Elliott Wood Partnership LTD	Page 8	
241 The Broadway	Below Ground Drainage Cals	
London	2210419 - 12 Pilgrims Lane	
SW19 1SD	London, NW3 1SN	Micco
Date 04/12/2024 16:31	Designed by RBA	
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX	Checked by MTr	Diamage
Innovyze	Network 2020.1.3	
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX Innovyze Storage Infiltration Trench M Infiltration Coefficient Base Infiltration Coefficient Side Safety H Por Invert Leve Porous Car Park Ma Infiltration Coefficient Base Membrane Percolation Max Percolatio Safety P Invert Le Porous Car Park Ma Infiltration Coefficient Base	Checked by MTr Network 2020.1.3 Structures for Storm anhole: SFilterDrain, DS/PN: S1.000 (m/hr) 0.00000 Trench Width (m) 0.5 (m/hr) 0.00000 Trench Length (m) 20.0 Factor 2.0 Slope (1:X) 0.0 cosity 0.30 Cap Volume Depth (m) 0.300 enhole: SPermPav1, DS/PN: S2.001 (m/hr) 0.00000 Width (m) 4.0 (m/hr) 1000 Length (m) 5.0 ractor 2.0 Depression Storage (mm) 5 Slope (1:X) 0.0 Factor 2.0 Depression Storage (mm) 5 Sorosity 0.30 Evaporation (mm/day) 3 vel (m) 99.350 Cap Volume Depth (m) 0.250 anhole: SPermPav2, DS/PN: S3.001 (m/hr) 0.00000 (m/hr) 0.00000 Width (m) 5.0	
Membrane Percolation Max Percolatio Safety P Invert Le <u>Cellular Storage</u> Inve Infiltration Coefficient Infiltration Coefficient	(mm/hr)1000Length (m)6.9n (1/s)9.6Slope (1:X)0.0Factor2.0 Depression Storage (mm)5orosity0.30Evaporation (mm/day)3vel (m)99.350Cap Volume Depth (m)0.250Manhole:SSWFC3, DS/PN: S1.006ert Level (m)98.350Safety Factor2.0t Base (m/hr)0.00000Porosity0.95t Side (m/hr)0.00000Porosity0.95	
Depth (m) Area (m ²) Inf. Area (m ²) Depth (m)	Area (m ²) Inf. Area (m ²) Depth (m) Area (m ²)	Inf. Area (m²)
0.000 12.0 0.0 0.800	12.0 0.0 0.801 0.0	0.0

Elliott Wo	ood Partnershi	p LTD							Pag	e 9
241 The Br	roadway		Be	elow G	round Drain	age Cal	S			
London			22	210419	- 12 Pilgr	ims Lan	е			
SW19 1SD			Lo	ondon,	NW3 1SN				N	licro
Date 04/12	2/2024 16:31		De	esigne	d by RBA				ň	
File 22104	419-EWP-ZZ-XX-	-CA-C-0001.N	1DX Ch	necked	by MTr					rainage
Innovyze			Ne	etwork	2020.1.3					
<u>l year</u>	Return Period	d Summary o	<u>f Criti</u>	cal Re	sults by Ma	aximum I	level	(Rank	<u>1) for</u>	<u>storm</u>
	Area Hc Manhole Headl Foul Sewage	Al Reduction H Hot Start (Dt Start Level Loss Coeff (Gl e per hectare	<u>Simu</u> Factor 1. (mins) (mm) obal) 0. (1/s) 0.	<u>alation</u> 000 <i>A</i> 0 500 Flc 000	<u>Criteria</u> Additional Fl MADD Fact Dw per Person	ow - % of or * 10m ³ Inlet (per Day	Tota /ha S Coeffic (l/pe	l Flow (torage 2 ecient (r/day) (0.000 2.000 0.800 0.000	
Num N	nber of Input Hyd Number of Online	lrographs 0 Controls 4 Nu	Number c umber of	of Offli Storage	ine Controls e Structures	0 Number 4 Number	of Ti of Re	me/Area al Time	Diagram Control	ns 0 .s 0
	Rainfal	l Model Region Engla	<u>Synthet</u>	<u>ic Rain</u> FSR M5 ales	fall Details -60 (mm) 21.0 Ratio R 0.4	00 Cv (S 35 Cv (W	ummer) inter)	0.750 0.840		
	Mar	rgin for Flood	l Risk Wa Analysi	rning (s Times DTS Sta	(mm) 300.0 step Fine In- atus ON	DVD Sta ertia Sta	atus O atus O	FF FF		
		Profi	10(5)			Summer	and M	linter		
		Duration(s) (mins) 15	, 30, 6	0, 120, 240,	360, 480	, 960,	1440		
	Return	Period(s) (y	ears)				1, 30	, 100		
		Climate Chang	e (%)				Ο,	0, 40		
		Climate Chang	e (%)				Ο,	0, 40		
		Climate Chang	e (%)				Ο,	0, 40		Water
DN	US/MH Namo	Climate Chang F	e (%) Return Cl	imate	First (X) Surcharge	First ()	0, () Fir	0, 40 st (Z)	Overflow	Water Water (m)
PN	US/MH Name	Climate Chang F Storm F	e (%) Return Cl Period Cl	.imate hange	First (X) Surcharge	First (1 Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water w Level (m)
PN S1.000	US/MH Name SFilterDrain	Climate Chang F Storm F 30 Winter 30 Winter	e (%) Return Cl Period Cl 1	imate hange +0%	First (X) Surcharge 30/15 Summer	First (1 Flood	0, () Fir Ove	0, 40 st (Z) (Overflow Act.	Water w Level (m) 96.492
PN S1.000 S1.001 S1.002	US/MH Name SFilterDrain SPump SSW1	Climate Chang F Storm E 30 Winter 30 Winter 15 Winter	e (%) Return Cl Period Cl 1 1 1	.imate hange +0% +0% 1 +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer	First (1 Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water w Level (m) 96.492 96.481 98.660
PN S1.000 S1.001 S1.002 S2.000	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter	e (%) Return Cl Period Cl 1 1 1 1	-imate hange +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer	First (Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water w Level (m) 96.492 96.481 98.660 99.327
PN S1.000 S1.001 S1.002 S2.000 S2.001	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SPermPav1	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter	e (%) Return Cl Period Cl 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter	First (\ Flood	0, () Fir Ove	0, 40 st (Z) o	Overflow Act.	Water w Level (m) 96.492 96.481 98.660 99.327 99.327
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SPermPav1 SJunction	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter	First () Flood	0, () Fir Ove	0, 40 st (Z) o	Overflow Act.	Water w Level (m) 96.492 96.481 98.660 99.327 99.327 98.547
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SPermPav1 SJunction SSW2	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 15 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer	First () Flood	0, () Fir Ove	0, 40 st (Z) o	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SDUMMY PermPav1 SJunction SSW2 SSW3	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 30 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter	First () Flood	0, () Fir Ove	0, 40 st (Z) o	Overflow Act.	Water w Level (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S2.001	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1	imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter	First (: Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SPermPav2	Climate Chang F Storm E 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 20 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter	First (Flood	0, () Fir Ove	0, 40 st (Z) o	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.455 98.457 99.410 99.408
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	Climate Chang F Storm F 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer	First (Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer	First (Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	Climate Chang F Storm E 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 1/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal	First (Flood	0, () Fir Ove	0, 40 st (Z) o erflow	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name	Climate Chang F Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter (m)	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow	First () Flood f Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s)	0, 40 st (Z) o erflow	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name	Climate Chang Storm F 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% Flow / Cap.	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	First (Flood If Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s)	0, 40 st (Z) o erflow	Overflow Act. Land Land Land Land Land Land Land Land	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006 PN S1.000	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SSW5C3 US/MH Name	Climate Chang Storm F 30 Winter 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 30 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Limate hange +0% +0% +0% +0% +0% +0% +0% +0% Flow / Cap. 0.28	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 1/30 Winter 30/15 Summer 30/15 Summer Hal Overflow (1/s)	First () Flood If Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s) 0.6	0, 40 st (Z) o erflow Statu	Overflow Act. Lans Exc OK	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006 PN S1.000	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SSW3 SDUMMY PermPav2 SSWFC3 US/MH Name	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 mp -0.069	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Limate hange +0% +0% +0% +0% +0% +0% +0% +0% Flow / Cap. 0.28 0.28	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 1/30 Winter 30/15 Summer 30/15 Summer Hal Overflow (1/s)	First () Flood f Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s) 0.6 0.6	0, 40 st (Z) o erflow Statu	Overflow Act. Land Is Exc OK OK	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.004 \$1.005 \$3.000 \$3.001 \$1.006 PN \$1.000 \$1.000 \$1.000 \$1.000 \$1.000	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SSW3 SDUMMY PermPav2 SSWFC3 US/MH Name	Climate Chang Storm F 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 mp -0.069 V1 -0.065	e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Limate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	First () Flood f Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s) 0.6 0.6 1.4	0, 40 st (Z) o erflow Statu	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
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PN \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.004 \$1.005 \$3.000 \$3.001 \$1.006 PN \$1.006 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.001 \$1.003 \$1.004 \$1.005 \$3.000 \$1.004 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$1.006 PN	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SSW3 SDUMMY PermPav2 SSWFC3 US/MH Name 00 SFilterDrai 01 SPum 02 SSW 00 SDUMMY Permpav 01 SPermPav	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 mp -0.069 v1 -0.073 v1 -0.073 on -0.065 v1 -0.073 on -0.055 v1 -0.055 on -0.055 v1 -0.073 on -0.055 on -	<pre>e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</pre>	<pre>imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%</pre>	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	First () Flood If Drain Time (mins)	0, () Fir Ove Pipe Flow (1/s) 0.6 0.6 1.4 0.0 0.1 1.5 2.2	0, 40 st (Z) o erflow Statu	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.004 \$1.005 \$3.000 \$3.001 \$1.006 PN \$1.006 \$1.000 \$1.000 \$1.000 \$2.000 \$1.000 \$2.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.001 \$1.003 \$1.004 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$1.005 \$3.000 \$3.000 \$3.000 \$1.006 PN	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SSW3 SDUMMY PermPav2 SSWFC3 US/MH Name 00 SFilterDrai 01 SPum 02 SSW 00 SDUMMY Permpac 01 SPermPav 03 SJunctic 03 SJunctic	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 np -0.069 N1 -0.073 colored N1 -0.073 colored N2 -0.055 N3 -0.075 0 007	<pre>e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</pre>	<pre>.imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%</pre>	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	First () Flood f Drain Time (mins)	0, Fir Ove Fipe Flow (1/s) 0.6 0.6 1.4 0.0 0.1 1.5 2.3 2.3	0, 40 st (Z) o srflow Statu	Overflow Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006 PN S1.006 S1.000	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name 00 SFilterDrai 01 SPum 02 SSW 00 SDUMMY Permpav 03 SJunctic 04 SSW	Climate Chang F Storm E 30 Winter 30 Winter 15 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 np -0.069 N1 -0.073 21 -0.073 21 -0.073 20 -0.055 N3 0.007 22 -0.090	<pre>e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</pre>	<pre>.imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%</pre>	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	First () Flood If Drain Time (mins)	0, () Fir Ove Fice (1/s) 0.6 0.6 1.4 0.0 0.1 1.5 2.3 2.9 0.0	0, 40 st (Z) o srflow Statu	Overflow Act. Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001 S1.006 PN S1.006 PN S1.000 S1	US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name 00 SFilterDrai 01 SPum 02 SSW 00 SDUMMY Permpav 03 SJUNCTIC 04 SSW 05 SSW	Climate Chang Storm E 30 Winter 30 Winter 15 Winter 60 Winter 60 Winter 30 Winter 15 Winter 30 Winter 960 Summer 1440 Winter 30 Winter Surcharged Depth (m) in -0.058 mp -0.069 v1 -0.073 v1 -0.073 v1 -0.073 v1 -0.055 v3 0.007 v2 -0.090 v2 -0.092	<pre>e (%) Return Cl Period Cl 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</pre>	<pre>.imate hange +0% +0% +0% +0% +0% +0% +0% +0% +0% +0%</pre>	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 1/30 Winter 30/15 Summer 30/15 Summer Hal Overflow (1/s)	First () Flood If Drain Time (mins)	0, () Fir Ove Fir (1/s) 0.6 0.6 1.4 0.0 0.1 1.5 2.3 2.9 0.0 0.0	0, 40 st (Z) o erflow Statu	Overflow Act. Act.	Water (m) 96.492 96.481 98.660 99.327 99.327 98.547 98.485 98.457 99.410 99.408 98.443

