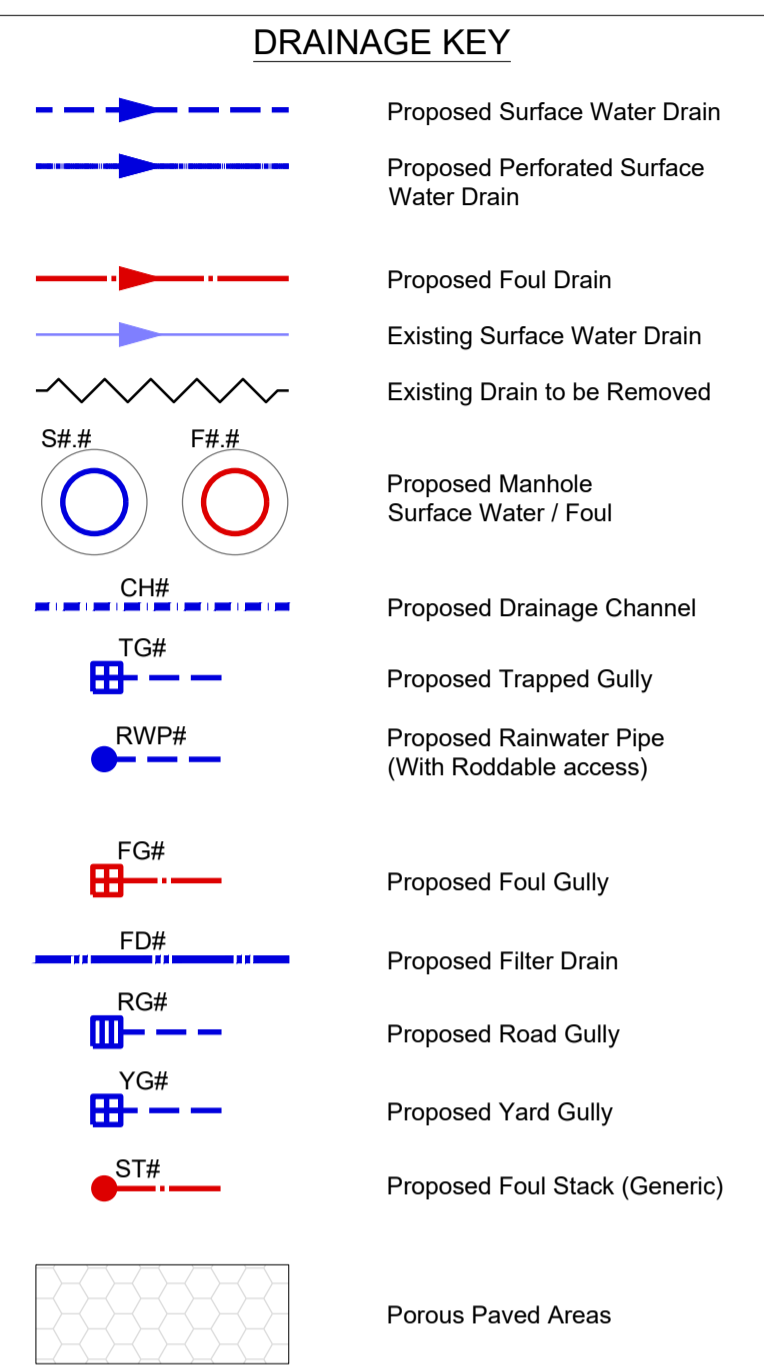


- Notes
- For general notes and manhole schedule refer to drawing J4053-C-DR-0102 For below ground drainage details refer to drawing series J4053-C-DE-0401 to J4053-C-DE-0403.
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Rev	Date	Description	Drm App
03	03.03.21	Stage 4 Update	GPD AY
02	11.12.20	Stage 4 Update	GPD AY
01	24.08.20	Stage 4 Update	GB GPD
00	21.07.20	Stage 4 Issue	GB GPD

