Paradise Mews – 1-21074

Outline Drainage Maintenance Operations

This section is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details. Where proprietary 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 operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

Drainage components are indicated on Clancy Consulting Ltd Drainage Strategy drawing.

Components

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

- Manhole and Inspection Chambers
- Catchpit Chambers
- Linear Drains
- Gullies
- Pipework
- Flow Control Unit
- Permeable Surfacing (Tarmac) – To manufacturers guidance, include with O&M manual.

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 an on-site facilities management team.

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

The surface water network has been designed to accommodate the 1 in 100 year storm rainfall event plus an allowance for climate change particular to the requirements of the site. It may be that the exceedance flows above the 1 in 30 year storm rainfall event are stored within the site partially above ground, on non-habitable external landscaping, parking or other space. As the flows are generally being attenuated on site and within SuDS features there will be a period

of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken as noted below.

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

Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

During the winter months, drainage features such as gullies and channels 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.

Should any oil or fuel spillages occur, these are to be cleaned up locally to prevent contaminants being washed into the surface water system by rainfall. Spillages such as these should not be washed into the drainage system.

Manholes and Inspection Chambers

Description

Manholes providing rodding and jetting access to pipe work.

Normally manholes, in similarity to inspection chambers, are designed for access by operatives. Manholes must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

It is not likely that Manholes will present maintenance issues. However, they allow both the access to the drainage infrastructure and allow visual inspection from the surface of any key maintenance issues.

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove covers and ensure that there are no blockages. Inspect and ascertain any parts that are not operating correctly and resolve.	For 3 months after installation
	Check covers do not need repairing.	Monthly
	Check drainage is running freely by inspecting manholes and inspection chambers.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate.	2 – 4 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System recovery following a pollution event • Manhole Cover replacement • Repairs to brickwork or concrete • Chanel repair	When required (tasks to repair problems due to wear, damage or vandalism)

Catchpits

Description

Catchpits are similar to manholes, however, they include a sump to the base which is designed to capture silt and prevent it reaching other parts of the drainage network. Catchpits provide a useful location to remove silt for drainage networks. Catchpits must only be accessed after a risk assessment, and the implementation of a safe system of work, which identifies the specific risk to confined space.

Maintenance Issues

If the silt captured in catchpits does not get removed regularly it will cause silt to move downstream to other part of the drainage network, some of which may be difficult to access, or totally inaccessible.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Remove manhole covers and ensure that there are no blockages. Inspect and identify any parts that are not operating correctly and resolve. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	For 3 months after installation
	Check covers do not need repairing. Repair/replace as required.	Monthly
	Inspect catchpits to ensure that the drainage is running freely, and free of debris. Inspect silt storage in sump. Remove silt as appropriate using subcontractor with vacuum extraction plant.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Suction sweeping and cleansing (to Water Jetting Association standards) and CCTV where appropriate. Resolve any chamber structural defects, or any defects that could reduce the free flow of water.	2 – 4 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System recovery following a pollution event • Manhole Cover Replacement • Repairs to brickwork or concrete	When required (tasks to repair problems due to wear, damage or vandalism)

Linear Drains

Description

Surface Water is drained over impermeable sections towards grated, or slot-type linear drains at low points and water is carried to below ground pipework.

Maintenance Issues

Linear drains could get blocked by silt or debris, causing flooding.

Linear drains frequently include silt traps at outlets which can cause siltation of downstream drainage infrastructure if the appropriate maintenance is not undertaken.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect linear drains to make sure that there are no blockages at surface level. Remove covers to outflow boxes and check for blockages or siltation. Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation
	Inspect linear drains to make sure that there are no blockages at surface level.	Monthly
	Remove covers to outflow boxes and check for blockages or siltation.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Jetting of linear drains and suction vacuuming of outlet boxes (to Water Jetting Association standards) and CCTV where appropriate.	1 – 2 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System rehabilitation following a pollution event • Linear drain cover replacement • Chanel repair • Ensure that impermeable surfaces surrounding linear drains have not settled below top of linear drain level, causing ponding	When required (tasks to repair problems due to wear, damage or vandalism)

Gullies

Description

Surface Water is drained over impermeable areas towards grated gullies at low points and water is carried to below ground pipework.

Maintenance Issues

Gullies can become blocked by silt or debris, causing flooding.

Gullies include integral silt traps which can cause siltation of downstream drainage infrastructure if the appropriate maintenance is not undertaken.

Gullies frequently include a trapped outlet which prevents liquids lighter than water (ie oil and fuel) departing the gully. If silt and light liquids do not get removed regularly silt and oil will move downstream to other areas of the drainage network, some of which may be difficult to access, or totally inaccessible.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect to ensure that there are no blockages at surface level, and that the outfall is operating efficiently. Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation
	Check that there are no blockages at surface level.	Monthly
	Remove covers to check for blockages or siltation.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Remove oil and silt using specialist vacuum extraction plant.	1 – 2 Years
Remedial maintenance	• Silt removal • Inlet/outlet repair • Erosion repairs • System rehabilitation following a pollution event • Cover replacement • Structural failure of gully pot • Ensure that impermeable surfaces surrounding linear drains have not settled below top of gully cover level, causing ponding	When required (tasks to repair problems due to wear, damage or vandalism)

Pipework

Description

Below ground drainage pipework connects drainage inlets (gullies, linear drains etc) to manholes as well as providing connections between manholes.

Maintenance Issues

Pipes could become blocked by silt, debris fat, grease, or collapse. In addition, it's possible for pipe joints to become displaced or for roots to grow from the surrounding ground into the pipes.

These factors can cause a reduction in, or loss of, the hydraulic capability of the pipes which could cause flooding to land and buildings.

Defects in pipes could cause a reduction in stability to ground underlying foundations, thus, causing settlement and damage to buildings and external surfaces.

The material of pipes and associated couplings can be damaged if aggressive liquids are passed through the pipes.

