SURFACE WATER MANHOLE SCHEDULE

MANHOLE REF:	COVER LEVEL (m)	PIPE INVERT LEVEL (m)	MANHOLE DEPTH (m)	MAIN CHANNEL SIZE (mm)	MANHOLE DIA & TYPE (mm)	MINIMUM COVER SIZE (mm)	COVER TYPE	LOAD CLASS	EASTINGS (m)	NORTHINGS (m)	GENERAL NOTES
S0.1	62.430	60.500	1.930	150	Swale Outlet	-	Inlet	B125			Outlet for proposed Swale. Minimum inlet opening 300 x 300mm
S1.0	61.750	60.400	1.350	150	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S2.0	61.750	60.180	1.570	225	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S3.0	61.900	60.520	1.380	300	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S4.0	62.500	61.450	1.050	150	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S5.0	61.300	59.870	1.430	225	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S6.0	60.100	58.600	1.500	300	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S7.0	62.500	61.570	0.930	225	Swale Outlet	-	Inlet	B125			Outlet for proposed Swale. Minimum inlet opening 300 x 300mm
S8.0	61.900	60.470	1.430	225	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S9.0	61.400	59.970	1.430	225	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S10.0	59.800	58.300	1.500	300	1200 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S11.0	58.620	57.050	1.570	450	1350 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S12.0	58.520	56.830	1.690	450	1350 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S13.0	61.200	60.350	0.850	150	Swale Outlet	-	Inlet	B125			Outlet for proposed Swale. Minimum inlet opening 300 x 300mm
S14.0	57.660	56.170	1.490	450	1350 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S15.0	54.930	53.580	1.350	450	1350 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S16.0	52.900	51.500	1.350	450	1350 Ø Manhole	600Ø	Solid Ductile Iron	D400			
S17.0	60.690	60.050	0.530	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S18.0	60.690	59.210	1.350	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S19.0	60.700	59.400	1.350	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S20.0	60.250	59.150	1.100	150	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
S21.00	59.200	57.000	2.200	150	450 Ø PPIC	600Ø	Solid Ductile Iron	D400			
S22.00	59.700	58.510	1.190	150	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
OF1.0	N/A	51.470	N/A	450	Outfall	N/A	N/A	N/A			Outfall to watercourse to suit 450dia pipe. Refer to details and requirements of Sewer For Adoption 7 Figure C.5. Outfall to have safety grille and integrated scour protection.

FOUL WATER MANHOLE SCHEDULE

MANHOLE REF:	COVER LEVEL (m)	PIPE INVERT LEVEL (m)	MANHOLE DEPTH (m)	MAIN CHANNEL SIZE (mm)	MANHOLE DIA & TYPE (mm)	MINIMUM COVER SIZE (mm)	COVER TYPE	LOAD CLASS	EASTINGS (m)	NORTHINGS (m)	GENERAL NOTES
F1.0	61.040	59.960	0.840	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F2.0	60.760	59.870	0.830	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F3.0	60.690	59.745	0.745	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F4.0	60.610	59.720	0.760	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F5.0	60.600	59.550	0.890	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F6.0	60.700	59.415	1.165	100	450 Ø PPIC	515x515	Solid Ductile Iron	D400			
F7.0	60.580	59.245*	1.335	150	450 Ø PPIC	515x515	Solid Ductile Iron	D400			MH IL to suit existing pipe.

