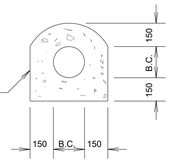
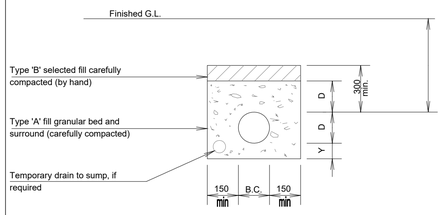
LEGEND

D = Internal diameter of pipe
B.C. = External diameter of pipe
Y = Depth of bedding (100mm min.)

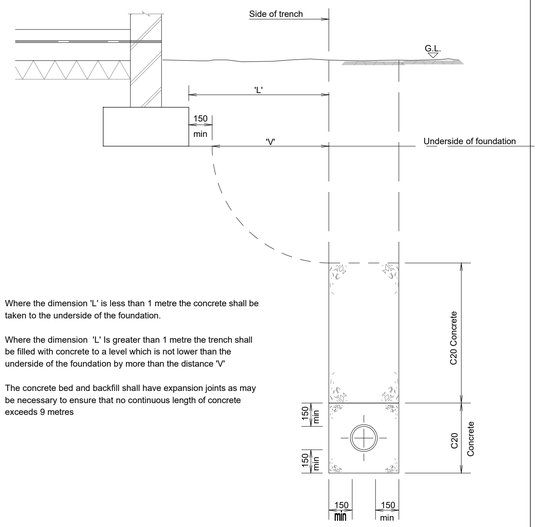


BEDDING TYPE '1'



BEDDING TYPE '2'

1. Type 'A' fill :- granular material for beds and surrounds, the material shall be coarse aggregate to B.S. 882 Table 1, 10mm nominal size.
2. Type 'B' fill :- shall be uniform, readily compactable material free from tree roots, vegetable matter, building rubbish and frozen soil and excluding clay lumps retained on a 75mm sieve and stones on a 28mm sieve.
3. For flexible pipe joints use 12mm flexible baffle between each section of concrete surround.
4. Type '1' to be flexibly jointed as per specification.
5. Bedding type '1' to be used :-
a. Where pipe is adjacent to underside of foundations
b. Where crown of pipe is less than 600mm below finished ground level.
c. Where crown of pipe is less than 900mm below a road



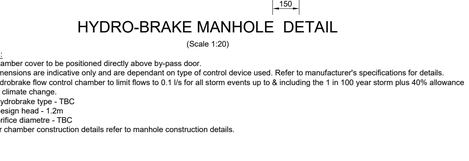
Where the dimension 'L' is less than 1 metre the concrete shall be taken to the underside of the foundation.

Where the dimension 'L' Is greater than 1 metre the trench shall be filled with concrete to a level which is not lower than the underside of the foundation by more than the distance 'V'

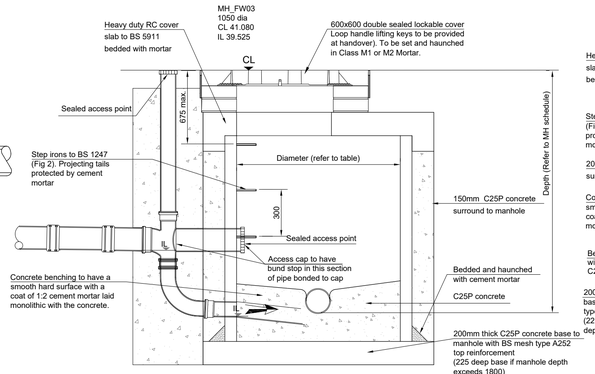
The concrete bed and backfill shall have expansion joints as may be necessary to ensure that no continuous length of concrete exceeds 9 metres

CONCRETE BED AND BACKFILL IN TRENCHES ADJACENT TO FOUNDATIONS

Nominal bore of pipe (mm)	Alternative aggregate (mm) single sized	Graded
225 - 300	10	--
375 - 525	10, 14	14 to 15
150	10, 14, 20	14 to 5, 20 to 5
100	14, 20	14 to 5, 20 to 5
Exceeding	14, 20, 40	14 to 5, 20 to 5, 40 to 5