It is recommended that trees are not planted within 3m of pipes to reduce the risk of root ingress.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Inspect and identify any parts that are not operating correctly and resolve.	For 3 months after installation.
	Monitor working of drainage at ground level. The indications damaged pipework's may include localised flooding or emission of smells.	Monthly
	Remove manholes covers to check for blockages.	Every 6 months
Occasional maintenance	CCTV pipework, clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	• Silt removal. • Fat and Grease removal. • Erosion repairs. • Joint displacement. • Structural failure, cracking or collapse. • System rehabilitation following a pollution event.	When required (tasks to repair problems due to wear, damage or vandalism)

Vortex Controls

Description

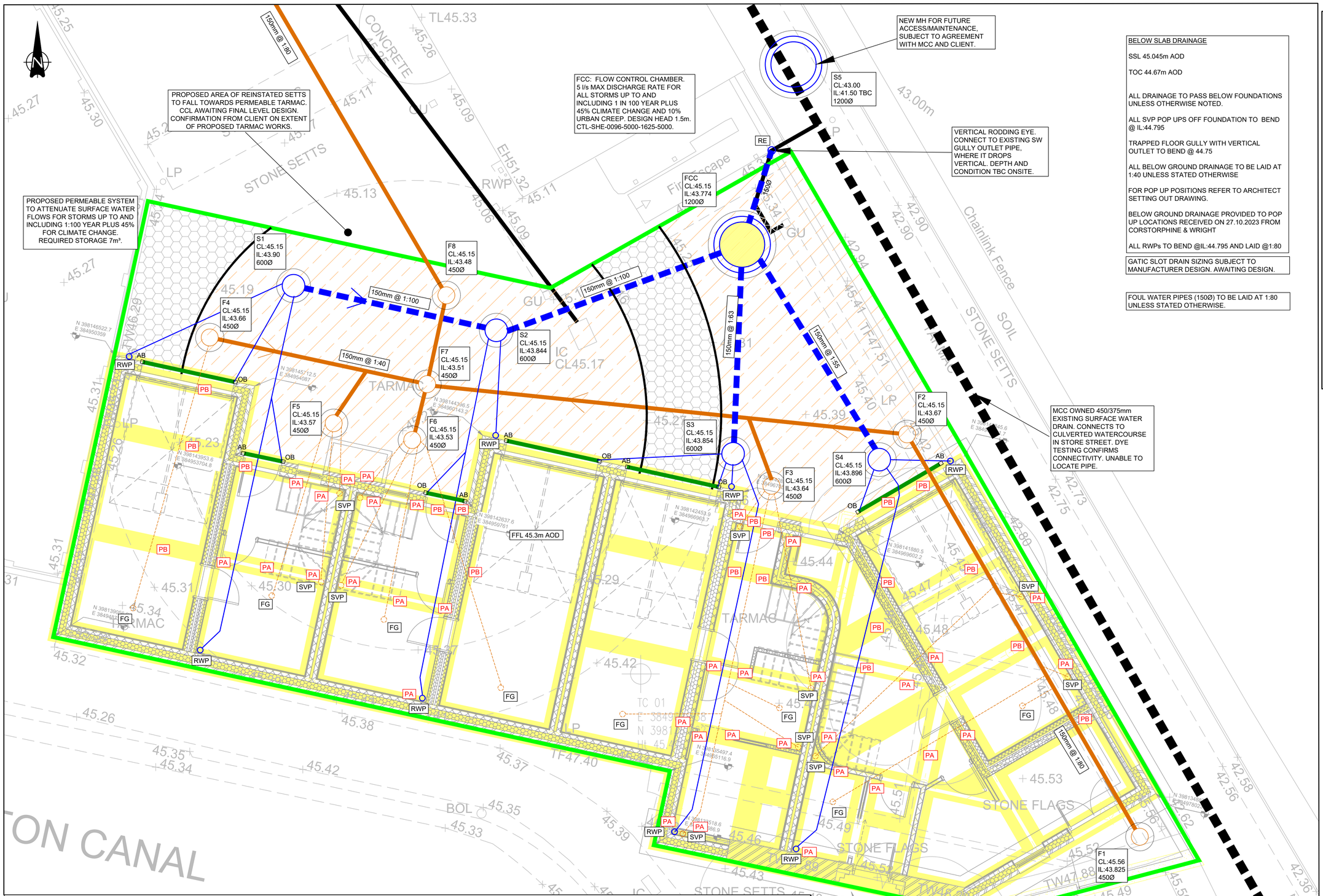
Vortex controls, often called Hydrobrakes, are installed in some manholes to limit the rate of flow. Vortex controls are normally constructed in steel and installed in a manhole with a sump.

Maintenance Issues

Vortex controls could become blocked by debris, plastic bags or other sheet material. If silt is allowed to build up in the sump the operation of the device could be impeeded causing flooding upstream.

Maintenance Regime

Schedule	Action Required	Frequency
Routine/regular maintenance (inc. inspections and monitoring)	Check manufacturer's specification. Inspect and identify any parts that are not operating, consult supplier and remediate as required.	For 3 months after installation
	Monitor working of drainage at ground level. Where localised flooding occurs, check the condition of all system elements.	Monthly
	Remove manholes covers to check for blockages. Remove sediment from pre-treatment structures, gullies, catchpits etc.	Every 6 months and following the leaf fall in autumn.
Occasional maintenance	Clean to WRC Sewer Jetting Code of Practice. Resolve issues as appropriate.	1 – 2 Years
Remedial maintenance	Inspect, and remedy to ensure that the features are in fully working order.	As required (tasks to repair problems due to wear, damage or vandalism).



BELOW SLAB DRAINAGE

SSL 45.045m AOD

TOC 44.67m AOD

ALL DRAINAGE TO PASS BELOW FOUNDATIONS UNLESS OTHERWISE NOTED.

ALL SVP POP UPS OFF FOUNDATION TO BEND @ IL:44.795

TRAPPED FLOOR GULLY WITH VERTICAL OUTLET TO BEND @ 44.75

ALL BELOW GROUND DRAINAGE TO BE LAID AT 1:40 UNLESS STATED OTHERWISE

FOR POP UP POSITIONS REFER TO ARCHITECT SETTING OUT DRAWING.

BELOW GROUND DRAINAGE PROVIDED TO POP UP LOCATIONS RECEIVED ON 27.10.2023 FROM CORSTORPHINE & WRIGHT

ALL RWPs TO BEND @IL:44.795 AND LAID @1:80

GATIC SLOT DRAIN SIZING SUBJECT TO MANUFACTURER DESIGN. AWAITING DESIGN.

FOUL WATER PIPES (150Ø) TO BE LAID AT 1:80 UNLESS STATED OTHERWISE.