Appendix J

MicroDrainage Hydraulic Modelling Calculations

J

Elliott Wood Partnership LTD	Page 1
241 The Broadway Below	Ground Drainage Cals
London 221041	.9 - 12 Pilgrims Lane
SW19 1SD Londor	NW3 1SN
Date 04/12/2024 16:31 Design	ied by RBA
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX Checke	ed by MTr Didilidye
Innovyze Networ	ck 2020.1.3

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and WalesReturn Period (years)1PIMP (%)100M5-60 (mm)21.000Add Flow / Climate Change (%)0Ratio R0.436Minimum Backdrop Height (m)0.200Maximum Rainfall (mm/hr)100Maximum Backdrop Height (m)1.500Maximum Time of Concentration (mins)30Min Design Depth for Optimisation (m)1.200Foul Sewage (l/s/ha)0.000Min Vel for Auto Design only (m/s)1.00Volumetric Runoff Coeff.0.750Min Slope for Optimisation (1:X)500

Designed with Level Soffits

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length	Fall	Slope	I.Area	T.E.	Base	k	HYD	DIA	Section Type	Auto
	(m)	(m)	(1:X)	(ha)	(mins)	Flow (l/s)	(mm)	SECT	(mm)		Design
S1.000	11.852	0.000	0.0	0.007	4.00	0.0	0.600	0	100	Pipe/Conduit	<u> </u>
S1.001	11.949	-2.175	-5.5	0.000	0.00	0.0	0.600	0	100	Pipe/Conduit	Ā
S1.002	11.160	0.112	99.6	0.008	0.00	0.0	0.600	0	100	Pipe/Conduit	ē
c2 000	0 510	0 000	0 0	0 000	4 00	0.0	0 600		100	Dine (Conduit	•
52.000	2.510	0.000	0.0	0.000	4.00	0.0	0.600	0	100	Pipe/Conduit	
S2.001	1.911	0./8/	2.4	0.002	0.00	0.0	0.600	0	100	Pipe/Conduit	•
S1.003	7.388	0.073	101.2	0.000	0.00	0.0	0.600	0	100	Pipe/Conduit	<u>A</u>
S1.004	8.844	0.090	98.0	0.008	0.00	0.0	0.600	0	100	Pipe/Conduit	Ă
S1.005	4.605	0.000	0.0	0.008	0.00	0.0	0.600	0	100	Pipe/Conduit	ĕ
G2 000	2 425	0 000	0 0	0 000	4 00	0.0	0 600		100	Dine (Conduit	•
53.000	2.435	0.000	0.0	0.000	4.00	0.0	0.600	0	100	Pipe/Conduit	
\$3.001	1.372	1.050	1.3	0.004	0.00	0.0	0.600	0	100	Pipe/Conduit	8
S1.006	2.105	0.020	105.3	0.000	0.00	0.0	0.600	0	100	Pipe/Conduit	4
										±	

Network Results Table

PN	Rain	T.C.	US/IL	Σ I.Area	Σ Base	Foul	Add Flow	Vel	Cap	Flow
	(mm/hr)	(mins)	(m)	(ha)	Flow (l/s)	(l/s)	(1/s)	(m/s)	(l/s)	(l/s)
S1.000	51.53	6.84	96.450	0.007	0.0	0.0	0.0	0.07	0.5«	1.0
S1.001	43.00	9.72	96.450	0.007	0.0	0.0	0.0	0.07	0.5«	1.0
S1.002	42.43	9.96	98.625	0.015	0.0	0.0	0.0	0.77	6.0	1.7
S2.000	62.15	4.60	99.300	0.000	0.0	0.0	0.0	0.07	0.5	0.0
S2.001	62.11	4.61	99.300	0.002	0.0	0.0	0.0	5.00	39.3	0.3
s1.003	42.07	10.12	98.513	0.017	0.0	0.0	0.0	0.76	6.0	1.9
S1.004	41.64	10.31	98.440	0.025	0.0	0.0	0.0	0.78	6.1	2.8
S1.005	39.35	11.41	98.350	0.033	0.0	0.0	0.0	0.07	0.5«	3.5
s3.000	62.25	4.58	99.400	0.000	0.0	0.0	0.0	0.07	0.5	0.0
S3.001	62.23	4.59	99.400	0.004	0.0	0.0	0.0	6.82	53.6	0.7
s1.006	39.26	11.46	98.350	0.037	0.0	0.0	0.0	0.75	5.9	3.9

Elliott Wood Partnership LTD	Page 2	
241 The Broadway	Below Ground Drainage Cals	
London	2210419 - 12 Pilgrims Lane	
SW19 1SD	London, NW3 1SN	Micro
Date 04/12/2024 16:31	Designed by RBA	
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX	Checked by MTr	Diamage
Innovyze	Network 2020.1.3	

Manhole	Schedules	for	Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Bac	kdrop (mm)
SEilterDrain	96 950	0 500	Open Manhole	450	S1 000	96 450	100					
SFILLEIDIAIII	90.950	0.000		450	31.000	90.450	100	a1 000	0.6 450	100		
SPump	97.148	0.698	Open Mannole	450	S1.001	96.450	100	SI.000	96.450	100		
SSW1	99.250	0.625	Open Manhole	450	S1.002	98.625	100	S1.001	98.625	100		
SDUMMY Permpav1	99.850	0.550	Junction		S2.000	99.300	100					
SPermPav1	99.850	0.550	Open Manhole	450	S2.001	99.300	100	s2.000	99.300	100		
SJunction	99.850	1.337	Junction		S1.003	98.513	100	S1.002	98.513	100		
								s2.001	98.513	100		
SSW2	99.850	1.410	Open Manhole	450	S1.004	98.440	100	s1.003	98.440	100		
SSW3	99.800	1.450	Open Manhole	450	S1.005	98.350	100	S1.004	98.350	100		
SDUMMY PermPav2	99.850	0.450	Junction		S3.000	99.400	100					
SPermPav2	99.850	0.450	Open Manhole	450	S3.001	99.400	100	s3.000	99.400	100		
SSWFC3	99.850	1.500	Open Manhole	1200	S1.006	98.350	100	S1.005	98.350	100		
								s3.001	98.350	100		
SOutfall	99.900	1.570	Open Manhole	0		OUTFALL		s1.006	98.330	100		