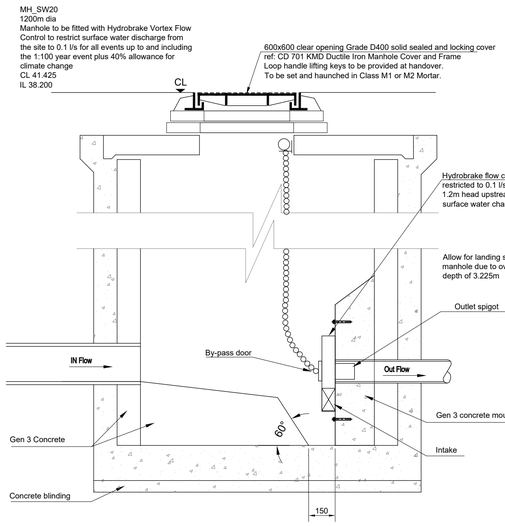


Hydrobrake Chamber (Plan)



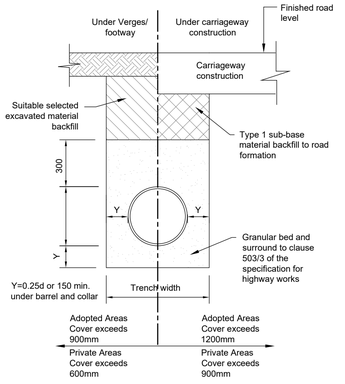
MH_FW03 BACKDROP MANHOLE DETAIL

(SCALE 1:20)



HYDRO-BRAKE MANHOLE DETAIL

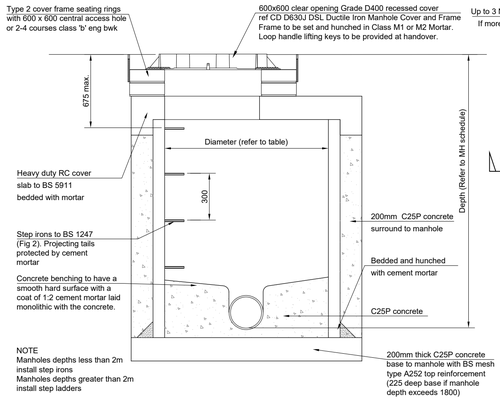
(Scale 1:20)



Class S Granular Surround

NOTES:
1. Chamber cover to be positioned directly above by-pass door.
2. Dimensions are indicative only and are dependant on type of control device used. Refer to manufacturer's specifications for details.
3. Hydrobrake flow control chamber to limit flows to 0.1 l/s for all storm events up to & including the 1 in 100 year storm plus 40% allowance for climate change.
   hydrobrake type - TBC
   design head - 1.2m
   orifice diametre - TBC
4. For chamber construction details refer to manhole construction details.

DO NOT SCALE



TYPICAL PRECAST MANHOLE DETAIL

MIN. MANHOLE SIZES	
DEPTH	DIAM.
900-1350	900
1351-1500	1050
1501-2500	1200

MH Dia also subject to pipe diameter refer to MH schedule

All precast concrete components to be in accordance with BS 5911 part 2 and to have tongue & grooved / ogee joints.

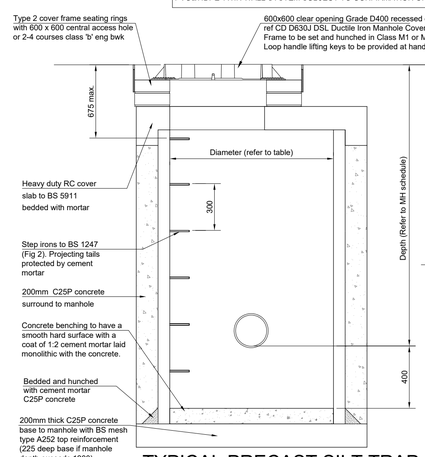
Joints to liberally coated with approved bitumous jointing material of trowelling grade before being fixed in position

Joints to be neatly struck off on internal surface.

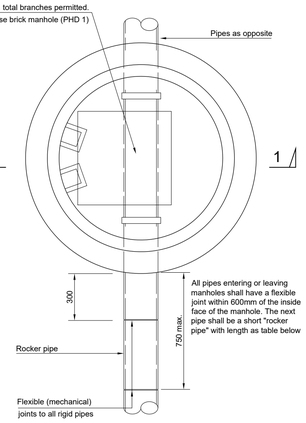
Lifting holes in P.C. units to be cleaned and filled with cement mortar.

All concrete in contact with the ground to be S.R.P.C.