KEY:

- SITE BOUNDARY TBC
- EXISTING COMBINED UU SEWER
- EXISTING CULVERTED WATERCOURSE
- EXISTING PRIVATE COMBINED DRAIN
- EXISTING SURFACE WATER DRAIN (MCC OWNED)
- PROPOSED SURFACE PERFORATED PIPE (150mmØ) AND CHAMBER
- PROPOSED FOUL WATER PIPE (150mmØ) AND CHAMBER
- PROPOSED FLOW CONTROL. HYDRO-BRAKE OR SIMILAR APPROVED.
- P01- PROPOSED PERMEABLE TARMAC
- P02- PROPOSED SETT REINSTATEMENT
- PROPOSED RAIN WATER PIPE AND 100mm CONNECTION
- PROPOSED SOIL VENT PIPE AND 100mm CONNECTION
- PROPOSED TRAPPED FLOOR GULLY WITH VERTICAL OUTLET AND 100mm CONNECTION
- ACO CHANNEL DRAIN WITH OUTLET AND ACCESS BOXES
- PB = PASS BELOW FOUNDATION
- PA = PASS ABOVE FOUNDATION
- FOUNDATIONS

DRAWINGS BASED ON THE FOLLOWING INFORMATION

- ARCHITECT LAYOUT - 27.10.23 (20005-CWA-BC-00-DR-A-2001-02_GROUND FLOOR PLAN)
- POP UP LOCATIONS - 27.10.23 (20005-CWA-BC-00-DR-A-2201-02_ABOVE GROUND DRAINAGE)
- FOUNDATION DESIGN - 27.07.23 (1-21074-CCL-ZZ-00-DR-S-002_P1)

SEE DRAWING 21074-CCL-XX-XX-DR-C-92503 FOR DRAINAGE LOCATION PLAN, CONSTRUCTION SPECIFICATION DETAILS AND DRAWING NOTES

MANHOLE SCHEDULE

MH REF	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT (m)	DS PIPE DIA (m)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	RECESSED	RESTRICTED ACCESS	BACK DROP	COMMENTS	EASTING	NORTHING
SURFACE WATER														
S1	45.150	43.900	1.10	0.150	600	PPIC	600X600	D400	N	N	N	NON ENTRY	TBC	TBC
S2	45.150	43.844	1.16	0.150	600	PPIC	600X600	D400	N	N	N	NON ENTRY	TBC	TBC
FCC	45.150	43.774	1.28	0.100	1200	PCC	600X600	D400	N	N	N	FLOW CONTROL CHAMBER	TBC	TBC
S3	45.150	43.854	1.15	0.150	600	PCC	600X600	D400	N	N	N	NON ENTRY	TBC	TBC
S4	45.150	43.896	1.10	0.150	600	PPIC	600X600	D400	N	N	N	NON ENTRY	TBC	TBC
S5	43.000	41.500	1.13	0.375	1200	PCC	600X600	D400	N	N	N		TBC	TBC
FOUL WATER														
F1	45.56	43.825	1.59	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F2	45.150	43.670	1.33	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F3	45.150	43.640	1.36	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F4	45.150	43.660	1.34	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F5	45.150	43.570	1.43	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F6	45.150	43.530	1.47	0.15	450	PPIC	450X450	D400	N	N	N	NON ENTRY	TBC	TBC
F7	45.200	43.510	1.54	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	TBC	TBC
F8	45.300	43.480	1.67	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	TBC	TBC
F9	45.200	43.110	1.94	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	TBC	TBC
F10	45.300	43.000	2.15	0.15	450	PPIC	450X450	D400	N	Y	N	NON ENTRY	TBC	TBC

NON ENTRY - REDUCER CAP REQUIRED AND FITTED TO SHAFT, PPIC - POLYPROPYLENE INSPECTION CHAMBER, CP - CATCH PIT TYPE, PCC - PRECAST CONCRETE.

Rev	Date	Description	By	Check	App.
P03	08.12.23	STAGE 4	AA	CD	CD
P02	28.04.23	STAGE 3	CD	JAP	JAP
P01	17.12.21	FOR INFORMATION	CD	PM	PM