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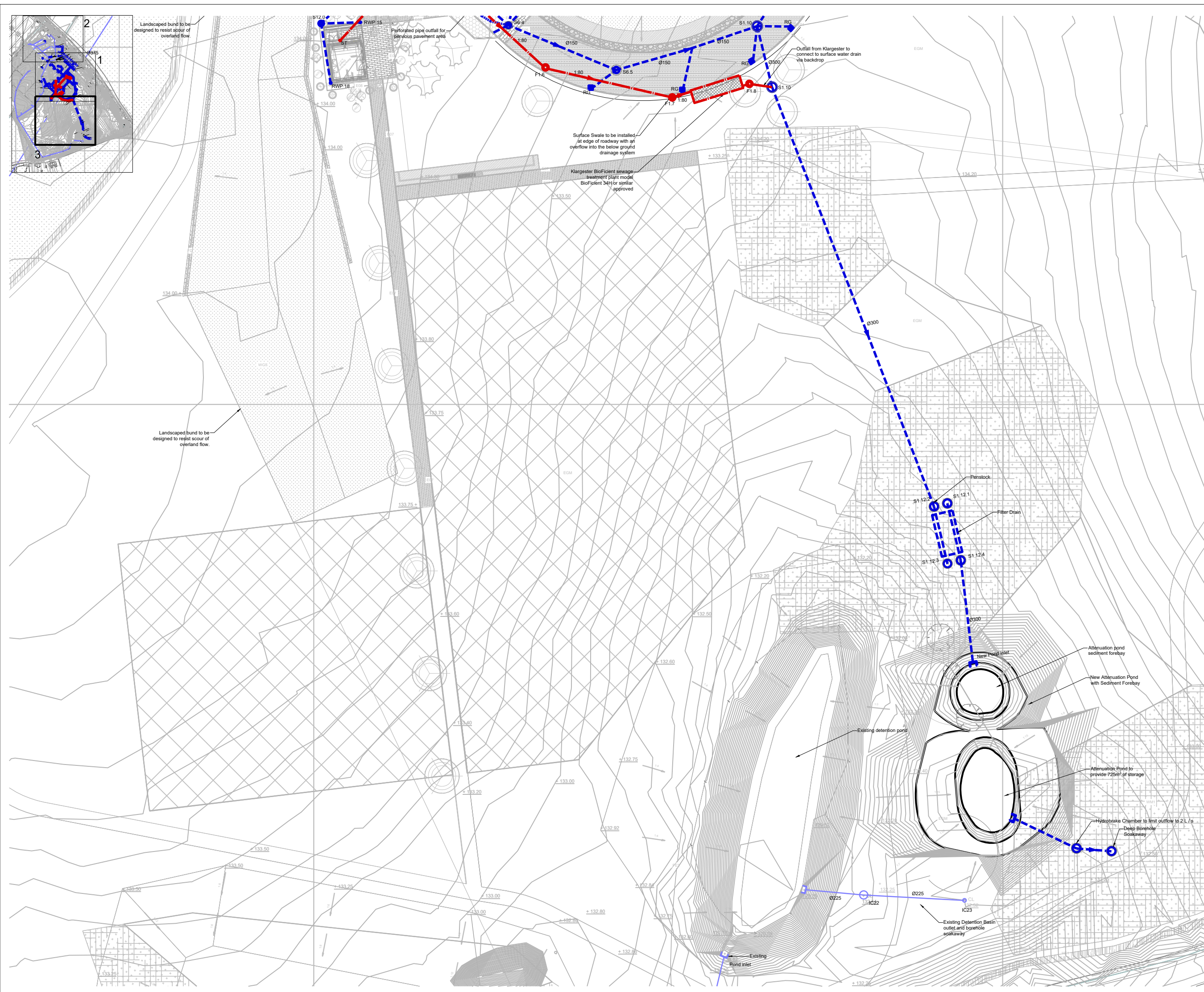
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Drawing Title
Drainage Layout Part Plan 2 of 3

