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# FLOOD RISK ASSESSMENT

# FOR THE

# PROPOSED DPV BLOCK

# HEINEKEN, MANCHESTER

HEINEKEN

**FEBRUARY 2021**



BSI ISO 9001 FS 542858



BSI ISO 14001 EMS 560379



**ENGINEERING** **ARCHITECTURE** **PROJECT MANAGEMENT** **CDM SERVICES**

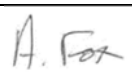
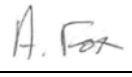






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## Document Control

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# 1 Introduction

This Flood Risk Assessment (FRA) has been produced in accordance with the 2018 National Planning Policy Framework (NPPF) and the associated Technical Guidance (TG), both contained within the 2018 Planning Practice Guidance (PPG).

The FRA has been produced on behalf of Heineken in respect of the proposed DPV Block, at their existing site off Denmark Road in Manchester.

The comments and opinions contained in this report including the conclusions and recommendations are based on the following information:

(i) Existing OS plans.
(ii) Topographical survey of existing levels.
(iii) Government flood mapping.
(iv) United Utilities sewer record plans.

This report is prepared solely for the use of Heineken and their advisers.

# 2 Site information

## 2.1 Existing Site

The existing Heineken factory is located off Denmark Road, Manchester. A site location plan is attached under **Appendix A**.

The site is bound by Princess Road to the west with a supermarket and retail park beyond. To the north, the site is bounded by Greenheys Lane with a residential area beyond. Charles Halle Road and Denmark Road run adjacent to the eastern boundary with residential housing beyond, along with a primary school and a commercial unit. To the south the site is bounded by Moss Lane East, with a number of churches, social clubs and commercial units beyond.

The Bridgewater Canal runs approximately 1.75Km to the north west of the site and the River Irwell runs approximately 1.85Km to the north west of the site.

Both vehicular and pedestrian access can be taken into the site via Denmark Road.

The Heineken site is approximately 7.5 Ha in area and accommodates the main factory and production buildings, along with the main office building. The remainder of the site is used as car parking, lorry parking and storage. The site is covered in impermeable surfacing, being a mixture of concrete and asphalt pavements, with the exception of a relatively small area of landscaping at the site entrance and to some boundaries.

The proposed DPV block is located towards the south end of the site, adjacent to an existing administration block and other vessels.

An existing site layout plan showing the location of the DPV block and existing ground levels is attached under **Appendix B.**

## 2.2 Proposed Development

The proposed development consists of a new DPV block, being a single storey building with an 8 no. vertical Dual Purpose Vessel (DPV) installation, with an adjacent open access vertical escape ladder and overhead pipe bridge/walkway to link to the adjacent vessels. A Glycol room and MCC room are located to the end of the DVP unit.

The DPV block accommodates an area of approximately 490m$^2$. The development area is flat lying having a ground level between approximately 32.90m AOD and 32.75m AOD and is currently occupied by a mix of tarmac and concrete service yard and road.

Both vehicular and pedestrian access into the site will continue to be taken via Denmark Road.

Proposed site layout plans are attached under **Appendix C**.

## 2.3 Flood Zone Classification

Flood mapping for Rivers has been obtained from the Environment Agency website and a copy of the Environment Agency Flood Map is attached under **Appendix D**.

The Environment Agency flood mapping for Rivers shows that the proposed DPV Block is located within a Low Risk Flood Zone 2 area which has an annual probability of flooding from rivers of between 1 in 100 and 1 in 1000 (a 1% - 0.1% chance of flooding in any given year).

There are no allocated flood storage areas shown within the vicinity of the site area.

The proposed re-development, being the DPV Block, is considered to be classed as 'general industry' and would therefore be classed as a Less Vulnerable development in accordance with Table 2 : Flood Risk Vulnerability Classification, of the PPG, associated with the NPPF. Table 3 : Flood Risk Vulnerability and Flood Zone Compatibility, of the PPG, associated with the NPPF shows that, an exceptions test is not required and the development is appropriate for a Less Vulnerable development within Flood Zone 2.

# 3 Possible Sources of Flooding

## 3.1 Fluvial (Rivers)

Fluvial sources of flooding include the inundation of floodplains from rivers and watercourses, inundation of areas outside the floodplain due to the influence of bridges, embankments and other features which artificially raise water levels, overtopping or breaching of defences, blockages of culverts, flood channels or flood corridors.

The Bridgewater Canal runs approximately 1.75Km to the north west of the site and the River Irwell runs approximately 1.85Km to the north west of the site.

The Government long term flood risk mapping shows that the proposed DPV Block is located within a Flood Zone 2 area which has an annual probability of flooding from rivers of between 1 in 100 and 1 in 1000 (a 1% - 0.1% chance of flooding in any given year).

The DPV Block will replace an existing concrete service road and yard and the proposals are to provide a relatively small amendment to the current site arrangement. It is considered that the provision of the DPV Block will have no notable effect on the site during a flood event.

## 3.2 Tidal

The area and associated Rivers are not subject to tidal events.

## 3.3 Surface Water

Flooding from surface water can include sheet run off from adjacent land and surcharged sewers being combined, foul or surface water sewers.

The site is bound by Highway land to all sides and it is considered that as the drainage systems within these roads are adopted, they will be adequately maintained. Should some flooding occur in the adjacent carriageways, it is considered that this will be held within the kerbing of the adjacent carriageways.

The Government long term flood risk information service shows that the area of the proposed DPV block has a low risk of flooding due to surface water. A low risk of flooding means that it has a chance of flooding of between 0.1% and 1% each year. It is noted that the government website providing this information states that it is difficult to predict flooding from surface water as rainfall location and volume area difficult to

forecast. In addition, local features can greatly affect the chance and severity of flooding.

The site has no history of flooding from surcharged sewers or sheet run off and is shown to be at low risk of flooding. Due to the flat lying nature of the site, and surface water collection would be relatively uniform and distributed and dissipated over a larger area. As such, the site is considered not to be at a significant risk from flooding from surface water.

## 3.4 Ground Water

Flooding from groundwater can include the water table rising above ground level after prolonged rainfall, remote from a watercourse, low lying areas underlain by permeable rock (aquifers), seepage directly into properties, and groundwater recovery after pumping has ceased from mining or industry.

There is no evidence of groundwater issues on the site.

## 3.5 Infrastructure Failure

Flooding from the failure of reservoirs, canals, industrial processes, burst water mains, blocked sewers or failed pumping stations.

A 2450mm brick combined sewer and a 750mm by 1020mm brick combined sewer run in a westerly direction within the carriageway of Moss Lane East. These sewers are shown to have a depth to invert of approximately 8m and 3.5m respectively.

620mm by 960mm brick culvert combined sewer runs in a southerly direction within Princess Road. The sewer records do not provide a depth for the sewer. The sewer connects onto the 2450mm combined sewer indicated above to continue to run in a westerly direction away from the site

A 610mm by 930mm combined sewer runs in a southerly direction within the site on its eastern side. This sewer is shown to have a depth to invert of approximately 3m and runs into the 750mm by 1020mm brick combined sewer indicated above. This sewer also serves the adjacent residential development located to the east of the site.

A 680mm brick combined sewer, shown to increase to a 620mm by 770mm sewer, runs in a northerly direction within the carriageway of Denmark Road, commencing at the site entrance. This sewer is shown to have a depth to invert of approximately 2.25m. This sewer is shown to have a 750mm combined spur running into the site which stops at a dead end.

A 300mm diameter, 560mm by 710mm, and 600mm diameter combined sewers run into the site from the Police Station to its eastern boundary. These sewers are shown to connect to each other and run in a westerly direction, but are shown to end within the site boundary.

A 1805mm by 3300mm surface water sewer is shown to run in a southerly direction adjacent to the western side of Denmark Road. The sewer is shown to have a depth to invert of approximately 4m and is shown to end at the site entrance.

A copy of the United Utilities sewer records, are attached under **Appendix E**.

As these drainage systems are adopted, it is considered that these systems are likely to be adequately maintained and monitored. Likewise, the on site private drainage network is adequately maintained and monitored by Heineken.

The Environment Agency have provided flood mapping for reservoirs which shows that the whole site will potentially be affected due to the failure of reservoirs. It is noted by the Environment Agency that the failure of a reservoir is very unlikely and that the maps provided reflect a credible worst case scenario for the purpose of emergency planning.

As such, the site is considered not to be a significant risk from infrastructure failure or flooding of existing sewers.

# 4 Development Drainage

An increase in formally drained impermeable area could increase flood risk to a wider catchment.

The existing site area which is to accommodate the DPV Block proposals is covered by an impermeable hard standing material which is formally drained and discharged into the surrounding site drainage network.

The DPV Block unit, having an area of approximately 430m$^2$, will have a flat roof and due to the potential risk of contamination the rainwater will be collected from the roof and discharged to the process water drainage system. This rainwater is to be collected and the discharge restricted with associated attenuation provided, prior to discharge into the process water network. This will provide betterment to the existing brownfield run off discharge.

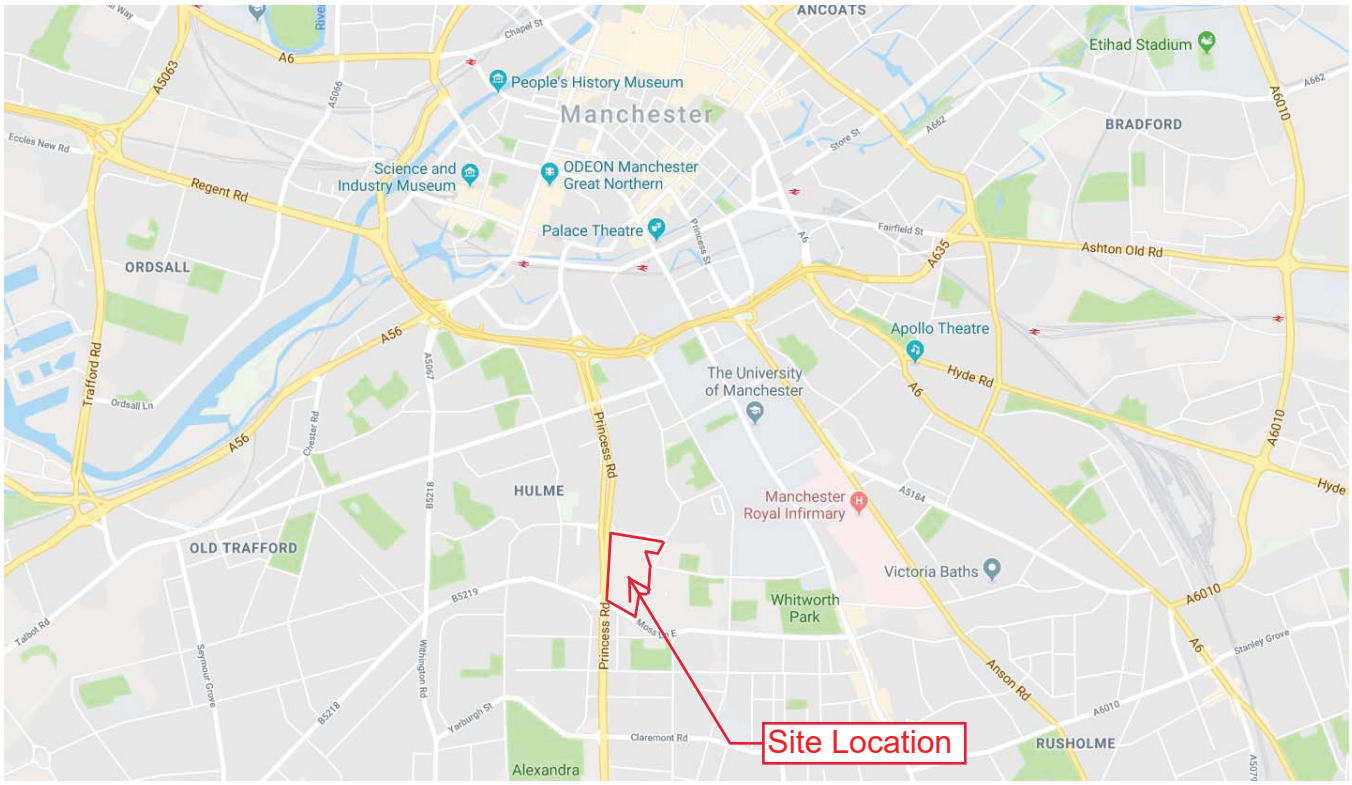
The glycol room and MCC rooms, have an area of approximately 65m$^2$. Due to the small volume of surface water discharge from these rooms and space limitations in the vicinity with respect to existing drainage systems, it is proposed to discharge the roof drainage from the glycol and MCC rooms directly into the process water drainage system.

As there is no increase in hard standing area there will not be an increased flood risk to the wider catchment from the development drainage. The flow from the development area will be restricted to provide a betterment to the existing arrangement.

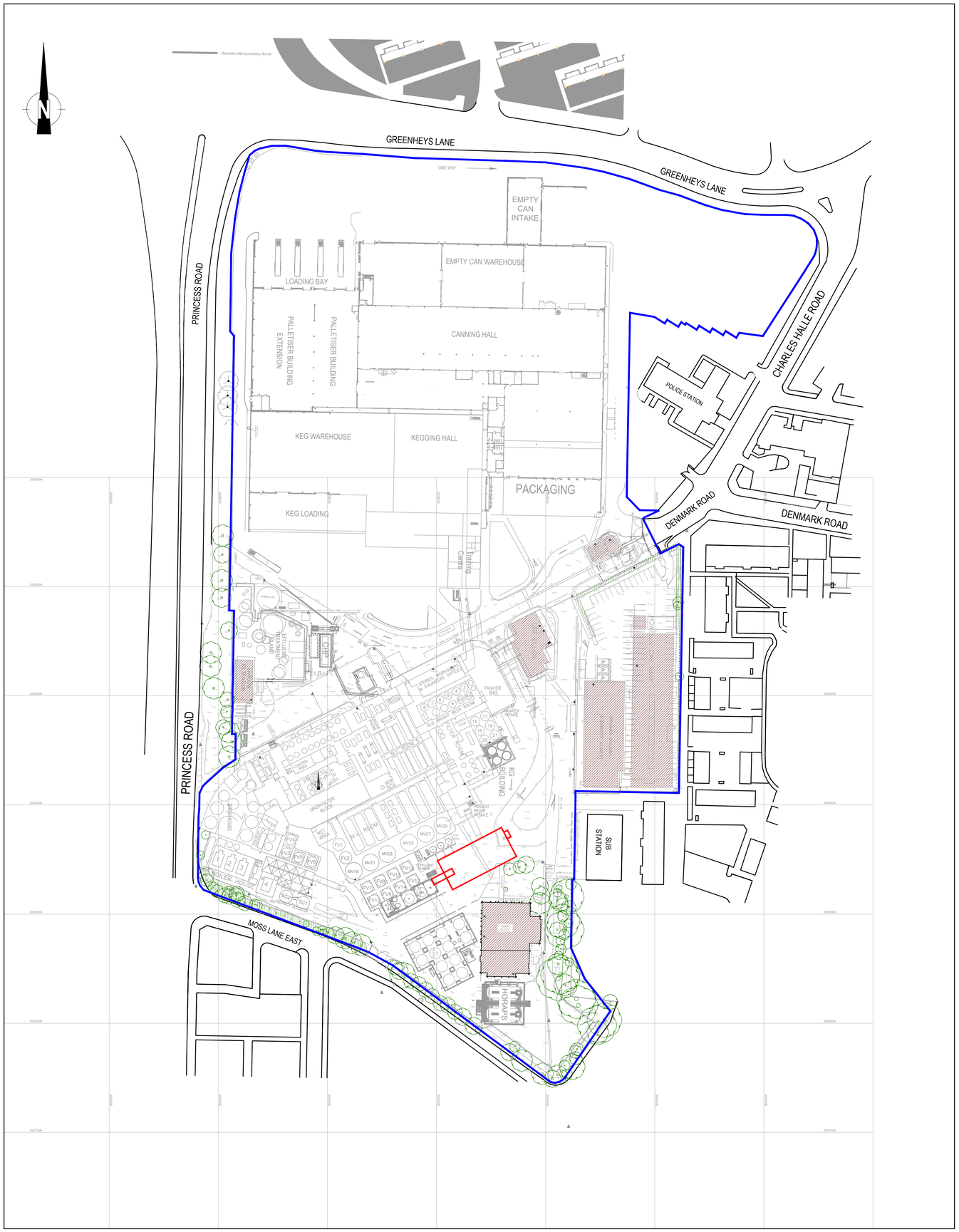
## Appendix A – Site Location Plans

**Heineken**
**Denmark Road, Manchester**

**Site Location Plan**






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9. Calculations and drawings of all Contractor designed structural items associated with NDA's design responsibilities shall be submitted to the Engineer for comment at least 10 days prior to manufacture. Any comments made by NDA do not absolve the Contractor of his design responsibilities.