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Client: VICTOR (M1) LTD

Project: PARADISE MEWS

Office: MANCHESTER

Discipline: CIVILS

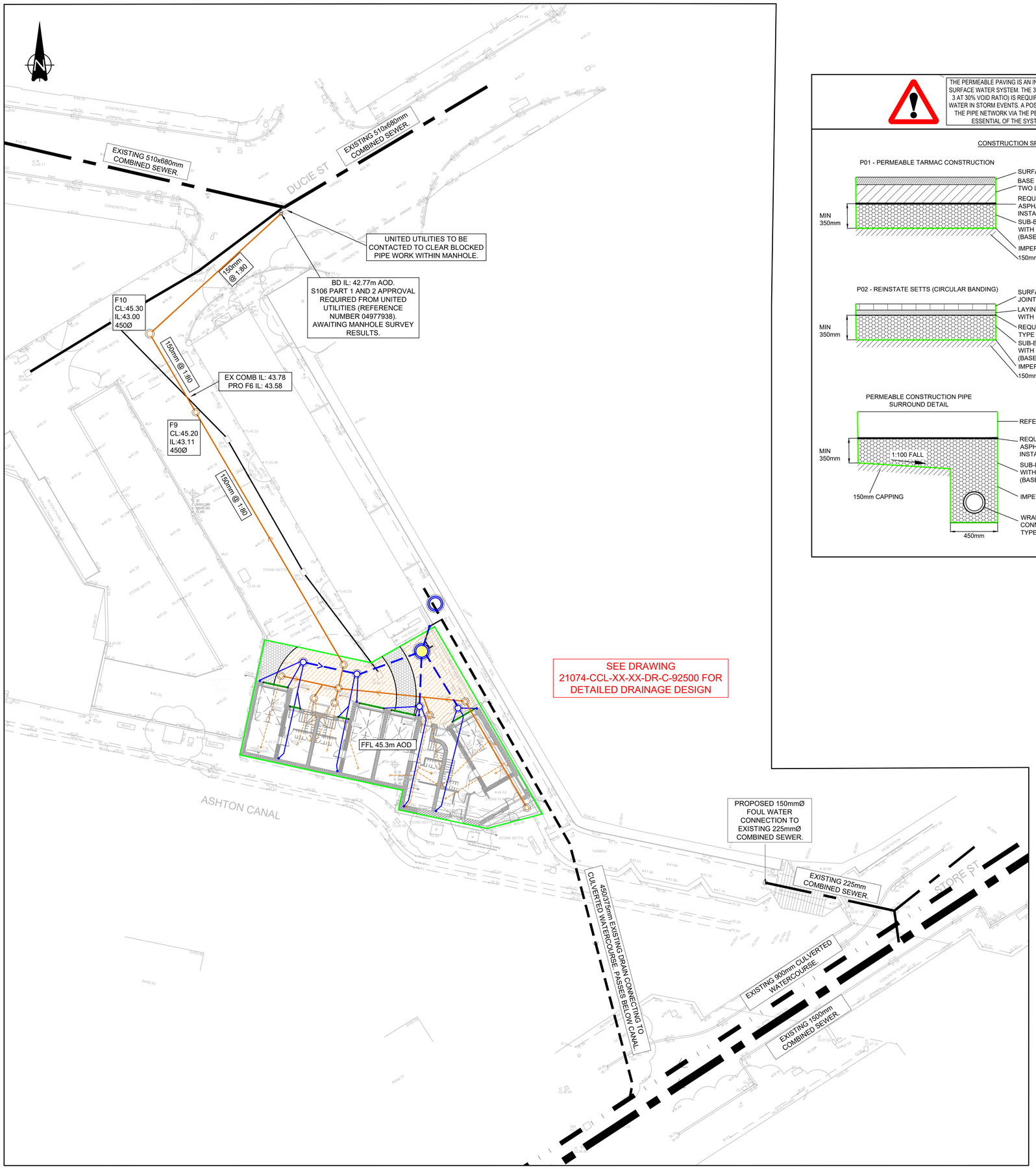
Title: DRAINAGE LAYOUT

Scale @ A1: 1:50

Status: STAGE 4

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Originator	Job Number	Discipline	Building/Zone
CCL	1-21074	C	XX
Type	**Level**	**Drawing No.**	**Revision**
DR	XX	92500	P03



THE PERMEABLE PAVING IS AN INTEGRAL PART OF THE SURFACE WATER SYSTEM. THE 350mm SUB-BASE (TYPE 3 AT 30% VOID RATIO) IS REQUIRED TO ATTENUATION WATER IN STORM EVENTS. A POSITIVE CONNECTION TO THE PIPE NETWORK VIA THE PERFORATED PIPES IS ESSENTIAL OF THE SYSTEM TO WORK.

CONSTRUCTION SPECIFICATION

P01 - PERMEABLE TARMAC CONSTRUCTION

P02 - REINSTATE SETTS (CIRCULAR BANDING)

PERMEABLE CONSTRUCTION PIPE SURROUND DETAIL

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.
3. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
4. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
5. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND INFORMATION AVAILABLE AT THE TIME OF THE DESIGN.
6. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.
7. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.
8. COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/ LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
9. ALL BELOW SLAB DRAINAGE CONNECTIONS SHOWN TO THE PENETRATION POSITIONS ARE INDICATIVE ONLY. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON ARCHITECTS GROUND FLOOR SETTING-OUT PLANS.
10. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.
11. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.
12. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.
13. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
14. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.
15. ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.
16. INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.
17. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
18. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
    - 100mm to 300mm DIA TO BE VITRIFIED CLAY.
    - 375mm DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
19. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER.
20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
21. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
22. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.
23. ALL ADOPTABLE DRAINAGE PIPES WILL REQUIRE A MINIMUM OF 1200mm COVER, IN ACCORDANCE WITH SEWERAGE UNDERTAKERS REQUIREMENTS. WHERE THIS IS NOT ACHIEVED, IT WILL BE NECESSARY TO AGREE THE BED AND SURROUND DETAIL.
24. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.
25. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.
26. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.
27. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
28. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.
29. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.
30. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
31. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.
32. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
    - B125 LOAD CLASS IN PEDESTRIAN AREAS
    - D400 LOAD CLASS IN VEHICULAR AREAS.
33. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.
34. ALL PROPOSED PIPEWORK TO BE 150mm DIAMETER UNLESS NOTED OTHERWISE.

KEY:

- SITE BOUNDARY TBC
- EXISTING COMBINED UU SEWER
- EXISTING CULVERTED WATERCOURSE
- EXISTING PRIVATE COMBINED DRAIN
- EXISTING SURFACE WATER DRAIN (MCC OWNED)
- PROPOSED SURFACE PERFORATED PIPE (150mmØ) AND CHAMBER
- PROPOSED FOUL WATER PIPE (150mmØ) AND CHAMBER
- PROPOSED FLOW CONTROL. HYDRO-BRAKE OR SIMILAR APPROVED.
- P01- PROPOSED PERMEABLE TARMAC
- P02- PROPOSED SETT REINSTATEMENT
- PROPOSED RAIN WATER PIPE AND 100mm CONNECTION (RWP)
- PROPOSED SOIL VENT PIPE AND 100mm CONNECTION (SVP)
- PROPOSED TRAPPED FLOOR GULLY WITH VERTICAL OUTLET AND 100mm CONNECTION (FG)
- ACO CHANNEL DRAIN WITH OUTLET AND ACCESS BOXES (OR, AB)

Rev	Date	Description	By	Check	App.
P01	08.12.23	STAGE 4	AA	CD	CD

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Client: VICTOR (M1) LTD

Project: PARADISE MEWS

Office: MANCHESTER

Discipline: CIVILS

Title: DRAINAGE LAYOUT
LOCATION PLAN AND DETAILS

Scale @ A1: 1:200

Status: STAGE 4

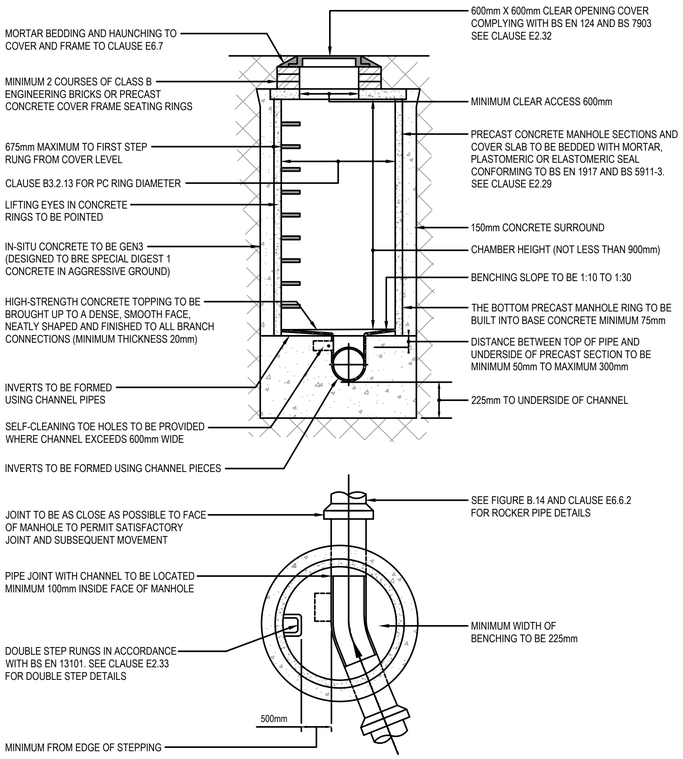
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CCL	1-21074	C	XX