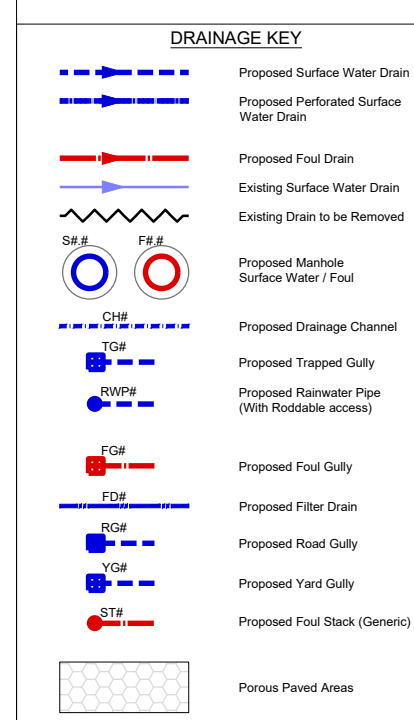
Drawing Status
Technical Design

Drawn by	Checked by	Sheet size	Scale	Rev status
GB	GPD	A1	1:250	S4

Drawing Number	Revision
J4053-C-DR-1002	03



- Notes
- For general notes and manhole schedule refer to drawing J4053-C-DR-0102 For below ground drainage details refer to drawing series J4053-C-DE-0401 to J4053-C-DE-0403.
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Rev	Date	Description	Drn App
05	15.06.21	Stage 4 Update	JPD AY
04	03.03.21	Stage 4 Update	GPD AY
03	11.12.20	Stage 4 Update	GPD AY
02	27.08.20	Stage 4 Update	GB GPD
01	24.08.20	Stage 4 Update	GB GPD
00	21.07.20	Stage 4 Issue	GB GPD

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Drawing Title
Drainage Layout Part Plan 3 of 3

Drawing Status
Technical Design

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GB	GPD	A1	1:250	S4

Drawing Number
J4053-C-DR-1003

Revision
05

SURFACE WATER MANHOLE SCHEDULE											
MANHOLE REF:	COVER LEVEL (m)	PIPE INVERT LEVEL (m)	MANHOLE DEPTH (m)	MAIN CHANNEL SIZE (mm)	MANHOLE DIA & TYPE (mm)	MINIMUM COVER SIZE (mm)	COVER TYPE	LOAD CLASS	EASTINGS (m)	NORTHINGS (m)	GENERAL NOTES
S1.0	135.240	134.654	0.586	150	PPIC 450 Ø	515 x 515	Recessed	B125			
S1.1	135.325	134.559	0.766	150	PPIC 450 Ø	515 x 515	Recessed	B125			
S1.3	134.550	133.828	0.722	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.4	134.260	133.528	0.732	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.5	134.350	132.815	1.535	225	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.6	134.283	132.682	1.601	225	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.7	134.336	132.529	1.807	225	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.8	133.253	132.030	1.223	225	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.9	132.071	130.850	1.221	225	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.10	132.000	130.762	1.238	300	Concrete 1200 Ø	600 x 600	Recessed	D400			
S1.11	133.000	130.717	2.283	300	Concrete 1200 Ø	600 x 600	Solid	B125			
S1.12.1	132.400	130.391	2.009	300	Concrete 1200 Ø	600 x 600	Solid	B125			
S1.12.2	132.400	130.391	2.009	300	Concrete 1200 Ø	600 x 600	Solid	B125			
S1.12.3	132.200	130.333	1.867	300	Concrete 1200 Ø	600 x 600	Solid	B125			Silt Trap, 500 mm deep sump.
S1.12.4	132.200	130.333	1.867	300	Concrete 1200 Ø	600 x 600	Solid	B125			
S2.0	134.930	134.322	0.608	100	PPIC 450 Ø	515 x 515	Recessed	B125			
S3.0	134.300	133.050	1.250	150	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S4.0	134.750	133.400	1.350	150	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S4.1	134.110	132.835	1.275	150	PPIC 450 Ø	600 x 600	Recessed	D400			
S5.0	134.400	133.621	0.779	100	RAT PPIC 450 Ø	515 x 515	Recessed	B125			
S6.0	134.346	133.683	0.663	100	PPIC 450 Ø	515 x 515	Recessed	B125			
S6.1	134.341	133.487	0.854	100	PPIC 450 Ø	600 x 600	Recessed	D400			
S6.2	134.314	132.892	1.422	100	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S6.3	134.253	132.610	1.643	150	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S6.4	134.260	132.470	1.790	150	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S6.5	133.400	131.809	1.591	150	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S8.0	134.313	133.013	1.300	100	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S9.0	134.250	133.000	1.250	100	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S10.0	134.400	133.142	1.258	100	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S10.1	134.250	132.908	1.342	100	RAT PPIC 450 Ø	600 x 600	Recessed	D400			
S11.0	134.100	132.771	1.329	150	RAT PPIC 450 Ø	515 x 515	Recessed	B125			
S12.0	134.150	132.850	1.300	100	RAT PPIC 450 Ø	515 x 515	Recessed	B125			

