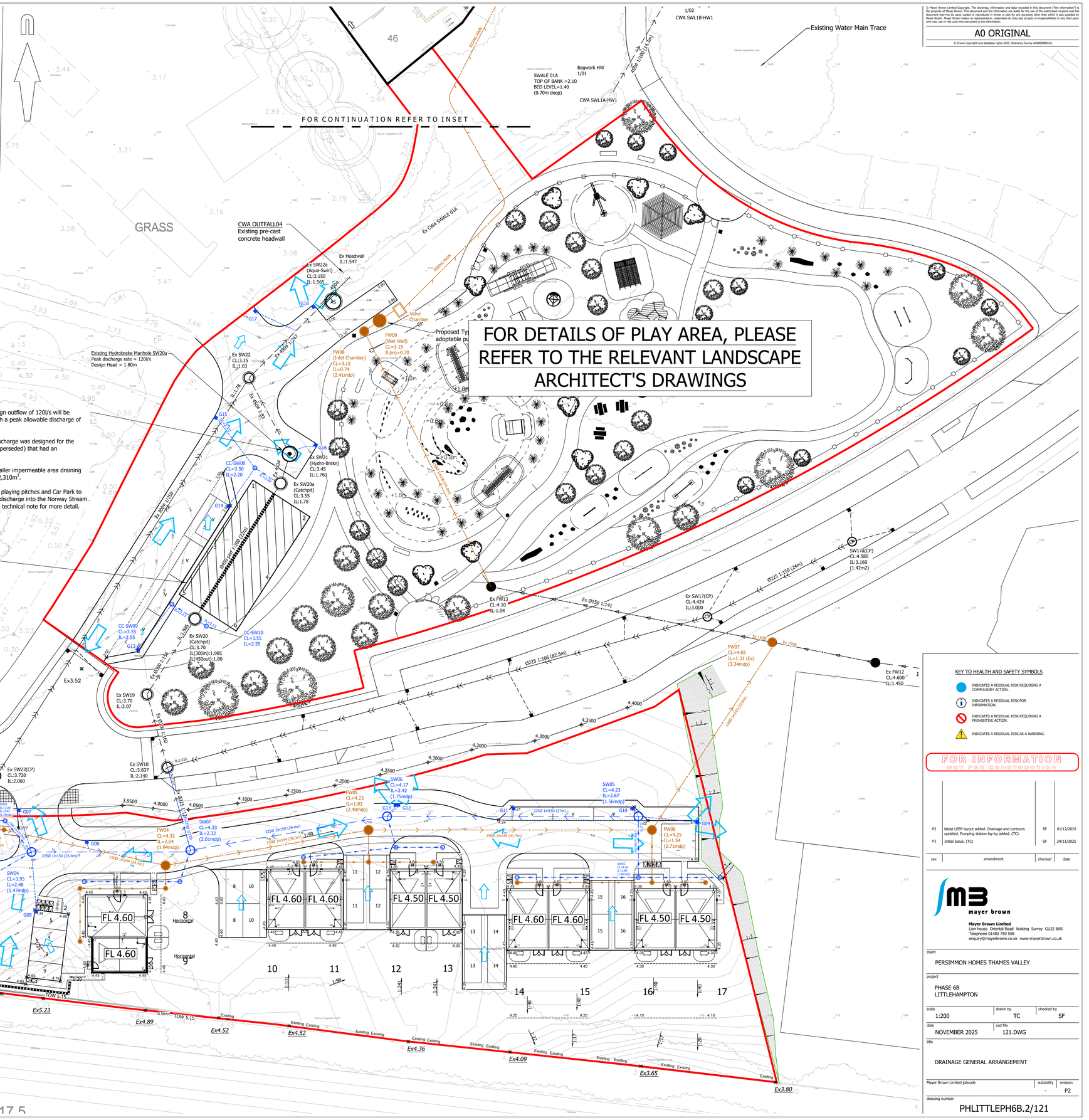
KEY

- SURFACE WATER SEWER AND MANHOLE
- SURFACE WATER FLOW CONTROL CHAMBER
- SURFACE WATER DRAINAGE
- FOUL WATER SEWER AND MANHOLE
- FOUL WATER SEWER AND INSPECTION CHAMBER
- PROPOSED GULLY AND GULLY LEAD
- PROPOSED RISING MAIN
- EXISTING FOUL WATER SEWER AND MANHOLE
- EXISTING SURFACE WATER SEWER AND MANHOLE
- EXISTING HIGHWAY DRAIN AND CATCHPIT
- EXISTING ATTENUATION TANK
- EXISTING HYDROBRAKE
- EXISTING AQUASWIRL
- EXISTING GULLY AND GULLY LEAD
- EXCEDDANCE FLOW ARROWS

NOTES:

1. This drawing is not to be scaled.
2. Drawing based on Persimmon Homes "Site Layout - Phase 6a - Residential - 285 units drawing reference "519_PL_100_B_LAYOUT_13.11.25", received on 13/11/2025.
3. Based on topographic survey undertaken by Subvision Survey in March 2022, drawing reference SS-PH-013.
4. This drawing is to be read in conjunction with all other relevant engineering and landscaping drawings. Any discrepancies are to be reported to the Engineer immediately for clarification.





