
Job Title

Jersey Street Bridge Ancoats

Report Type

Drainage & SuDS Maintenance

Prepared for

Manchester City Council

Date

28 February 2023

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Drainage & SuDS Maintenance

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Reviewed by	Chris Kendrick
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Revised	
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1. Introduction

This drainage maintenance document has been prepared in support of the planning application for the for the Jersey Street Bridge, Ancoats, Development.

This maintenance document aims to establish the appropriate schedule of maintenance for the surface water drainage system. The adopting authority, Manchester City Council (MCC), is ultimately responsible for the maintenance of the proposed drainage and should follow the guidelines outlined in this report.

The proposed drainage strategy for the site is presented in the Flood Risk Assessment and Drainage Strategy appended herein.

2. Maintenance

This maintenance document is intended to give an overview of the operation and maintenance of the drainage features included within the drainage strategy and in relation to typical details. Where propriety products are specified, the manufacturer's instructions and recommendations should be followed in priority to this document, unless specifically noted otherwise due to project constraints.

The recommended maintenance actions and frequencies are typical only and should be undertaken more frequent soon after construction to ensure that there are no unforeseen issues with the operation of the system. The frequency should then be adjusted to suit the site-specific requirements.

The surface water network has been designed to accommodate surface water flows from the adoptable footways and carriageways to provide a betterment on the existing traditional highway drainage network. As the flows are attenuated on site there will be a period after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48 hours, appropriate action should be taken as noted in this section.

2.1 Components

The following components are included within the drainage design for the proposed development:

- Inspection and manhole chambers
- Pipes, including perforated pipes
- Filter drains and raingardens
- Gullies

A suitable maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

It is assumed that the maintenance of the drainage network will be the responsibility of the MCC Highways maintenance team.

A copy of the final construction drainage layout should be provided in the final Operations and Maintenance Manual

It is recommended that the drainage system is inspected on a yearly basis, as a minimum, with the system also being inspected after any major storm event.

During the winter months, drainage features such as channels and gullies should be cleared of ice, snow, debris or litter.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas such as the filter drains and the upstream/downstream chambers.

2.2 Inspection and Manhole Chambers

Generally, access points have been located at the head of each run, at abrupt changes in direction and at a change of pipe size in accordance with applicable British standards and guidelines (BE EN 752, building regulations approved document part H, Specification for Highway Works. The perforated filter drains have been laid with gradual changes in direction to suit the landscaping layout and inspection chamber catchpits, rodding points and manholes provided at convenient regular locations.

Inspection chambers and manholes are proprietary products; the manufacturer's maintenance recommendation should therefore also be followed. The information regarding operation and maintenance can be found within the manufacturer's specification and should be included in the hand-over documentation.

The system has been designed to minimise person access into chambers. If deemed necessary by the maintenance team, appropriate health and safety measure and equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Maintenance Manager prior to any access. Double locked and sealed manholes must be sealed and locked correctly post maintenance operation.

Table 1: Maintenance Schedule for manholes and chambers

Activity	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Inspect flow control devices for signs of build up or blockage	Annually or as required
Regular maintenance/ inspection	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
Remedial action	Repair/rehabilitate inlets, outlet, overflows and vents	As required
	Remove sedimentation or debris build-up from inside of chamber	As required

2.3 Pipes, including perforated pipes

Pipes are proprietary products and the materials used are generally uPVC or PP. As such, the appropriate manufacturer's recommendations should be followed.

Pipes are intended to be the main conveyance across the development and where oversized they form the attenuation volume required by the limitation of the drainage rate. They are intended to be dry except for during rainfall events. Solid wall pipes which are proposed simply to convey water around the site have been designed such that they are considered to be self-cleansing.

Filter drains are designed to collect surface water run-off from the adjacent hardstanding. The filter trenches are wrapped in permeable geotextile to prevent fines entering the stone itself and the perforated pipe network. The perforated pipes convey surface water run-off to the main carrier drain and the outfall beyond.

Access for maintenance is provided through access chambers and manholes. Catchpits are provided along the filter drains which further add a level of protection against silt build up within the system and ultimately discharge into the United Utilities public sewer.

Regular inspection and maintenance is important to identify areas which may have been obstructed/clogged and may not drain correctly thus exposing the development to a greater level of flood risk. The recommended maintenance schedule for pipes is presented in Table 1.