FOUL WATER MANHOLE SCHEDULE											
MANHOLE REF:	COVER LEVEL (m)	PIPE INVERT LEVEL (m)	MANHOLE DEPTH (m)	MAIN CHANNEL SIZE (mm)	MANHOLE DIA & TYPE (mm)	MINIMUM COVER SIZE (mm)	COVER TYPE	LOAD CLASS	EASTINGS (m)	NORTHINGS (m)	GENERAL NOTES
F1.1	134.400	133.3000	1.100	100	Concrete 1200 Ø	600 x 600	Recessed	B125			
F1.2	134.400	133.240	1.160	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
F1.3	134.310	132.124	2.186	150	Concrete 1200 Ø	600 x 600	Recessed	B125			
F1.4	134.400	131.777	2.624	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
F1.5	134.300	131.684	2.616	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
F1.6	133.410	131.492	1.919	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
F1.7	132.400	131.315	1.086	150	Concrete 1200 Ø	600 x 600	Recessed	D400			
F1.8	132.200	131.175	1.025	150	Concrete 1200 Ø	600 x 600	Recessed	B125			
F2.0	134.400	133.050	1.350	150	Concrete 1200 Ø	600 x 600	Recessed	B125			

GENERAL NOTES TO DRAINAGE

- This drawing is to be read in conjunction with the drainage details and other relevant Architects and Engineers drawings and specifications.
- Design and setting out of above ground drainage by Architect/M&E engineer. All soil pipes, rainwater downpipes, channels and gullies are shown indicatively.
- For below ground drainage layouts refer to drawing series J4053-C-DR-1001 to J4053-C-DR-1003.
- For below ground drainage details refer to drawing series J4053-C-DE-0401 to J4053-C-DE-0403.
- Any part of the existing drainage system retained as part of the new scheme shall be cleaned and inspected. Any defects shall be reported to the Engineer.
- Existing drainage connectivity & condition to be confirmed by Contractor. Before starting work, check invert levels & positions of existing drains, sewers, inspection chambers & manholes against drawings. Report discrepancies.
- Any drains proposed to be removed, the Contractor is to confirm the drain is no longer live prior to removal/capping.
- Existing drainage to be removed is to be broken out to bed level and void backfilled with granular material, compacted in layers not exceeding 250mm.
- Private foul water and surface water drainage is to be constructed in accordance with the building regulations part H (2015), BS EN 12056-2:2000 (inside buildings), BS EN 752:2017 (outside buildings) and all relevant agreement certificates.
- Any Statutory Authority (eg Section 106 Water Industry Act) connection approvals or new drain adoption approvals to be undertaken by Client / Contractor.
- Relevant drains to be built to adoptable standard as per "Sewers for Adoption, 7th Edition".
- Drain connections to be soffit to soffit unless noted otherwise.
- UNO Gravity drains up to and including DN300 are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1:2013 (Hepworth "Supersieve" or similar approved), drains bedded and back filled in accordance with the manufacturer's instructions. all tested in accordance with BS EN 1610:2015.
- All Foul Drains are DN150mm at 1:40 gradient UNO.
- All Storm Drains are DN100mm at 1:100 gradient UNO.
- Pipes with cover less than 1200mm under paved areas and 900mm under soft areas to be laid with concrete surround (Class Z or similar).
- Concrete surround to pipes below slab to be monolithic with slab, allow for nominal re-bar to be cast into surround and tie into slab. Double-rocker detail required at all interfaces.
- All pipes passing through foundations to be fitted with double rocker pipe connections on each side and/or sleeved through ground beams/walls subject to confirmation with structural engineer.
- Surface water from private areas is not to be discharged onto public highway.
- All internal manhole covers and rodding eyes shall be of 'double-seal' type. All external foul drainage manholes shall have double seal covers and all storm drainage manholes shall have single seal cover as a minimum.
- Manhole covers and frames shall be BS EN 124 and shall be Kitemarked. Covers and frames shall be heavy duty C250 in carriageways and vehicular areas and medium duty B125 in footways and soft landscaping. In blocked/concrete paved areas covers shall be recessed fabricated steel. All recessed covers shall be in accordance with the FACTA association gradings and shall match the Architects finishes.
- Cover levels are to be adjusted locally to suit finished ground levels.
- Access panels are to be provided to all rainwater pipes, max 600 above finished ground level.
- All drains to be tested before backfilling the trench and again after back filling - this may need to be witnessed by the local building control officer - contractor to confirm. Contractor to agree preferred method of testing (Water or Air test) with building control/engineer.
- HEALTH AND SAFETY: The works shall be carried out by specialist competent and experienced contractors who are members of a recognised national organisation. Operatives shall have received full and appropriate training for the operations they are to undertake. All work shall be carried out in accordance with all pertinent Health and Safety Regulations.
- HEALTH AND SAFETY: Care should be taken to locate services prior to any excavation.