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SFilterDrain	526854.030	185669.729	526854.030	185669.729	Required	•
SPump	526857.155	185658.297	526857.155	185658.297	Required	<u></u>
SSW1	526845.213	185657.867	526845.213	185657.867	Required	-
SDUMMY Permpavl	526840.096	185665.609			No Entry	Ċ
SPermPavl	526840.406	185668.099	526840.406	185668.099	Required	5
SSUNCCION SSW2	526840.320	185675.758	526840.320	185675.758	Required	
SSW3	526845.889	185682.629	526845.889	185682.629	Required	
SDUMMY PermPav2	526839.138	185680.908			No Entry	1.00
SPermPav2	526841.572	185680.984	526841.572	185680.984	Required	G
						-•

Elliott Wood Pa	rtnership	LTD					1	Page 3
241 The Broadwa	У		Belo	w Ground Dr	ainage Cals			
London			2210	419 - 12 Pi				
SW19 1SD			Lond	on, NW3 1SN		Micco		
Date 04/12/2024	16:31		Desi	gned by RBA				
File 2210419-EW	P-ZZ-XX-CA	A-C-0001.M	IDX Chec	ked by MTr				Dialing
Innovyze			Netw	ork 2020.1.	3			
		Ма	nhole Sch	edules for s	Storm			
	MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North	-)
	SSWFC3	526842.259	185679.797	526842.259	185679.797	Required	1	e de la companya de l
	SOutfall	526840.261	185679.133			No Entry	•	•
			©1982-2	020 Innovyze	۵			

Elliott Wood Partnership LTD	Page 4	
241 The Broadway	Below Ground Drainage Cals	
London	2210419 - 12 Pilgrims Lane	
SW19 1SD	London, NW3 1SN	Mirco
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File 2210419-EWP-ZZ-XX-CA-C-0001.MDX	Checked by MTr	Diamage
Innovyze	Network 2020.1.3	

PIPELINE SCHEDULES for Storm

<u>Upstream Manhole</u>

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH	DIAM., (mm)	L*W
S1.000	0	100	SFilterDrain	96.950	96.450	0.400	Open Manhole			450
S1.001	0	100	SPump	97.148	96.450	0.598	Open Manhole			450
S1.002	0	100	SSW1	99.250	98.625	0.525	Open Manhole			450
S2.000	0	100	SDUMMY Permpav1	99.850	99.300	0.450	Junction			
S2.001	0	100	SPermPav1	99.850	99.300	0.450	Open Manhole			450
							1			
S1.003	0	100	SJunction	99.850	98.513	1.237	Junction			
S1.004	0	100	SSW2	99.850	98.440	1.310	Open Manhole			450
S1.005	0	100	SSW3	99.800	98.350	1.350	Open Manhole			450
01.000	Ũ	200	00110	33.000		2.000	opon nannozo			100
\$3.000	0	100	SDUMMY PermPav2	99.850	99.400	0.350	Junction			
C2 001	0	100	CDormDavi2	00 050	00 100	0.250	Onon Manhala			450
53.UUI	0	100	SPermPavz	99.00U	yy.400	0.350	open mannoite			430
01 006		100	COMEC 2	00 050	00 250	1 400	Onen Manhala			1 2 0 0
910.IC	0	T 0 0	SSWECS	yy.830	20.330	1.400	open mannore		-	IZ00

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM. (mm)	, L*W
S1.000	11.852	0.0	SPump	97.148	96.450	0.598	Open Manhole		450
S1.001	11.949	-5.5	SSW1	99.250	98.625	0.525	Open Manhole		450
S1.002	11.160	99.6	SJunction	99.850	98.513	1.237	Junction		
S2.000	2.510	0.0	SPermPav1	99.850	99.300	0.450	Open Manhole		450
S2.001	1.911	2.4	SJunction	99.850	98.513	1.237	Junction		
s1.003	7.388	101.2	SSW2	99.850	98.440	1.310	Open Manhole		450
S1.004	8.844	98.0	SSW3	99.800	98.350	1.350	Open Manhole		450
S1.005	4.605	0.0	SSWFC3	99.850	98.350	1.400	Open Manhole		1200
s3.000	2.435	0.0	SPermPav2	99.850	99.400	0.350	Open Manhole		450
S3.001	1.372	1.3	SSWFC3	99.850	98.350	1.400	Open Manhole		1200
S1.006	2.105	105.3	SOutfall	99.900	98.330	1.470	Open Manhole		0

Elliott Wood Partnership LTD		Page 5
241 The Broadway	Below Ground Drainage Cals	
London	2210419 - 12 Pilgrims Lane	
SW19 1SD	London, NW3 1SN	Mirro
Date 04/12/2024 16:31	Designed by RBA	
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX	Checked by MTr	Diamage
Innovyze	Network 2020.1.3	

Area Summary for Storm

Pipe Number	РІМР Туре	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.007	0.007	0.007
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.008	0.008	0.008
2.000	-	-	100	0.000	0.000	0.000
2.001	-	-	100	0.002	0.002	0.002
1.003	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.008	0.008	0.008
1.005	-	-	100	0.008	0.008	0.008
3.000	-	-	100	0.000	0.000	0.000
3.001	-	-	100	0.004	0.004	0.004
1.006	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.037	0.037	0.037

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241 The Broadway	Below Ground Drainage Cals	
London	2210419 - 12 Pilgrims Lane	
SW19 1SD	London, NW3 1SN	Micro
Date 04/12/2024 16:31	Designed by RBA	
File 2210419-EWP-ZZ-XX-CA-C-0001.MDX	Checked by MTr	Dialitaye
Innovvze	Network 2020.1.3	

Network Classifications for Storm

PN	USMH	Pipe	Min Cover	Max Cover	Ріре Туре	MH	MH	MH Ring	МН Туре
	Name	Dia	Depth	Depth		Dia	Width	Depth	
		(mm)	(m)	(m)		(mm)	(mm)	(m)	
S1 000	SFilterDrain	100	0 400	0 598	Unclassified	450	0	0 400	Unclassified
S1.000	SPump	100	0.525	0.598	Unclassified	450	0	0.598	Unclassified
S1.002	SSW1	100	0.525	1.237	Unclassified	450	0	0.525	Unclassified
S2.000	SDUMMY Permpav1	100	0.450	0.450	Unclassified				Junction
S2.001	SPermPav1	100	0.450	1.237	Unclassified	450	0	0.450	Unclassified
S1.003	SJunction	100	1.237	1.310	Unclassified				Junction
S1.004	SSW2	100	1.310	1.350	Unclassified	450	0	1.310	Unclassified
S1.005	SSW3	100	1.350	1.400	Unclassified	450	0	1.350	Unclassified
S3.000	SDUMMY PermPav2	100	0.350	0.350	Unclassified				Junction
S3.001	SPermPav2	100	0.350	1.400	Unclassified	450	0	0.350	Unclassified
S1.006	SSWFC3	100	1.400	1.470	Unclassified	1200	0	1.400	Unclassified

Free Flowing Outfall Details for Storm

Outfall	Outfall	c.	Level	I.	Level		Min	D,L	W
Pipe Number	Name		(m)		(m)	I.	Level	(mm)	(mm)
							(m)		

S1.006 SOutfall 99.900 98.330 0.000 0 0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow 0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage 2.000
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 4 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type Su	ummer
Return Period (years)	1	Cv (Summer) ().750
Region	England and Wales	Cv (Winter) ().840
M5-60 (mm)	21.000	Storm Duration (mins)	30
Ratio R	0.436		