The existing Hydrobrake with a design outflow of 120l/s will be replaced with a new Hydrobrake with a peak allowable discharge of 20l/s.

The Attenuation Tank and 120l/s discharge was designed for the Community Centre and Car Park (superseded) that had an impermeable area of 5,690m².

The revised 6a RMA has a much smaller impermeable area draining into the attenuation tank, covering 2,310m².

The 100l/s reduction will enable the playing pitches and Car Park to the east of phase 6a to have a free discharge into the Norway Stream. Refer to the accompanying drainage technical note for more detail.

EXISTING ATTENUATION TANK 01

COVER ABOVE TANK
Base Level = 1.79m (Constant, Tank is flat)
Soffit = 2.915m

TOP WATER LEVEL
Top Water Level (soffit tank) = 2.915m AOD
(300mm below lowest gully grate @ 3.22m)

Plan Area= 200m²
20m (l) x 10m (w) x 1.125m (dp) x 95% Void Ratio
Usable Volume= 213m³

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rev.	amendment	checked	date
P2	latest LEEP layout added. Drainage and contours updated. Pumping station lay-by added. (TC)	SF	01/12/2025
P1	Initial Issue. (TC)	SF	24/11/2025

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project: PHASE 6B LITTLEHAMPTON

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1:200	TC	SF

date	cad file
NOVEMBER 2025	121.DWG

title: DRAINAGE GENERAL ARRANGEMENT

Mayer Brown Limited jobcode	suitability	revision
	-	P2

drawing number: PHLITTLEPH6B.2/121

APPENDIX G: Phase 6b – MBL Levels & Engineering Plans

A0 ORIGINAL

LEVELS KEY:

- 4.66 SPOT LEVEL
- 4.66 MAIN AVENUE SPOT LEVEL
- Ex4.66 EXISTING SPOT LEVEL
- 1/100 GRADIENT
- RETAINING WALL
- GRAVEL BOARD
- FL 4.75 FINISHED FLOOR LEVEL
- CONSTRUCTION LINES
- 5.00 PROPOSED CONTOUR

NOTES:

1. This drawing is not to be scaled.
2. Drawing based on Persimmon Homes "Site Layout - Phase 6a - Residential - 285 units drawing reference " 547_PL_100b", received on 29/05/2025.
3. Based on topographic survey undertaken by Survey Solutions in November 2024, drawing reference 71849BWLS-02.
4. This drawing is to be read in conjunction with all other relevant engineering and landscaping drawings. Any discrepancies are to be reported to the Engineer immediately for clarification.

FOR DETAILS OF PLAY AREA, PLEASE REFER TO THE RELEVANT LANDSCAPE ARCHITECHT'S DRAWINGS

Approx. 4m length of existing Main Avenue Retaining Wall to be removed and reconstructed to tie in with proposed Phase 6B Retaining Wall

Proposed 1in3 embankment required beyond the boundary to tie in with existing levels.

Byre

Flint Acre

Pond

MP 17.5

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rev.	amendment	checked	date
P2	latest LEEP layout added. Levels and contours updated. (TC)	SF	01/12/2025
P1	Initial Issue. (TC)	SF	24/11/2025

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project: PHASE 6B LITTLEHAMPTON

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1:200	TC	SF

date	cad file
NOVEMBER 2025	151.DWG

title: ENGINEERING LAYOUT - LEVELS AND RETENTION

Mayer Brown Limited jobcode	suitability	revision
	-	P2

drawing number: PHLITTLEPH6B.2/151

KEY

- EXISTING KERB LINE
- KERB/EDGING LINE
- DROPPED KERB
- BUFF COLOURED TACTILE PAVING
- BITUMEN MACADAM CARRIAGEWAY SURFACING
- BLOCK PAVED PARKING BAY / PRIVATE DRIVE SURFACING LAID IN HERRINGBONE PATTERN
- PROPOSED BITUMEN MACADAM FOOTWAY CONSTRUCTION
- PROPOSED SLAB PRIVATE FOOTPATH CONSTRUCTION
- PROPOSED GRASSCRETE CONSTRUCTION
- PROPOSED SOFT LANDSCAPING (REFER TO LANDSCAPE ARCHITECT DRAWINGS)
- SITE BOUNDARY