DRAINAGE LAYOUT IS SHOWN FOR INFORMATION ONLY AND LIKELY TO CHANGE DURING DETAILED DESIGN FOLLOWING CONFIRMATION OF FINAL LANDSCAPING LEVELS AND DRAINAGE POINTS.



APPROXIMATE RAINWATER PIPES, CHANNEL, GULLY AND FOUL STACK POSITIONS ARE SHOWN FOR INFORMATION ONLY AND LIKELY TO CHANGE DURING DETAILED DESIGN. ARCHITECT TO CONFIRM FINAL POSITIONS.



IMPORTANT NOTE: DRAINAGE SCHEME IS SUBJECT TO CONFIRMATION THAT THE EXISTING SYSTEM AT THE POSITION OF THE PROPOSED CONNECTION IS FUNCTIONAL.



IMPORTANT H&S NOTE: BURIED SERVICES - REFER TO SURVEYS & STATS DRAWINGS FOR DETAILS. ALWAYS FOLLOW GOOD PRACTICE TO AVOID STRIKING BURIED SERVICES.

Notes

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05	03.03.21	Stage 4 Update	GPD	AY
04	11.12.20	Reissued for Stage 4	GPD	AY
03	21.07.20	Stage 4 Issue	PB	AY
02	21.05.20	Updated Stage 3 Issue	PB	AY
01	18.05.20	Updated Stage 3 Issue	PB	AY
00	30.04.20	Stage 3 Issue	PB	AY
Rev	Date	Description	Drn	App

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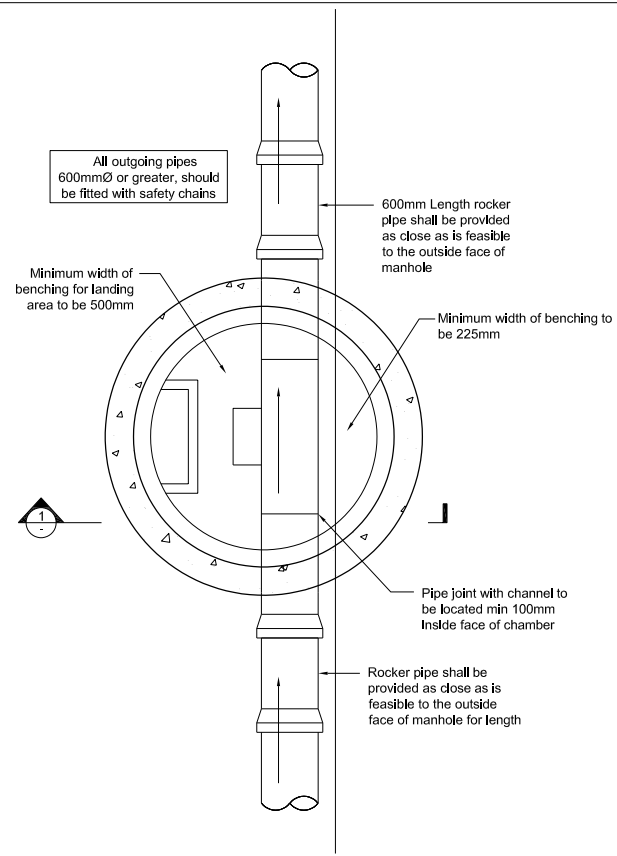
Project
Hemel Hempstead Crematorium