Heineken Site Boundary

DPV Vessel Boundary

| REV | DATE | AMENDMENT | BY |
|---|---|---|---|
| P4 | 26.02.21 | Building extents updated. | AF |
| P3 | 01.12.20 | Building extents updated. | AF |
| P2 | 02.09.20 | Planning Issue. | SW |
| P1 | 01.09.20 | Preliminary Issue | AF |

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PROJECT

Manchester Brewery
New 8 Vessel DPV Block

DRAWING TITLE

Site Location Plan

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## Appendix B – Existing Topographical Survey and DPV Block Location

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Heineken Site Boundary

DPV Vessel Boundary

| REV | DATE | AMENDMENT | BY |
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| P2 | 01.12.20 | Building extents updated. | AF |
| P1 | 01.09.20 | Preliminary Issue | AF |

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Existing Topographical Survey

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## Appendix C – Proposed Site Layout Plans

Heineken Site Boundary

Proposal Area

Area of new road to be constructed - under separate planning application

North

Existing FV Block (constructed 2012)

Existing Yeast Propagation Building (constructed 2018)

Existing FV Block (Built 2004)

Existing YV Block Extension (constructed 2018)

Existing YV Block (constructed 2012)

Existing YV Block Staircase Raised in height to provide vessel top walkway link

Existing Pipebridge/Walkway (constructed 2012)

Existing FV Block Staircase

Proposed Pipebridge/Walkway Link

Existing Horizontal Vessels - HORAPS (constructed 2017)

Existing surfaced yard area

Existing Admin Office Block

Proposed DPV Block - 4 vessels + 4 future vessels

PHASE 1

PHASE 2

Existing CO2 Tanks

Existing Maturation Vessels

Rough Beer Intake

Existing MV Block

Extent of new site roadway to be constructed - These works are covered under a separate planning application ref:127906/FO/2020, now approved .

Existing surfaced yard area

Existing Car Parking

FV25 FV26 FV21 FV22 FV23 FV24 FV20 FV19 FV18 FV17 FV15 FV16

FV10 FV7 FV9 FV8 FV14 FV11 FV13 FV12 YCV3B YCV3A

DPV43 FV2 MV20 & 21 MV22 & 23 MV24 & 25 MV26 & 27 MV 28 & 29

GLYCOL ROOM MCC ROOM

NEW DPV NEW DPV NEW DPV NEW DPV

FUTURE DPV FUTURE DPV FUTURE DPV FUTURE DPV

VC103 VC102 VC101

Scale 1:200

GRAPHIC SCALE: 1:200

## 1 Block Plan showing Proposal

Revit Model Location \\NOD-DC2012R2-01\RedirectedFolders\lornathomas\My Documents\8540-NDA-XX-XX-M3-A-001 Architectural Model Planning R2020_lornathomas@norder.co.uk.rvt

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| P3 | 26.01.21 | Updated to show additional Glycol & MCC Rooms & Wall Cladding modified. | LT/SW |
| P2 | 02.09.20 | Planning Issue. | SW |
| P1 | 27.08.20 | Issued for Client comments/approval. | SW |

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Block Plan showing Proposal

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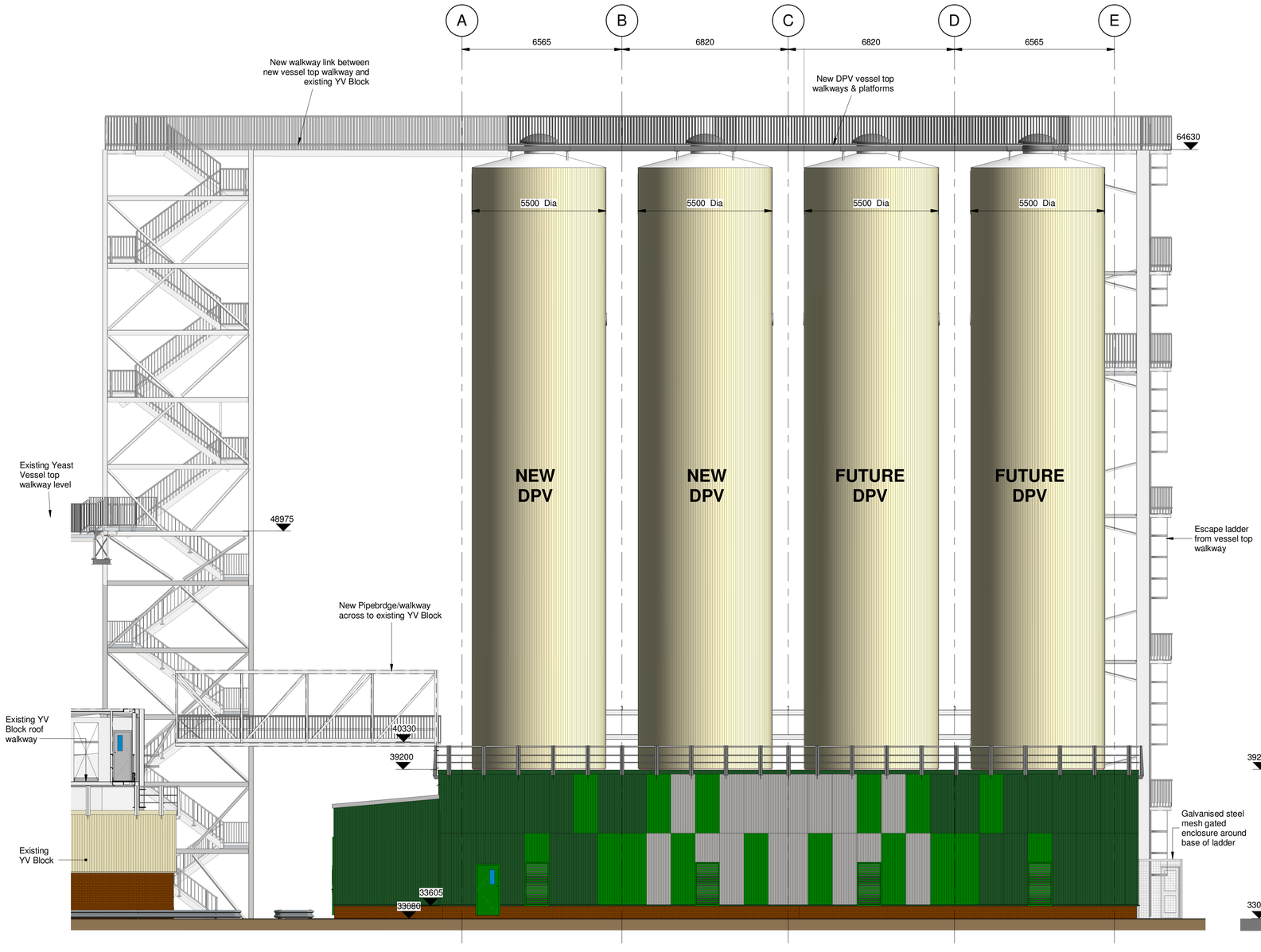
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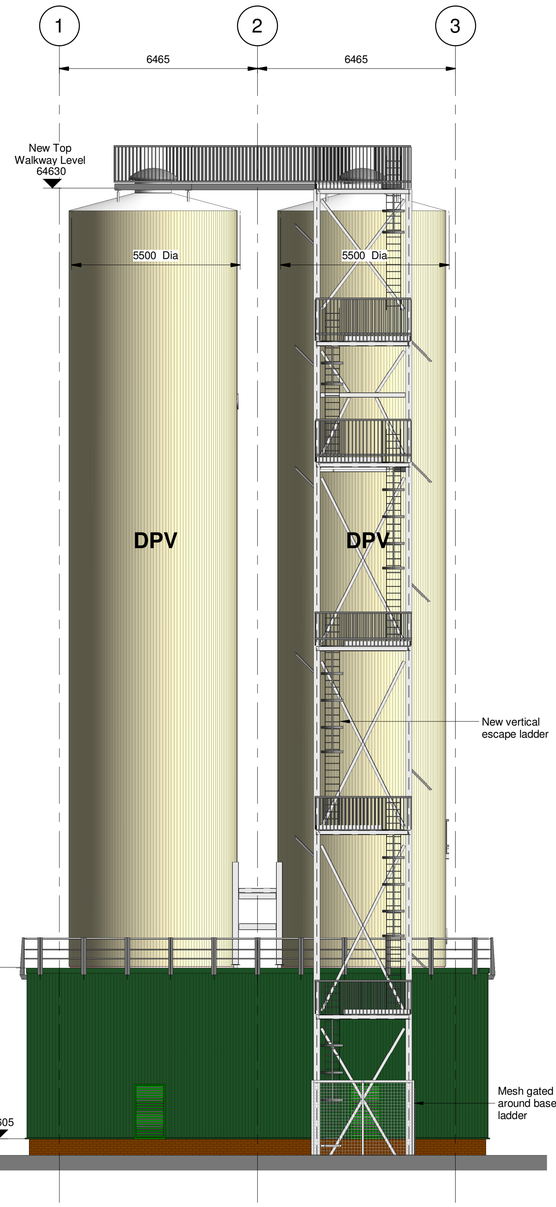
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REV P3




1 **South-East Elevation - DPV Block**
1 : 100




2 **North-East Elevation - DPV Block**
1 : 100

**FOR MATERIALS SPECIFICATION REFER TO DRAWING 8540-NDA-XX-XX-DR-A-5503**

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| P1 | 27.08.20 | Issued for Client comments/approval. | SW |

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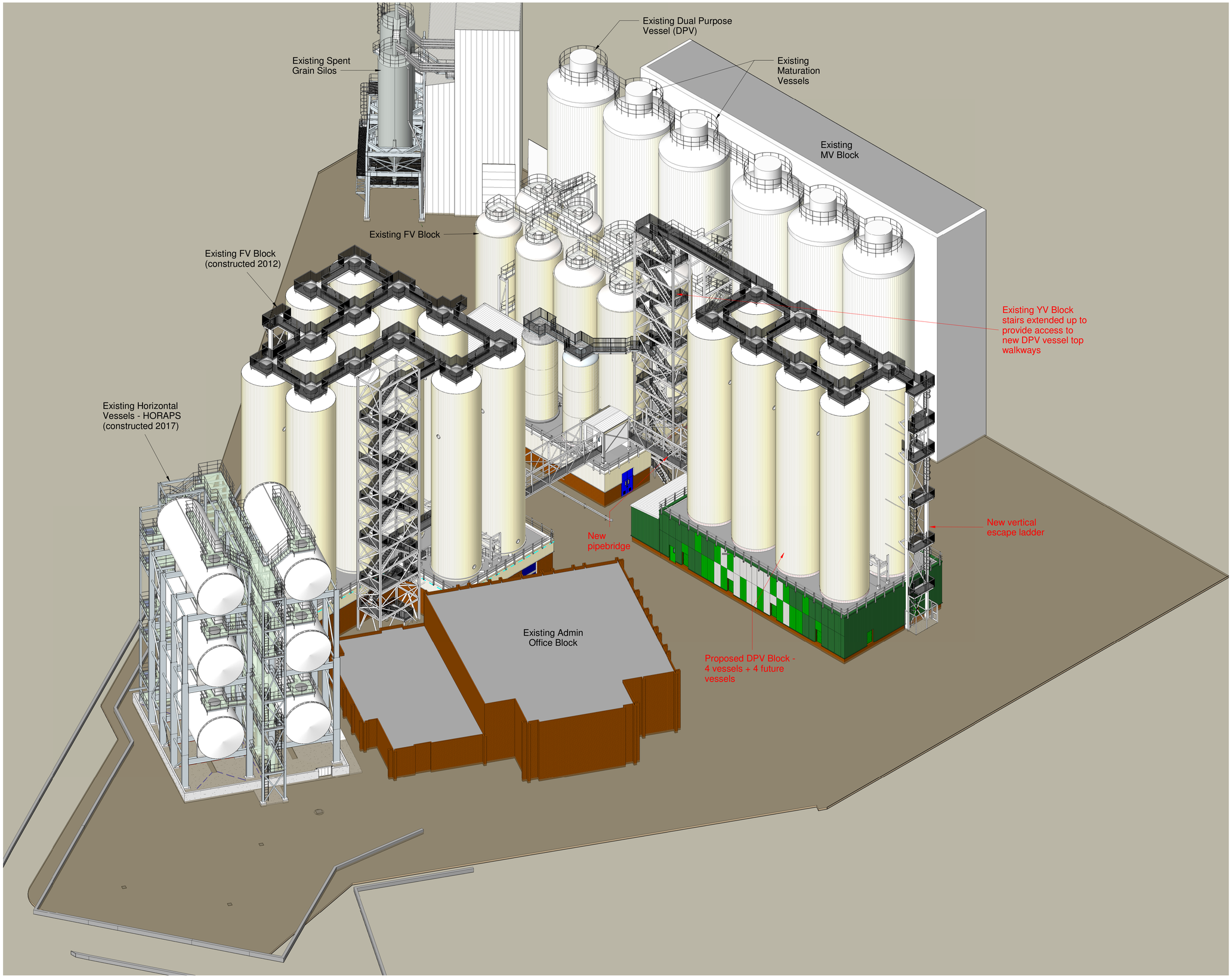
PLANNING

DRAWING TITLE

Proposed DPV Block Building Elevations 2 of 2

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| 8540-NDA-XX-XX-DR-A-5504 | | P3 | |