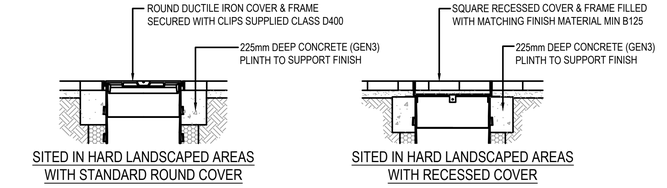
Type	Level	Drawing No.	Revision
DR	XX	92503	P01

Birmingham 0121 200 3500 · Glasgow 0141 222 7201 · Liverpool 0151 227 5300 · London 020 3207 0905 · Manchester 0161 613 0000 · Newcastle 0191 221 2702 · Norwich 01603 395190 · Prestwich 01204 478375 · Reading 0118 947 7888



MANHOLE COVERS WITHIN TRAFFICKED PAVED AREAS TO BE D400 RECESSED COVERS.

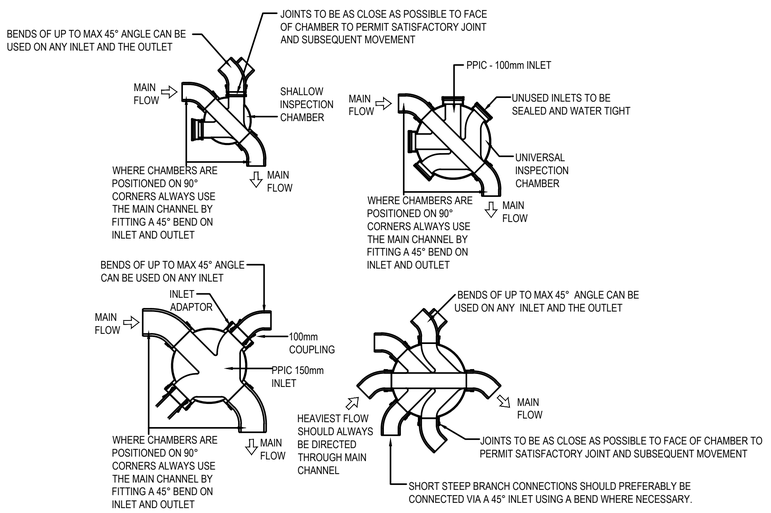
TYPICAL MANHOLE DETAIL - TYPE 2 (MAXIMUM DEPTH FROM COVER TO SOFFIT OF PIPE 3.0 m)



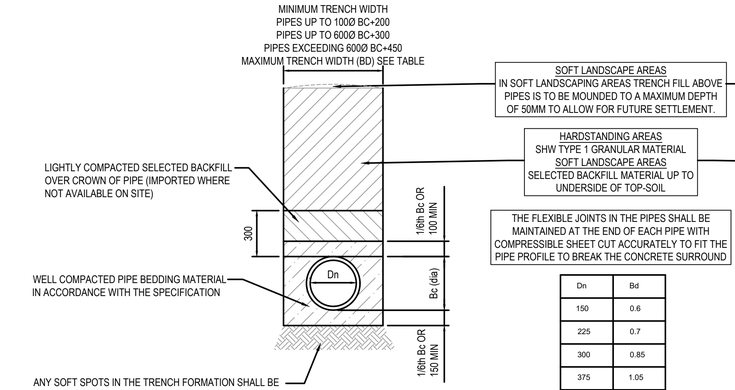
SITED IN HARD LANDSCAPED AREAS WITH STANDARD ROUND COVER

SITED IN HARD LANDSCAPED AREAS WITH RECESSED COVER

TYPICAL INSPECTION CHAMBER COVER DETAILS



INSPECTION CHAMBER BASE DETAILS

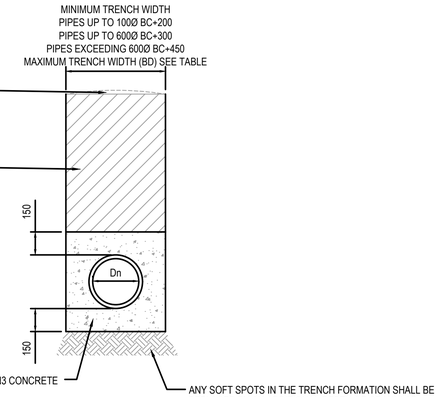


CLASS S - 360° GRANULAR SURROUND PIPE BEDDING DETAIL

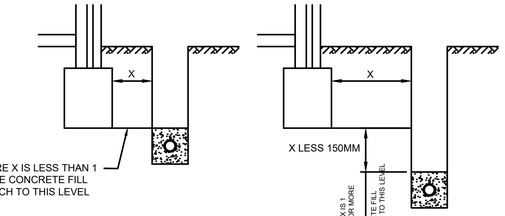
THE FLEXIBLE JOINTS IN THE PIPES SHALL BE MAINTAINED AT THE END OF EACH PIPE WITH COMPRESSIBLE SHEET CUT ACCURATELY TO FIT THE PIPE PROFILE TO BREAK THE CONCRETE SURROUND

Dn	Bd
150	0.6
225	0.7
300	0.85
375	1.05
450	1.15
525	1.25
600	1.35
675	1.45
750	1.50

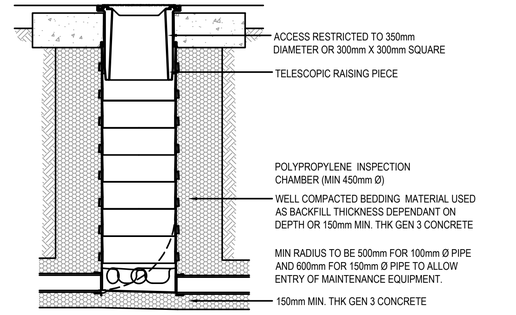
MAXIMUM TRENCH WIDTH



CLASS Z - CONCRETE BED AND SURROUND PIPE BEDDING DETAIL
(COVER < 900mm IN VEHICULAR LOADING AND OPEN FIELD.
COVER <600mm ELSEWHERE EXCEPT UNDER BUILDINGS.)