Drawing Title
**Manhole Schedule
 Drainage Layout**

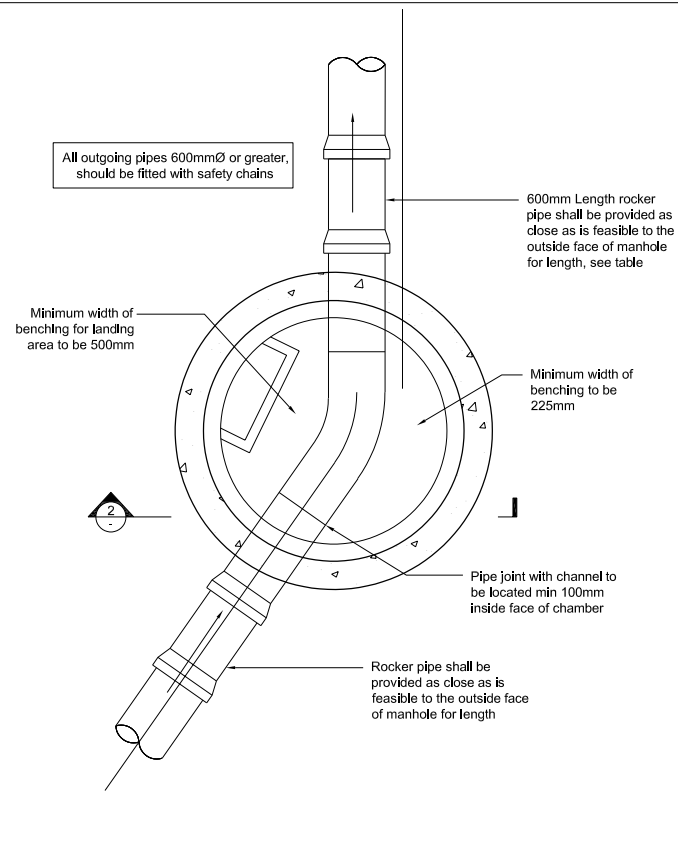
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Technical Design

Drawn by	Checked by	Sheet size	Scale	Rev status
PB	AY	A1	NTS	S4

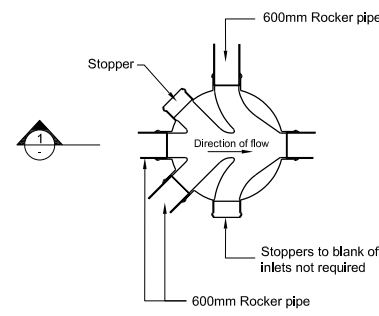
Drawing Number	Revision
J4053-C-DR-0102	05