lood Partn	ership LTI)					Pag	e 7
Broadway			Below G	round Dra	inage Cal	S		
			2210419	- 12 Pil	.grims Lan	е		
			London	NW3 1SN	2			
2/2024 16	• 31		Designe	d by PBA			IV	
110 EMD R		0001 MDV	Charlad					rainade
)419-EWP-Z:	Z-XX-CA-C-	-0001.MDX	Checked	by Mir				
			Network	2020.1.3	3			
Flow (1/s) 2.0000 2.0000 2.0000 2.0000	<u>Pump Man</u> Depth (m) 0.700 0.800 0.900 1.000 1.000	<u>Onli</u> hole: SPu I Flow (1/s) 2.0000 2.0000 2.0000 2.0000	<u>mp, DS/PN:</u> nvert Level Depth (m) F 1.300 1.400 1.500 1.600	ls for St S1.001, (m) 96.450 Plow (1/s) 2.0000 2.0000 2.0000 2.0000 2.0000 2.0000	<u>Volume (m</u>) Depth (m) F 1.900 2.000 2.100 2.200	1 ³): 0.2 Plow (1/s) De 2.0000 2.0000 2.0000 2.0000 2.0000	<pre>>pth (m) 2.500 2.600 2.700 2.800 2.800</pre>	Flow (1/s) 2.0000 2.0000 2.0000 2.0000
2.0000	1.100	2.0000	1.700	2.0000	2.300	2.0000	2.900	2.0000
Dia <u>Or:</u> Dia <u>Hydro-B</u> 1	meter (m) 0 ifice Manh meter (m) 0 rake® Opti	.020 Discha ole: SPer .020 Discha mum Manho Des: 	arge Coeffic mPav2, DS arge Coeffic ole: SSWFC Dnit Referen esign Head (Ign Flow (1/ Flush-Fl Objecti Applicati Sump Availab Diameter (m zert Level (ient 0.600 /PN: S3.0 ient 0.600 3, DS/PN: ce MD-SHE- m) s) o™ ve Minimi on le m) m)	Invert Lev 101, Volum Invert Lev <u>\$1.006, ``</u> 0070-2000-0 Ca. se upstream	el (m) 99.30 <u>e (m³): 0.</u> el (m) 99.40 Volume (m ³ 800-2000 0.800 2.0 lculated storage Surface Yes 70 98.350 100	00 1 00): 1.7	
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Control	Points	Head (m)	Flow (l/s)	Contr	ol Points	Head (m)) Flow (]	./s)
Control : sign Point (Points (Calculated) Flush-Flo™	Head (m) 0.800 0.240	Flow (1/s) 2.0 2.0	Contr Mean Flow o	ol Points Kick-F over Head Ra	Head (m)) Flow (] 4 -	./s) 1.6 1.7
	Flow (1/s) 2.0000 2.	3roadway 2/2024 16:31)419-EWP-ZZ-XX-CA-C- Pump Manl Flow (1/s) Depth (m) 2.0000 0.700 2.0000 0.800 2.0000 0.900 2.0000 1.000 2.0000 1.000 2.0000 1.100 2.0000 1.200 Orifice Manh Diameter (m) 0 Orifice Manh Diameter (m) 0 Hydro-Brake® Opti Minimum C Suggest	Image: Stroadway 2/2024 16:31 1419-EWP-ZZ-XX-CA-C-0001.MDX Onli Pump Manhole: SPur I Flow (1/s) 2.0000 0.700 2.0000 2.0000 0.700 2.0000 2.0000 0.700 2.0000 2.0000 0.900 2.0000 2.0000 1.000 2.0000 2.0000 1.000 2.0000 2.0000 1.000 2.0000 2.0000 1.000 2.0000 2.0000 1.000 2.0000 2.0000 1.200 2.0000 Orifice Manhole: SPer Diameter (m) 0.020 Dischat Minimum Outlet: SPer Diameter (m) 0.020 Image: Speriad Structure Image: Speriad Structure Image: Speriad Structure Diameter (m) 0.020 Image: Speriad Structure Image: Speriad Structure Image: Speriad Structure Sugge: Sted	Broadway Below G 2210419 London, 2/2024 16:31 Designe 0419-EWP-ZZ-XX-CA-C-0001.MDX Checked Network Online Control Pump Manhole: SPump, DS/PN: Invert Level Flow (1/s) Depth (m) Flow (1/s) Depth (m) F 2.0000 0.700 2.0000 1.300 2.0000 0.800 2.0000 1.400 2.0000 0.900 2.0000 1.500 2.0000 1.000 2.0000 1.600 2.0000 1.100 2.0000 1.600 2.0000 1.200 2.0000 1.800 Orifice Manhole: SPermPav1, DS, Diameter (m) 0.020 Discharge Coeffic Orifice Manhole: SPermPav2, DS, Diameter (m) 0.020 Discharge Coeffic Unit Referen Design Head (Design Flow (1/ Flush-Fl Objecti Sump Availab Diameter (m) Checked Minimum Outlet Pipe Diameter (m)	Broadway Below Ground Dra 2210419 - 12 Pil London, NW3 1SN .2/2024 16:31 Designed by RBA Checked by MTr .419-EWP-ZZ-XX-CA-C-0001.MDX Decked by MTr Network 2020.1.3 Online Controls for St .0nline Controls for St Designed by RBA .100 .000 .100 2.0000 .100 2.0000 .100 2.0000 .0000 1.300 .0000 1.300 .0000 1.400 .0000 1.600 .0000 1.600 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000 1.800 .0000	Below Ground Drainage Cal 2210419 - 12 Pilgrims Lan London, NW3 ISN 2/2024 16:31 M419-EWP-ZZ-XX-CA-C-0001.MDX Checked by MTr Network 2020.1.3 Online Controls for Storm Pump Manhole: SPump, DS/PN: S1.001, Volume (n Invert Level (m) 96.450 Flow (1/s) Pepth (m) Flow (1/s) Pepth (m) Flow (1/s) Pepth (m) Flow (1/s) Pepth (m) Flow (1/s) Pepth (m) F 2.0000 2.0000 2.0000 2.0000 2.0000 1.000 2.0000 2.	Below Ground Drainage Cals 2210419 - 12 Pilgrims Lane London, NW3 ISN 2/2024 16:31 Designed by RBA 1419-EWP-ZZ-XX-CA-C-0001.MDX Checked by MTr Network 2020.1.3 Online Controls for Storm Pump Manhole: SPump, DS/FN: S1.001, Volume (m³): 0.2 Invert Level (m) 96.450 Flow (1/s) Pepth (m) Flow (1/s) Pepth (m) Flow (1/s) Popt (m) Flow (1/s) 0.2,0000 2.0000 0.700 2.0000 1.300 2.0000 2.0000 2.0000 0.700 2.0000 1.400 2.0000 2.0000 2.0000 2.0000 0.800 2.0000 1.600 2.0000	iroadway Below Ground Drainage Cals 2210419 - 12 Pilgrims Lane London, NW3 ISN 2/2024 16:31 Designed by RBA (419-EWP-ZZ-XX-CA-C-0001.MDX Checked by MTr Network 2020.1.3 Online Controls for Storm Fump Manhole: SPump, DS/FN: S1.001, Volume (m ³): 0.2 Invert Level (m) 96.450 Flow (1/s) Depth (m) Flow (1/s) Depth (m) Flow (1/s) Depth (m) 2.0000 0.700 2.0000 1.400 2.0000 2.0000 2.600 2.0000 0.700 2.0000 1.400 2.0000 2.0000 2.600 2.0000 0.700 2.0000 1.600 2.0000 2.0000 2.800 2.0000 1.000 2.0000 1.800 2.0000 2.800 2.800 2.0000 1.200 2.0000 1.800 2.0000 2.800 2.800 2.0000 1.200 2.0000 1.800 2.0000 2.800 2.800 2.0000 1.200 2.0000 1.800 2.0000 2.800 2.800 2.0000 1.800 2.0000 2