KERB TYPES

- (0) TYPE 0 - NO KERB
- (1) TYPE 1 - HB2 - 125mm UPSTAND
- (2) TYPE 2 - BN - 25mm UPSTAND (VEHICULAR CROSSOVER)
- (3) TYPE 3 - EF - FLUSH
- (4) TYPE 4 - BN - 50mm UPSTAND (UPSTAND ON RAISED TABLE)
- (5) TYPE 5 - BN - 0-6mm FLUSH
- (6) TYPE 6 - CS2 - FLUSH
- (7) TYPE 7 - HB2 - 100mm UPSTAND

NOTES:

1. This drawing is not to be scaled.
2. Drawing based on Persimmon Homes "Site Layout - Phase 6a - Residential - 285 units drawing reference " 547_PL_100b", received on 29/05/2025.
3. Based on topographic survey undertaken by Survey Solutions in November 2024, drawing reference 71849BWLS-02.
4. This drawing is to be read in conjunction with all other relevant engineering and landscaping drawings. Any discrepancies are to be reported to the Engineer immediately for clarification.

FOR DETAILS OF PLAY AREA, PLEASE REFER TO THE RELEVANT LANDSCAPE ARCHITECHT'S DRAWINGS

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NOT FOR CONSTRUCTION

rev.	amendment	checked	date
P2	latest LEEP layout added. Hatching updated. Pumping station lay-by added. (TC)	SF	01/12/2025
P1	Initial Issue. (TC)	SF	24/11/2025

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client: PERSIMMON HOMES THAMES VALLEY