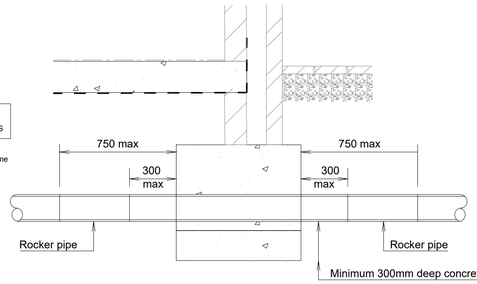
NOTE:
SURFACE WATER DRAINAGE PIPE RUNS TO BE CONCRETE PIPES OR PVCu/HDPE TWIN WALL SYSTEM SUBJECT TO CONFIRMATION OF DETAILS



TYPICAL PRECAST SILT TRAP MANHOLE DETAIL

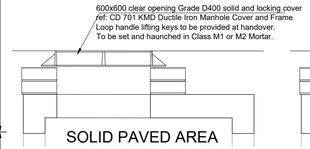


PLAN ON TYPICAL PRECAST MANHOLE DETAIL



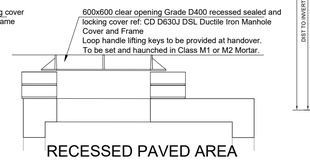
ROCKER PIPE DETAIL THROUGH FOUNDATIONS

(Scale 1:20)



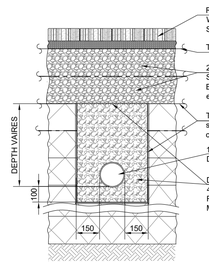
SOLID PAVED AREA MANHOLE COVER DETAIL

(SCALE 1:20)



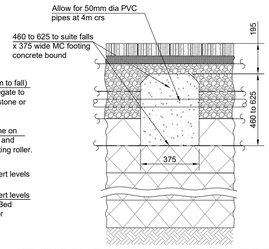
RECESSED PAVED AREA MANHOLE COVER DETAIL

(SCALE 1:20)



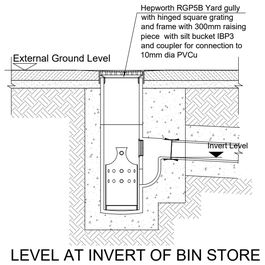
150MM DIA PERFORATED DIFFUSER SW DRAIN

(Scale 1:20)



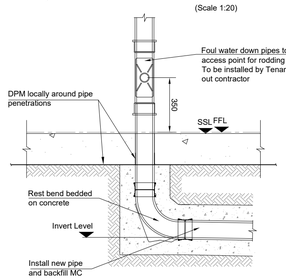
TYPICAL BOUND DETAIL TO RESTRICT SURFACE WATER FLOW BETWEEN SEPARATED BAYS OF POUROUS PAVED AREAS (Allow for 75m o/a length in area across site TBC)

(Scale 1:20)



LEVEL AT INVERT OF BIN STORE GULLY+ SHOWING DRAINAGE POINT INSTALLATION DETAILS

(Scale 1:20)



LEVEL AT INVERT OF REST BEND + SHOWING DRAINAGE POINT INSTALLATION DETAILS

(Scale 1:20)

SURFACE WATER MANHOLE SCHEDULE

MANHOLE	LEVELS cover	LEVELS invert	INTERNAL Depth	MIN. INTERNAL MH SIZE	CONDITION	COVER grade	COVER opening	COVER reference	NOTES
MH-SW01	41.020	40.230	790	475 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW02	41.030	39.450	1580	1050 dia	Silt Trap	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	400mm deep silt trap
MH-AP-SW03	41.050	40.100	950	100 dia	-	D400	600x600	-	Rodding Access Point
MH-SW04	40.965	40.025	940	600 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW05	40.940	39.450	1490	1050 dia	Silt Trap	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	400mm deep silt trap
MH-SW06	40.630	39.270	1360	900 dia	Silt Trap	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	400mm deep silt trap
MH-SW07	40.915	39.160	1755	1200 dia	Silt Trap	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	400mm deep silt trap
MH-SW08	40.840	38.925	1915	1200 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW09	41.260	40.040	1220	900 dia	-	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	-
MH-SW10	41.240	39.800	1440	1050 dia	-	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	-
MH-SW11	41.170	38.400	2770	1200 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW12	41.140	38.800	2340	1200 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW13	41.200	38.900	800	See Note	SW Tank	-	-	Surface Water Storage Tank Polystorm Modular Units 9m x 5.5m x 0.8m dp (39.6m3 of Surface Water Storage - Polystorm Units 0.5m x 1m x 0.4m dp) Cl 40.820 to 41.200 - TOT 39.700 - BOT 38.900	
MH-AP-SW14	40.315	39.510	805	475 dia	-	D400	600x600	-	Rodding Access Point
MH-AP-SW15	40.390	39.400	990	475 dia	-	D400	600x600	-	Rodding Access Point
MH-SW16	40.445	39.240	1205	900 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-SW17	40.710	38.500	2210	1200 dia	Silt Trap	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	400mm deep silt trap
MH-SW18	40.615	38.900	800	See Note	SW Tank	-	-	Surface Water Storage Tank Polystorm Modular Units 16.5m x 5.5m x 0.8m dp (72.6m3 of Surface Water Storage - Polystorm Units 0.5m x 1m x 0.4m dp) Cl 40.615 to 41.150 - TOT 39.700 - BOT 38.900	
MH-SW19	41.170	38.675	2495	1200 dia	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	allow for hydro international down stream defender vortex separator
MH-SW20	41.425	38.200	3225	1200 dia	-	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	-