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<u>30 year</u> Numk Nu	Return Period Area Ho Manhole Headl Foul Sewage Der of Input Hydr umber of Online (Rainfall	d Summary l Reduction Hot Start t Start Leve oss Coeff (C per hectare rographs 0 Controls 4 1 Model Region Engl	of Crit Si Factor (mins) el (mm) Global) e (1/s) Number Number o <u>Synthe</u> and and	mulation 1.000 0 0.500 F 0.000 of Offi f Storad Etic Rai FSR M Wales	Results by M <u>n Criteria</u> Additional FI MADD Fact low per Persor line Controls ge Structures <u>nfall Details</u> 15-60 (mm) 21. Ratio R 0.	Maximum I Low - % of cor * 10m ³ Inlet C n per Day 0 Number 4 Number 0000 Cv (Su 435 Cv (Wi	Total Flow /ha Storage oeffiecient (l/per/day) of Time/Are of Real Tim ummer) 0.75 .nter) 0.84	nk 1) fc v 0.000 e 2.000 c 0.800 0.000 ea Diagram me Control	ms 0 ls 0
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	Return	Period(s) (Climate Chan	(years) nge (%)	13, 30,	00, 120, 240,		980, 1440 1, 30, 100 0, 0, 40		
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PN	Return (US/MH Name	Period(s) (Climate Chan Storm	(years) nge (%) Return C Period (Climate Change	First (X) Surcharge	First (Y) Flood	<pre>900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow</pre>	Overflow Act.	Water W Level (m)
PN S1.000 S1.001	Return US/MH Name SFilterDrain SPump	Period(s) (Climate Chan Storm 15 Winter 15 Winter	(years) lge (%) Return C Period (30 30	Climate Change +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer	First (Y) Flood	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water Water (m) 96.561 96.535
PN S1.000 S1.001 S1.002	Return US/MH Name SFilterDrain SPump SSW1	Period(s) (Climate Chan Storm 15 Winter 15 Winter 15 Winter	(years) nge (%) Return C Period (30 30 30	Climate Change +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer	First (Y)	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water Water (m) 96.561 96.535 98.817
PN S1.000 S1.001 S1.002 S2.000	Return US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1	Storm Storm 15 Winter 15 Winter 15 Winter 30 Winter	(years) ige (%) Return C Period (30 30 30 30 30	Climate Change +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer	First (Y) Flood	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water W Level (m) 96.561 96.535 98.817 99.366
PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.002	Return US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SPermPav1	Storm Storm 15 Winter 15 Winter 15 Winter 30 Winter 30 Winter	(years) ige (%) Return C Period (30 30 30 30 30 30 30 30 30 30	Climate Change +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter	First (Y) Flood	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water W Level (m) 96.561 96.535 98.817 99.366 99.366 99.366
PN \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.003	Return US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SPermPav1 SJunction	Storm 15 Winter 15 Winter 15 Winter 15 Winter 30 Winter 30 Winter 15 Summer 15 Summer	(years) ige (%) Return C Period (30 30 30 30 30 30 30 30 30 30	Climate Change +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 100/30 Winter 20/15 Summer	First (Y) Flood	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water Watevel (m) 96.561 96.535 98.817 99.366 99.366 99.366 98.613 98.739
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PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000	Return US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1 SJunction SSW2 SSW3 SDUMMY PermPav2	Storm Storm 15 Winter 15 Winter 15 Winter 30 Winter 30 Winter 15 Summer 15 Summer 15 Winter 30 Winter 30 Winter 30 Winter	(years) lige (%) Return C Period C 30 30 30 30 30 30 30 30 30 30	Climate Change +0% +0% +0% +0% +0% +0% +0% +0% +0%	First (X) Surcharge 30/15 Summer 100/15 Summer 30/15 Summer 100/30 Winter 30/15 Summer 1/30 Winter	First (Y) Flood	900, 1440 1, 30, 100 0, 0, 40 First (Z) Overflow	Overflow Act.	Water W Level (m) 96.561 96.535 98.817 99.366 99.366 98.613 98.738 98.668 99.430
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EILIOTT WO	od Partnershi	p L'I'D							Page 11
241 The Br	oadway		E	Below G	Ground Drain	nage Cal	S		
London			2	2210419) - 12 Pilgı	rims Lan	е		
SW19 1SD			I	London,	NW3 1SN				Micco
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<u>100 year</u> <u>Numi</u>	r Return Perio Area: Hot Manhole Headlo Foul Sewage Der of Input Hydr Imber of Online (Rainfall Mare	d Summary l Reduction Hot Start t Start Leve Dss Coeff (G per hectare cographs 0 Controls 4 N Model Region Engl. gin for Floc	of Cri Sin Factor 1 (mins) 21 (mm) 31 (bal) 0 22 (1/s) 0 Number Number of Synthe and and 1 pd Risk W Analys	<u>ulation</u> <u>tical 1</u> 000 0).500 F1).000 of Offl Storag <u>tic Rain</u> FSR M! Wales Warning	<u>Results by</u> <u>A Criteria</u> Additional FI MADD Fact .ow per Persor .ine Controls te Structures <u>mfall Details</u> 5-60 (mm) 21. Ratio R 0. (mm) 300.0 step Fine Ir	Maximum ow - % of or * 10m ³ Inlet C per Day 0 Number 4 Number 0000 Cv (S 435 Cv (W DVD Sta pertia Sta	Leve Tota /ha S oeffi (1/pe of Ti of Re ummer) inter) tus O tus O	<pre>1 (Rank 1 1 Flow 0.00 torage 2.00 ecient 0.80 r/day) 0.00 me/Area Dia al Time Con 0 0.750 0 0.840 FF FF</pre>) for Storm 00 00 00 00 agrams 0 ntrols 0
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S1.000	SFilterDrain	15 Winter	100	+40%	30/15 Summer				96.793
S1.001	SPump	15 Winter	100	+40%	100/15 Summer				96.775
S1.002	SSW1	15 Winter	100	+40%	30/15 Summer				99.246
S2.000	SDUMMY Permpavi	30 Winter	100	+40%	100/20 Mintor				99.400
S2.001 S1 003	SJunction	15 Summer	100	+40%	100/30 Winter				99.403
S1.003	SSW2	15 Winter	100	. 100					98 613
			100	+40%	30/15 Summer				98.613 99.166
S1.005	SSW3	60 Winter	100	+40% +40%	30/15 Summer 1/30 Winter				98.613 99.166 99.108
\$1.005 \$3.000	SSW3 SDUMMY PermPav2	60 Winter 120 Winter	100 100 100	+40% +40% +40%	30/15 Summer 1/30 Winter				98.613 99.166 99.108 99.487
\$1.005 \$3.000 \$3.001	SSW3 SDUMMY PermPav2 SPermPav2	60 Winter 120 Winter 120 Winter	100 100 100	+40% +40% +40% +40%	30/15 Summer 1/30 Winter				98.613 99.166 99.108 99.487 99.487
\$1.005 \$3.000 \$3.001 \$1.006	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	60 Winter 120 Winter 120 Winter 60 Winter	100 100 100 100	+40% +40% +40% +40% +40%	30/15 Summer 1/30 Winter 30/15 Summer				98.613 99.166 99.108 99.487 99.487 99.098
\$1.005 \$3.000 \$3.001 \$1.006	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	60 Winter 120 Winter 120 Winter 60 Winter	100 100 100 100	+40% +40% +40% +40% +40%	30/15 Summer 1/30 Winter 30/15 Summer				98.613 99.166 99.108 99.487 99.487 99.098
\$1.005 \$3.000 \$3.001 \$1.006	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3	60 Winter 120 Winter 120 Winter 60 Winter Surcharged	100 100 100 100	+40% +40% +40% +40% +40%	30/15 Summer 1/30 Winter 30/15 Summer Hal	lf Drain	Pipe		98.613 99.166 99.108 99.487 99.487 99.098
\$1.005 \$3.000 \$3.001 \$1.006	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH	60 Winter 120 Winter 120 Winter 60 Winter Surcharged Depth	100 100 100 100 100	+40% +40% +40% +40% +40%	30/15 Summer 1/30 Winter 30/15 Summer Hal	lf Drain Time	Pipe Flow		98.613 99.166 99.108 99.487 99.487 99.098
\$1.005 \$3.000 \$3.001 \$1.006	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name	60 Winter 120 Winter 120 Winter 60 Winter Surcharged Depth (m)	100 100 100 100 100 Flooded Volume (m ³)	+40% +40% +40% +40% +40%	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (1/s)	lf Drain Time (mins)	Pipe Flow (1/s)	Status	98.613 99.166 99.108 99.487 99.487 99.098 Level Exceeded
\$1.005 \$3.000 \$3.001 \$1.006 PN \$1.000 \$1.001 \$1.002	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrain SPump SSW1	60 Winter 120 Winter 120 Winter 60 Winter Surcharged Depth (m) 1 0.243 0.225 0.521 0.000	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9	Pipe Flow (1/s) 2.4 2.0 6.1	Status FLOOD RIS SURCHARGE FLOOD RIS	98.613 99.166 99.108 99.487 99.487 99.098 Level Exceeded K
S1.005 S3.000 S3.001 S1.006 PN S1.000 S1.001 S1.002 S2.000 S2.000	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrain SPump SSW1 SDUMMY Permpav1	60 Winter 120 Winter 120 Winter 60 Winter Surcharged Depth (m) 1 0.243 0.225 0.521 0.000 0.000	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 0 1.08 0 .89 1.07 0.03	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9	Pipe Flow (1/s) 2.4 2.0 6.1 0.2	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED	98.613 99.166 99.108 99.487 99.487 99.098 Level Exceeded K
S1.005 S3.000 S3.001 S1.006 PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.002	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrain SPump SDUMMY Permpav1 SPermPav1	60 Winter 120 Winter 120 Winter 60 Winter Surcharged Depth (m) 1 0.243 0.225 0.521 0.000 0.003 0.003	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07 0.03 0.01	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9 21	Pipe Flow (1/s) 2.4 2.0 6.1 0.1 0.3 6.3	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED SURCHARGED	98.613 99.166 99.108 99.487 99.487 99.098 Level Exceeded K K *
S1.005 S3.000 S3.001 S1.006 PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.003	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrain SPump SDUMMY Permpav1 SDUMMY Permpav1 SPermPav1 SJunction	60 Winter 120 Winter 120 Winter 60 Winter 60 Winter Surcharged Depth (m) 1 0.243 0.225 0.521 0.000 0.003 0.000	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07 0.03 0.01 1.05	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9 21	Pipe Flow (1/s) 2.4 2.0 6.1 0.1 0.3 6.3 9.0	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED SURCHARGED SURCHARGED	98.613 99.166 99.108 99.487 99.098 Level Exceeded K K *
<pre>\$1.005 \$3.000 \$3.001 \$1.006 PN \$1.000 \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.004 \$1.004 \$1.005</pre>	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrain SPump SDUMMY Permpav1 SDUMMY Permpav1 SDUMMY Permpav1 SPermPav1 SJunction SJunction	60 Winter 120 Winter 120 Winter 60 Winter 60 Winter Surcharged Depth (m) 1 0.243 0.225 0.521 0.000 0.003 0.000 0.626 0.658	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07 0.03 0.01 1.05 1.59 2.58	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9 21	Pipe Flow (1/s) 2.4 2.0 6.1 0.1 0.3 6.3 9.0 8.8	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED SURCHARGED SURCHARGED SURCHARGE	98.613 99.166 99.108 99.487 99.098 Level Exceeded K K * D
<pre>\$1.005 \$3.000 \$3.001 \$1.006 PN \$1.000 \$1.000 \$1.001 \$1.002 \$2.000 \$2.001 \$1.003 \$1.004 \$1.005 \$3.000</pre>	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrair SPump SDUMMY Permpav1 SDUMMY Permpav1 SDUMMY PermPav2 SSW3 SDUMMY PermPav2	60 Winter 120 Winter 120 Winter 60 Winter 60 Winter 0 Vinter 0 Vinter	100 100 100 100 100 100 100 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07 0.03 0.01 1.05 1.59 2.58	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9 21	Pipe Flow (1/s) 2.4 2.0 6.1 0.1 0.3 6.3 9.0 8.8 0.0	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED SURCHARGED SURCHARGED SURCHARGE SURCHARGE	98.613 99.166 99.108 99.487 99.098 Level Exceeded K K * D X
S1.005 S3.000 S3.001 S1.006 PN S1.000 S1.001 S1.002 S2.000 S2.001 S1.003 S1.004 S1.005 S3.000 S3.001	SSW3 SDUMMY PermPav2 SPermPav2 SSWFC3 US/MH Name SFilterDrair SPump SDUMMY Permpav1 SDUMMY PermPav1 SJunctior SSW2 SSW3 SDUMMY PermPav2 SPermPav2	60 Winter 120 Winter 120 Winter 60 Winter 60 Winter 0 0.243 0 0.225 0 0.521 0 0.003 0 0.003 0 0.003 0 0.003 0 0.626 0 0.658 -0.013 -0.013	Ioo 100	+40% +40% +40% +40% +40% Flow / Cap. 1.08 0.89 1.07 0.03 0.01 1.05 1.59 2.58 0.000 0.01	30/15 Summer 1/30 Winter 30/15 Summer Hal Overflow (l/s)	lf Drain Time (mins) 9 21 116	Pipe Flow (1/s) 2.4 2.0 6.1 0.1 0.3 6.3 9.0 8.8 0.0 0.2	Status FLOOD RIS SURCHARGE FLOOD RIS SURCHARGED SURCHARGED SURCHARGED SURCHARGE SURCHARGE OK	98.613 99.166 99.108 99.487 99.487 99.098 Level Exceeded K K * D K *