project: PHASE 6B
LITTLEHAMPTON

scale	drawn by	checked by
1:200	TC	SF

date	cad file
NOVEMBER 2025	131.DWG

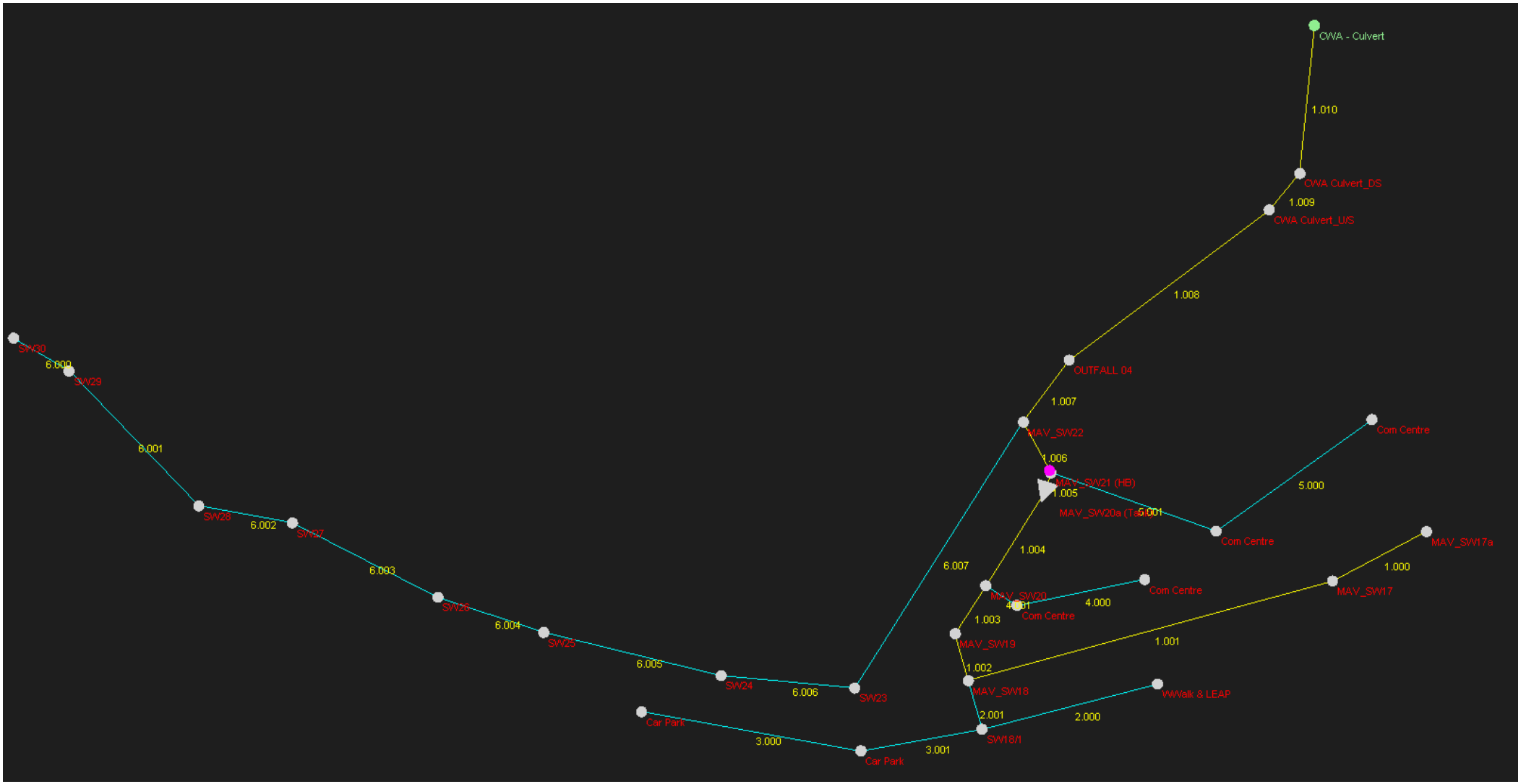
title: SURFACE TREATMENTS

Mayer Brown Limited jobcode	suitability	revision
	-	P2

drawing number: PHLITTLEPH6B.2/131

A0 ORIGINAL

APPENDIX H: Phase 6b - Windes Calculations


CWA - Culvert
1.010
CWA Culvert_DS
1.009
CWA Culvert_U/S
1.008
OUTFALL 04
1.007
MAV_SW22
1.006
MAV_SW21 (HB)
1.005
MAV_SW20a (Tank)
5.001
Com Centre
5.000
Com Centre
MAV_SW17a
1.000
MAV_SW17
1.001
6.007
1.004
MAV_SW20
4.001
Com Centre
4.000
Com Centre
1.003
MAV_SW19
1.002
MAV_SW18
WWalk & LEAP
2.001
2.000
SW18/1
3.001
Car Park
3.000
Car Park
6.006
SW23
SW24
6.005
SW25
6.004
SW26
6.003
SW27
6.002
SW28
6.001
SW29
6.000
SW30

Existing Network Details 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
1.000	23.387	0.160	146.2	0.035	5.00	0.0	0.600	o	225	Pipe/Conduit
1.001	83.165	0.785	105.9	0.146	5.00	0.0	0.600	o	225	Pipe/Conduit
2.000	39.931	0.380	105.1	0.064	5.00	0.0	0.600	o	225	Pipe/Conduit
3.000	49.000	0.500	98.0	0.064	5.00	0.0	0.600	o	225	Pipe/Conduit
3.001	27.068	0.380	71.2	0.062	5.00	0.0	0.600	o	225	Pipe/Conduit
2.001	11.068	0.105	105.4	0.000	5.00	0.0	0.600	o	225	Pipe/Conduit
1.002	10.777	0.070	154.0	0.026	5.00	0.0	0.600	o	300	Pipe/Conduit
1.003	12.514	0.080	156.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit
1.004	24.246	0.120	202.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit
4.000	18.120	0.180	100.7	0.020	5.00	0.0	0.600	o	150	Pipe/Conduit
4.001	6.462	0.170	38.0	0.021	5.00	0.0	0.600	o	150	Pipe/Conduit
5.000	18.146	0.170	106.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
5.001	18.509	0.170	108.9	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
5.002	17.190	0.160	107.4	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
5.003	28.543	0.160	178.4	0.000	5.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	3.160	0.035	0.0	1.08	42.9
1.001	3.000	0.181	0.0	1.27	50.5
2.000	2.700	0.064	0.0	1.28	50.7
3.000	3.200	0.064	0.0	1.32	52.5
3.001	2.700	0.126	0.0	1.55	61.7
2.001	2.320	0.190	0.0	1.27	50.6
1.002	2.140	0.397	0.0	1.26	89.4
1.003	2.070	0.397	0.0	1.26	88.8
1.004	1.900	0.397	0.0	1.43	226.9
4.000	2.550	0.020	0.0	1.00	17.7
4.001	2.370	0.041	0.0	1.64	28.9
5.000	2.750	0.000	0.0	0.97	17.2
5.001	2.580	0.000	0.0	0.96	17.0
5.002	2.410	0.000	0.0	0.97	17.1
5.003	2.175	0.000	0.0	0.98	38.8

