

DRAINAGE STRATEGY

SURFACE WATER

TOTAL SITE AREA: 2.59 ha

EXISTING RUN-OFF RATES:

- Q<sub>bar</sub> = 14.7 l/s

PROPOSED SITE IMPERMEABLE AREA: 1.20 ha (approx.)

SURFACE WATER IS INTENDED TO DISCHARGE SOUTH-WEST OF THE SITE DIRECTLY INTO THE EXISTING UU STORM NETWORK.

STORM EVENTS UP TO AND INCLUDING THE 1:30 YEAR EVENT IS PROVIDED IN THE OVERSIZED PIPE NETWORK.

ADDITIONAL ATTENUATION IS PROVIDED IN PRIVATE STORM ATTENUATION CRATES FOR STORMS IN EXCESS OF THE 1:30 YEAR EVENT, UP TO AND INCLUDING THE 1:100 YEAR + 40% CLIMATE CHANGE EVENT.

THE PROPOSED GRADIENTS WILL ALLOW A GRAVITY NETWORK TO DISCHARGE INTO THE EXISTING UU STORM NETWORK LOCATED TO THE SOUTH-WEST OF THE SITE.

FOUL WATER

THE PROPOSED FOUL WATER NETWORK WILL FOLLOW THE PROPOSED SITE GRADIENTS TO ENSURE DEPTHS ARE KEPT TO A MINIMUM AND THE CLOSEST POINT OF CONNECTION TO THE EXISTING SEWER NETWORK CAN BE MADE.

FOUL WATER WILL DISCHARGE UNRESTRICTED BY GRAVITY TO THE PROPOSED FOUL WATER NETWORK DUE TO BE CONSTRUCTED IN THE SOUTHERN SPINE ROAD.

GENERAL NOTES

- SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING.
- ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 6TH EDITION AND UNITED UTILITIES DETAILS & GUIDELINES.
- THE MINIMUM GRAVITY PIPE DIAMETER UNDER ADOPTABLE HIGHWAYS SHALL BE 150mm.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION GIVEN WITH REGARDS TO EXISTING SERVICES AND DRAINAGE CONNECTIONS ETC. PRIOR TO COMMENCING THE WORKS. THE RATES SHALL INCLUDE FOR HAND DIG AROUND SERVICES WHERE NECESSARY. THE CONTRACTOR SHALL ADHERE TO THE CON REGULATIONS AT ALL TIMES.
- THE OUTSIDES OF ALL SEWERS SHALL BE A MINIMUM OF 1.0m FROM KERB LINES AND THE OUTSIDE OF MANHOLES SHALL BE A MINIMUM OF 0.5m FROM KERB LINES.
- EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES.
- ONLY TRAINED PERSONNEL SHALL BE PERMITTED TO ENTER CONFINED SPACES.
- ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT UNLESS THE SITE INVESTIGATION REPORT PROVIDES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHIN A CLASS.
- ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE SUPERVISED BY A. NIRC OR THE NETWORK OPERATOR AS APPLICABLE.
- WHERE ULTRA RIP UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LADIN IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION.
- A CLASS 3 BED AND SURROUND MUST BE USED FOR SUCH PIPES. TRENCH BACKFILL IN HIGHWAYS TO WITHIN 1M OF HIGHWAY SHALL AS DIRECTED BY THE HIGHWAY AUTHORITY BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 4.3.4.
- SUB LEVELS SHALL NOT BE VARIED WITHOUT REFERENCE TO THE ENGINEER FOR GUIDANCE.
- DOMESTIC DRAINAGE SHALL BE TO BUILDING REGULATIONS APPROVED DOCUMENT H. 110mm U.P.V.C. PIPES LAID TO THE FOLLOWING MINIMUM FALLS UNLESS OTHERWISE SHOWN.

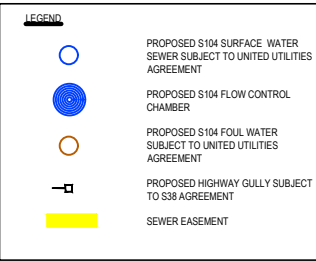
|           |         |          |
|-----------|---------|----------|
| HEAD RUN  | FOUL    | S.W.     |
| ELSEWHERE | 1 IN 60 | 1 IN 80  |
|           | 1 IN 80 | 1 IN 100 |
- ALL GULLY CONNECTIONS TO BE 150mm VITRIFIED CLAY UNLESS NOTED OTHERWISE.
- MINIMUM COVER TO DRAINAGE SLOTT LEVEL: 

|             |                  |          |
|-------------|------------------|----------|
| LANDSCAPING | TRAFFICKED AREAS | HIGHWAYS |
| 0.600m      | 0.300m           | 1.200m   |

- CLASS 3 BEDDING AND SURROUND TO BE USED WHERE MINIMUM COVER IS ACHIEVED.
- WHERE MINIMUM COVER IS NOT ACHIEVED CLASS 2 BEDDING AND SURROUND (CONCRETE ENGAGEMENT) IS TO BE USED.

REFER TO UNITED UTILITIES STANDARD DRAWINGS FOR CONSTRUCTION DETAILS

- STND/19/001 - TYPE 1 MANHOLE
- STND/19/002 - TYPE 2 MANHOLE & INVERT ACCESS DETAIL
- STND/19/003 - SHALLOW MANHOLE DETAIL FOR SMALL DIAMETER PIPES
- STND/19/004 - SHALLOW SW MANHOLE DETAIL
- STND/19/007 - EXTERNAL AND INTERNAL BACKDROPS
- STND/19/008 - PIPE EMBEDMENT DETAILS
- STND/19/010 - VARIABLE MANHOLE GUIDANCE NOTES



|     |            |                                    |    |     |     |
|-----|------------|------------------------------------|----|-----|-----|
| IN  | 02.09.2022 | UPDATED TO SUIT LATEST SITE LAYOUT | JP | KOB | KOB |
| PS  | 24.09.2022 | UPDATED TO SUIT LATEST SITE LAYOUT | JP | KOB | KOB |
| PS  | 22.07.2022 | UPDATED TO SUIT LATEST SITE LAYOUT | JP | KOB | KOB |
| P1  | 02.12.2021 | PRELIMINARY ISSUE                  | LS | KOB | KOB |
| REV | DATE       | DESCRIPTION                        | BY | CHK | APP |

|                                                    |             |         |            |           |          |
|----------------------------------------------------|-------------|---------|------------|-----------|----------|
| DRAWING STATUS:                                    |             |         |            |           |          |
| PRELIMINARY                                        |             |         |            |           |          |
| CLIENT:                                            |             |         |            |           |          |
| VISTRY PARTNERSHIPS                                |             |         |            |           |          |
| ARCHITECT:                                         |             |         |            |           |          |
| MPSL                                               |             |         |            |           |          |
| PROJECT:                                           |             |         |            |           |          |
| HALSNEAD GARDEN VILLAGE<br>LICKERS LANE<br>WHISTON |             |         |            |           |          |
| TITLE:                                             |             |         |            |           |          |
| DRAINAGE STRATEGY<br>MASTERPLAN                    |             |         |            |           |          |
| STATUS:                                            | PROJECT No: | PROJECT | ORIGINATOR | VOLUNTARY | LEVEL    |
| S2                                                 | 221-130     | HLL     | AJP        | XX        | 00       |
| SCALE @ M:                                         | DESIGNED    | DRAWN   | CHECKED    | APPROVED  | DATE     |
| 1:500                                              | LS          | LS      | AMC        | KOB       | NOV 2021 |