General Notes to Drainage

1. This drawing is to be read in conjunction with the drainage details and other relevant Architects and Engineers drawings and specifications.
2. Design and setting out of above ground drainage by Architect/M&E engineer. All soil pipes, rainwater downpipes, channels and gullies are shown indicatively.
3. Any part of the existing drainage system retained as part of the new scheme shall be cleaned and inspected. Any defects shall be reported to the Engineer.
5. All existing drainage levels are taken from CCTV survey undertaken by Cadmap Ltd November 2018, file *Hainault Forest Country Park_CCTV.dwg*
6. Existing drainage connectivity & condition to be confirmed by Contractor. Before starting work, check invert levels & positions of existing drains, sewers, inspection chambers & manholes against drawings. Report discrepancies.
7. Any drains proposed to be removed, the Contractor is to confirm the drain is no longer live prior to removal/capping.
8. Existing drainage to be removed is to be broken out to bed level and void backfilled with granular material, compacted in layers not exceeding 250mm.
9. Private foul water and surface water drainage is to be constructed in accordance with the building regulations part H (2015), BS EN 12056-2:2000 (inside buildings), BS EN 752:2017 (outside buildings) and all relevant agreement certificates.
10. Relevant drains to be built to adoptable standard as per "Sewers for Adoption, 7th Edition".
11. Drain connections to be soffit to soffit unless noted otherwise.
12. UNO Gravity drains up to and including DN300 are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1:2013 (Hepworth "Supersleve" or similar approved), drains bedded and back filled in accordance with the manufacturer's instructions, all tested in accordance with BS EN 1610:2015.
13. UNO Gravity drains over DN300 jointed concrete pipes to BS EN 5911-1:2002 & BS EN 1916:2002 (Stanton-Bonna Integrated Gasket or similar approved), drains bedded and back filled in accordance with the manufacturer's instructions, all tested in accordance with BS EN 1610:2015.
14. Where drains run at shallow depths under basements and foundations, allow for Cast Iron pipes to BS EN 877 (Saint-Gobain "Timesaver" or similar approved).
15. All Foul Drains are DN100mm at minimum 1:40 gradient UNO.
16. All Storm Drains are DN100mm at minimum 1:100 gradient UNO.
17. All pipe gradients are to suit manhole Invert levels UNO.
18. Pipes with cover less than 1200mm under paved areas and 900mm under soft areas to be laid with concrete surround (Class Z or similar).
19. Concrete surround to pipes below slab to be monolithic with slab, allow for nominal re-bar to be cast into surround and tie into slab. Double-rocker detail required at all interfaces.
20. All pipes passing through foundations to be fitted with double rocker pipe connections on each side and/or sleeved through ground beams/walls subject to confirmation with structural engineer.
21. Surface water from private areas is not to be discharged onto public highway.
22. All internal manhole covers and rodding eyes shall be of 'double-seal' type. All external foul drainage manholes shall have double seal covers and all storm drainage manholes shall have single seal cover as a minimum.
23. Manhole covers and frames shall be BS EN 124 and shall be Kitemarked. Covers and frames shall be heavy duty D400 in carriageways and vehicular areas and medium duty B125 in footways and soft landscaping. In blocked/concrete paved areas covers shall be recessed fabricated steel. All recessed covers shall be in accordance with the FACTA association gradings and shall match the Architects finishes.
24. Cover levels are to be adjusted locally to suit finished ground levels.
25. Access panels are to be provided to all rainwater pipes, max 600 above finished ground level.
26. All drains to be tested before backfilling the trench and again after back filling - this may need to be witnessed by the local building control officer - contractor to confirm. Contractor to agree preferred method of testing (Water or Air test) with building control/engineer.
27. HEALTH AND SAFETY: The works shall be carried out by specialist competent and experienced contractors who are members of a recognised national organisation. Operatives shall have received full and appropriate training for the operations they are to undertake. All work shall be carried out in accordance with all pertinent Health and Safety Regulations.
28. HEALTH AND SAFETY: Care should be taken to locate services prior to any excavation.

Notes

1. Do not scale the drawing
2. All dimensions are in millimetres unless noted otherwise
3. Any discrepancies between structural and architectural setting out dimensions must be brought to the attention of the Architect and Engineers

Rev	Date	Description	Drn	App
05	04.09.20	Updated S4 Design	AM	GP-D
04	01.06.20	Issued for Stage 4	AM	GP-D
03	26.05.20	Draft S4 Design	AM	GP-D
02	18.04.19	Updated S3 Design	YP	GP-D
01	29.11.18	Issue For Stage 3	YP	GP-D
00	16.11.18	Issue for Comments	YP	GP-D

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Project
Hainault Forest Country Park

Drawing Title
Below Ground Drainage General Notes and Manhole Schedule

Drawing Status
Technical Design

Drawn by	Checked by	Sheet size	Scale	Rev status
AM	GP-D	A1	1:50	S4

Drawing Number
J3713-C-DR-0001

Revision
05