Existing Network Details 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
1.005	4.562	0.020	228.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit
6.000	7.180	0.080	89.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
6.001	22.453	0.475	47.3	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
6.002	13.976	0.135	103.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
1.006	12.721	0.130	97.9	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit
7.000	14.210	0.210	67.7	0.048	5.00	0.0	0.600	o	225	Pipe/Conduit
7.001	41.217	0.890	46.3	0.030	0.00	0.0	0.600	o	225	Pipe/Conduit
7.002	20.964	0.090	232.9	0.063	0.00	0.0	0.600	o	225	Pipe/Conduit
7.003	36.000	0.150	240.0	0.068	0.00	0.0	0.600	o	225	Pipe/Conduit
7.004	24.553	0.100	245.5	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit
7.005	40.228	0.170	236.6	0.015	0.00	0.0	0.600	o	225	Pipe/Conduit
7.006	29.521	0.120	246.0	0.044	0.00	0.0	0.600	o	225	Pipe/Conduit
7.007	69.390	0.280	247.8	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit
1.007	16.732	0.067	249.7	0.019	0.00	0.0	0.600	o	450	Pipe/Conduit
1.008	4.325	0.017	250.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit
1.009	47.963	0.196	244.7	0.000	0.00	0.0	0.600	\/	35	Pipe/Conduit
1.010	14.335	0.100	143.4	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit
1.011	32.552	0.150	217.0	0.000	5.00	0.0	0.600	\/	35	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.005	1.780	0.438	0.0	1.34	213.4
6.000	2.750	0.000	0.0	1.06	18.8
6.001	2.670	0.000	0.0	1.47	25.9
6.002	2.120	0.000	0.0	1.28	51.1
1.006	1.760	0.438	0.0	2.06	326.9
7.000	3.790	0.048	0.0	1.59	63.3
7.001	3.580	0.078	0.0	1.93	76.6
7.002	2.690	0.141	0.0	0.85	33.9
7.003	2.600	0.209	0.0	0.84	33.4
7.004	2.450	0.223	0.0	0.83	33.0
7.005	2.350	0.238	0.0	0.85	33.6
7.006	2.180	0.282	0.0	0.83	33.0
7.007	2.060	0.317	0.0	0.99	70.3
1.007	1.630	0.774	0.0	1.28	203.9
1.008	1.563	0.774	0.0	1.28	203.8
1.009	1.546	0.774	0.0	3.24	6651.6
1.010	1.350	0.774	0.0	1.70	269.7
1.011	1.250	0.774	0.0	3.44	7065.0

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.011	CWA - Culvert	2.300	1.100	0.000	1325	0

Datum (m) 0.000 Offset (mins) 0

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
1	1.800	42	1.800	83	1.800	124	1.800	165	1.800	206	1.800
2	1.800	43	1.800	84	1.800	125	1.800	166	1.800	207	1.800
3	1.800	44	1.800	85	1.800	126	1.800	167	1.800	208	1.800
4	1.800	45	1.800	86	1.800	127	1.800	168	1.800	209	1.800
5	1.800	46	1.800	87	1.800	128	1.800	169	1.800	210	1.800
6	1.800	47	1.800	88	1.800	129	1.800	170	1.800	211	1.800
7	1.800	48	1.800	89	1.800	130	1.800	171	1.800	212	1.800
8	1.800	49	1.800	90	1.800	131	1.800	172	1.800	213	1.800
9	1.800	50	1.800	91	1.800	132	1.800	173	1.800	214	1.800
10	1.800	51	1.800	92	1.800	133	1.800	174	1.800	215	1.800
11	1.800	52	1.800	93	1.800	134	1.800	175	1.800	216	1.800
12	1.800	53	1.800	94	1.800	135	1.800	176	1.800	217	1.800
13	1.800	54	1.800	95	1.800	136	1.800	177	1.800	218	1.800
14	1.800	55	1.800	96	1.800	137	1.800	178	1.800	219	1.800
15	1.800	56	1.800	97	1.800	138	1.800	179	1.800	220	1.800
16	1.800	57	1.800	98	1.800	139	1.800	180	1.800	221	1.800
17	1.800	58	1.800	99	1.800	140	1.800	181	1.800	222	1.800
18	1.800	59	1.800	100	1.800	141	1.800	182	1.800	223	1.800
19	1.800	60	1.800	101	1.800	142	1.800	183	1.800	224	1.800
20	1.800	61	1.800	102	1.800	143	1.800	184	1.800	225	1.800
21	1.800	62	1.800	103	1.800	144	1.800	185	1.800	226	1.800
22	1.800	63	1.800	104	1.800	145	1.800	186	1.800	227	1.800
23	1.800	64	1.800	105	1.800	146	1.800	187	1.800	228	1.800
24	1.800	65	1.800	106	1.800	147	1.800	188	1.800	229	1.800
25	1.800	66	1.800	107	1.800	148	1.800	189	1.800	230	1.800
26	1.800	67	1.800	108	1.800	149	1.800	190	1.800	231	1.800
27	1.800	68	1.800	109	1.800	150	1.800	191	1.800	232	1.800
28	1.800	69	1.800	110	1.800	151	1.800	192	1.800	233	1.800
29	1.800	70	1.800	111	1.800	152	1.800	193	1.800	234	1.800
30	1.800	71	1.800	112	1.800	153	1.800	194	1.800	235	1.800
31	1.800	72	1.800	113	1.800	154	1.800	195	1.800	236	1.800
32	1.800	73	1.800	114	1.800	155	1.800	196	1.800	237	1.800
33	1.800	74	1.800	115	1.800	156	1.800	197	1.800	238	1.800
34	1.800	75	1.800	116	1.800	157	1.800	198	1.800	239	1.800
35	1.800	76	1.800	117	1.800	158	1.800	199	1.800	240	1.800
36	1.800	77	1.800	118	1.800	159	1.800	200	1.800	241	1.800
37	1.800	78	1.800	119	1.800	160	1.800	201	1.800	242	1.800
38	1.800	79	1.800	120	1.800	161	1.800	202	1.800	243	1.800
39	1.800	80	1.800	121	1.800	162	1.800	203	1.800	244	1.800
40	1.800	81	1.800	122	1.800	163	1.800	204	1.800	245	1.800
41	1.800	82	1.800	123	1.800	164	1.800	205	1.800	246	1.800