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Appendix K

London Borough of Camden SuDS Pro-Forma

Κ



GREATER LONDON AUTHORITY



	Project / Site Name (including sub- catchment / stage / phase where appropriate)	12 Pilgrim's Lane			
	Address & post code	12 Pilgrim's Lane Camden London NW3 1SN			
	OS Grid ref (Easting Northing)	E 526850			
	OS ONG TEL. (Lasting, Northing)	N 185679			
tails	LPA reference (if applicable)				
1. Project & Site Do	Brief description of proposed work	Extension and refurbishment works.			
	Total site Area	785 m ²			
	Total existing impervious area	m ²			
	Total proposed impervious area	358 m ²			
	Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?	No			
	Existing drainage connection type and location	150mm Combined Water Connection to TW Sewer Beneath Pilgrim's Lane			
	Designer Name	Ryan Burt-Allen			
	Designer Position	Civil Engineer			
	Designer Company	Elliott Wood Partnership Ltd.			

	2a. Infiltration Feasibility								
	Superficial geology classification		Refer to report.						
	Bedrock geology classification	Refer to repor	t.						
	Site infiltration rate	N/A	m/s						
	Depth to groundwater level	N/A	m belo	w ground level					
	Is infiltration feasible?		No						
	2b. Drainage Hierarchy								
			Feasible (Y/N)	Proposed (Y/N)					
í n	1 store rainwater for later use		Ν	Ν					
	2 use infiltration techniques, such a surfaces in non-clay areas	as porous	Ν	Ν					
	3 attenuate rainwater in ponds or features for gradual release	open water	Ν	Ν					
	4 attenuate rainwater by storing in sealed water features for gradual reasons.	tanks or elease	Y	Y					
- i	5 discharge rainwater direct to a w	atercourse	Ν	Ν					
	6 discharge rainwater to a surface sewer/drain	water	Ν	Ν					
	7 discharge rainwater to the comb	ined sewer.	Y	Y					
	2c. Proposed Discharge Details								
	Proposed discharge location	TW Sewe	er Beneath Pilg	rims Lane					
	Has the owner/regulator of the discharge location been consulted?		Yes						



GREATER LONDON AUTHORITY



	3a. Discharge Rates & Required Storage							
	Greenfield (GF) runoff rate (l/s)		Existing discharge rate (I/s)	Required storage for GF rate (m ³)	Proposed discharge rate (I/s)			
	Qbar	0.44	$\left \right\rangle$	\backslash	\ge			
	1 in 1 0.38		2.8		1.7			
	1 in 30	1.02	7.1		2			
	1 in 100	1.41	9.1		2			
	1 in 100 + CC		\geq		2			
	Climate change a	llowance used	40%					
rategy	3b. Principal Met Control	hod of Flow	Hydro-brake Vortez Flow Control					
e St	3c. Proposed Su	S Measures						
Drainag			Catchment area (m²)	Plan area (m²)	Storage vol. (m ³)			
т. С	Rainwater harves	ting	0	\langle	0			
	Infiltration system	ns	0	\ge	0			
	Green roofs		0	0	0			
	Blue roofs		0	0	0			
	Filter strips		0	0	0			
	Filter drains		0	0	0			
	Bioretention / tre	e pits	0	0	0			
	Pervious paveme	nts	0	0	0			
	Swales		0	0	0			
	Basins/ponds		0	0	0			
	Attenuation tanks	S	358	\geq	13.6			
	Total		358	0	13.6			

	4a. Discharge & Drainage Strategy	Page/section of drainage report		
	Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	Refer to report		
	Drainage hierarchy (2b)	Refer to report		
n	Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	Refer to report		
ormatic	Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	Refer to report		
ting Inf	Proposed SuDS measures & specifications (3b)	Refer to report		
por	4b. Other Supporting Details	Page/section of drainage report		
Sup	Detailed Development Layout	Refer to report		
4.	Detailed drainage design drawings, including exceedance flow routes	Refer to report		
	Detailed landscaping plans	Refer to report		
	Maintenance strategy	Refer to report		
	Demonstration of how the proposed SuDS measures improve:	Refer to report		
	a) water quality of the runoff?	Refer to report		
	b) biodiversity?			
	c) amenity?	Refer to report		

Appendix L

Proposed Below Ground Drainage Drawings & Details

L



BELOW GROUND DRAINAGE NOTES

- THE LOCATION AND LEVEL OF EXISTING DRAINAGE CONNECTIONS AND EXISTING SERVICES IS TO BE CHECKED PRIOR TO COMMENCEMENT OF DRAINAGE WORKS. ANY VARIANCE TO THE DETAILS ON THIS DRAWING AND THE SCHEDULE IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (EG. ARCHITECT AND M & E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
- THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE NBS SPECIFICATIONS, ASSOCIATED MANHOLE SCHEDULE AND STANDARD DRAINAGE DETAIL DRAWINGS WHERE APPLICABLE.
- . THE POSITIONS OF FOUL AND SURFACE WATER DRAINAGE POINTS ARE INDICATIVE ONLY, REFER TO THE ARCHITECTS DRAWINGS FOR SETTING OUT DETAILS.
- PRIVATE FOUL AND SURFACE WATER DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS PART H, BS EN752 AND BS EN12056.
- DRAINS AT BASEMENT LEVEL ARE TO BE CONSTRUCTED USING CAST IRON (ENSIGN OR EQUIVALENT) AND FLEXIBLY JOINTED TO BS 437.
- DRAINS AT GROUND LEVEL ARE TO BE CONSTRUCTED USING VITRIFIED CLAY PIPES TO BS EN 295-1 SUPER STRENGTH SPECIFICATION (HEPWORTH SUPERSLEVE) OR SIMILAR APPROVED.
- ALL SOIL CONNECTIONS UNDER BUILDINGS TO BE 100mm DIA LAID AT A MINIMUM GRADIENT OF 1/40 UNLESS NOTED OTHERWISE.
- ALL SURFACE WATER CONNECTIONS TO BE 150mm DIAMETER AND TO BE LAID AT A MINIMUM GRADIENT OF 1/80 UNLESS NOTED OTHERWISE .
- 10. ALL SOIL CONNECTIONS AND RAINWATER PIPES SHOULD BE RODDABLE FROM GROUND LEVEL.
- RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND. WHERE DRAINAGE IS COMBINED A 'P' TRAP MUST ALSO BE PROVIDED.
- 12. IN CASES OF IN SITU CONCRETE FLOOR SLABS, DRAINS ARE TO BE CAST INTEGRAL WITH THE SLAB WHERE PIPE COVER TO THE CROWN IS LESS THAN 300mm. - NOTE SPECIAL PROVISIONS APPLY TO BASEMENT FLOOR SLABS - SEE DETAILED DRAINAGE AND STRUCTURAL DRAWINGS. CONCRETE ENCASEMENT TO BE REINFORCED AS PER DRAINAGE DETAIL.
- 13. IN CASES OF SUSPENDED FLOORS WHERE A VOID OF 300mm OR MORE EXISTS BELOW FLOOR DRAINS ARE TO BE SUSPENDED USING A PROPRIETARY HANGER SYSTEM OR CAST INTEGRAL WITH THE FLOOR.
- . WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES A LINTEL OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE USING ROCKER PIPES.
- . BACKFILLING OF DRAIN TRENCHES ADJACENT TO BUILDING OR OTHER STRUCTURES IS TO BE IN ACCORDANCE WITH DIAGRAM 8 OF THE BUILDING REGULATIONS.
- 6. ANY PIPE OR GULLY OR OTHER FITTING OR DUCT PENETRATING THE BASEMENT SLAB OR WALL IS TO BE WATERPROOFED USING HYDROPHILIC STRIPS OR PUDDLE FLANGES TO ENSURE A WATER TIGHT JOINT. CONCRETE SURROUND TO DRAINAGE PIPES AND FITTINGS MAY BE REQUIRED IN CERTAIN CASES - REFER TO DETAILED DRAINAGE DRAWINGS AND RELEVANT STRUCTURAL DETAILS.
- EXISTING FOUNDATIONS AND RETAINING WALLS MUST NOT BE UNDERMINED BY NEW DRAINAGE RUNS UNLESS AGREED IN WRITING WITH THE STRUCTURAL ENGINEER. CONTRACTOR TO SUBMIT METHOD STATEMENTS AND TEMPORARY WORKS PROPOSALS TO THE STRUCTURAL ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF WORKS.
- 18. ALL DRAINAGE EXCAVATIONS SHOULD BE RISK ASSESSED BY THE CONTRACTOR TO ENSURE TRENCH SAFETY / STABILISATION MEASURES ARE CONSIDERED DURING THE CONSTRUCTION PERIOD. ANY EXCAVATIONS LEFT EXPOSED SHOULD BE INSPECTED BY A COMPETENT PERSON ON A DAILY BASIS. GROUND CONDITIONS SHOULD BE MONITORED AND TOOL BOX TALKS SHOULD INCLUDE SITE INVESTIGATION INFORMATION TO AID THE CONTRACTORS ONGOING RISK ASSESSMENT AND METHOD OF EXCAVATION. ALL EXCAVATIONS SHOULD BE ASSESSED BY A COMPETENT PERSON FOR CONFINED SPACES REQUIREMENTS.
- 9. THE CONTRACTOR IS TO CONSIDER PHASING OF THE DRAINAGE INSTALLATION AND ARE TO PROVIDE TEMPORARY DRAINAGE MEASURES THEY DETERMINE ARE REQUIRED.
- 20. SuDS ARE TO BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE WITHIN THE CIRIA SUDS MANUAL C753 (WITH PARTICULAR ATTENTION DRAWN TO CHAPTER 31) AND CIRIA GUIDANCE ON THE CONSTRUCTION OF SuDS C768. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSIDER CONSTRUCTION PROGRAMME OF SuDS.
- . ALL MANHOLE COVER LEVELS SHOWN ARE APPROXIMATE AND ARE TO SUIT THE FINAL GROUND OR BUILDING LEVELS .
- 2. MANHOLE COVERS IN BLOCK PAVED AREAS ARE TO BE RECESSED UNLESS NOTED OTHERWISE.
- 23. ALL INTERNAL MANHOLE COVERS ARE TO BE NON-VENTILATING AND DOUBLE SEALED.
- 24. ALL EXTERNAL FOUL AND COMBINED WATER MANHOLE COVERS IN FOOTPATHS AND PAVED AREAS (OTHER THAN ROADS) ARE TO BE NON-VENTILATING AND SINGLE SEALED UNLESS NOTED OTHERWISE.
- 25. ALL EXTERNAL SURFACE WATER MANHOLE COVERS ARE TO BE NON-VENTILATING UNLESS NOTED OTHERWISE.
- 26. ALL MANHOLE COVERS ARE TO BE INSTALLED SQUARE TO PAVING, KERB LINES OR BUILDINGS.
- 27. INSPECTION CHAMBERS ARE TO HAVE A REDUCED ACCESS PIECE WHEN Ground Floor Level THE DEPTH IS GREATER THAN 1.2m TO THE BASE OF THE CHAMBER.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.



