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## KEY

- F1 — NEW PRIVATE FOUL MANHOLE
- S1 — NEW PRIVATE SURFACE WATER MANHOLE
- NEW PRIVATE FOUL DRAIN + FLOW DIRECTION (HEPWORTH SUPERSLEVE/HEPSLEVE) - - CLASS S BEDDING
- NEW PRIVATE SURFACE WATER DRAIN + FLOW DIRECTION (HEPWORTH SUPERSLEEVE/ HEPSLEVE) - CLASS S BEDDING
- EX ADOPTED COMBINED SEWER
- GATIC 150mm WIDE SLOT DRAIN (MEDIUM DUTY) WITH D400 COVER (U.N.O.) - 200mm C28/35 CONCRETE BED + SURROUND WITH TRAPPED, RODDABLE SUMP OUTLET AND ACCESS POINTS
- MD — MEDIUM DUTY (GRADE C250)
- HD — HEAVY DUTY (GRADE D400)
- MAC — 300Ø x 600dp MINI ACCESS CHAMBER (To foul or surface water) (Hepworth code Ref:- SDAC1/1)
- FG — FLOOR GULLY, TRAPPED WITH RODDABLE OUTLET
- PU — POP-UP IN FLOOR
- SO — ACO SILT PIT WITH OUTLET AND + MD COVER TO BE TRAPPED AND RODDABLE
- AP — ACO ACCESS POINT
- SVP — SOIL VENT PIPE
- RWP — RAIN WATER PIPE

## GENERAL NOTES

Do not scale this drawing.

Contractor to check all dimensions and report all errors and omissions to the engineer.

1. All external setting out to be confirmed on Architects drawings.
2. Manhole IL's relate to outgoing main pipe. Where incoming pipes are of a smaller diameter to the outgoing pipes they are to be positioned with pipe soffits level UNO.
3. All pipes under the building to be given Class Z conc bed + surround. In addition all pipes in vehicle paved areas where the cover is less than 750mm are to be given a Class Z concrete bed + surround. Typically pipes to have Class S bedding.
4. For exact location of all SVP's, RWP's and Pop-Ups refer to Buro Happold drawings.
5. All foul pipes to be 100Ø at min 1:60 fall unless noted otherwise.
6. All surface water pipes to be 150Ø unless noted otherwise.
7. Attenuation system and flow restrictor are based upon a max. discharge from the SW system of 7 l/s. This MUST be approved by the Local Authority and United Utilities prior to any works being carried out.
8. Legend refers to clay pipelines. Alternative twin wall pipes can be used, as DW Cnsulting Specification - contractor to choose.
9. For details of drainage refer to drawing BB-DWC-ZZ-C-DR102, DR103 & DR104.

### NEW MANHOLE SCHEDULE

| MH REF. | C.L. (m) TBC | I.L. (m) | MH TYPE & DETAIL No | MH SIZE | COVER & FRAME SIZE & TYPE | REMARKS |
|---|---|---|---|---|---|---|
| F1 | 35.200* | 34.300 | PPIC | 475 DIA. | 450 x 450 HD | |
| F2 | 35.200* | 34.000 | CONC | 1050 DIA. | 600 x 600 HD | |
| F3 | 34.800* | 32.575 | CONC | 1200 DIA. | 750 x 750 MD | |
| F4 | 35.150 | 34.550 | CONC | 1200 DIA. | 600 x 600 MD | Double sealed internal cover. |
| F5 | 35.150 | 34.525 | CONC | 1050 DIA. | 600 x 600 MD | Double sealed internal cover. |
| F6 | 35.150 | 34.480 | CONC | 1050 DIA. | 600 x 600 MD | Double sealed internal cover. |
| F7 | 35.150 | 34.450 | CONC | 1200 DIA. | 600 x 600 MD | Double sealed internal cover. |
| F8 | 35.150 | 34.400 | CONC | 1200 DIA. | 600 x 600 MD | Double sealed internal cover. |
| UU Manhole 2204 | 34.300** | 32.490** | Extg. | Extg. | Extg. | New chamber may be required subject to UU requirements. |
| | | | | | | |
| S1 | 35.000* | 33.800 | CONC | 1200 DIA. | 600 x 600 HD | |
| S2 | 35.100* | 33.477 | CONC | 1200 DIA. | 600 x 600 HD | |
| S3 | 34.900* | 33.167 | CONC | 1200 DIA. | 600 x 600 HD | |
| S4 | 34.700* | 33.101 | CONC | 1200 DIA. | 600 x 600 HD | |
| S5 | 34.800* | Pipe - 33.086 Sump - 32.786 | CONC | 1200 DIA. | 600 x 600 MD | Silt pit manhole - 300mm deep. All pipe inverts level |
| S6 | 35.200* | Pipe - 32.906 Sump - 32.606 | CONC | 1200 DIA. | 600 x 600 MD | Silt pit manhole - 300mm deep. All pipe inverts level |
| S7 | 34.712* | Pipe - 32.795 Sump - 33.345 | CONC | 1500 DIA. | 750 x 600 HD | 450mm deep silt pit manhole with flow control fitted in MH. Flow restricted to 7.0 litres / sec with a max head of 1.2m. All pipe inverts level. Flow restrictor to have built in overflow. |

* Denotes proposed levels to be confirmed on site

** Denotes existing sewer levels to be confirmed on site

Surface water discharge from site is limited to MAX 7.0 litres / second and attenuation storage is sized for a 1 in 100 year storm event + 40% extra for Climate Change.

No works should commence until the details shown on this drawing are fully approved by the Local Authority and United Utilities.

Note:
All manhole covers in external hard surfacings, and all internal covers are to be recessed to receive finishes to match their location

Note:
ALL Cover Levels to be confirmed following final confirmation of external surface levels. ALL invert levels are based upon INTERPOLATED levels of the existing adopted surface and foul runs within the site boundary.

| Rev | Detail | By | Chk | Date |
|---|---|---|---|---|
| T5 | Slot drain added to South elevation. Attenuation tank size increased to suit. | | | 27.02.20 |
| T4 | Redrawn to suit finalised internal fwp, svp & pop-ups and to suit finalised external works setting out. | | | 04.02.20 |
| T3 | Pipe gradients and sizes added and manhole schedule added. | | | 16.12.19 |
| T2 | Layout changed to suit moved building, removal of soft areas and changed hardscape areas | | | 19.11.19 |
| T | SW Attenuation tank size confirmed. | | | 04.11.19 |
| A | Redrawn to suit updated site layout and confirmation to maintain SW discharge to extg combined sewer | | | 03.11.19 |

Revisions


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Client: Bruntwood SciTech

Project: BASE, Manchester Science Park

Drawing Title: Underground Drainage Layout

Drawing Status: Tender

| Project No. | Discipline | Drawing No. |
|---|---|---|
| BB-DWC-ZZ | C | DR101 |

| Scale | Sheet Size | Revision |
|---|---|---|
| 1:200 | A0 | T5 |

| Date | Drawn | Checked | Auth |
|---|---|---|---|
| DEC'19 | VE | RM | |

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DWC1-MDO-ZL-DR-LP-DWG.LP-DWG.LP JOBS\DWG\BB BASE BUILDING\DRAWINGS\DW DRAWINGS\CURRENT DWGS\LBP AND DRAINAGE\BB-DWC-ZZ-C-DR101.TS