Surcharged Outfall Details for Storm

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
247	1.800	297	1.800	347	1.800	397	1.800	447	1.800	497	1.800
248	1.800	298	1.800	348	1.800	398	1.800	448	1.800	498	1.800
249	1.800	299	1.800	349	1.800	399	1.800	449	1.800	499	1.800
250	1.800	300	1.800	350	1.800	400	1.800	450	1.800	500	1.800
251	1.800	301	1.800	351	1.800	401	1.800	451	1.800	501	1.800
252	1.800	302	1.800	352	1.800	402	1.800	452	1.800	502	1.800
253	1.800	303	1.800	353	1.800	403	1.800	453	1.800	503	1.800
254	1.800	304	1.800	354	1.800	404	1.800	454	1.800	504	1.800
255	1.800	305	1.800	355	1.800	405	1.800	455	1.800	505	1.800
256	1.800	306	1.800	356	1.800	406	1.800	456	1.800	506	1.800
257	1.800	307	1.800	357	1.800	407	1.800	457	1.800	507	1.800
258	1.800	308	1.800	358	1.800	408	1.800	458	1.800	508	1.800
259	1.800	309	1.800	359	1.800	409	1.800	459	1.800	509	1.800
260	1.800	310	1.800	360	1.800	410	1.800	460	1.800	510	1.800
261	1.800	311	1.800	361	1.800	411	1.800	461	1.800	511	1.800
262	1.800	312	1.800	362	1.800	412	1.800	462	1.800	512	1.800
263	1.800	313	1.800	363	1.800	413	1.800	463	1.800	513	1.800
264	1.800	314	1.800	364	1.800	414	1.800	464	1.800	514	1.800
265	1.800	315	1.800	365	1.800	415	1.800	465	1.800	515	1.800
266	1.800	316	1.800	366	1.800	416	1.800	466	1.800	516	1.800
267	1.800	317	1.800	367	1.800	417	1.800	467	1.800	517	1.800
268	1.800	318	1.800	368	1.800	418	1.800	468	1.800	518	1.800
269	1.800	319	1.800	369	1.800	419	1.800	469	1.800	519	1.800
270	1.800	320	1.800	370	1.800	420	1.800	470	1.800	520	1.800
271	1.800	321	1.800	371	1.800	421	1.800	471	1.800	521	1.800
272	1.800	322	1.800	372	1.800	422	1.800	472	1.800	522	1.800
273	1.800	323	1.800	373	1.800	423	1.800	473	1.800	523	1.800
274	1.800	324	1.800	374	1.800	424	1.800	474	1.800	524	1.800
275	1.800	325	1.800	375	1.800	425	1.800	475	1.800	525	1.800
276	1.800	326	1.800	376	1.800	426	1.800	476	1.800	526	1.800
277	1.800	327	1.800	377	1.800	427	1.800	477	1.800	527	1.800
278	1.800	328	1.800	378	1.800	428	1.800	478	1.800	528	1.800
279	1.800	329	1.800	379	1.800	429	1.800	479	1.800	529	1.800
280	1.800	330	1.800	380	1.800	430	1.800	480	1.800	530	1.800
281	1.800	331	1.800	381	1.800	431	1.800	481	1.800	531	1.800
282	1.800	332	1.800	382	1.800	432	1.800	482	1.800	532	1.800
283	1.800	333	1.800	383	1.800	433	1.800	483	1.800	533	1.800
284	1.800	334	1.800	384	1.800	434	1.800	484	1.800	534	1.800
285	1.800	335	1.800	385	1.800	435	1.800	485	1.800	535	1.800
286	1.800	336	1.800	386	1.800	436	1.800	486	1.800	536	1.800
287	1.800	337	1.800	387	1.800	437	1.800	487	1.800	537	1.800
288	1.800	338	1.800	388	1.800	438	1.800	488	1.800	538	1.800
289	1.800	339	1.800	389	1.800	439	1.800	489	1.800	539	1.800
290	1.800	340	1.800	390	1.800	440	1.800	490	1.800	540	1.800
291	1.800	341	1.800	391	1.800	441	1.800	491	1.800	541	1.800
292	1.800	342	1.800	392	1.800	442	1.800	492	1.800	542	1.800
293	1.800	343	1.800	393	1.800	443	1.800	493	1.800	543	1.800
294	1.800	344	1.800	394	1.800	444	1.800	494	1.800	544	1.800
295	1.800	345	1.800	395	1.800	445	1.800	495	1.800	545	1.800
296	1.800	346	1.800	396	1.800	446	1.800	496	1.800	546	1.800