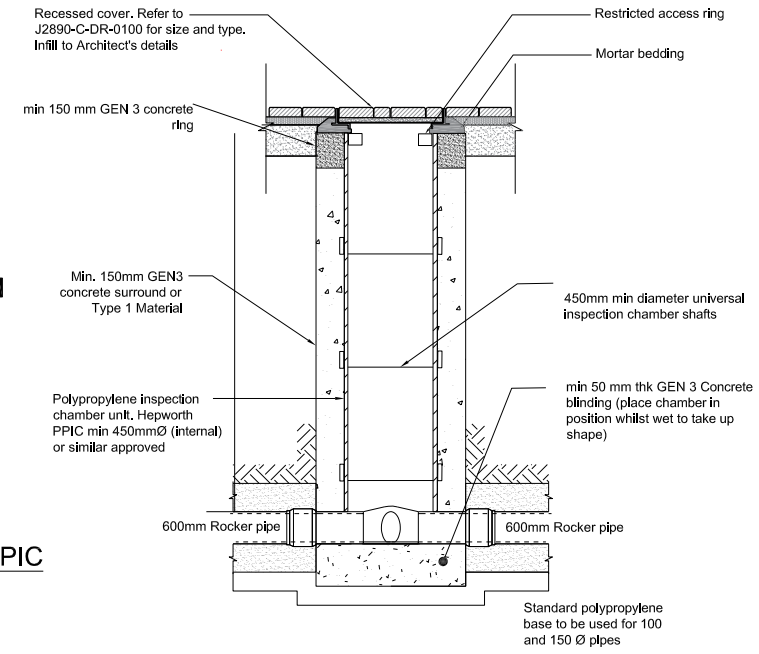
General Arrangement



General Arrangement



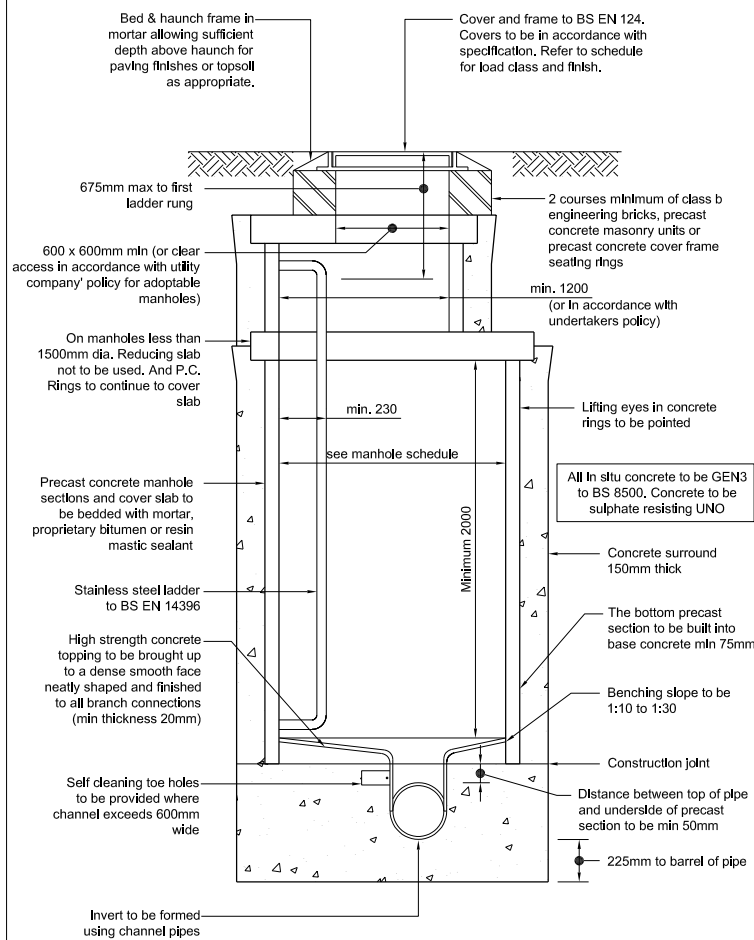
Typical Plan View 450Ø/600Ø PPIC Inspection Chamber Base