RWP

PROPOSED SURFACE WATER PACKAGED PUMPING STATION

PROPOSED FOUL WATER PACKAGED PUMPING STATION

PROPOSED FOUL WATER RISING MAIN (RM) PROPOSED FRENCH DRAIN PROPOSED BUILDING

RAIN WATER PIPE (RWP)

PROPOSED LINEAR CHANNEL WITH HEELGUARD GRATING

C2 S2	17.10.24			
	• • = •	RBA	KTr	Construction Issue
C1 S2	31.07.24	RBA	KTr	Construction Issue
T2 S2 (06.02.24	HHu	KTr	Tender Issue
T1 S2 ²	18.08.23	HHu	KTr	Tender Issue
P2 S2 (07.10.22	MAs	HHu	Stage 4 Issue
P1 S2 (03.10.22	MAs	HHu	Draft Stage 4 Issue
rev sc	date	by	chk	description

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12 Pilgrim's Lane Hampstead Heath

London NW3 1SN

Project

Drawing title

Proposed Below Ground Drainage General Arrangement - Lower

Scale (s)		Date				Drawn
1:100 @ A1 ; 1:2	00 @ A3	Dece	mber 20)24		RBA
Drawing status					Status	Revision
Construc	ction Is	sue			S2	C3
Project no.	Originator	Zone	Level	Туре	Role	drg no.
2210419	-EWP	-ZZ-	-LG-	DR	-C-	0900



			SW MA	ANHOLE SCHEDUL	E		
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	Clear Opening	Cover Grade	Notes
FC1	PPIC	CL = 99.800 SUMP LEVEL OF MANHOLE = 98.700 INV IN = 98.700 INV OUT = 98.700	1.100	450Ø	450x450	B125	ORIFICE PLATE FLOW CONTROL RECESSED COVER
FC2	PPIC	CL = 99.850 SUMP LEVEL OF MANHOLE = 99.000 INV IN = 99.000 INV OUT = 99.000	0.850	450Ø	450x450	D400	ORIFICE PLATE FLOW CONTROL RECESSED COVE 400mm DEEP SUMP
FC3	PCC	CL = 99.850 SUMP LEVEL OF MANHOLE = 98.350 INV IN = 98.350 INV OUT = 98.350	1.500	1200Ø	600x600	D400	HYDROBRAKE FLOW CONTROL RECESSED COVER
SW1	PPIC	CL = 99.250 SUMP LEVEL OF MANHOLE = 98.625 INV IN = 98.625 INV IN = 98.625 INV OUT = 98.625	0.625	450Ø	450x450	B125	RECESSED COVER
SW2	PPIC	CL = 99.850 SUMP LEVEL OF MANHOLE = 98.440 INV IN = 98.440 INV OUT = 98.440	1.410	450Ø	450x450	B125	REDUCED ACCESS PIECE REQUIR
SW3	PPIC	CL = 99.800 SUMP LEVEL OF MANHOLE = 98.350 INV IN = 98.350 INV IN = 98.350 INV IN = 98.350 INV OUT = 98.350	1.450	450Ø	450x450	D400	300mm DEEP SUMP MANHOLE REDUCED ACCESS PIECE REQUIR RECESSED COVER

				FW MANHOLE	SC
Manhole	Chamber Type	Cover Level (m)	Depth	Chamber Size	
FW1	PPIC	CL = 99.395 INV IN = 98.890 INV OUT = 98.890	0.695	450Ø	
FW2	PPIC	CL = 99.680 INV IN = 98.700 INV IN = 98.700 INV OUT = 98.700	0.980	450Ø	
FW3	PPIC	CL = 99.740 INV IN = 98.550 INV IN = 98.550 INV OUT = 98.550	1.190	450Ø	
FW4	PPIC	CL = 99.870 INV IN = 98.350 INV IN = 98.350 INV IN = 98.350 INV OUT = 98.350	1.520	450Ø	

BELOW GROUND DRAINAGE NOTES

- 1. THE LOCATION AND LEVEL OF EXISTING DRAINAGE CONNECTIONS AND EXISTING SERVICES IS TO BE CHECKED PRIOR TO COMMENCEMENT OF DRAINAGE WORKS. ANY VARIANCE TO THE DETAILS ON THIS DRAWING Do not scale from this drawing. AND THE SCHEDULE IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 2. THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (EG. ARCHITECT AND M & E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
- 3. THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE NBS SPECIFICATIONS, ASSOCIATED MANHOLE SCHEDULE AND STANDARD DRAINAGE DETAIL DRAWINGS WHERE APPLICABLE.
- THE POSITIONS OF FOUL AND SURFACE WATER DRAINAGE POINTS ARE INDICATIVE ONLY, REFER TO THE ARCHITECTS DRAWINGS FOR SETTING OUT DETAILS.
- PRIVATE FOUL AND SURFACE WATER DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS PART H, BS EN752 AND BS EN12056.
- 6. DRAINS AT LOWER GROUND FLOOR LEVEL ARE TO BE CONSTRUCTED USING CAST IRON (ENSIGN OR EQUIVALENT) AND FLEXIBLY JOINTED TO BS 437
- 7. DRAINS AT GROUND LEVEL ARE TO BE CONSTRUCTED USING VITRIFIED CLAY PIPES TO BS EN 295-1 SUPER STRENGTH SPECIFICATION (HEPWORTH SUPERSLEVE) OR SIMILAR APPROVED.
- 8. ALL SOIL CONNECTIONS UNDER BUILDINGS TO BE 100mm DIA LAID AT A MINIMUM GRADIENT OF 1/40 UNLESS NOTED OTHERWISE.
- 9. ALL SURFACE WATER CONNECTIONS TO BE 150mm DIAMETER AND TO BE LAID AT A MINIMUM GRADIENT OF 1/80 UNLESS NOTED OTHERWISE .
- 10. ALL SOIL CONNECTIONS AND RAINWATER PIPES SHOULD BE RODDABLE FROM GROUND LEVEL.
- 11. RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND. WHERE DRAINAGE IS COMBINED A 'P' TRAP MUST ALSO BE PROVIDED.
- 12. IN CASES OF IN SITU CONCRETE FLOOR SLABS, DRAINS ARE TO BE CAST INTEGRAL WITH THE SLAB WHERE PIPE COVER TO THE CROWN IS LESS THAN 300mm. - NOTE SPECIAL PROVISIONS APPLY TO LOWER GROUND FLOOR SLABS - SEE DETAILED DRAINAGE AND STRUCTURAL DRAWINGS. CONCRETE ENCASEMENT TO BE REINFORCED AS PER DRAINAGE DETAIL.
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- 14. WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES A LINTEL OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE USING ROCKER PIPES.
- 15. BACKFILLING OF DRAIN TRENCHES ADJACENT TO BUILDING OR OTHER STRUCTURES IS TO BE IN ACCORDANCE WITH DIAGRAM 8 OF THE BUILDING REGULATIONS.
- 16. ANY PIPE OR GULLY OR OTHER FITTING OR DUCT PENETRATING THE LOWER GROUND FLOOR SLAB OR WALL IS TO BE WATERPROOFED USING HYDROPHILIC STRIPS OR PUDDLE FLANGES TO ENSURE A WATER TIGHT JOINT. CONCRETE SURROUND TO DRAINAGE PIPES AND FITTINGS MAY BE REQUIRED IN CERTAIN CASES - REFER TO DETAILED DRAINAGE DRAWINGS AND RELEVANT STRUCTURAL DETAILS.
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- 21. DETAILED DESIGN OF GEOCELLULAR ATTENUATION CRATES IS A CDP ITEM AND SHOULD BE BASED ON LEVEL, LAYOUT AND VOLUME DETAILS SHOWN. DETAILED DESIGN INFORMATION SHOULD BE PROVIDED TO THE CIVIL ENGINEER TO PASS COMMENT.
- 22. ALL MANHOLE COVER LEVELS SHOWN ARE APPROXIMATE AND ARE TO SUIT THE FINAL GROUND OR BUILDING LEVELS .
- 23. MANHOLE COVERS IN BLOCK PAVED AREAS ARE TO BE RECESSED UNLESS NOTED OTHERWISE.
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- 28. INSPECTION CHAMBERS ARE TO HAVE A REDUCED ACCESS PIECE WHEN THE DEPTH IS GREATER THAN 1.2m TO THE BASE OF THE CHAMBER.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