Surcharged Outfall Details for Storm

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
547	1.800	556	1.800	565	1.800	574	1.800	583	1.800	592	1.800
548	1.800	557	1.800	566	1.800	575	1.800	584	1.800	593	1.800
549	1.800	558	1.800	567	1.800	576	1.800	585	1.800	594	1.800
550	1.800	559	1.800	568	1.800	577	1.800	586	1.800	595	1.800
551	1.800	560	1.800	569	1.800	578	1.800	587	1.800	596	1.800
552	1.800	561	1.800	570	1.800	579	1.800	588	1.800	597	1.800
553	1.800	562	1.800	571	1.800	580	1.800	589	1.800	598	1.800
554	1.800	563	1.800	572	1.800	581	1.800	590	1.800	599	1.800
555	1.800	564	1.800	573	1.800	582	1.800	591	1.800	600	1.800

Online Controls for Storm

Hydro-Brake® Optimum Manhole: MAV_SW21 (HB), DS/PN: 1.006, Volume (m³): 3.2

Unit Reference	MD-SHE-0196-2000-1200-2000
Design Head (m)	1.200
Design Flow (l/s)	20.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	196
Invert Level (m)	1.760
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	20.0
Flush-Flo™	0.376	20.0
Kick-Flo®	0.827	16.8
Mean Flow over Head Range	-	17.1

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	6.8	1.200	20.0	3.000	31.0	7.000	46.7
0.200	18.3	1.400	21.5	3.500	33.4	7.500	48.2
0.300	19.8	1.600	22.9	4.000	35.6	8.000	49.8
0.400	20.0	1.800	24.3	4.500	37.7	8.500	51.3
0.500	19.7	2.000	25.5	5.000	39.6	9.000	52.7
0.600	19.4	2.200	26.7	5.500	41.5	9.500	54.1
0.800	17.4	2.400	27.8	6.000	43.3		
1.000	18.3	2.600	28.9	6.500	45.0		

Storage Structures for Storm

Cellular Storage Manhole: MAV_SW20a (Tank), DS/PN: 1.005

Invert Level (m) 1.790 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	200.0	200.0	1.126	0.0	266.0
1.125	200.0	266.0			

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

Simulation Criteria

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

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 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Catchment
FEH Rainfall Version 2013 Cv (Summer) 0.840
Site Location GB 502950 104450 TQ 02950 04450 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
DTS Status ON

Profile(s) Winter
Duration(s) (mins) 120
Return Period(s) (years) 100
Climate Change (%) 40

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	MAV_SW17a	120 minute 100 year Winter I+40%	4.580	3.474	0.089	0.000	0.22	0.350		8.6	SURCHARGED