1 **3D View Proposed**

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Proposed 3D View

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SCALE

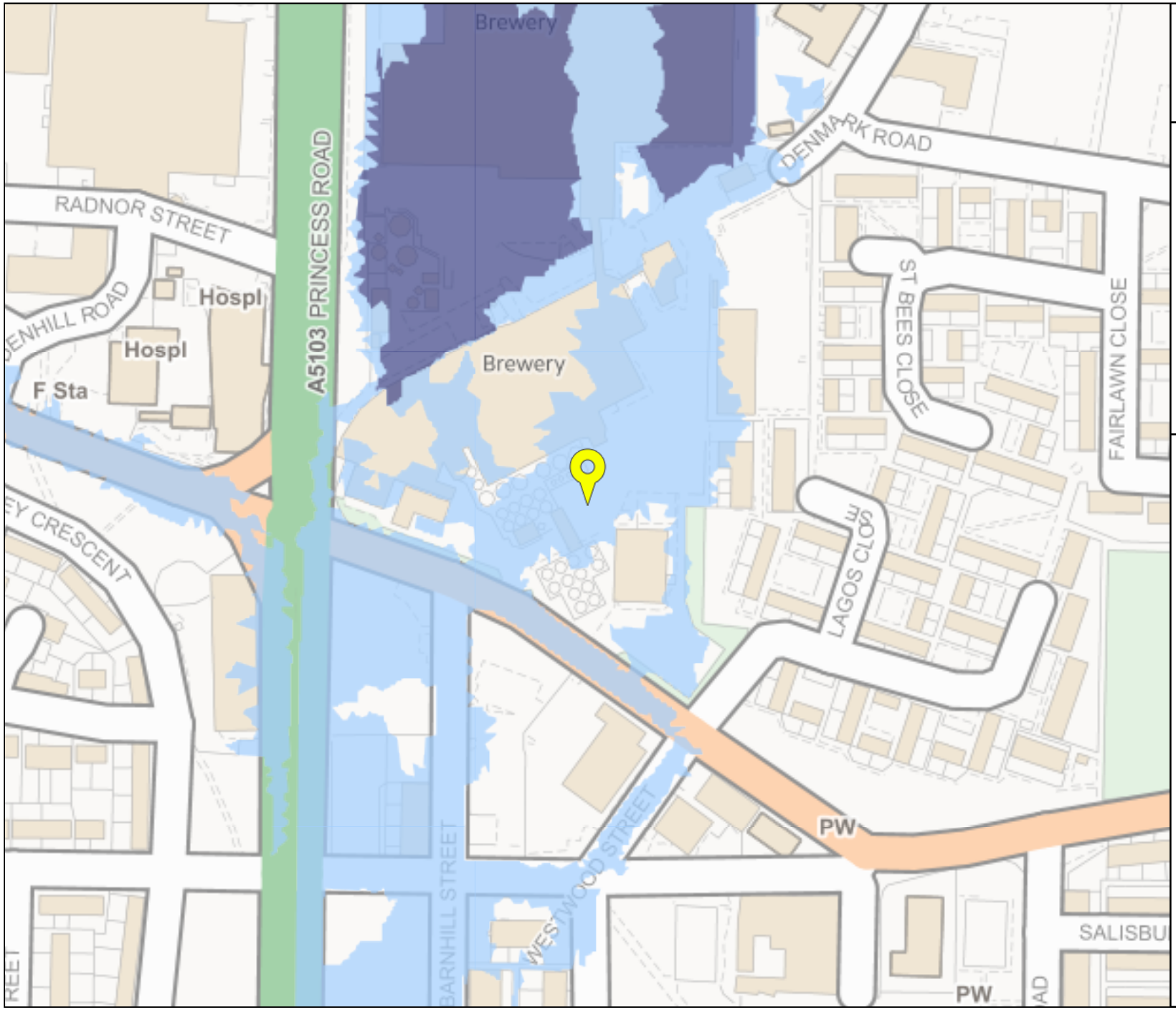
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DRAWING NO. 8540-NDA-XX-XX-DR-A-9002

REV P3

## Appendix D – Flood Mapping Information




Environment Agency

## Flood map for planning

Your reference
**Heineken Man**

Location (easting/northing)
**383958/395867**

Scale
**1:2500**

Created
**30 Aug 2020 12:59**

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

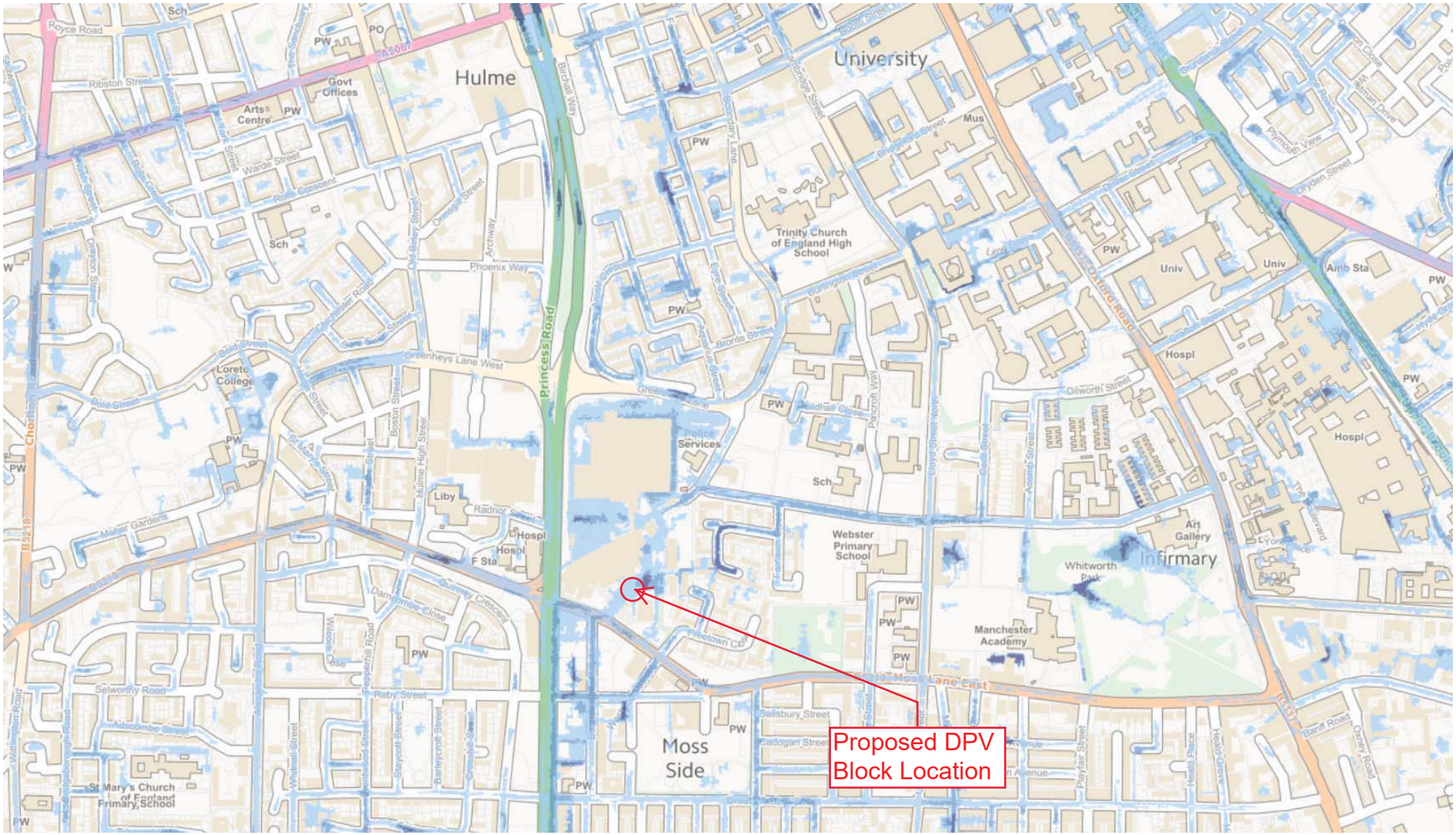
0 20 40 60m



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**Heineken Brewery**
**Manchester**

**Flood Risk From Surface Water**



# Reservoir Flood Map

Environment Agency
Asiantaeth yr Amgylchedd




The area within the red circle could be at risk of flooding from the following reservoirs:

| Reservoir Name | Reservoir Owner | Location | Local Authority | Environment Agency Office |
|---|---|---|---|---|
| Gorton Lower | United Utilities Water plc | 389386, 396041 | Manchester | Environment Agency - Greater Manchester, Merseysid |
| Gorton Upper | United Utilities Water plc | 389893, 396254 | Manchester | Environment Agency - Greater Manchester, Merseysid |
| Audenshaw No. 3 | United Utilities Water plc | 390934, 396835 | Tameside | Environment Agency - Greater Manchester, Merseysid |
| Audenshaw No.2 | United Utilities Water plc | 391643, 396093 | Tameside | Environment Agency - Greater Manchester, Merseysid |
| Audenshaw No.1 | United Utilities Water plc | 391852, 396483 | Tameside | Environment Agency - Greater Manchester, Merseysid |

**Note** - this map provides a general indication of the largest area that might be flooded if a reservoir were to fail and release the water it holds. It is taken from a national assessment and displays a worst case scenario. The map is only intended as a guide and is not a prediction of what will happen.

## Important

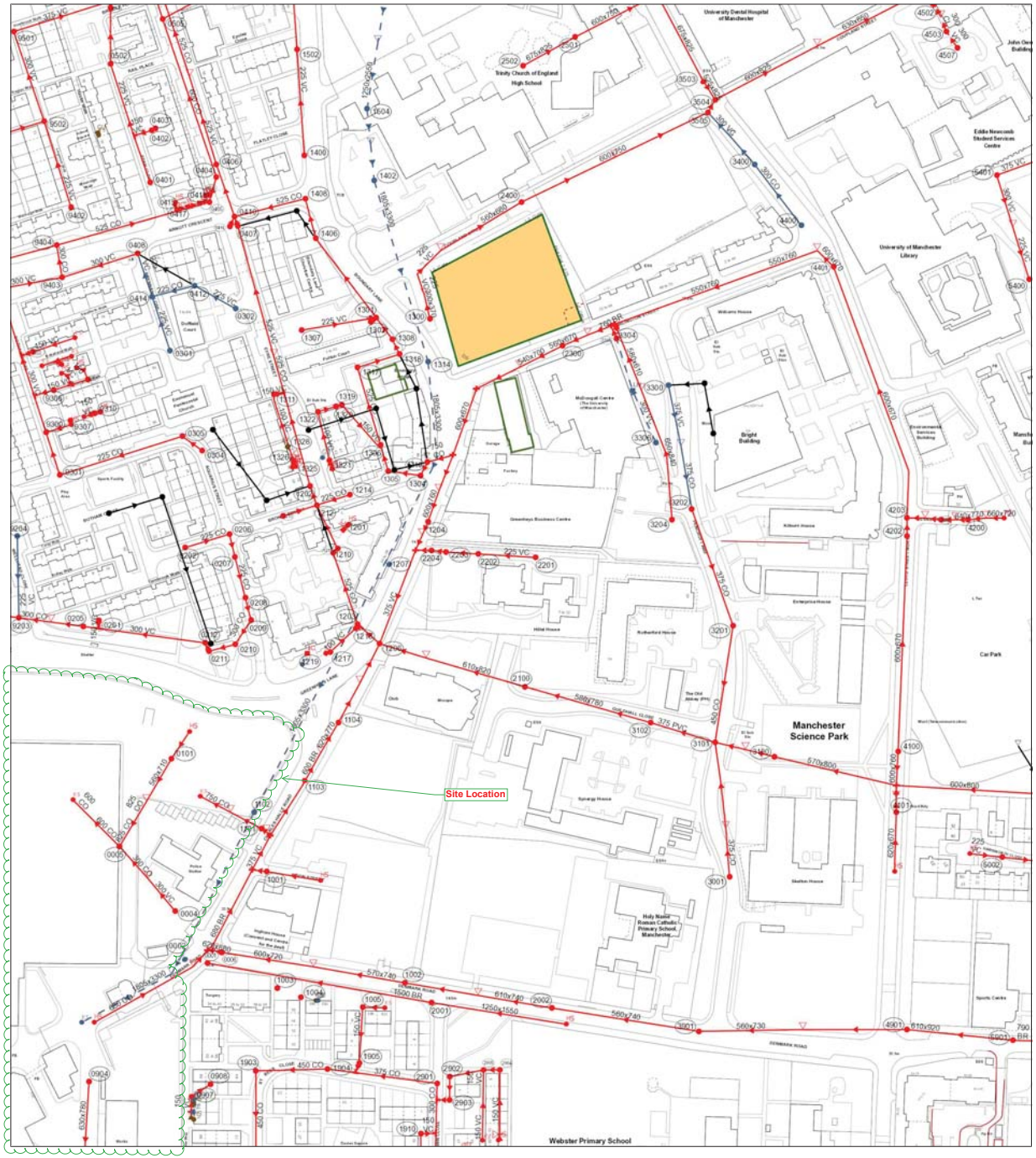
- This map has been produced for emergency planning purposes and displays a worst case scenario.
- It is not suitable for use at an individual property scale due to the method used.
- This map does not give any information on the likelihood of reservoir flooding or on the depth or speed of floodwaters. It also does not include any smaller reservoirs (which hold less than 25,000 cubic metres of water) or reservoirs commissioned or registered after Spring 2009.
- The information should not be interpreted as stating that the location you are interested in will or won't actually flood, but simply that it is in or not in an area that could be affected by reservoir flooding as shown on the maps.

Maximum extent of flood

**1:10,000**

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## Appendix E – United Utility Sewer Record Plans