NOTE:- Manhole covers by www.clark-Drain.com (tel 01733 765317)

EXISTING FOUL WATER MANHOLE SCHEDULE

MANHOLE	LEVELS cover	LEVELS invert	INTERNAL Depth	MIN. INTERNAL MH SIZE	CONDITION	COVER grade	COVER opening	COVER reference	NOTES
MH-FW01	41.070	40.445	625	475	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-FW02	41.080	40.100	980	900	-	D400	600x600	CD D630J DSL Ductile Iron Recessed Cover and Frame	-
MH-FW03s	41.080	39.525	1555	1050	-	D400	600x600	CD 701 KMD Ductile Iron Solid Cover and Frame	-

NOTE:- Manhole covers by www.clark-Drain.com (tel 01733 765317)

ENGINEERING NOTES

1. This drawing to be read in conjunction with all relevant Architects, Engineers and Subcontractors drawings and details.
2. All levels relate to levels given on survey drawing.
3. Refer to Architects drawings for details of all paving types & patterns, soft landscaping, fences, gates & bollards.
4. All works to be carried out in accordance with Sewers for Adoption 7th Edition, BS EN 752 "Drain and sewer systems outside buildings" and the current edition of The Building Regulations "Approved document H".
5. New drainage connections are to be made with appropriate lengths of rocker pipes & couplings.
6. All manhole chamber covers to be installed parallel to final kerbs, edgings, paving joints or building lines as appropriate.
7. This drawing details all below ground drainage up to finished floor level. For details of drainage above finished floor level, refer to Architects drawings.
8. All stack connections under buildings to be minimum 100mm diameter solid PVC-U to BS EN 1401-1/BS4660 & laid at a minimum gradient of 1 in 60 unless otherwise noted. If the stack is greater than 100mm then the diameter of the connection is to be increased to match it
9. All RWP connections to be minimum 100mm diameter solid PVC-U to BS EN 1401-1/BS4660 & laid at a minimum gradient of 1 in 60 unless otherwise noted. If the RWP is greater than 100mm then the diameter of the connection is to be increased to match it.
10. All private foul water pipework up to 150mm in diameter to be PVC-U to BS EN 1401-1/BS4660.
11. All private surface water pipework up to 150mm in diameter to be solid PVC-U to BS EN 1401-1/BS4660. All private surface water pipework 225mm and above to be structured wall plastic sewer pipe complying with clause 518 of the specification for highway works.
12. Plastic chambers shall comply with BS EN 1917 and BS 5911-3.
13. All adoptable foul water and surface water pipework up to 225mm in diameter to be Kitemark certified Vitrified Clay (VC) with flexible spigot and socket joints and shall comply with the requirements of BS EN 295. All adoptable foul water and surface water pipework 300mm and above to be concrete sewer pipe with flexible spigot and socket joints and shall comply with the requirements of BS EN 1916 and BS 5911: Part 1.
14. On completion of development all drainage shall be jet cleaned and CCTV surveyed.
15. Redundant drainage & services marked to be removed are to be dug out with chambers demolished & void filled with Type 1 material to clause 803 & 806.
16. All existing services shown are based on topographical survey. Location of all services in close proximity to works should be confirmed by means of trial pits under supervision of statutory undertaker & in accordance with HSE document "Avoiding Danger from Underground Services"