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.001	MAV_SW17	120 minute 100 year Winter I+40%	4.424	3.456	0.231	0.000	0.87	1.393		42.7	SURCHARGED
2.000	PH6b 1	120 minute 100 year Winter I+40%	4.400	3.171	0.246	0.000	0.33	0.527		15.7	SURCHARGED
3.000	PH6b 2	120 minute 100 year Winter I+40%	4.400	3.288	-0.137	0.000	0.33	0.094		16.5	OK
3.001	PH6b 3	120 minute 100 year Winter I+40%	4.400	3.183	0.258	0.000	0.53	1.927		30.3	SURCHARGED
2.001	SW18/1	120 minute 100 year Winter I+40%	4.100	3.156	0.611	0.000	1.02	3.508		43.8	SURCHARGED
1.002	MAV_SW18	120 minute 100 year Winter I+40%	3.800	3.136	0.696	0.000	1.36	4.706		90.4	SURCHARGED
1.003	MAV_SW19	120 minute 100 year Winter I+40%	3.700	3.048	0.678	0.000	1.27	1.777		90.0	SURCHARGED
1.004	MAV_SW20	120 minute 100 year Winter I+40%	3.700	2.954	0.604	0.000	0.47	1.986		89.5	SURCHARGED
4.000	CC-IC08	120 minute 100 year Winter I+40%	3.550	2.899	0.199	0.000	0.31	0.097		5.2	SURCHARGED
4.001	CC-IC09	120 minute 100 year Winter I+40%	3.450	2.895	0.375	0.000	0.43	0.457		10.6	SURCHARGED
5.000	CC-IC01	120 minute 100 year Winter I+40%	3.750	2.891	-0.009	0.000	0.00	0.022		0.0	OK
5.001	CC-IC02	120 minute 100 year Winter I+40%	3.750	2.891	0.161	0.000	0.01	0.360		0.2	SURCHARGED
5.002	CC-IC03	120 minute 100 year Winter I+40%	3.750	2.891	0.331	0.000	0.02	0.395		0.2	SURCHARGED
5.003	CC-IC04	120 minute 100 year Winter I+40%	4.050	2.891	0.491	0.000	0.01	0.495		0.3	SURCHARGED
1.005	MAV_SW20a (Tank)	120 minute 100 year Winter I+40%	3.700	2.891	0.661	0.000	0.20	215.261	112	23.2	SURCHARGED
6.000	CC-IC05	120 minute 100 year Winter I+40%	3.750	2.865	-0.035	0.000	0.00	0.017		0.1	OK
6.001	CC-IC06	120 minute 100 year Winter I+40%	3.750	2.864	0.044	0.000	0.02	0.138		0.4	SURCHARGED
6.002	CC-IC07	120 minute 100 year Winter I+40%	3.400	2.891	0.546	0.000	0.01	0.604		0.5	SURCHARGED
1.006	MAV_SW21 (HB)	120 minute 100 year Winter I+40%	3.700	2.899	0.689	0.000	0.10	2.338		20.0	SURCHARGED
7.000	SW30	120 minute 100 year Winter I+40%	4.920	3.936	-0.079	0.000	0.22	0.159		12.2	OK
7.001	SW29	120 minute 100 year Winter I+40%	4.710	3.914	0.109	0.000	0.27	0.825		19.5	SURCHARGED
7.002	SW28	120 minute 100 year Winter I+40%	4.100	3.850	0.935	0.000	1.14	2.888		35.2	FLOOD RISK
7.003	SW27	120 minute 100 year Winter I+40%	3.730	3.735	0.910	4.719	1.46	6.773		46.0	FLOOD
7.004	SW26	120 minute 100 year Winter I+40%	3.850	3.479	0.804	0.000	1.57	2.541		47.8	SURCHARGED
7.005	SW25	120 minute 100 year Winter I+40%	4.400	3.260	0.685	0.000	1.56	1.952		49.9	SURCHARGED

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

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.006	SW24	120 minute 100 year Winter I+40%	4.000	2.862	0.457	0.000	1.95	2.318		60.0	SURCHARGED
7.007	SW23	120 minute 100 year Winter I+40%	3.720	2.406	0.046	0.000	1.02	1.497		68.4	SURCHARGED
1.007	MAV_SW22	120 minute 100 year Winter I+40%	3.700	2.120	0.040	0.000	0.56	5.396		90.0	SURCHARGED
1.008	SW22A	120 minute 100 year Winter I+40%	3.150	2.024	0.011	0.000	0.76	2.803		90.0	SURCHARGED
1.009	OUTFALL 04	120 minute 100 year Winter I+40%	2.300	2.011	-0.526	0.000	0.02	0.984		90.0	FLOOD RISK
1.010	CWA Culvert_U/S	120 minute 100 year Winter I+40%	2.300	1.955	0.155	0.000	0.50	32.789		89.9	SURCHARGED
1.011	CWA Culvert_DS	120 minute 100 year Winter I+40%	2.300	1.849	-0.392	0.000	0.02	2.759		89.9	OK