The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|
| 9300 | 33.89 | CO | 31.06 | 300 | | | VC | 64.15765 | 1 in 221 |
| 9300 | 33.89 | CO | 31.06 | 300 | | | VC | 84.15765 | 1 in 221 |
| 2300 | 34.52 | CO | 31.36 | 540 | | | BR | 26.83282 | |
| 1904 | 33.75 | CO | 31.08 | 450 | | | CO | 40.0125 | 1 in 667 |
| 1904 | 33.75 | CO | 31.08 | 450 | | | CO | 40.0125 | 1 in 667 |
| 1311 | | CO | | 150 | | | VC | 8.512077 | |
| 2400 | 34.36 | SW | 31.86 | 300 | | | VC | 62.14495 | 1 in 2.16306823 |
| 2400 | | SW | 0 | 225 | | | VC | 24.5753 | |
| 4101 | 34.85 | CO | 32.79 | 570 | | | BR | 6 | |
| 2904 | | CO | | 150 | | | VC | 9.103977 | |
| 2904 | | CO | | 150 | | | VC | 9.103977 | |
| 1318 | | CO | 0 | 525 | | | CO | 9.329441 | |
| 1307 | 34.55 | CO | 32.49 | 225 | | | VC | 38.48635 | |
| 4507 | | CO | | 300 | | | VC | 10.81685 | 1 in |
| 9203 | 33.58 | CO | 30.64 | 300 | | | VC | 39.48372 | 1 in 146 |
| 9203 | 33.58 | CO | 30.64 | 300 | | | CO | 39.48372 | 1 in 146 |
| 1310 | 34.35 | CO | 0 | 525 | | | CO | 8.401892 | |
| 0302 | 34.71 | SW | 32.55 | 225 | | | VC | 26.08914 | |
| 0201 | | CO | | 150 | | | VC | 4.584419 | |
| 0201 | | CO | | 150 | | | VC | 4.584419 | |
| 2909 | | CO | | 150 | | | VC | 19.19599 | |
| 2905 | | CO | | 150 | | | VC | 19.19599 | |
| 0002 | 33.39 | SW | 29.49 | 1805 | | | BR | 12.52996 | |
| 0002 | 33.39 | SW | 29.49 | 1805 | | | BR | 12.52996 | |
| 0004 | 33.33 | CO | 31.09 | 300 | | | VC | 23.43075 | 1 in 167 |
| 0004 | 33.33 | CO | 31.09 | 300 | | | VC | 23.43075 | 1 in 167 |
| 9400 | | CO | 0 | 525 | | | CO | 68.41052 | |
| 1905 | | CO | | 150 | | | VC | 5.883502 | |
| 1905 | | CO | | 150 | | | VC | 5.883502 | |
| 3305 | 34.74 | CO | 31.59 | 300 | | | VC | 7.615773 | |
| 0403 | 34.45 | CO | 32.6 | 150 | | | VC | 2.236988 | |
| 1202 | 34.62 | CO | 28.38 | 525 | | | CO | 74.79561 | 1 in 187 |
| 2100 | 34.69 | CO | 31.67 | 610 | | | BR | 57.28001 | |
| 1322 | | CO | | 100 | | | VC | 10.4655 | |
| 0101 | 33.37 | CO | 30.42 | 560 | | | BR | 27.78469 | |
| 1304 | | CO | 0 | 525 | | | CO | 18.29317 | |
| 2902 | 35.16 | CO | 32.52 | 225 | | | VC | 55.14166 | 1 in 110 |
| 2501 | 35.93 | CO | 31.63 | 600 | | | BR | 69.77935 | 1 in 137 |
| 4103 | 34.88 | CO | 32.38 | 600 | | | BR | 10.1253 | |
| 1216 | 34.9 | CO | 0 | 600 | | | VC | 92 | |
| 1216 | | CO | | 600 | | | VC | 2.871551 | |
| 0006 | 33.69 | CO | 31.01 | 620 | | | BR | 4.123106 | |
| 0006 | 33.69 | CO | 31.01 | 620 | | | BR | 4.123106 | |
| 1301 | 34.62 | CO | 29.83 | 525 | | | CO | 55.51116 | |
| 4503 | 35.49 | CO | 31.03 | 300 | | | CI | 8.544603 | 1 in 0.32217208 |
| 1002 | 33.59 | CO | 30.96 | 570 | | | BR | 51.78803 | 1002 |
| 1002 | 33.59 | CO | 30.96 | 570 | | | BR | 51.78803 | |
| 9400 | 33.95 | CO | 30.68 | 300 | | | VC | 35.43739 | 1 in 31 |
| 0405 | 34.66 | CO | 29.03 | 600 | | | CO | 14.56022 | 1 in 112 |
| 2201 | 34.69 | CO | 33.34 | 225 | | | VC | 32.06244 | 1 in 92 |
| 3202 | 34.84 | CO | 32.64 | 375 | | | CO | 68.94926 | 1 in 255 |
| 4201 | 35.28 | CO | 33.17 | 580 | | | BR | 9.055396 | |
| 1217 | | CO | | 100 | | | VC | 19.53001 | |
| 3400 | 35.33 | SW | 31.86 | 300 | | | CO | 19.84943 | 1 in 496 |
| 0212 | | CO | 31.19 | 300 | | | VC | 68.47559 | 1 in 196 |
| 1308 | 34.88 | CO | 29.89 | 525 | | | VC | 14.99078 | 1 in 300 |
| 0304 | | CO | 0 | 225 | | | CO | 13.64062 | |
| 9301 | | CO | 0 | 225 | | | CO | 24.8776 | |
| 9301 | | CO | 0 | 225 | | | CO | 24.8776 | |
| 1321 | | CO | | 100 | | | VC | 27.92004 | |
| 1314 | 34.68 | SW | 32.22 | 1805 | | | BR | 116.8409 | 1 in 142 |
| 1319 | | CO | | 150 | | | VC | 31.71808 | |
| 1302 | 34.71 | CO | 32.22 | 225 | | | VC | 1.892954 | |
| 0404 | 34.63 | CO | 28.83 | 600 | | | VC | 92.97311 | 1 in 664 |
| 9501 | 34.57 | CO | 31.72 | 375 | | | VC | 56.61272 | 1 in 354 |
| 9501 | 34.57 | CO | 31.72 | 375 | | | VC | 56.61272 | 1 in 354 |
| 1402 | 34.95 | SW | 32.6 | 1805 | | | BR | 105.3613 | 1 in 301 |
| 2001 | 33.6 | CO | 31.19 | 1500 | | | BR | 126.0212 | 1 in 409 |
| 2001 | 33.6 | CO | 31.19 | 1500 | | | BR | 126.0212 | 1 in 409 |
| 0505 | 34.62 | CO | 30.6 | 600 | | | CO | 18.14314 | |
| 0205 | 33.91 | CO | 30.83 | 300 | | | VC | 18.14314 | 1 in 202 |
| 0408 | 34.5 | CO | 32.06 | 300 | | | VC | 44.12879 | 1 in 202 |
| 0502 | 34.38 | CO | 31.92 | 225 | | | VC | 44.12879 | 1 in 16 |
| 0502 | 34.38 | CO | 31.92 | 225 | | | VC | 4.175835 | |
| 0310 | | CO | | 150 | | | VC | 4.175835 | |
| 0310 | | CO | | 150 | | | VC | 6.431989 | |
| 1213 | | CO | 0 | 225 | | | VC | 6.431989 | |
| 3102 | 34.23 | CO | 31.97 | 580 | | | CO | 19.66908 | |
| 1903 | 34.05 | CO | 30.98 | 450 | | | PVC | 36.40095 | 1 in 260 |
| 1903 | 34.05 | CO | 30.98 | 450 | | | CO | 49 | 1 in 129 |
| 4203 | | CO | 0 | 600 | | | CO | 49 | 1 in 129 |
| 2400 | 34.87 | CO | 31.41 | 600 | | | BR | 147.51 | |
| 1317 | | CO | 0 | 525 | | | BR | 57.69749 | |
| 1300 | 34.61 | CO | 32.72 | 300 | | | CO | 24.55987 | |
| 2502 | 36.06 | CO | 32.11 | 675 | | | VC | 13.34196 | |
| 1101 | 33.83 | CO | 30.5 | 760 | | | BR | 33.12699 | 1 in 70 |
| 2204 | 33.91 | CO | 32.1 | 225 | | | BR | 19.23538 | |
| 5901 | 35.24 | CO | 0 | 610 | | | VC | 9 | |
| 5901 | 35.24 | CO | 0 | 610 | | | BR | 59.3043 | |
| 1207 | 34.3 | SW | 31.36 | 1805 | | | BR | 59.3043 | |
| 3304 | 34.59 | CO | 31.43 | 570 | | | BR | 159.2388 | |
| 9404 | 34.57 | CO | 29.23 | 525 | | | BR | 1 | |
| 9404 | 34.57 | CO | 29.23 | 525 | | | CO | 88.32327 | 1 in 552 |
| 3100 | 34.74 | CO | 32 | 570 | | | CO | 88.32327 | 1 in 552 |
| 3101 | 34.34 | CO | 32.07 | 375 | | | BR | 16.49242 | |
| 0207 | | CO | 0 | 225 | | | PVC | 37.84306 | 1 in 753 |
| 0411 | | CO | 0 | 225 | | | CO | 23.49268 | |
| 2002 | 33.85 | CO | 31.2 | 610 | | | CO | 6.070935 | |
| 2002 | 33.85 | CO | 31.2 | 610 | | | BR | 41.59327 | 1 in 347 |
| 5002 | 35.54 | CO | 33.53 | 225 | | | BR | 41.59327 | 1 in 347 |
| 4401 | 35.03 | CO | 0 | 600 | | | VC | 27.18703 | 1 in 60 |
| 0410 | | CO | 27.55 | 525 | | | BR | 12.7272 | |
| 2901 | 34 | CO | 31.3 | 375 | | | VC | 61.52235 | 1 in 88 |
| 2901 | 34 | CO | 31.3 | 375 | | | CO | 61.52235 | 1 in 263 |
| 1406 | | CO | 0 | 525 | | | CO | 22.91475 | |
| 0202 | | CO | 0 | 225 | | | CO | 25.82646 | |
| 0210 | | CO | 0 | 390 | | | CO | 14.98547 | |
| 3204 | 34.72 | CO | 0 | 650 | | | BR | 74.7512 | |
| 0301 | 34.32 | SW | 32.36 | 225 | | | VC | 31.77663 | |
| 2202 | 34.41 | CO | 32.98 | 225 | | | VC | 18.62776 | 1 in 106 |
| 3001 | 34.73 | CO | 32.78 | 375 | | | CO | 27.07397 | |
| 1102 | 33.71 | SW | 29.81 | 1805 | | | BR | 88.54942 | 1 in 277 |
| 2903 | | CO | | 150 | | | VC | 7.130569 | |
| 2903 | | CO | | 150 | | | VC | 7.130569 | |
| 4100 | 34.88 | CO | 32.42 | 600 | | | BR | 120.1041 | |
| 0209 | | CO | 0 | 300 | | | CO | 16.21131 | |
| 3004 | 35.94 | CO | 31.49 | 600 | | | BR | 64.41273 | 1 in 3 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 1001 | 33.84 | CO | 31.11 | 375 | | | VC | 8.662258 | |
| 1408 | | CO | 0 | 525 | | | CO | 40.72957 | |
| 1005 | 34.11 | CO | | 150 | | | VC | 30.99455 | |
| 1005 | 34.11 | CO | | 150 | | | VC | 30.99465 | |
| 5401 | 35.95 | CO | 0 | 300 | | | VC | 30.99465 | |
| 0206 | | CO | 0 | 225 | | | CO | 13.06314 | |
| 1306 | | CO | 0 | 525 | | | CO | 44.96155 | |
| 2901 | 34.06 | CO | 31.9 | 300 | | | BR | 69.02273 | 1 in 166 |
| 0208 | | CO | 0 | 300 | | | CO | 12.80492 | |
| 1403 | 35.02 | CO | 33.05 | 225 | | | VC | 59.13544 | 1 in 114 |
| 9204 | 33.5 | SW | 31.75 | 225 | | | VC | 45.58971 | 1 in 105 |
| 0004 | 33.5 | SW | 31.75 | 225 | | | VC | 45.58971 | 1 in 105 |
| 0305 | | CO | 0 | 225 | | | CO | 71.65667 | |
| 0305 | 35.48 | CO | 33.2 | 640 | | | BR | 0 | |
| 1103 | 34.01 | CO | 31.76 | 600 | | | BR | 20.50126 | 1 in 48 |
| 0907 | | CO | | 150 | | | VC | 12.78049 | |
| 0907 | | CO | | 150 | | | VC | 12.78049 | |
| 3901 | 34.38 | CO | 31.83 | 560 | | | BR | 83.02409 | 1 in 134 |
| 3901 | 34.38 | CO | 31.83 | 560 | | | BR | 83.02409 | 1 in 134 |
| 1210 | | CO | 0 | 525 | | | CO | 3.370402 | |
| 0005 | 33.37 | CO | 30.34 | 600 | | | BR | 36.76955 | |
| 0005 | 33.37 | CO | 30.34 | 600 | | | CO | 36.76955 | |
| 1214 | | CO | 0 | 225 | | | CO | 19.29815 | |
| 0414 | | SW | 0 | 225 | | | VC | 25.30584 | |
| 3201 | 35.23 | CO | 32.53 | 450 | | | VC | 65.76473 | 1 in 274 |
| 3503 | 35.93 | CO | 31.72 | 525 | | | BR | 15.26434 | 1 in 85 |
| 2203 | 34.04 | CO | 32.79 | 225 | | | VC | 8.662258 | 1 in 73 |
| 1211 | | CO | 0 | 525 | | | CO | 26.89218 | |
| 0408 | 34.63 | CO | 27.12 | 525 | | | VC | 51.24451 | 1 in 214 |
| 0211 | | CO | 0 | 300 | | | CO | 5.099236 | |
| 3300 | 35.43 | SW | 33.13 | 375 | | | VC | 34.71311 | 1 in 248 |
| 1910 | | CO | | 150 | | | VC | 8.482361 | |
| 1910 | | CO | | 150 | | | VC | 8.482361 | |
| 0407 | 34.72 | CO | 27.55 | 525 | | | VC | 5.622344 | 1 in 16 |
| 4400 | 35.1 | SW | 32.15 | 300 | | | CO | 42.80197 | 1 in 195 |
| 9502 | 35.5 | CO | 32.9 | 300 | | | VC | 52.81099 | 1 in 46 |
| 9502 | 35.5 | CO | 32.9 | 300 | | | VC | 52.81099 | 1 in 46 |
| 4502 | | CO | | 300 | | | VC | 5 | 1 in |
| 9402 | 34.81 | CO | 32.01 | 225 | | | VC | 50.28917 | |
| 9402 | 34.81 | CO | 32.01 | 225 | | | VC | 50.28917 | |
| 0502 | 34.38 | CO | | 225 | | | VC | 30.82417 | |
| 0502 | 34.38 | CO | | 225 | | | VC | 30.82417 | |
| 0307 | | CO | | 150 | | | VC | 19.66122 | |
| 1904 | | SW | | 1050 | | | VC | 7.886723 | |
| 1906 | 33.73 | CO | 28.86 | 525 | | | BR | 16.43764 | 1 in 103 |
| 1005 | 35.92 | CO | 31.52 | 600 | | | CO | 42.40296 | |
| 1104 | 34.19 | CO | 30.92 | 620 | | | BR | 25.05563 | 1 in 20 |
| 1203 | 34.28 | CO | 28.68 | 525 | | | CO | 42.07213 | 1 in 162 |
| 1320 | | CO | | 100 | | | VC | 3.469498 | |
| 1305 | | CO | 0 | 525 | | | CO | 15.21912 | |
| 2902 | | CO | | 150 | | | VC | 12.9578 | |
| 2902 | | CO | | 150 | | | VC | 12.9578 | |
| 9403 | 34.6 | CO | 29.54 | 300 | | | CO | 18.24629 | 1 in 304 |
| 9403 | 34.6 | CO | 29.54 | 300 | | | CO | 18.24629 | 1 in 304 |
| 1212 | | CO | 28.68 | 525 | | | CO | 11.41786 | 1 in 44 |
| 4901 | 34.96 | CO | 32.28 | 610 | | | BR | 58 | 1 in 264 |
| 4901 | 34.96 | CO | 32.28 | 610 | | | BR | 58 | 1 in 264 |
| 1204 | 34.08 | CO | 31.33 | 600 | | | BR | 8.6015 | |
| 9306 | | CO | | 150 | | | VC | 11.38232 | |
| 9306 | | CO | | 150 | | | VC | 11.38232 | |
| 9305 | | CO | | 150 | | | VC | 6.805998 | |
| 9305 | | CO | | 150 | | | VC | 6.805998 | |
| 0402 | 34.39 | CO | 32.72 | 150 | | | VC | 10.44031 | |
| 0401 | 34.42 | CO | 32.33 | 225 | | | VC | 69.57311 | 1 in 183 |

| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|

## LEGEND

Abandoned · Foul · Surface Water · Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined · blue - surface water
brown - foul · purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

**MANHOLE FUNCTION**

| | |
|---|---|
| FO | Foul |
| SW | Surface Water |
| CO | Combined |
| OV | Overflow |

**SEWER SHAPE**

| | | | |
|---|---|---|---|
| CI | Circular | TR | Trapezoidal |
| EG | Egg | AR | Arch |
| OV | Oval | BA | Barrel |
| FT | Flat Top | HO | HorseShoe |
| RE | Rectangular | UN | Unspecified |
| SQ | Square | | |