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEER'S & SUB-CONTRACTORS DRAWINGS AND DETAILS AND THE PROJECT SPECIFICATION. WHERE ANY DISCREPANCY MAY EXIST BETWEEN THESE NOTES & THE SPECIFICATION, THE SPECIFICATION SHALL PREVAIL.
2. ALL SETTING-OUT TO BE CHECKED AGAINST ARCHITECT'S LATEST SETTING OUT DRAWING.
3. NO DIMENSIONS ARE TO BE SCALED FROM THIS DRAWING.
4. NO DEVIATION MAY BE MADE FROM THE DETAILS SHOWN ON THIS DRAWING WITHOUT PRIOR AGREEMENT OF THE ENGINEERS.
5. ANY DISCREPANCY BETWEEN THIS DRAWING AND ANY OTHER DOCUMENT SHOULD BE REFERRED IMMEDIATELY TO THE ENGINEER.
6. ALL WORKMANSHIP, MATERIALS AND LOADINGS TO BE IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF:
   - EC0 - BASIC STRUCTURAL DESIGN
   - EC1 - ACTIONS ON STRUCTURES
   - EC2 - DESIGN OF CONCRETE STRUCTURES
   - EC3 - DESIGN OF STEEL STRUCTURES
   - EC7 - GEOTECHNICAL DESIGN
   - THE BUILDING REGULATIONS, MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONTRACTOR IS TO ALLOW FOR ALL TEMPORARY WORKS AS NECESSARY TO UNDERTAKE AND MAINTAIN THE STRUCTURAL INTEGRITY OF THE PROPOSED BUILDING AND SURROUNDING STRUCTURES AT ALL TIMES

CONTRACTOR TO PROVIDE FULL DESIGN AND FABRICATION DRAWINGS FOR RETAINING WALLS AND GEOSYNTHETICS CELLWEB TREE PROTECTION SYSTEM TO BE INSTALLED AS PER MANUFACTURS RECOMENDATIONS

NOTE:
Contractor is responsible for liasing between Retaining Wall Designer and Installer and GEOSYNTHETICS Cell web system and final design aspects for acceptance by Contract Administrator and Clients Design Team

NOTE:
Retaining Wall and GEOSYNTHETICS Cellweb details shown are for indication. All final design and working details are to be designed by Contractors specialist contractor to manufacturer details and provide detailed design and drawings for approval by Clients Design Team
GEOSYNTHETICS details
Jamie Leake tel 01455 241507
jamie.leake@geosyn.co.uk

NOTE:
For all dimensions and setting out refer to architects drawings

NOTE
Refer to M&E spec and drawings for additional excavation locations for incoming and redirected services on site

NOTE:
THE CONTRACTOR IS TO REFER TO ALL RELEVANT INFORMATION
PROJECT MANAGERS CONTRACT DOCUMENTATION, ARCHITECTS SPEC AND DRAWING
M&E SPEC AND DRAWINGS
QUARTET DESIGN ARBORICULTURAL CONSULTANTS SPEC AND DRAWINGS
SOIL INVESTIGATION REPORT,
TOPO SURVEY,
SUBSCAN SURVEY,
UTILITIES REPORT,

NOTE:
THE CONTRACTOR IS TO REFER TO STARBUCKS DEVELOPER DRIVE THOUGH SPECIFICATION AND ALL DRAWINGS

CONTRACTOR IS TO CHECK WITH DESIGN TEAM FOR THE LATEST REVISION SPECIFICATION AND ALL DRAWINGS

Contractors Design & Tender Requirements

The contractor's is to ensure full compliance with the Project Managers, Architects, M&E, Arboriculturist, Engineers and Tenants specifications / requirements.

Contractor is to allow for detailed design of all retaining walls, Geosynthetics Cellweb and detailed fabrication drawings including full dimensioned drawings for approval by Design Team

Contractor is to Allow for liasing with Thames Water and making applications for off site connections to existing public sewer system for seperate surface water and foul water connections and for all application fees

MK	REVISION	BY	DATE
P1	ISSUED FOR PLANNING CONDITION 6	GB	11.06.26
T2	DRAWING TITLE CORRECTED MH_SW19 NOTE FOR DOWNSTREAM DEFENDER VORTEX SEPARATOR ADDED	GB	28.05.26
T1	ISSUED FOR TENDER	GB	26.05.26

DRAWING STATUS

ISSUE

DRAWING TITLE

PROPOSED SURFACE WATER AND FOUL WATER DRAINAGE DETAILS (SHEET 1 OF 2)

PROJECT

STARBUCKS POD,
SCOURS LANE,
TILEHURST,
READING, RG30 6AX

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60 Goswell Road
London, EC1M 7AD
Tel: 020 7253 2626
E: mail@simpsoneng.com
W: www.simpsoneng.com
London, Henley-on Thames and Gloucester

Drawn	Ch'kd	Scales	Date
GB	-	1:20	08/04/26

Purpose of Issue
ISSUE

Project Number	Drawing Number	Revision
P24-0805	PH02	P1

A1