Table 2: Maintenance Schedule for Pipes

Activity	Required Action	Frequency
Monitoring	Initial inspection should be provided as post-construction CCTV survey.	N/A
Regular maintenance/inspection	Inspect for evidence of poor operation via water level in chambers. If required, take remedial action.	3-monthly, 48 hours after large storms
Remedial action	Rod through poorly performing pipe-runs as initial remediation.	As required
	If continued poor performance jet and CCTV survey poorly performing pipe-runs.	As required
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required if above does not improve performance

2.4 Raingardens

All soft landscaping and the individual raingardens have been designed with a perforated pipe within a single sized stone sub-base layer. The upper soil layers and sub-base provide filtration for surface water run-off and slow down the rate of flow into the main surface water system. They also provide attenuation for storm events allowing water to pond on the surface of the raingarden rather than in adjacent carriageway or footway. Due to the rate of flow through the filter drain stone material there may be occasions where surface ponding is visible for short durations during higher intensity storms. This is normal and intended to be restricted to within the soft landscaped raingarden areas.

The surface of the filter drains should be cleared of leaves and debris on a regular basis to avoid the breakdown of organic matter which could affect the operation of the filter drain.

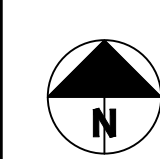
Table 3 presents the recommended maintenance schedule for the Filter Drains and Raingardens.

Table 3: Maintenance schedule for filter drains

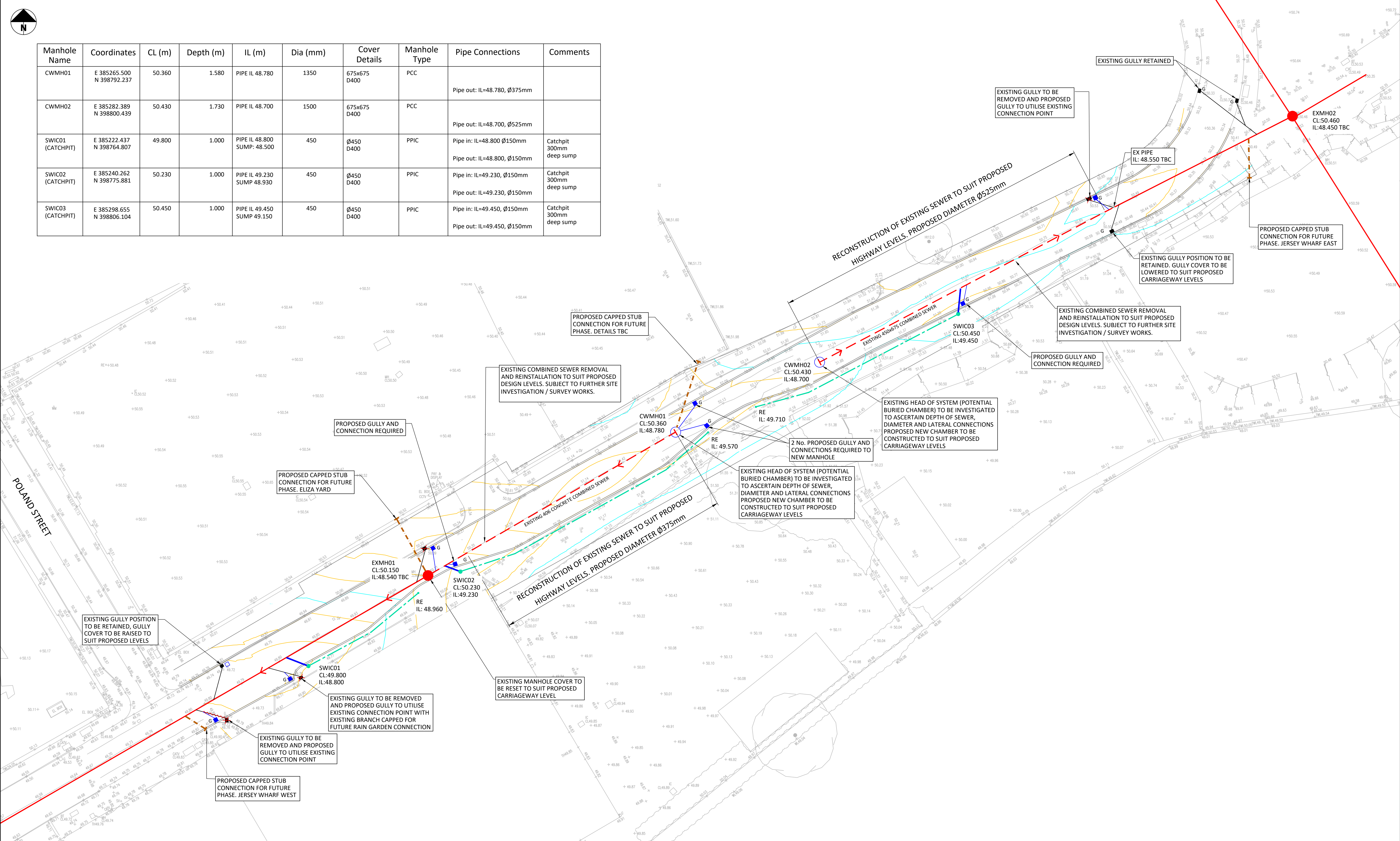
Activity	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection	Half yearly and after large storms
	Monitor accumulation of silt at inlet/ outlet infrastructure. If silt build-up is significant, take action to prevent blocking of drain.	Monthly (can be monitored and adjusted based on the operation of the system)
Regular maintenance/ inspection	Remove litter (including leaf litter) and debris from filter drain surface	Monthly or as required
	Manage other vegetation and remove nuisance plants	Monthly at start, or when required. Or as per landscape maintenance strategy whichever is the more frequent
	Inspect infiltration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for >48 hours	Monthly, or when required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
Remedial action	Repair erosion or other damage by re-turfing or reseeded	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils or petrol residues using safe standard practices	As required