**SEWER MATERIAL**

| | |
|---|---|
| AC | Asbestos Cement |
| BR | Brick |
| PE | Polyethylene |
| RP | Reinforced Plastic Matrix |
| CO | Concrete |
| CSB | Concrete Segment Bolted |
| CSU | Concrete Segment Unbolted |
| CC | Concrete Box Culverted |
| PSC | Plastic / Steel Composite |
| GRC | Glass Reinforced Plastic |
| DI | Ductile Iron |
| PVC | Polyvinyl Chloride |
| CI | Cast Iron |
| SI | Spun Iron |
| ST | Steel |
| VC | Vitrified Clay |
| PP | Polypropylene |
| PF | Pitch Fibre |
| MAC | Masonry, Coursed |
| MAR | Masonry, Random |
| U | Unspecified |

**Address or Site Reference:**

Heineken Manchester Denmark Road,

**OS sheet Number:** SJ8496SW
**Scale:** 1:1250 **Date:** 28/12/2018
**Nodes:** 187
**Sheet:** 1 of 4

**Printed by:** Property Searches

**SEWER RECORDS**

United Utilities — helping life flow smoothly




| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|
| 1904 | 33.75 | CO | 31.08 | 450 | | | CO | 40.0125 | 1 in 667 |
| 1904 | 33.75 | CO | 31.08 | 450 | | | CO | 40.0125 | 1 in 667 |
| 1603 | 33.56 | CO | 31.21 | 300 | | | VC | 9.213544 | 1 in 8 |
| 2403 | 33.67 | CO | 31.47 | 225 | | | VC | 23.85 | 1 in 200 |
| 1908 | | CO | | 150 | | | VC | 33.45214 | 1 in 200 |
| 1901 | | CO | 0 | 2250 | | | BR | 152.3868 | |
| 1601 | 33.74 | CO | 31.92 | 300 | | | VC | 15.23155 | 1 in 109 |
| 2404 | 33.8 | CO | 30.04 | 300 | | | VC | 23.23107 | 1 in 78 |
| 2503 | 33.98 | CO | 30.72 | 300 | | | VC | 24.1541 | 1 in 56 |
| 0701 | 32.67 | CO | 29.56 | 450 | | | VC | 7.615773 | 1 in 95 |
| 0701 | 32.67 | CO | 29.56 | 450 | | | VC | 7.615773 | 1 in 95 |
| 2601 | 33.97 | CO | 32.09 | 300 | | | VC | 52 | 1 in 57 |
| 1604 | 33.67 | CO | 31.44 | 300 | | | VC | 21 | 1 in 140 |
| 4401 | 34.42 | CO | 32.5 | 300 | | | VC | 30.0164 | |
| 3414 | | CO | | 150 | | | VC | 6.914375 | |
| 2904 | | CO | | 150 | | | VC | 9.103977 | |
| 2904 | | CO | | 150 | | | VC | 9.103977 | |
| 4403 | 34.46 | CO | 32.54 | 300 | | | VC | 16 | 1 in 1600 |
| 1406 | 33.35 | CO | 31.63 | 225 | | | VC | 44 | 1 in 133 |
| 2505 | 33.93 | CO | 29.33 | 610 | | | BR | 46.11 | 1 in 231 |
| 3410 | 34.2 | SW | 31.5 | 450 | | | CO | 28.0295 | 1 in 299 |
| 4802 | 34.97 | CO | 31.65 | 760 | | | BR | 69.06519 | |
| 1702 | 33.88 | CO | 31.59 | 375 | | | CO | 81.59857 | 1 in 185 |
| 2905 | | CO | | 150 | | | VC | 19.19699 | |
| 2905 | | CO | | 150 | | | VC | 19.19699 | |
| 0702 | 32.96 | CO | 31.34 | 300 | | | CO | 32.06244 | 1 in 267 |
| 0002 | 33.39 | SW | 29.49 | 1805 | | | BR | 12.52996 | |
| 0002 | 33.39 | SW | 29.49 | 1805 | | | BR | 12.52996 | |
| 0004 | 33.33 | CO | 31.09 | 300 | | | VC | 23.43075 | 1 in 167 |
| 0004 | 33.33 | CO | 31.09 | 300 | | | VC | 23.43075 | 1 in 167 |
| 1905 | | CO | | 150 | | | VC | 5.863502 | |
| 1905 | | CO | | 150 | | | VC | 5.863502 | |
| 5408 | 34.54 | CO | 32.68 | 225 | | | VC | 16.02776 | 1 in 38 |
| 4505 | 34.79 | CO | 31.38 | 600 | | | BR | 55.03635 | 1 in 393 |
| 0703 | 33.29 | CO | 29.6 | 750 | | | BR | 104.2945 | 1 in 316 |
| 4702 | 34.97 | CO | 31.05 | 620 | | | BR | 65.7 | |
| 0002 | 32.95 | CO | 27.16 | 760 | | | BR | 47.01664 | 1 in 392 |
| 0002 | 32.95 | CO | 27.16 | 760 | | | BR | 47.01664 | 1 in 392 |
| 0612 | | CO | | 150 | | | VC | 6.749316 | |
| 3602 | 34.28 | CO | 31.02 | 300 | | | VC | 30.01656 | 1 in 33 |
| 1505 | 33.64 | CO | 31.38 | 300 | | | VC | 16 | 1 in 90 |
| 0502 | 33.19 | CO | 27.31 | 770 | | | BR | 41 | 1 in 342 |
| 0502 | 33.19 | CO | 27.31 | 770 | | | BR | 41 | 1 in 342 |
| 1607 | 33.52 | CO | 30.02 | 750 | | | BR | 24.73863 | 1 in 112 |
| 0702 | 32.65 | CO | 24.56 | 2450 | | | BR | 191.4129 | |
| 0702 | 32.65 | CO | 24.58 | 2450 | | | BR | 191.4129 | |
| 1506 | 33.66 | CO | 28.87 | 650 | | | BR | 17.02839 | 1 in 29 |
| 1606 | 33.56 | CO | 31.25 | 300 | | | VC | 12.80625 | 1 in 8 |
| 1509 | 33.48 | CO | 31.33 | 300 | | | VC | 32.06244 | 1 in 75 |
| 0408 | 33.12 | CO | 30.05 | 300 | | | VC | 47 | 1 in 92 |
| 0901 | 33.49 | CO | 30.54 | 525 | | | CO | 20.02498 | 1 in 54 |
| 4602 | 34.55 | CO | 31.68 | 620 | | | BR | 24.18877 | 1 in 173 |
| 0601 | 34.39 | CO | 0 | 450 | | | VC | 100.005 | |
| 1605 | 33.66 | CO | 32.48 | 225 | | | VC | 11.04336 | 1 in 22 |
| 0406 | 32.8 | CO | 29.16 | 300 | | | VC | 29.06888 | 1 in 88 |
| 0406 | 32.8 | CO | 29.16 | 300 | | | VC | 29.06888 | 1 in 88 |
| 3601 | 34.4 | CO | 33.08 | 300 | | | VC | 16 | 1 in 76 |
| 1703 | 33.46 | CO | 29.88 | 750 | | | BR | 40.60441 | |
| 2503 | 33.98 | CO | 32.45 | 225 | | | VC | 99.0202 | 1 in 89 |
| 2601 | 33.97 | CO | 32.03 | 300 | | | VC | 56 | 1 in 100 |
| 2804 | | CO | | 150 | | | VC | 8.983191 | |
| 2504 | 33.74 | CO | 29.12 | 610 | | | BR | 22 | 1 in 157 |
| 0006 | 33.69 | CO | 31.01 | 620 | | | BR | 4.123106 | |
| 0006 | 33.69 | CO | 31.01 | 620 | | | BR | 4.123106 | |
| 0802 | 33.59 | CO | 30.56 | 450 | | | CO | 15 | 1 in 42 |
| 3504 | 34.3 | CO | 29.79 | 610 | | | BR | 40.0125 | 1 in 235 |
| 1605 | 33.66 | CO | 31.59 | 300 | | | VC | 20.02498 | 1 in 80 |
| 1602 | 33.59 | CO | 30.96 | 570 | | | BR | 51.79803 | |
| 1602 | 33.59 | CO | 30.96 | 570 | | | BR | 51.79803 | |
| 1503 | 34.28 | CO | 32.22 | 300 | | | VC | 16 | 1 in 36 |
| 2410 | 33.83 | CO | 31.3 | 225 | | | VC | 6.527803 | 1 in 16 |
| 0419 | | CO | | 150 | | | VC | 2.465992 | |
| 1608 | 33.53 | CO | 31.72 | 300 | | | VC | 23.02173 | 1 in 209 |
| 0414 | 33.11 | CO | 31.31 | 225 | | | VC | 42.0119 | 1 in 114 |
| 1607 | 33.52 | CO | 0 | 1050 | | | BR | 9 | |
| 5601 | 34.94 | CO | 32.72 | 300 | | | VC | 26.01922 | 1 in 79 |
| 1902 | 33.59 | CO | 30.59 | 525 | | | CO | 39 | 1 in 1950 |
| 1507 | 33.66 | CO | 28.96 | 580 | | | BR | 14 | 1 in 700 |
| 0903 | 32.87 | CO | 29.7 | 640 | | | BR | 16 | 1 in 114 |
| 0903 | 32.87 | CO | 29.7 | 640 | | | BR | 16 | 1 in 114 |
| 1609 | 33.55 | CO | 31.44 | 300 | | | VC | 25.07997 | 1 in 836 |
| 2912 | | CO | | 100 | | | VC | 9.880688 | |
| 0803 | 33.21 | CO | 30.64 | 450 | | | CO | 36.79574 | 1 in 613 |
| 4404 | 34.66 | CO | 31.73 | 610 | | | BR | 84.58587 | 1 in 352 |
| 5602 | 35.02 | CO | 32.37 | 300 | | | VC | 32.00007 | 1 in 80 |
| 2411 | 33.9 | CO | 0 | 300 | | | VC | 28.03206 | |
| 2402 | 33.68 | CO | 30.99 | 300 | | | VC | 29.01724 | 1 in 33 |
| 1502 | 33.63 | CO | 28.27 | 750 | | | BR | 51.0392 | 1 in 72 |
| 2001 | 33.6 | CO | 31.19 | 1500 | | | BR | 126.9212 | 1 in 409 |
| 2001 | 33.6 | CO | 31.19 | 1500 | | | BR | 126.9212 | 1 in 409 |
| 1912 | | CO | | 150 | | | VC | 15.80875 | |
| 3405 | 34.4 | SW | 33.1 | 450 | | | CO | 15.03077 | 1 in 150 |
| 2802 | | CO | | 150 | | | VC | 17.954 | |
| 0902 | 33.54 | CO | 30.02 | 675 | | | CO | 59.03389 | 1 in 281 |
| 0801 | 33.15 | CO | 31.07 | 450 | | | CO | 65.45902 | 1 in 168 |
| 1903 | 34.05 | CO | 30.98 | 450 | | | CO | 49 | 1 in 129 |
| 1903 | 34.05 | CO | 30.98 | 450 | | | CO | 49 | 1 in 129 |
| 0409 | 33.19 | CO | 29.46 | 300 | | | VC | 31.06445 | 1 in 124 |
| 3611 | | CO | | 150 | | | VC | 10.41981 | |
| 1405 | 33.46 | CO | 31.9 | 225 | | | VC | 17 | 1 in 27 |
| 2404 | 33.87 | CO | 30.28 | 750 | | | BR | 92.2243 | 1 in 231 |
| 2402 | 33.68 | CO | 0 | 300 | | | VC | 46 | |
| 9404 | 32.69 | CO | 0 | 300 | | | VC | 46 | |
| 5901 | 35.24 | CO | 0 | 610 | | | BR | 59.3043 | |
| 5901 | 35.24 | CO | 0 | 610 | | | BR | 59.3043 | |
| 2409 | 33.98 | SW | | 0 | | | CO | 0.5136748 | |
| 2506 | 34.03 | CO | 29.49 | 610 | | | BR | 28.90896 | 1 in 222 |
| 2605 | 34.06 | CO | 31.65 | 300 | | | VC | 55 | 1 in 61 |
| 2603 | 33.98 | CO | 32.61 | 300 | | | VC | 45.01111 | 1 in 82 |
| 1404 | 33.28 | CO | 31.94 | 225 | | | VC | 18.02776 | 1 in 18 |
| 5649 | | CO | | 150 | | | VC | 25.8446 | |
| 1501 | 33.44 | CO | 27.55 | 750 | | | BR | 44.01336 | 1 in 400 |
| 4701 | 34.75 | CO | 25.36 | 2250 | | | BR | 186.0968 | 1 in 600 |
| 1601 | 33.55 | CO | 29.32 | 375 | | | VC | 45.04442 | 1 in 94 |
| 2408 | 33.77 | CO | 32.15 | 225 | | | VC | 45.01111 | 1 in 71 |
| 1804 | | CO | | 150 | | | VC | 11.75836 | |
| 4604 | 34.83 | CO | 31.24 | 600 | | | BR | 54.03703 | 1 in 284 |
| 1604 | 33.67 | CO | 32.32 | 225 | | | VC | 11.04336 | 1 in 36 |
| 4506 | 34.69 | CO | 31.54 | 600 | | | BR | 55.08176 | 1 in 367 |
| 1901 | 33.64 | CO | 30.9 | 300 | | | CO | 38.58756 | 1 in 146 |
| 0914 | | CO | | 150 | | | VC | 13.72601 | |
| 2501 | 33.75 | CO | 31.99 | 300 | | | VC | 49.0102 | 1 in 82 |
| 3801 | 34.69 | CO | 31.46 | 630 | | | BR | 73.33465 | 1 in 188 |
| 1602 | 33.51 | CO | 29.82 | 375 | | | VC | 49.0408 | 1 in 104 |
| 2509 | | FO | | 100 | | | VC | 12.46258 | |
| 2002 | 33.85 | CO | 31.2 | 610 | | | BR | 41.59327 | 1 in 347 |
| 2002 | 33.85 | CO | 31.2 | 610 | | | BR | 41.59327 | 1 in 347 |
| 1701 | 33.57 | CO | 30.37 | 375 | | | VC | 44.04543 | 1 in 83 |
| 4402 | 34.47 | CO | 32.34 | 300 | | | VC | 24.08319 | |
| 4503 | 34.51 | CO | 32.24 | 375 | | | VC | 26.30569 | 1 in 114 |
| 1602 | | CO | | 150 | | | VC | 11.37314 | |
| 2901 | 34 | CO | 31.3 | 375 | | | CO | 61.52235 | 1 in 293 |
| 2901 | 34 | CO | 31.3 | 375 | | | CO | 61.52235 | 1 in 293 |
| 1904 | | CO | | 150 | | | VC | 6.149589 | |
| 1906 | | CO | | 150 | | | VC | 8.004659 | |
| 0703 | 32.78 | CO | 29.45 | 750 | | | BR | 107.4161 | 1 in 250 |
| 0703 | 32.78 | CO | 29.45 | 750 | | | BR | 107.4161 | 1 in 250 |
| 4502 | 34.43 | CO | 32 | 375 | | | VC | 25.71936 | 1 in 180 |
| 4602 | 34.67 | CO | 31.52 | 620 | | | BR | 44.40721 | |
| 1504 | 33.54 | CO | 31.16 | 300 | | | VC | 10.63015 | 1 in 5 |
| 1502 | 33.71 | SW | 29.81 | 1805 | | | BR | 88.54942 | 1 in 277 |
| 2402 | 33.68 | CO | 32.31 | 225 | | | VC | 23 | 1 in 28 |
| 2903 | | CO | | 150 | | | VC | 7.130569 | |
| 2903 | | CO | | 150 | | | VC | 7.130569 | |
| 1402 | 33.36 | CO | 31.27 | 225 | | | VC | 22 | 1 in 122 |
| 3413 | | CO | | 150 | | | VC | 23.13009 | |
| 3505 | 34.54 | CO | 30.08 | 610 | | | BR | 46 | 1 in 192 |
| 3702 | 34.46 | CO | 30.61 | 740 | | | BR | 106 | 1 in 366 |
| 2602 | 34.15 | CO | 32.58 | 300 | | | VC | 48.01067 | 1 in 97 |
| 3406 | 34.47 | SW | 33 | 450 | | | CO | 28.47027 | 1 in 190 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 5701 | 35.24 | CO | 31.95 | 300 | | | VC | 2 | |
| 4501 | 34.42 | CO | 31.82 | 620 | | | BR | 26.1725 | 1 in 238 |
| 1005 | 34.11 | CO | | 150 | | | VC | 30.09465 | |
| 1005 | 34.11 | CO | | 150 | | | VC | 30.09465 | |
| 4504 | 34.58 | CO | 31.58 | 610 | | | BR | 18.78263 | |
| 1505 | 33.64 | CO | 32.17 | 225 | | | BR | 21.0236 | 1 in 28 |
| 2601 | 34.06 | CO | 31.9 | 300 | | | CO | 88.02273 | 1 in 166 |
| 3408 | 34.35 | SW | 31.6 | 450 | | | CO | 30.27752 | 1 in 303 |
| 3602 | 34.38 | CO | 32.86 | 300 | | | VC | 68.0294 | 1 in 110 |
| 3701 | 34.41 | CO | 31.37 | 300 | | | VC | 9.053386 | |
| 2602 | 34.15 | CO | 0 | 300 | | | VC | 60.67445 | |
| 2602 | | CO | | 150 | | | VC | 12.78049 | |
| 0907 | | CO | | 150 | | | VC | 12.78049 | |
| 3901 | 34.38 | CO | 31.83 | 580 | | | BR | 83.02409 | 1 in 134 |
| 3901 | 34.38 | CO | 31.83 | 580 | | | BR | 83.02409 | 1 in 134 |
| 3404 | 34.5 | SW | 33.4 | 225 | | | VC | 12.46715 | 1 in 42 |
| 1403 | 33.25 | CO | 29.85 | 300 | | | VC | 47.01664 | 1 in 142 |
| 4601 | 35.4 | CO | 33.48 | 225 | | | VC | 75.19859 | 1 in 82 |
| 2701 | 33.93 | CO | 31.1 | 300 | | | VC | 7.071068 | |
| 0807 | | CO | | 150 | | | VC | 9.093446 | |
| 3601 | 34.4 | CO | 31.8 | 300 | | | VC | 39.20459 | 1 in 101 |
| 1910 | | CO | | 150 | | | VC | 8.462361 | |
| 1910 | | CO | | 150 | | | VC | 8.462361 | |
| 2604 | 33.83 | CO | 32.08 | 300 | | | VC | 48 | 1 in 109 |
| 3503 | 34.12 | CO | 29.6 | 610 | | | BR | 16 | 1 in 178 |
| 5407 | 34.56 | CO | 32.2 | 225 | | | VC | 7 | 1 in 8 |
| 3409 | 34.32 | FO | 32 | 150 | | | VC | 42.41223 | 1 in 109 |
| 3408 | 33.53 | CO | 31.21 | 225 | | | VC | 25 | 1 in 147 |
| 3407 | 34.48 | SW | 33.47 | 150 | | | VC | 10.29763 | 1 in 28 |
| 0505 | | CO | | 150 | | | VC | 2.539301 | |
| 1401 | 33.33 | CO | 29.52 | 300 | | | VC | 30.01666 | 1 in 167 |
| 4601 | 34.85 | CO | 0 | 620 | | | BR | 27.45906 | |
| 4504 | 34.56 | CO | 30.3 | 610 | | | BR | 38.98711 | 1 in 217 |
| 4507 | 34.67 | CO | 30.57 | 525 | | | CO | 60.73476 | 1 in 190 |
| 2412 | 34.06 | FO | 31.61 | 150 | | | VC | 20.2857 | 1 in 65 |
| 0813 | | CO | | 150 | | | VC | 40.64032 | |
| 2502 | 33.94 | CO | 32.5 | 300 | | | VC | 45.01111 | 1 in 96 |
| 0804 | 32.76 | CO | 29.44 | 610 | | | BR | 23.08579 | |
| 0804 | 32.76 | CO | 29.44 | 610 | | | BR | 23.08579 | |
| 2405 | 33.64 | CO | 30.42 | 300 | | | VC | 24.02213 | 1 in 69 |
| 5406 | 34.57 | CO | 31.33 | 225 | | | VC | 6 | 1 in 53 |
| 1810 | | CO | | 150 | | | VC | 19.52302 | |
| 2703 | 33.83 | CO | 25.07 | 2250 | | | BR | 140.4279 | |
| 1803 | | CO | | 150 | | | VC | 17.74558 | |
| 3411 | | CO | | 150 | | | VC | 9.06364 | |
| 1503 | 33.56 | CO | 28.84 | 150 | | | VC | 47.01664 | 1 in 85 |
| 2902 | | CO | | 150 | | | VC | 12.9576 | |

| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|
| 0410 | 33.22 | CO | 30.92 | 225 | | | VC | 24.02082 | 1 in 240 |
| 4901 | 34.96 | CO | 32.28 | 610 | | | BR | 58 | 1 in 264 |
| 4901 | 34.96 | CO | 32.28 | 610 | | | BR | 58 | 1 in 264 |
| 0501 | 33.16 | CO | 27.29 | 720 | | | BR | 4 | 1 in 200 |
| 0501 | 33.16 | CO | 27.29 | 720 | | | BR | 4 | 1 in 200 |
| 0406 | 33 | CO | 29.3 | 300 | | | VC | 30.12929 | 1 in 274 |
| 0406 | 33 | CO | 29.3 | 300 | | | VC | 30.12929 | 1 in 274 |
| 0503 | 33.29 | CO | 27.44 | 760 | | | BR | 1.4 | 1 in 400 |
| 3607 | | CO | | 225 | | | VC | 72.28702 | |
| 0405 | 32.91 | CO | 30.25 | 300 | | | VC | 44.89475 | 1 in 47 |
| 0405 | 32.91 | CO | 30.25 | 300 | | | VC | 44.89475 | 1 in 47 |
| 3512 | | CO | | 150 | | | VC | 18.64203 | |
| 0411 | 32.97 | CO | 31.43 | 225 | | | VC | 44.79205 | 1 in 132 |
| 3510 | | CO | | 150 | | | VC | 17.02699 | |
| 0407 | 33.06 | CO | 31.09 | 225 | | | VC | 22.65167 | 1 in 57 |

## LEGEND

Abandoned Foul Surface Water Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

**MANHOLE FUNCTION**

FO Foul
SW Surface Water
CO Combined
OV Overflow

**SEWER SHAPE**

CI Circular
EG Egg
OV Oval
FT Flat Top
RE Rectangular
SQ Square
TR Trapezoidal
AR Arch
BA Barrel
HO HorseShoe
UN Unspecified

**SEWER MATERIAL**

AC Asbestos Cement
BR Brick
PE Polyethylene
RP Reinforced Plastic Matrix
CO Concrete
CSB Concrete Segment Bolted
CSU Concrete Segment Unbolted
CC Concrete Box Culverted
PSC Plastic / Steel Composite
GRC Glass Reinforced Plastic
DI Ductile Iron
PVC Polyvinyl Chloride
CI Cast Iron
SI Spun Iron
ST Steel
VC Vitrified Clay
PP Polypropylene
PF Pitch Fibre
MAC Masonry, Coursed
MAR Masonry, Random
U Unspecified