COMBINED WATER MANHOLE

SURFACE WATER MANHOLE

FOUL WATER MANHOLE

• RWP □ YG
BEE



SITE BOUNDARY

SVP SOIL VENT PIPE

C3	S2	12.12.24	RBA	MTr	1Tr Construction Issue	
C2	S2	17.10.24	RBA	KTr Construction Issue		
C1	S2	31.07.24	RBA	KTr Construction Issue		
T2	S2	06.02.24	HHu	KTr	Tender Issue	
T1	S2	18.08.23	HHu	KTr	Tender Issue	
P2	S2	07.10.22	MAs	HHu	Stage 4 Issue	
P1	S2	03.10.22	MAs	HHu	Draft Stage 4 Issue	
rev	SC	date	by	chk	description	

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12 Pilgrim's Lane Hampstead Heath

London NW3 1SN

Drawing title

Proposed Below Ground Drainage General Arrangement

Scale (s)		Date				Drawn
1:100@ A1; 1:200	D@ A3	Dece	ember 20)24		RBA
Drawing status					Status	Revision
Construc	tion Is	sue			S2	C3
Project no.	Originator	Zone	Level	Туре	Role	drg no.
2210419	-EWP	-ZZ-	- 00-	DR	- C -	1000















SCALE: 1:25

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

Notes:

- 1. All dimensions are in millimeters unless stated otherwise.
- 2. This drawing should not be scaled. 3. This drawing should be read in conjunction with the below ground drainage drawing(s) and manhole schedule(s).
- 4. This drawing should be read in conjunction with all relevant Architect's,
- Engineer's and Services Engineer's specifications and drawings. 5. All drainage shall be constructed in accordance with the relevant provisions of current Building Regulations, BS EN 752, BS EN 12056 and Sewers for
- Adoption as appropriate. 6. Pre-cast concrete products shall comply with the relevant provisions of BS
- 5911: Part 2, 200 & 230. 7. Details surrounding proprietary products and systems are indicative only. contractor to ensure all systems are installed strictly in accordance with the manufactures details.
- 8. All external manhole covers and frames located within vehicular areas are to be load class D400 and be 150mm deep unless stated otherwise.
- 9. All external manhole covers and frames located within pedestrian areas are to be load class B125 unless stated otherwise. 10. All external manhole covers and frames are to be installed square to the
- building, paving or highway channel lines. 11. All external manhole covers and frames shall comply with the relevant provisions of BS EN 124 and BS 7903 and shall be non-ventilated (single
- sealed) with closed keyways unless stated otherwise. 12. All internal manhole covers and frames are to be double sealed and recessed unless stated otherwise.
- 13. All manhole covers located on grease traps are to be double sealed. 14. Manhole cover frames shall be bedded on a gauged class 1 (3:1) sand/cement mortar to clause 2402 of SHW - mortar designation (i), and
- between 2 and 4 courses of engineering brickwork class 'b' to BS EN 771-1:2011 or precast concrete adjusting units - corbelling to be no more than 30mm per course. 15. Manholes < 3m deep shall be installed with type d class 1 steps, complying
- with the requirements of BS EN 13101:2002. 16. Manholes > 3m deep shall be installed with an appropriate fixed ladder
- complying with the requirements of BS EN 14396:2004. 17. Where rigid pipes are used, a flexible joint shall be provided as close as is
- feasible to the outside face of any structure into which a pipe is built, within 150mm for pipe diameters less than 300mm. The design of the joints shall be compatible with any subsequent movement. Rocker pipe lengths shall be in accordance with Table 1, unless stated otherwise.

Table 1						
Nominal Diameter (mm)	Effective Length (m)					
150 - 600	0.6					
600 - 750	1.0					
over 750	1.25					

18. Insitu concrete base and surround shall be class 'GEN3' in accordance with 'BRE Special Digest 1 - Concrete in Aggressive Ground' and the requirement of 'Sewers for Adoption'.

C3	S2	12.12.24	RBA	MTr	Construction Issue
C2	S2	17.10.24	RBA	KTr	Construction Issue
C1	S2	02.08.24	RBA	KTr	Construction Issue
T1	S2	18.08.23	HHu	KTr	Tender Issue
P1	S2	29.09.22	MAs	HHu	Issued for information
rev	SC	date	by	chk	description

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12 Pilgrim's Lane NW3 1SN

Project

Drawing title Typical Below Ground Drainage Details (Sheet 1 of 3)

Scale (s)	D	ate			Drawn
AS NOTED	D	ecember 20)24		RBA
Drawing status				Status	Revision
Constructi		S2	C3		
Project no. C	Driginator Zoi	ne Level	Туре	Role	drg no.
2210419-	EWP-Z	Z-XX-	DT	-C-	3000





SECTION TYPICAL ROCKER PIPE DETAIL IN CONCRETE SURROUND SCALE: 1:10 SUITABLE FOR PIPES SIZES UP TO 600MM INTERNAL DIAMETER

- 20MM COMPRESSIBLE BOARD



This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

Notes:

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 This drawing should be read in conjunction with the below ground drainage drawing (a) and machael schedule(a).
- drawing(s) and manhole schedule(s). 4. This drawing should be read in conjunction with all relevant Architect's,
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- Adoption as appropriate.
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- manufactures details.All external manhole covers and frames located within vehicular areas are to be load class D400 and be 150mm deep unless stated otherwise.
- 9. All external manhole covers and frames located within pedestrian areas are to be load class B125 unless stated otherwise.
- All external manhole covers and frames are to be installed square to the building, paving or highway channel lines.
 All external manhole covers and frames shall comply with the relevant
- provisions of BS EN 124 and BS 7903 and shall be non-ventilated (single sealed) with closed keyways unless stated otherwise.12. All internal manhole covers and frames are to be double sealed and
- All methan mannole covers and marnes are to be double sealed and recessed unless stated otherwise.
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- 15. Manholes < 3m deep shall be installed with type d class 1 steps, complying with the requirements of BS EN 13101:2002.
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C3	S2	12.12.24	RBA	MTr	Construction Issue
C2	S2	17.10.24	RBA	KTr	Construction Issue
C1	S2	02.08.24	RBA	KTr	Construction Issue
T1	S2	18.08.23	HHu	KTr	Tender Issue
P1	S2	29.09.22	MAs	HHu	Issued for information
rev	SC	date	by	chk	description

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Project 12 Pilgrim's Lane NW3 1SE

Drawing title Typical Below Ground Drainage Details (Sheet 2 of 3)

Scale (s)		Date				Drawn
AS NOTED		Dece	mber 20)24		RBA
Drawing status					Status	Revision
Construction Issue S2						C3
Project no.	Originator	Zone	Level	Туре	Role	drg no.
2210419	-EWP	-ZZ-	-XX-	DT	-C-	3001

PROVIDE BOARD PROTECTION TO - POCKET AS FOR FOUL STACKS (DURING CONSTRUCTION)

-RODDING ACCESS PLUG STRUCTURAL SLAB TO STRUCTURAL ENGINEERS DETAILS

- 100MMØ OUTLET AT MINIMUM 1:40 GRADIENT

- SURROUND TO PIPES AS FOR FOUL DRAINS





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- . All dimensions are in millimeters unless stated otherwise.
- 3. This drawing should be read in conjunction with the below ground drainage drawing(s) and manhole schedule(s).
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C3	S2	12.12.24	RBA	MTr	Construction Issue
C2	S2	17.10.24	RBA	KTr	Construction Issue
C1	S2	02.08.24	RBA	KTr	Construction Issue
T1	S2	18.08.23	HHu	KTr	Tender Issue
P1	S2	29.09.22	MAs	HHu	Issued for information
rev	SC	date	by	chk	description

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12 Pilgrim's Lane NW3 1SE

Typical Below Ground Drainage

Scale (s)		Date				Drawn
AS NOTED		Dece	ember 20)24		RBA
Drawing status					Status	Revision
Construction Issue						C3
Project no.	Originator	Zone	Level	Туре	Role	drg no.
2210419	-EWP-	-ZZ-	- XX-	DT	-C-	3002

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