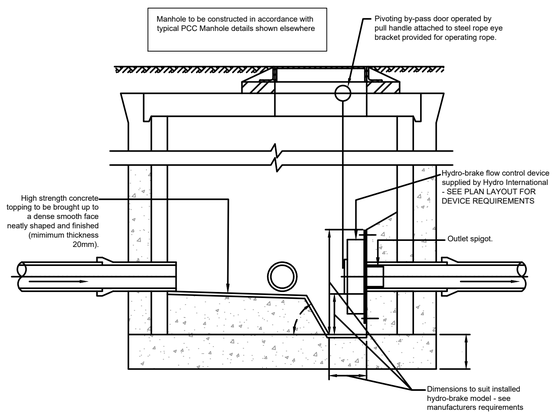


TYPICAL DETAILS WHERE DRAINAGE TRENCH IS DEEPER THAN FOUNDATIONS

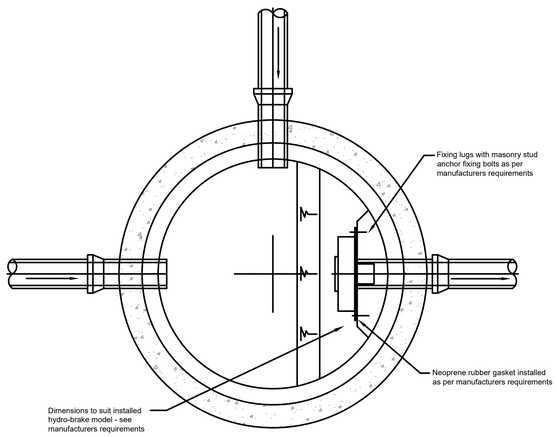


DEEP INSPECTION CHAMBER DEPTHS BETWEEN 1.2m AND 3.0m

TYPICAL INSPECTION CHAMBER DETAILS - PPIC



TYPICAL FLOW CONTROL MANHOLE (HYDRO-BRAKE)



GENERAL NOTES

1. DO NOT SCALE THIS DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO COMMENCING ANY WORKS SHOWN.
5. ALL DETAILS TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCILS BUILDING CONTROL, OR ANY OTHER RELEVANT STANDARDS BODY.
6. ALL PROPRIETARY PRODUCT TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

DRAINAGE NOTES

1. NO WORK SHOULD COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY, ADOPTING SEWERAGE UNDERTAKERS, ENVIRONMENT AGENCY AND/OR ANY OTHER RELEVANT AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE DEVELOPERS RISK AND CLANCY CONSULTING LIMITED WILL NOT BE HELD RESPONSIBLE FOR SUBSEQUENT DELAYS IN APPROVALS, REMEDIAL COSTS OR DELAYS.
2. ALL INVERT LEVELS OF EXISTING FOUL AND SURFACE WATER SYSTEMS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS. ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO CLANCY CONSULTING LIMITED
3. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
   150MM DIA TO BE VITRIFIED CLAY.
   225MM DIA TO BE VITRIFIED CLAY.
   300MM DIA TO BE VITRIFIED CLAY.
   375MM DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
4. ALL VITRIFIED CLAY PIPES TO BS EN 295-1:
   ALL CONCRETE PIPES TO BE TO BS EN 1916.
   ALL CONCRETE MANHOLES TO BE TO BS EN1917.
5. LATERAL CONNECTIONS FROM MAIN SEWERS TO DEMARCATION CHAMBER TO BE 150MM DIA MINIMUM UNO AND CONSTRUCTED TO ADOPTABLE STANDARDS.
6. FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
7. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
8. ALL SEWER WORKS TO COMPLY WITH WRC 'SEWERS FOR ADOPTION, 6TH EDITION', STWS REQUIREMENTS AND KITE-MARKED(OR SIMILAR APPROVED) WHERE PRACTICABLE. WHERE CONFLICTING DETAILS OCCUR, STWS DETAILS SHALL TAKE PRECEDENCE IN ALL CASES.
9. MANHOLE COVERS SHALL HAVE A CLEAR OPENING IN ACCORDANCE WITH SFA 6TH EDITION AND SHALL BE CLASS D400 TO BS EN 124 WITH 150MM DEEP FRAMES IN VEHICULAR TRAFFICED AREA. CLASS B125 COVERS AND FRAMES TO BE PROVIDED ON ALL OTHER MANHOLES IN LANDSCAPING.
10. FILLED GROUND MUST BE FILLED AND CONSOLIDATED BEFORE ANY SEWER WORKS ARE CARRIED OUT.
11. WATER AUTHORITIES ARE NOT OBLIGED TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUN OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY), AN ALTERNATIVE METHOD OF DISPOSAL OF LAND DRAINAGE RUN OFF WILL THEREFORE BE REQUIRED AND ANY PROPOSALS MUST BE AGREED WITH THE LOCAL AUTHORITY LAND DRAINAGE SECTION.
12. COVER SLABS MUST CARRY THE BSI KITEMARK AND SHALL COMPLY WITH BS 5911 PART3 / BS EN 1917 :2000. WHERE THE CLEAR OPENING OF THE KITE-MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS SPECIFIED ABOVE. PLEASE REFER TO CONCRETE PIPELINE SYSTEMS ASSOCIATION (CPSA) 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITE-MARKED COVER SLAB OPENING SIZES.
13. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
14. ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
15. SEWERS MUST HAVE 5M CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH THE SFA 6TH REQUIREMENTS.
16. ALL PIPES TO HAVE CLASS 'S' GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WIS 4-08-02 (TABLE A2), WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES (OR LESS THAN 0.9M IN NON-VEHICULAR ACCESSED AREAS), THEN A CLASS 'Z' BEDDING TO BE USED.
17. ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.
18. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
19. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300MM DIAMETER.
20. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS.
21. SECTION 163 OF THE HIGHWAYS ACT 1980 REQUIRES PROVISION TO BE MADE TO PREVENT WATER FALLING ON OR FLOWING ONTO THE HIGHWAY FROM PRIVATE DRIVEWAYS OR PROPERTIES. ANY DRAINAGE REQUIREMENTS MUST BE CONNECTED INTO THE PRIVATE SURFACE WATER DRAINAGE SYSTEM.
22. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-
   (i) ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.
   (ii) THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.
   (iii) PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.
   (iv) ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.
23. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CURTINS SPECIFICATION FOR DRAINAGE WORKS AND ANY OTHER SUBSEQUENT ADDITIONS TO THIS LIST.
24. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
25. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE-WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LLFA AND ENVIRONMENT AGENCY.
26. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