**Address or Site Reference:**

Heineken Manchester Denmark Road,

**OS sheet Number:** SJ8495NW
**Scale:** 1:1250 **Date:** 28/12/2018
**Nodes:** 216
**Sheet:** 2 of 4

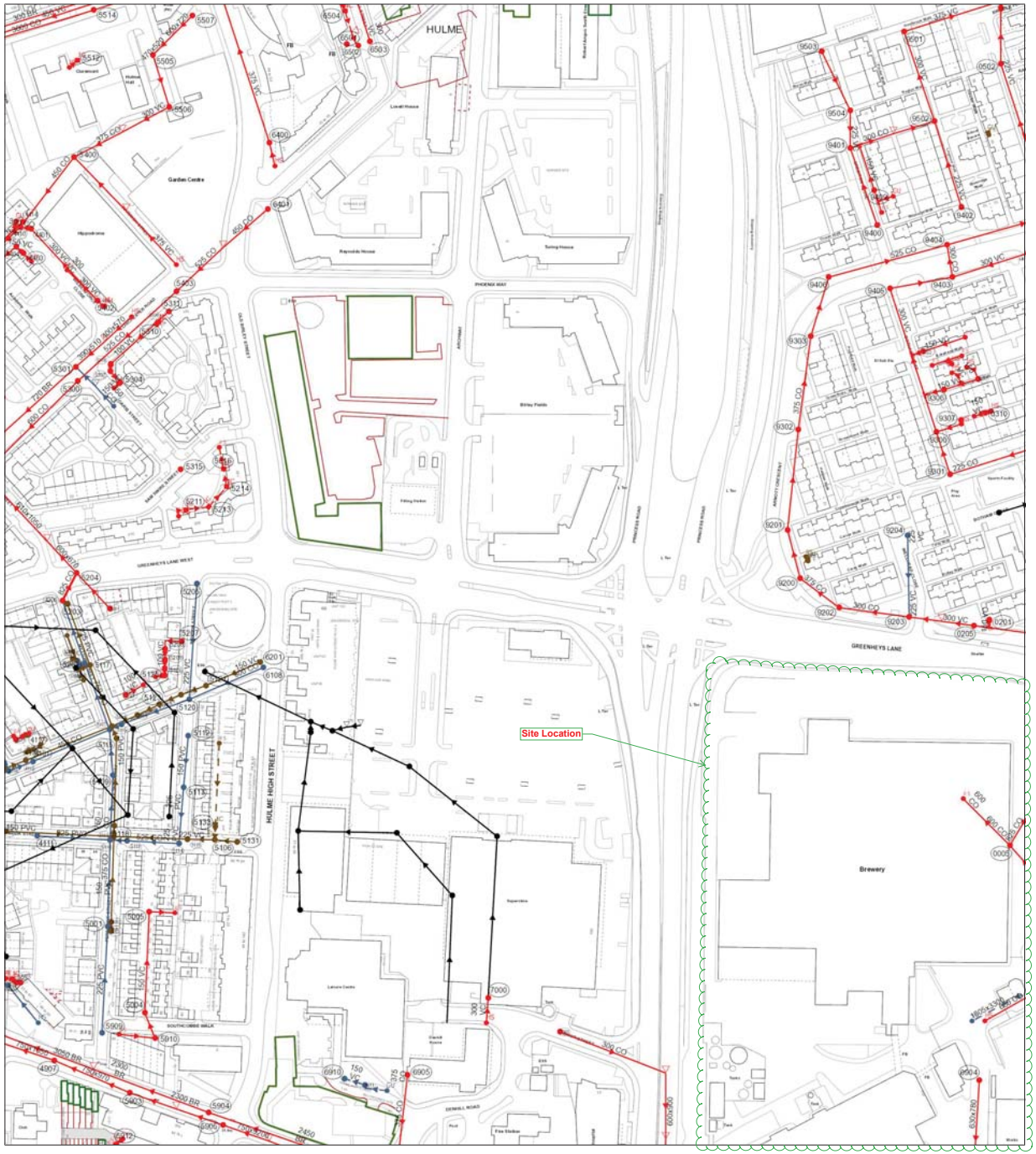
**Printed by:** Property Searches

**SEWER RECORDS**

United Utilities
helping life flow smoothly

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|
| 9300 | 33.89 | CO | 31.06 | 300 | | | VC | 84.15765 | 1 in 221 |
| 9300 | 33.89 | CO | 31.06 | 300 | | | VC | 84.15765 | 1 in 221 |
| 5126 | | CO | | 100 | | | VC | 3.806781 | |
| 4116 | 33.13 | FO | 29.09 | 150 | | | PVC | 5.164464 | 1 in 143 |
| 5106 | 33.31 | SW | 29.96 | 225 | | | PVC | 7.305597 | 1 in 4 |
| 5103 | 32.2 | FO | 27.88 | 150 | | | PVC | 3.249516 | 1 in 18 |
| 4001 | | CO | | 100 | | | PE | 1.72915 | |
| 4009 | | CO | | 100 | | | VC | 2.219719 | |
| 4009 | | CO | | 100 | | | VC | 2.219719 | |
| 7901 | 33.14 | CO | 31.3 | 300 | | | CO | 63.32466 | |
| 7901 | 33.14 | CO | 31.3 | 300 | | | CO | 63.32466 | |
| 5131 | | FO | | 225 | | | VC | 12.52583 | |
| 5905 | 31.86 | CO | 28.14 | 750 | | | BR | 27.51363 | 1 in 172 |
| 5905 | 31.86 | CO | 28.14 | 750 | | | BR | 27.51363 | 1 in 172 |
| 5506 | 33.52 | CO | 29.46 | 300 | | | VC | 29.52665 | 1 in 128 |
| 4206 | 32.11 | CO | 27.7 | 825 | | | CO | 17.39212 | 1 in 79 |
| 4116 | | CO | | 100 | | | VC | 2.377321 | |
| 6400 | 32.87 | CO | 28.83 | 375 | | | VC | 107.6927 | 1 in 135 |
| 5004 | | CO | | 150 | | | VC | 56.50772 | |
| 5004 | | CO | | 150 | | | VC | 56.50772 | |
| 9404 | 34.57 | CO | 29.23 | 525 | | | CO | 88.32327 | 1 in 552 |
| 9404 | 34.57 | CO | 29.23 | 525 | | | CO | 88.32327 | 1 in 552 |
| 5116 | 32.48 | FO | 29.27 | 150 | | | PVC | 48.81601 | 1 in 125 |
| 9203 | 33.58 | CO | 30.64 | 300 | | | CO | 39.46372 | 1 in 146 |
| 9203 | 33.58 | CO | 30.64 | 300 | | | CO | 39.46372 | 1 in 146 |
| 5311 | | CO | | 100 | | | VC | 43.47447 | |
| 4404 | | CO | | 150 | | | VC | 13.13227 | |
| 5111 | 32.39 | SW | 29.3 | 525 | | | CO | 9.398947 | 1 in 11 |
| 0201 | | CO | | 150 | | | VC | 4.584419 | |
| 0201 | | CO | | 150 | | | VC | 4.584419 | |
| 4117 | | CO | | 100 | | | VC | 5.947394 | |
| 5205 | 32.34 | SW | 30.94 | 225 | | | VC | 64.64909 | 1 in 104 |
| 4110 | 33.18 | SW | 29.24 | 450 | | | CO | 46.16934 | 1 in 45 |
| 9302 | 33.67 | CO | 29.79 | 375 | | | CO | 52.46904 | 1 in 119 |
| 9408 | | CO | 31.4 | 525 | | | CO | 58.41052 | |
| 5108 | 33.59 | FO | 31.44 | 300 | | | CO | 47.59491 | 1 in 40 |
| 5002 | 32.02 | FO | 29.62 | 150 | | | PVC | 47.75172 | 1 in 149 |
| 5002 | 32.02 | FO | 29.62 | 150 | | | PVC | 47.75172 | 1 in 149 |
| 4404 | | CO | | 150 | | | VC | 56.50772 | |
| 5909 | 31.77 | SW | 30.62 | 225 | | | PVC | 59.28731 | 1 in 34 |
| 5909 | 31.77 | SW | 30.62 | 225 | | | PVC | 59.28731 | 1 in 34 |
| 5210 | | SW | | 225 | | | VC | 2.91744 | |
| 9202 | 33.5 | CO | 30.3 | 375 | | | CO | 27.21922 | 1 in 340 |
| 4111 | 32.24 | SW | 30.19 | 225 | | | PVC | 40.81896 | 1 in 23 |
| 6401 | 33.11 | CO | 29.7 | 450 | | | CO | 32.95317 | 1 in 150 |
| 6201 | 33.5 | FO | 32.3 | 150 | | | VC | 33.01572 | 1 in 67 |
| 5120 | 33.07 | SW | 30.32 | 450 | | | CO | 40.30047 | 1 in 112 |
| 5105 | | FO | | 225 | | | VC | 41.10695 | |
| 4907 | 34.77 | CO | 30.62 | 750 | | | BR | 34.78505 | |
| 4907 | 34.77 | CO | 30.62 | 750 | | | BR | 34.78505 | |
| 5109 | 32.59 | SW | 28.32 | 750 | | | CO | 25.36038 | 1 in 231 |
| 5124 | 33.25 | FO | 29.15 | 150 | | | VC | 15.46426 | 1 in 37 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 5304 | | CO | | 150 | | | VC | 4.57439 | |
| 5120 | | CO | | 100 | | | VC | 11.23012 | |
| 5123 | 33.15 | FO | 30.53 | 150 | | | VC | 13.72597 | 1 in 10 |
| 5307 | | CO | | 100 | | | VC | 8.293975 | |
| 5003 | 32 | FO | 29.65 | 150 | | | PVC | 5.041429 | 1 in 168 |
| 5003 | 32 | FO | 29.65 | 150 | | | PVC | 5.041429 | 1 in 168 |
| 5400 | 33.24 | CO | 28.95 | 450 | | | CO | 49.20386 | 1 in 107 |
| 5001 | 32 | SW | 28.9 | 375 | | | CO | 48.30943 | 1 in 103 |
| 5001 | 32 | SW | 28.9 | 375 | | | CO | 48.30943 | 1 in 103 |
| 5115 | 32.66 | FO | 28.88 | 150 | | | PVC | 7.196327 | 1 in 48 |
| 5117 | 32.55 | FO | 28.12 | 225 | | | PVC | 36.52824 | 1 in 152 |
| 5116 | 32.48 | FO | 28.73 | 225 | | | PVC | 36.52843 | 1 in 59 |
| 5116 | 32.48 | FO | 29.3 | 150 | | | PVC | 3.994414 | 1 in 200 |
| 9303 | 31.19 | CO | 29.68 | 150 | | | BR | 64.18388 | |
| 5904 | 31.64 | CO | 24.08 | 2300 | | | BR | 64.35203 | |
| 5904 | 31.64 | CO | 24.08 | 2300 | | | BR | 64.35203 | |
| 5107 | 32.9 | SW | 28.21 | 750 | | | CO | 39.66611 | 1 in 220 |
| 6503 | 33.83 | CO | 31.5 | 300 | | | VC | 65.21564 | 1 in 119 |
| 9204 | 33.5 | SW | 31.75 | 225 | | | VC | 45.59971 | 1 in 106 |
| 9204 | 33.5 | SW | 31.75 | 225 | | | VC | 45.59971 | 1 in 106 |
| 4401 | 32.64 | CO | 28.8 | 300 | | | CO | 6.082753 | 1 in 38 |
| 4004 | 32.63 | SW | 30.09 | 1390 | | | | 37.21559 | 1 in 930 |
| 4004 | 32.63 | SW | 30.09 | 1390 | | | | 37.21559 | 1 in 930 |
| 9405 | 33.95 | CO | 30.68 | 300 | | | VC | 35.43739 | 1 in 31 |
| 0305 | | CO | 0 | 225 | | | CO | 71.65667 | |
| 5209 | | CO | | 100 | | | VC | 4.874985 | |
| 9201 | 33.84 | CO | 30.06 | 375 | | | CO | 56.32051 | 1 in 225 |
| 9503 | | CO | 0 | 225 | | | VC | 36.67424 | |
| 0005 | 33.37 | CO | 30.34 | 600 | | | CO | 36.76955 | |
| 0005 | 33.37 | CO | 30.34 | 600 | | | CO | 36.76955 | |
| 4403 | | CO | | 150 | | | VC | 5.477767 | |
| 9400 | 33.94 | CO | 32.14 | 225 | | | VC | 45.54119 | |
| 5005 | | CO | | 150 | | | VC | 14.35202 | |
| 5005 | | CO | | 150 | | | VC | 14.35202 | |
| 5505 | 33.49 | CO | 29.64 | 300 | | | VC | 30.39445 | 1 in 179 |
| 0212 | | CO | 31.19 | 300 | | | VC | 69.47559 | 1 in 196 |
| 5507 | 33.48 | CO | 29.89 | 600 | | | BR | 15.55535 | 1 in 141 |
| 5112 | 32.71 | SW | 30.65 | 150 | | | PVC | 28.95062 | 1 in 50 |
| 9401 | 34.22 | CO | 32.28 | 300 | | | CO | 25.30202 | 1 in 74 |
| 9301 | | CO | 0 | 225 | | | CO | 24.8776 | |
| 9301 | | CO | 0 | 225 | | | CO | 24.8776 | |
| 6901 | 31.9 | CO | 28.21 | 750 | | | BR | 26.92582 | 1 in 898 |
| 9504 | | CO | 0 | 225 | | | VC | 21 | |
| 5122 | 33.07 | FO | 31.69 | 150 | | | VC | 13.1704 | 1 in 11 |
| 5105 | | FO | | 225 | | | VC | 3.167521 | |
| 5103 | | SW | | 225 | | | VC | 14.76782 | |
| 4105 | 33.18 | SW | 29.29 | 525 | | | CO | 5.438538 | |
| 4402 | 32.84 | CO | | 225 | | | CO | 14.68833 | 1 in 294 |
| 5110 | 32.4 | SW | 28.43 | 750 | | | CO | 9.154697 | |
| 5300 | 32.97 | CO | 28.32 | 600 | | | CO | 38.22233 | 1 in 329 |
| 6911 | | SW | | 150 | | | VC | 73.44656 | |
| 6911 | | SW | | 150 | | | VC | 11.82275 | |
| 5201 | 31.84 | CO | 27.85 | 600 | | | BR | 27.284 | |
| 9501 | 34.57 | CO | 31.72 | 375 | | | VC | 56.61272 | 1 in 354 |
| 9501 | 34.57 | CO | 31.72 | 375 | | | VC | 56.61272 | 1 in 354 |
| 9502 | 35.5 | CO | 32.9 | 300 | | | VC | 52.81099 | 1 in 46 |
| 9502 | 35.5 | CO | 32.9 | 300 | | | VC | 52.81099 | 1 in 46 |
| 6905 | 33.24 | CO | 29.95 | 375 | | | CO | 53.33854 | 1 in 184 |
| 6905 | 33.24 | CO | 29.95 | 375 | | | CO | 53.33854 | 1 in 184 |
| 9402 | 34.61 | CO | 32.01 | 225 | | | VC | 50.28917 | |
| 9402 | 34.61 | CO | 32.01 | 225 | | | VC | 50.28917 | |
| 0502 | 34.38 | CO | | 225 | | | VC | 30.82417 | |
| 0502 | 34.38 | CO | | 225 | | | VC | 30.82417 | |
| 0307 | | CO | | 150 | | | VC | 19.86122 | |
| 0307 | | CO | | 150 | | | VC | 19.86122 | |
| 0205 | 33.91 | CO | 30.83 | 300 | | | VC | 18.14314 | 1 in 202 |
| 0205 | 33.91 | CO | 30.83 | 300 | | | VC | 18.14314 | 1 in 202 |
| 4410 | | CO | | 525 | | | CO | 27.63242 | |
| 5102 | | FO | | 225 | | | VC | 6.230314 | |
| 0408 | 34.5 | CO | 32.06 | 300 | | | VC | 44.12879 | 1 in 18 |
| 4115 | 32.12 | FO | 29.99 | 150 | | | PVC | 50.50107 | 1 in 88 |
| 5306 | | CO | | 100 | | | VC | 4.055799 | |
| 0502 | 34.38 | CO | 31.92 | 225 | | | VC | 4.175835 | |
| 0502 | 34.38 | CO | 31.92 | 225 | | | VC | 4.175835 | |
| 0310 | | CO | | 150 | | | VC | 6.431089 | |
| 0310 | | CO | | 150 | | | VC | 6.431089 | |
| 5101 | 33.06 | FO | 31.81 | 150 | | | VC | 19.94132 | 1 in 124 |
| 5101 | | SW | 0 | 525 | | | CO | 29.04132 | |
| 5207 | | SW | | 225 | | | VC | 13.94536 | |
| 9403 | 32.41 | CO | 29.25 | 525 | | | CO | 74.15558 | |
| 5903 | 31.79 | CO | 27.82 | 750 | | | BR | 22.84732 | |
| 5903 | 31.79 | CO | 27.82 | 750 | | | BR | 22.84732 | |
| 5113 | 32.76 | SW | 30.07 | 225 | | | PVC | 31.44276 | |
| 5202 | 32.5 | SW | 28.03 | 750 | | | CO | 37.01732 | 1 in 112 |
| 5301 | 32.93 | CO | 28.33 | 720 | | | BR | 72.91776 | 1 in 228 |
| 5910 | | CO | | 150 | | | VC | 15.24798 | |
| 5910 | | CO | | 150 | | | VC | 15.24798 | |
| 5204 | 32.57 | CO | 0 | 600 | | | BR | 24.04636 | |
| 5208 | | CO | | 100 | | | VC | 5.945171 | |
| 9403 | 34.6 | CO | 29.54 | 300 | | | CO | 18.24929 | 1 in 304 |
| 9403 | 34.6 | CO | 29.54 | 300 | | | CO | 18.24929 | 1 in 304 |
| 5402 | 32.11 | CO | 29.21 | 300 | | | VC | 54.48853 | 1 in 156 |
| 9200 | 33.64 | CO | 30.22 | 375 | | | CO | 27.89265 | 1 in 174 |
| 9306 | | CO | | 150 | | | VC | 11.38232 | |
| 9306 | | CO | | 150 | | | VC | 11.38232 | |
| 9305 | | CO | | 150 | | | VC | 6.805898 | |
| 9305 | | CO | | 150 | | | VC | 6.805898 | |
| 9402 | 34.39 | CO | 32.72 | 150 | | | VC | 10.44031 | |
| 5514 | | CO | 0 | 3600 | | | CO | 312.8489 | |
| 0401 | 34.42 | CO | 32.33 | 225 | | | VC | 69.57311 | 1 in 183 |

| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|

## LEGEND

Abandoned · Foul · Surface Water · Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined · blue - surface water
brown - foul · purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

### MANHOLE FUNCTION

| | |
|---|---|
| FO | Foul |
| SW | Surface Water |
| CO | Combined |
| OV | Overflow |

### SEWER SHAPE

| | | | |
|---|---|---|---|
| CI | Circular | TR | Trapezoidal |
| EG | Egg | AR | Arch |
| OV | Oval | BA | Barrel |
| FT | Flat Top | HO | HorseShoe |
| RE | Rectangular | UN | Unspecified |
| SQ | Square | | |

### SEWER MATERIAL

| | |
|---|---|
| AC | Asbestos Cement |
| BR | Brick |
| PE | Polyethylene |
| RP | Reinforced Plastic Matrix |
| CO | Concrete |
| CSB | Concrete Segment Bolted |
| CSU | Concrete Segment Unbolted |
| CC | Concrete Box Culverted |
| PSC | Plastic / Steel Composite |
| GRC | Glass Reinforced Plastic |
| DI | Ductile Iron |
| PVC | Polyvinyl Chloride |
| CI | Cast Iron |
| SI | Spun Iron |
| ST | Steel |
| VC | Vitrified Clay |
| PP | Polypropylene |
| PF | Pitch Fibre |
| MAC | Masonry, Coursed |
| MAR | Masonry, Random |
| U | Unspecified |