Appendices

Appendix A - Drainage Layout



Manhole Name	Coordinates	CL (m)	Depth (m)	IL (m)	Dia (mm)	Cover Details	Manhole Type	Pipe Connections	Comments
CWMH01	E 385265.500 N 398792.237	50.360	1.580	PIPE IL 48.780	1350	675x675 D400	PCC	Pipe out: IL=48.780, Ø375mm	
CWMH02	E 385282.389 N 398800.439	50.430	1.730	PIPE IL 48.700	1500	675x675 D400	PCC	Pipe out: IL=48.700, Ø525mm	
SWIC01 (CATCHPIT)	E 385222.437 N 398764.807	49.800	1.000	PIPE IL 48.800 SUMP: 48.500	450	Ø450 D400	PPIC	Pipe in: IL=48.800 Ø150mm Pipe out: IL=48.800, Ø150mm	Catchpit 300mm deep sump
SWIC02 (CATCHPIT)	E 385240.262 N 398775.881	50.230	1.000	PIPE IL 49.230 SUMP 48.930	450	Ø450 D400	PPIC	Pipe in: IL=49.230, Ø150mm Pipe out: IL=49.230, Ø150mm	Catchpit 300mm deep sump
SWIC03 (CATCHPIT)	E 385298.655 N 398806.104	50.450	1.000	PIPE IL 49.450 SUMP 49.150	450	Ø450 D400	PPIC	Pipe in: IL=49.450, Ø150mm Pipe out: IL=49.450, Ø150mm	Catchpit 300mm deep sump



Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies are to be reported to the C.A. prior to the commencement of the works.

Notes and Keys

- EXISTING COMBINED SEWER
- EXISTING COMBINED SEWER (RECONSTRUCTION TO SUIT NEW HIGHWAY LEVELS)
- PROPOSED HIGHWAY DRAINAGE
- PROPOSED FILTER DRAIN Ø150mm
- EXISTING GULLY REMOVED
- EXISTING GULLY RETAINED
- PROPOSED GULLY
- PROPOSED LATERAL SEWER FOR FUTURE CONNECTIONS Ø225mm
- EXISTING COMBINED SEWER
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER

ALL PROPOSALS SUBJECT TO UNITED UTILITIES APPROVAL

ALL PROPOSALS SUBJECT TO SECTION 278 APPROVAL

THIRD PARTY INFORMATION REFERENCED IN THIS DRAWING INCLUDES

TOPOGRAPHICAL SURVEY DATED 15.02.2021
UNDERTAKEN BY MALCOLM HUGHES CHARTERED LAND SURVEYORS

ORDNANCE SURVEY BACKGROUND SUPPLIED BY
AECOM RECEIVED 21.06.2021

CIVIC ENGINEERS DO NOT GUARANTEE THE
ACCURACY OF THESE FILES AND WOULD
RECOMMEND SITE VERIFICATION PRIOR TO THE
COMMENCEMENT OF CONSTRUCTION PHASE.

08.02.23	P04	EX MH CLs & ILs ADDED	CD	CFK
03.02.23	P03	ISSUED FOR STAGE 4	CD	CFK
13.01.23	P02	ISSUED FOR STAGE 4	BW	CFK
02.12.22	P01	ISSUED FOR STAGE 4	BW	CFK
Date	Rev	Description	Drawn	Chk

Project	Poland Street Ancoats
Title	Jersey Street Temporary Construction Proposed Drainage Layout
Project Number	2561
Scale @ A1	1:200
Date Created	DEC'22
Drawn	BW
Checked	CFK
Suitability	-



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Status

STAGE 4

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Revision

P04