Rev	Date	Description	By	Check	App.
P02	08.12.23	STAGE 4	AA	CD	CD
P01	28.04.23	STAGE 3	CD	JAP	JAP

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DO NOT SCALE THIS DRAWING ELECTRONICALLY OR MANUALLY.
WORK TO FIGURED DIMENSIONS ONLY.
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
DO NOT TURN ON LAYERS THAT HAVE BEEN TURNED OFF.
DO NOT THAW LAYERS THAT HAVE BEEN FROZEN.
DRAWING MUST BE PRINTED IN BLACK AND WHITE ONLY.

Client: VICTOR (M1) LTD

Project: PARADISE MEWS

Office: ALTRINCHAM

Discipline: CIVILS

Title: DRAINAGE DETAILS SHEET 1

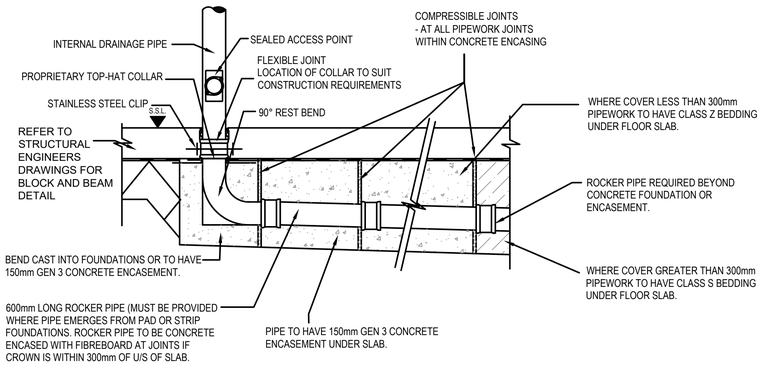
Scale @ A1: NTS

Status: STAGE 4

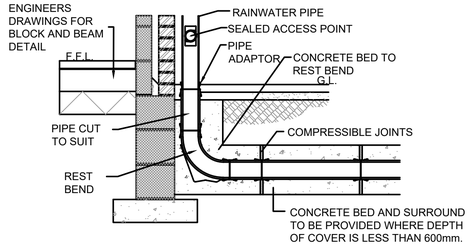
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Job Number	Originator	Building/Zone	Level
1-21074	CCL	XX	XX

Type	Discipline	Drawing No.	Revision
DR	C	92501	P02

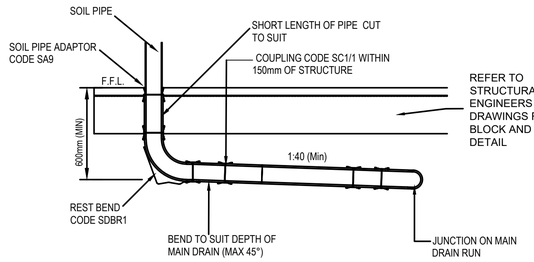


DRAINAGE UNDER BUILDINGS

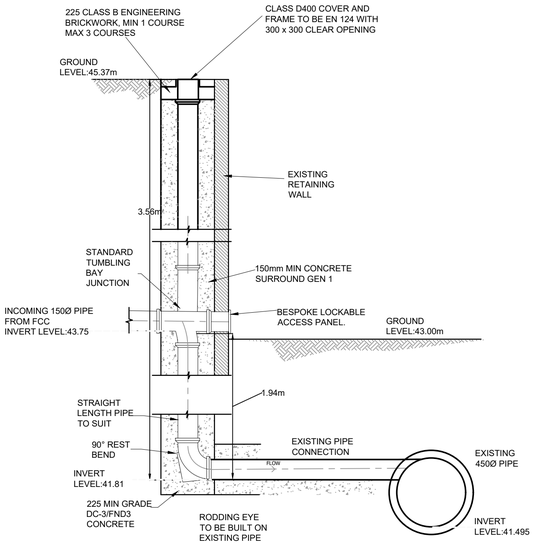


RWP CONNECTION DETAIL

(SCALE 1:20)