**Address or Site Reference:**

Heineken Manchester Denmark Road,

**OS sheet Number:** SJ8396SE
**Scale:** 1:1250 **Date:** 28/12/2018
**Nodes:** 157
**Sheet:** 3 of 4

**Printed by:** Property Searches

**SEWER RECORDS**

United Utilities — helping life flow smoothly




| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|
| 5507 | | SW | | 0 | | | UN | 30.52526 | |
| 5501 | 31.16 | CO | 28.69 | 450 | | | CO | 20.02498 | 1 in 222 |
| 8602 | 32.5 | CO | 29.53 | 450 | | | VC | 86.01688 | 1 in 307 |
| 7901 | 33.14 | CO | 31.3 | 300 | | | CO | 63.32466 | |
| 7901 | 33.14 | CO | 31.3 | 300 | | | CO | 63.32466 | |
| 5504 | | CO | | 2300 | | | BR | 27.51358 | |
| 5905 | 31.86 | CO | 28.14 | 750 | | | BR | 27.51363 | 1 in 172 |
| 5906 | 31.91 | CO | 28.63 | 300 | | | VC | 21.37756 | 1 in 107 |
| 9701 | 32.67 | CO | 29.58 | 450 | | | VC | 7.615773 | 1 in 95 |
| 9701 | 32.67 | CO | 29.58 | 450 | | | VC | 7.615773 | 1 in 95 |
| 6601 | 31.88 | CO | 29.23 | 375 | | | CO | 24.02082 | 1 in 96 |
| 6804 | 32.02 | CO | 29.48 | 225 | | | VC | 40.31129 | 1 in 115 |
| 5809 | | CO | | 150 | | | VC | 12.36351 | |
| 5402 | 31.13 | CO | 28.23 | 300 | | | CO | 31 | 1 in 45 |
| 8504 | 32.26 | CO | 26.61 | 770 | | | BR | 152 | 1 in 724 |
| 5801 | 31.87 | CO | 29.21 | 450 | | | VC | 39.62323 | 1 in 209 |
| 9703 | 33.29 | CO | 29.8 | 750 | | | BR | 104.2945 | 1 in 316 |
| 5908 | 31.77 | SW | 30.62 | 225 | | | PVC | 59.28751 | 1 in 34 |
| 5909 | 31.77 | SW | 30.62 | 225 | | | PVC | 59.28751 | 1 in 34 |
| 9602 | 32.95 | CO | 27.18 | 780 | | | BR | 47.01064 | 1 in 392 |
| 9502 | 32.95 | CO | 27.18 | 780 | | | BR | 47.01064 | 1 in 392 |
| 5504 | 31.07 | CO | 28.39 | 525 | | | CO | 16.03122 | 1 in 200 |
| 6410 | | CO | | 150 | | | VC | 5.034476 | |
| 0502 | 33.19 | CO | 27.31 | 770 | | | BR | 41 | 1 in 342 |
| 0502 | 33.19 | CO | 27.31 | 770 | | | BR | 41 | 1 in 342 |
| 9503 | 32.82 | CO | 30.78 | 150 | | | VC | 17.11724 | 1 in 342 |
| 9702 | 32.65 | CO | 24.58 | 2450 | | | BR | 191.4129 | |
| 9702 | 32.65 | CO | 24.58 | 2450 | | | BR | 191.4129 | |
| 5603 | 31.32 | CO | 28.85 | 375 | | | CO | 61.0082 | 1 in 678 |
| 4907 | 34.77 | CO | 30.62 | 750 | | | BR | 34.78505 | |
| 4907 | 34.77 | CO | 30.62 | 750 | | | BR | 34.78505 | |
| 9405 | 31.28 | CO | 29.26 | 300 | | | CO | 39.01282 | 1 in 91 |
| 0601 | 34.39 | CO | 0 | 450 | | | VC | 100.005 | |
| 7703 | 32.18 | CO | 30.29 | 225 | | | VC | 64.09781 | 1 in 123 |
| 9406 | 32.6 | CO | 29.16 | 300 | | | VC | 29.06688 | 1 in 88 |
| 9406 | 32.6 | CO | 29.16 | 300 | | | VC | 29.06688 | 1 in 88 |
| 9403 | | CO | | 150 | | | VC | 2.654624 | |
| 7724 | 32.24 | CO | 30.43 | 0 | | | VC | 25.01666 | 1 in 417 |
| 6609 | | SW | | 0 | | | BR | 78.24707 | |
| 5502 | 31.1 | CO | 28.57 | 450 | | | CO | 31.01612 | 1 in 222 |
| 5505 | 30.98 | CO | 28.58 | 375 | | | CO | 26.07681 | 1 in 201 |
| 5001 | 32 | SW | 28.9 | 375 | | | CO | 48.30943 | 1 in 103 |
| 5001 | 32 | SW | 28.9 | 375 | | | CO | 48.30943 | 1 in 103 |
| 7701 | 32.3 | CO | 29.61 | 375 | | | CO | 73.1642 | 1 in 261 |
| 7601 | 32.29 | CO | 28.24 | 750 | | | BR | 51.0098 | 1 in 650 |
| 5904 | 31.84 | CO | 24.08 | 2300 | | | BR | 68.35203 | |
| 5904 | 31.84 | CO | 24.08 | 2300 | | | BR | 68.35203 | |
| 5509 | | CO | | 100 | | | VC | 7.545934 | |
| 9802 | 32.6 | CO | 29.02 | 750 | | | BR | 69.21229 | |
| 5408 | | CO | | 150 | | | VC | 15.31035 | |
| 8701 | 32 | CO | 29.77 | 300 | | | CO | 50 | 1 in 294 |
| 5813 | | CO | | 150 | | | VC | 6.236243 | |
| 8702 | 32.41 | CO | 29.22 | 450 | | | VC | 10.91868 | 1 in 364 |
| 7602 | 32.25 | CO | 30.1 | 225 | | | VC | 30 | 1 in 88 |
| 8702 | 31.86 | CO | 29.46 | 450 | | | CO | 30.01666 | 1 in 131 |
| 5802 | 31.73 | CO | 29.69 | 375 | | | CO | 28.28427 | 1 in 257 |
| 6506 | 31.61 | CO | 28.61 | 525 | | | CO | 1.415386 | |
| 7603 | 32.19 | CO | 29.67 | 300 | | | CO | 55.44366 | 1 in 163 |
| 0903 | 32.87 | CO | 29.7 | 640 | | | BR | 16 | 1 in 114 |
| 0903 | 32.87 | CO | 29.7 | 640 | | | BR | 16 | 1 in 114 |
| 5604 | | SW | | 0 | | | UN | 96.56183 | |
| 5506 | 31.28 | CO | 28.3 | 650 | | | BR | 56.00693 | 1 in 5501 |
| 7502 | 31.98 | CO | 29.21 | 375 | | | CO | 30.14863 | 1 in 151 |
| 9401 | 32.44 | CO | 28.36 | 300 | | | VC | 31.01612 | 1 in 155 |
| 6905 | 33.24 | CO | 25.95 | 375 | | | VC | 53.33854 | 1 in 184 |
| 6905 | 33.24 | CO | 25.95 | 375 | | | VC | 53.33854 | 1 in 184 |
| 7601 | 32.03 | CO | 29.31 | 375 | | | VC | 29.07 | 1 in 247 |
| 9610 | | CO | | 150 | | | VC | 3.034476 | |
| 5813 | | FO | | 150 | | | VC | 2.634747 | |
| 5503 | 33.54 | CO | 30.02 | 675 | | | CO | 59.03382 | 1 in 281 |
| 6404 | | CO | | 150 | | | VC | 29.08742 | |
| 8803 | 33.03 | CO | 0 | 980 | | | BR | 30.06859 | |
| 9501 | 32.77 | CO | 27.02 | 800 | | | BR | 47.01064 | 1 in 672 |
| 6904 | 32 | CO | 26.07 | 750 | | | BR | 153.015 | 1 in 739 |
| 6904 | 32.04 | CO | 25.61 | 375 | | | VC | 2.236068 | 1 in 0 |
| 9603 | 32.7 | CO | 29.65 | 450 | | | VC | 8.602325 | |
| 8603 | 32.47 | CO | 0 | 770 | | | BR | 178.0112 | |
| 6801 | 31.97 | CO | 30.08 | 300 | | | VC | 24.35159 | 1 in 162 |
| 9404 | 32.69 | CO | 0 | 300 | | | VC | 46 | |
| 9404 | 32.69 | CO | 0 | 300 | | | VC | 46 | |
| 5503 | 31.2 | CO | 29.42 | 225 | | | VC | 22.02271 | 1 in 37 |
| 5901 | 31.94 | CO | 28.78 | 525 | | | CO | 48.6921 | 1 in 374 |
| 4009 | | CO | | 100 | | | VC | 2.219719 | |
| 4009 | | CO | | 100 | | | VC | 2.219719 | |
| 6504 | 31.75 | CO | 29.95 | 300 | | | CO | 52.23983 | 1 in 80 |
| 6506 | 31.61 | CO | 28.61 | 525 | | | CO | 29.65327 | |
| 5004 | | CO | | 150 | | | VC | 56.50772 | |
| 5004 | | CO | | 150 | | | VC | 56.50772 | |
| 8511 | | SW | | 150 | | | VC | 11.23139 | |
| 9608 | | CO | 0 | 150 | | | VC | 32.04481 | |
| 5601 | 31.4 | CO | 25.88 | 760 | | | BR | 121.0372 | 1 in 1009 |
| 6703 | 32.01 | CO | 29.61 | 300 | | | CO | 31.06445 | 1 in 444 |
| 5404 | 31 | CO | 29.11 | 225 | | | VC | 13.0384 | 1 in 93 |
| 9403 | 31.56 | CO | 28.94 | 300 | | | CO | 30.01666 | 1 in 42 |
| 7803 | | CO | 0 | 300 | | | BR | 29.73214 | |
| 5902 | 32.03 | CO | 29.46 | 375 | | | VC | 31.01612 | 1 in 310 |
| 6802 | 32 | CO | 29.24 | 375 | | | CO | 56.85947 | 1 in 284 |
| 5602 | 31.33 | CO | 29.59 | 225 | | | VC | 44.01136 | 1 in 116 |
| 5002 | 32.02 | FO | 29.62 | 150 | | | PVC | 47.75172 | 1 in 149 |
| 5002 | 32.02 | FO | 29.62 | 150 | | | PVC | 47.75172 | 1 in 149 |
| 9703 | 32.89 | CO | 30.45 | 450 | | | VC | 33.09689 | 1 in 174 |
| 9703 | 32.78 | CO | 29.45 | 750 | | | BR | 107.4151 | 1 in 290 |
| 9703 | 32.78 | CO | 29.45 | 750 | | | BR | 107.4151 | 1 in 252 |
| 5503 | 32.08 | CO | 29.99 | 300 | | | CO | 45.01453 | 1 in 660 |
| 5819 | | FO | | 100 | | | VC | 3.003394 | |
| 8501 | 32.54 | CO | 26.92 | 760 | | | BR | 58 | 1 in 527 |
| 9418 | | CO | | 225 | | | VC | 17.06126 | |
| 9801 | 32.89 | CO | 0 | 620 | | | BR | 63.97656 | |
| 9504 | 32.94 | CO | 30.67 | 225 | | | VC | 3.605551 | 1 in 0 |
| 8503 | 32.63 | CO | 30.25 | 375 | | | VC | 28 | 1 in 140 |
| 8802 | 32.72 | CO | 0 | 1070 | | | BR | 4.472136 | |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 0904 | 33.12 | CO | 30.47 | 630 | | | BR | 65.12296 | 1 in 93 |
| 9506 | 32.8 | CO | 30.83 | 450 | | | VC | 56.00893 | 1 in 86 |
| 5404 | 32.35 | CO | 0 | 300 | | | VC | 45.04442 | |
| 9417 | | CO | | 225 | | | VC | 22.31138 | |
| 5003 | 32 | FO | 29.65 | 150 | | | PVC | 5.041429 | 1 in 168 |
| 5003 | 32 | FO | 29.65 | 150 | | | PVC | 5.041429 | 1 in 168 |
| 7702 | 32.23 | CO | 29.63 | 300 | | | CO | 43 | |
| 6506 | 31.61 | CO | 28.61 | 525 | | | CO | 52.92583 | |
| 7403 | 31.84 | CO | 29.73 | 300 | | | CO | 73.02739 | 1 in 128 |
| 9409 | | CO | | 150 | | | VC | 62.29316 | |
| 8703 | 32.43 | CO | 29.16 | 450 | | | VC | 40.64325 | |
| 6903 | 32.1 | CO | 23.57 | 3050 | | | BR | 4.123106 | |
| 9902 | 32.2 | CO | 28.34 | 750 | | | BR | 53.75872 | 1 in 489 |
| 4004 | 32.63 | SW | 30.09 | 1390 | | | | 37.21559 | 1 in 930 |
| 4004 | 32.63 | SW | 30.09 | 1390 | | | | 37.21559 | 1 in 930 |
| 7802 | 32.38 | CO | 28.55 | 750 | | | BR | 25.63201 | |
| 9602 | 32.79 | CO | 29.97 | 450 | | | VC | 69.00758 | 1 in 213 |
| 9610 | | CO | | 150 | | | VC | 7.681459 | |
| 9610 | 32.17 | CO | 28.15 | 750 | | | BR | 59 | 1 in 667 |
| 6501 | | SW | | 0 | | | UN | 63.53632 | |
| 9405 | 32.47 | CO | 0 | 300 | | | VC | 50 | |
| 5505 | | CO | | 150 | | | VC | 14.35202 | |
| 5205 | | CO | | 150 | | | VC | 14.35202 | |
| 6901 | 31.9 | CO | 28.21 | 750 | | | BR | 26.92582 | 1 in 898 |
| 5803 | 31.7 | CO | 29.96 | 300 | | | VC | 6 | 1 in 50 |
| 7601 | 32.51 | CO | 29.33 | 375 | | | CO | 69.28925 | 1 in 277 |
| 6808 | | SW | | 100 | | | VC | 9.059731 | |
| 9407 | 32.62 | CO | 0 | 300 | | | VC | 30.01666 | |
| 6911 | | SW | | 150 | | | VC | 11.82275 | |
| 6911 | | SW | | 150 | | | VC | 11.82275 | |
| 6602 | 31.66 | CO | 29.72 | 225 | | | VC | 38.01316 | 1 in 112 |
| 9508 | | CO | | 100 | | | VC | 8.559363 | |
| 5413 | | CO | | 150 | | | VC | 6.39105 | |
| 6402 | | CO | | 150 | | | VC | 23.23719 | |
| 5701 | 31.69 | CO | 29.59 | 300 | | | VC | 59 | 1 in 268 |
| 0804 | 32.76 | CO | 29.44 | 610 | | | BR | 23.08679 | |
| 0804 | 32.76 | CO | 29.44 | 610 | | | BR | 23.08679 | |
| 5510 | | CO | | 100 | | | VC | 16.92827 | |
| 5903 | 31.79 | CO | 27.82 | 750 | | | BR | 22.84732 | |
| 5903 | 31.79 | CO | 27.82 | 750 | | | BR | 22.84732 | |
| 5910 | | CO | | 150 | | | VC | 15.24798 | |
| 5910 | | CO | | 150 | | | VC | 15.24798 | |
| 7503 | 31.92 | CO | 28.95 | 525 | | | CO | 66.01768 | 1 in 630 |
| 6505 | 31.68 | CO | 28.83 | 525 | | | CO | 79.91305 | 1 in 390 |
| 8802 | 32.72 | CO | 28.6 | 720 | | | BR | 14.86607 | 1 in 743 |
| 5510 | | CO | | 100 | | | VC | 3.380162 | |
| 5808 | | CO | | 150 | | | VC | 5.549957 | |
| 7402 | 31.87 | CO | 30.09 | 225 | | | VC | 33.06955 | 1 in 92 |
| 4606 | | CO | | 150 | | | VC | 33.65176 | |
| 9501 | 33.16 | CO | 27.29 | 720 | | | BR | 4 | 1 in 200 |
| 9501 | 33.16 | CO | 27.29 | 720 | | | BR | 4 | 1 in 200 |
| 9406 | 33 | CO | 29.3 | 300 | | | VC | 30.12929 | 1 in 274 |
| 9406 | 33 | CO | 29.3 | 300 | | | VC | 30.12929 | 1 in 274 |
| 9512 | | CO | | 100 | | | VC | 9.126545 | |
| 0503 | 33.29 | CO | 27.44 | 750 | | | BR | 46 | 1 in 430 |
| 0407 | 33.06 | CO | 31.09 | 225 | | | VC | 22.65167 | 1 in 57 |
| 0406 | 32.91 | CO | 30.25 | 300 | | | VC | 44.89475 | 1 in 47 |
| 0405 | 32.91 | CO | 30.25 | 300 | | | VC | 44.89475 | 1 in 47 |

| Refno | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length | Grad |
|---|---|---|---|---|---|---|---|---|---|

## LEGEND

Abandoned · Foul · Surface Water · Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined · blue - surface water
brown - foul · purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

**MANHOLE FUNCTION**

| | |
|---|---|
| FO | Foul |
| SW | Surface Water |
| CO | Combined |
| OV | Overflow |

**SEWER SHAPE**

| | | | |
|---|---|---|---|
| CI | Circular | TR | Trapezoidal |
| EG | Egg | AR | Arch |
| OV | Oval | BA | Barrel |
| FT | Flat Top | HO | HorseShoe |
| RE | Rectangular | UN | Unspecified |
| SQ | Square | | |

**SEWER MATERIAL**

| | |
|---|---|
| AC | Asbestos Cement |
| BR | Brick |
| PE | Polyethylene |
| RP | Reinforced Plastic Matrix |
| CO | Concrete |
| CSB | Concrete Segment Bolted |
| CSU | Concrete Segment Unbolted |
| CC | Concrete Box Culverted |
| PSC | Plastic / Steel Composite |
| GRC | Glass Reinforced Plastic |
| DI | Ductile Iron |
| PVC | Polyvinyl Chloride |
| CI | Cast Iron |
| SI | Spun Iron |
| ST | Steel |
| VC | Vitrified Clay |
| PP | Polypropylene |
| PF | Pitch Fibre |
| MAC | Masonry, Coursed |
| MAR | Masonry, Random |
| U | Unspecified |

**Address or Site Reference:**

Heineken Manchester Denmark Road,

**OS sheet Number:** SJ8395NE
**Scale:** 1:1250 **Date:** 28/12/2018
**Nodes:** 173
**Sheet:** 4 of 4

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**SEWER RECORDS**

United Utilities — helping life flow smoothly

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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