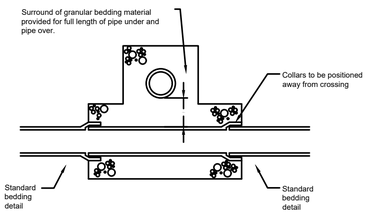


TYPICAL SVP CONNECTION TO MAIN RUN

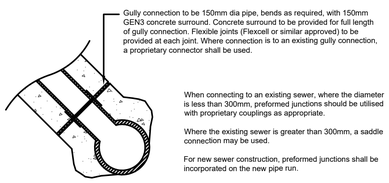


RODDING EYE BACKDROP DETAIL

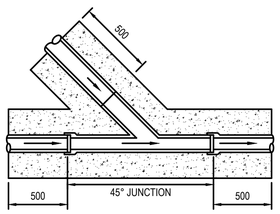
SCALE 1:20



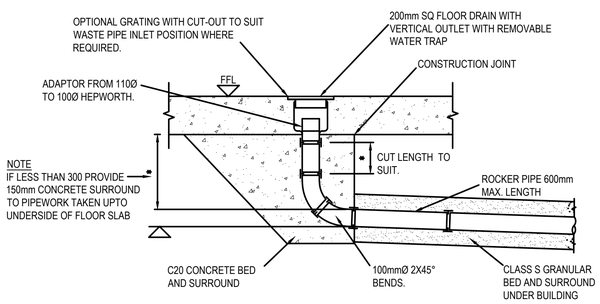
PIPE CROSSINGS DETAIL



SADDLE CONNECTION TO EXISTING SEWER



TYPICAL SADDLE CONNECTION



TYPICAL INTERNAL FLOOR DRAIN

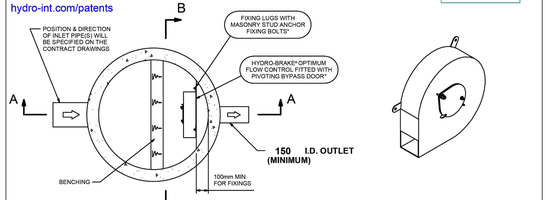
Technical Specification

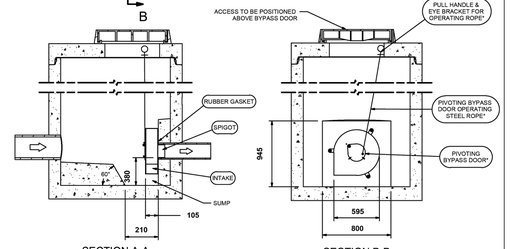
Control Point	Head (m)	Flow (l/s)
Primary Design	1.500	5.000
Flush-Flo™	0.431	4.879
Kick-Flo®	0.878	3.900
Mean Flow		4.321

Hydro-Brake® Optimum Flow Control including:

- 3 mm grade 304L stainless steel
- Integral stainless steel pivoting by-pass door allowing clear line of sight through to outlet, c/w stainless steel operating rope
- Beed blasted finish to maximise corrosion resistance
- Stainless steel fixings
- Rubber gasket to seal outlet
- Indicative Weight: 20 kg

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SECTION A-A SECTION B-B

IMPORTANT: LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® FLOW CONTROL & HYDRO-BRAKE® OPTIMUM FLOW CONTROL ARE REGISTERED TRADEMARKS FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE !	The head/flow characteristics of this SHE-0098-5000-1500-5000 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve. **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**
DATE	07/12/2023 12:25
SITE	Paradise Mews
DESIGNER	Alexa Abbot
REF	1-21074

Hydro International — A CIRCA COMPANY

SHE-0098-5000-1500-5000
Hydro-Brake® Optimum

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alexa.abbot@clancy.co.uk

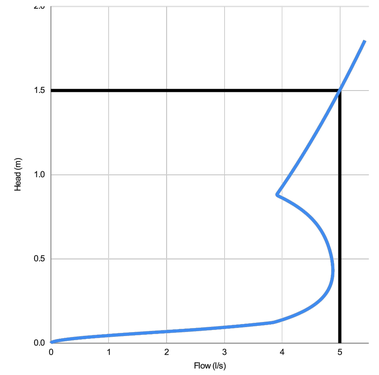
Technical Specification

Control Point	Head (m)	Flow (l/s)
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Kick-Flo®	0.878	3.900
Mean Flow		4.321

BBA APPROVAL INSPECTION TESTING CERTIFICATION — CERTIFICATE No: 08/4598

WRC approved — PT/503/0422 Valid: 01/04/2022 - 31/03/2027

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Head (m)	Flow (l/s)
0.000	0.000
0.052	1.259
0.103	3.316
0.155	4.142
0.207	4.464
0.259	4.667
0.310	4.789
0.362	4.853
0.414	4.878
0.466	4.874
0.517	4.850
0.569	4.809
0.621	4.750
0.672	4.668
0.724	4.555
0.776	4.398
0.828	4.184
0.879	3.914
0.931	4.007
0.983	4.108
1.034	4.206
1.086	4.302
1.138	4.396
1.190	4.487
1.241	4.576
1.293	4.664
1.345	4.749
1.397	4.833
1.448	4.915
1.500	4.996

DESIGN ADVICE !	The head/flow characteristics of this SHE-0098-5000-1500-5000 Hydro-Brake Optimum® Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve. **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**
DATE	07/12/2023 12:25
Site	Paradise Mews
DESIGNER	Alexa Abbot
Ref	1-21074

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SHE-0098-5000-1500-5000
Hydro-Brake Optimum®

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11. WATER AUTHORITIES ARE NOT OBLIGED TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUN OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY), AN ALTERNATIVE METHOD OF DISPOSAL OF LAND DRAINAGE RUN OFF WILL THEREFORE BE REQUIRED AND ANY PROPOSALS MUST BE AGREED WITH THE LOCAL AUTHORITY LAND DRAINAGE SECTION.
12. COVER SLABS MUST CARRY THE BSI KITEMARK AND SHALL COMPLY WITH BS 5911 PART3 / BS EN 1917 :2000. WHERE THE CLEAR OPENING OF THE KITE-MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS SPECIFIED ABOVE. PLEASE REFER TO CONCRETE PIPELINE SYSTEMS ASSOCIATION (CPSA) 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITE-MARKED COVER SLAB OPENING SIZES.
13. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
14. ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
15. SEWERS MUST HAVE 5M CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH THE SFA 6TH REQUIREMENTS.
16. ALL PIPES TO HAVE CLASS 'S' GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WIS 4-08-02 (TABLE A2). WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES OR LESS THAN 0.9M IN NON-VEHICULAR ACCESSED AREAS), THEN A CLASS 'Z' BEDDING TO BE USED.
17. ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.
18. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
19. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300MM DIAMETER.
20. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS.
21. SECTION 163 OF THE HIGHWAYS ACT 1980 REQUIRES PROVISION TO BE MADE TO PREVENT WATER FALLING ON OR FLOWING ONTO THE HIGHWAY FROM PRIVATE DRIVEWAYS OR PROPERTIES. ANY DRAINAGE REQUIREMENTS MUST BE CONNECTED INTO THE PRIVATE SURFACE WATER DRAINAGE SYSTEM.
22. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-
   (i) ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.
   (ii) THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.
   (iii)PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.
   (ii) ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.
23. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CURTINS SPECIFICATION FOR DRAINAGE WORKS AND ANY OTHER SUBSEQUENT ADDITIONS TO THIS LIST.
24. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
25. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE-WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LLFA AND ENVIRONMENT AGENCY.
26. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

Rev	Date	Description	By	Check	App.
P02	08.12.23	STAGE 4	AA	CD	CD
P01	28.04.23	STAGE 3	CD	JAP	JAP

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Project: PARADISE MEWS

Office: ALTRINCHAM

Discipline: CIVILS

Title: DRAINAGE DETAILS SHEET 2

Scale @ A1: NTS

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