**1.2m to 3.0m Max depth to invert
450 Ø PPIC**

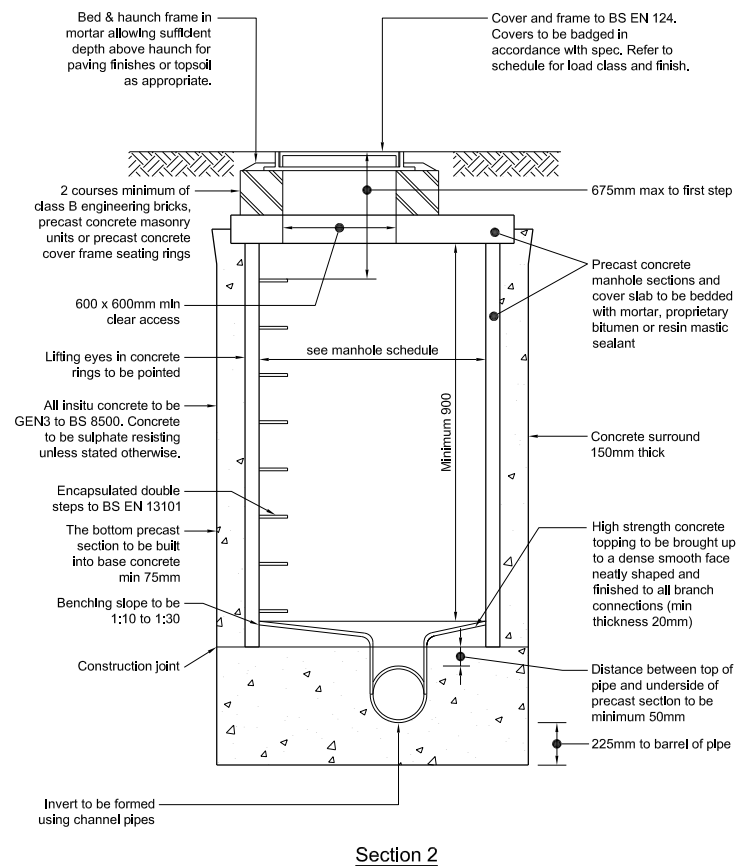
Notes

1. For drainage general notes and below ground drainage manhole schedule refer to J4053-C-DR-0102.
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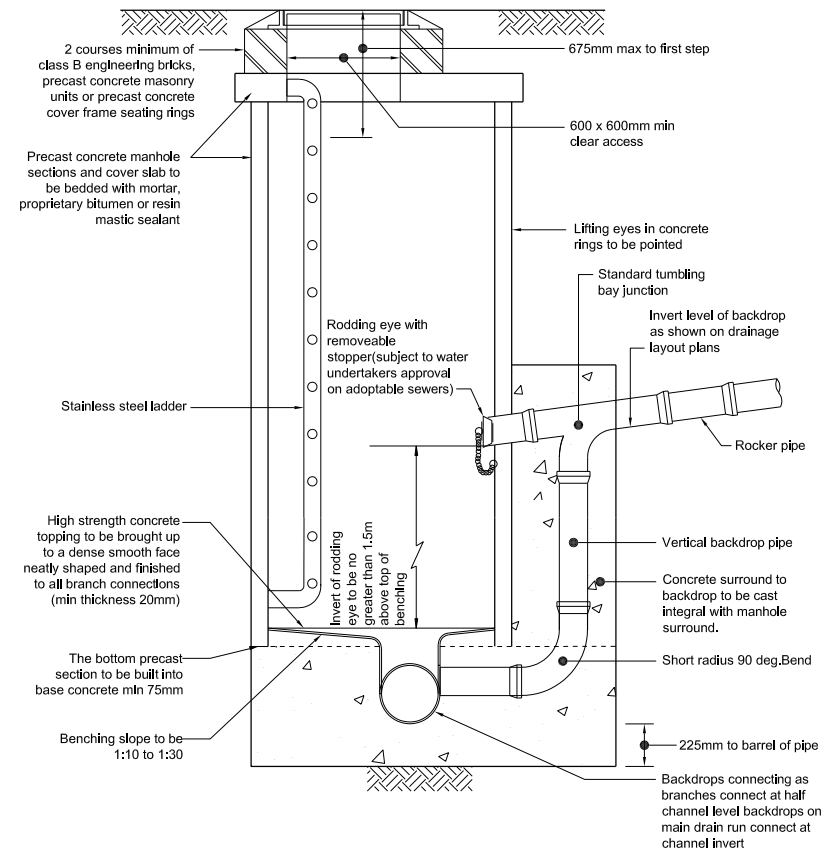
Section 1

**Typical manhole detail - Type A
depth from ground level to soffit of pipe 3-6m**



Section 2

**Typical manhole detail - Type B
maximum depth from ground level to soffit of pipe 3.0m**



**Typical back drop manhole detail
all other details as for standard manhole**

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00	21.07.20	Stage 4 Issue	GB	GPD

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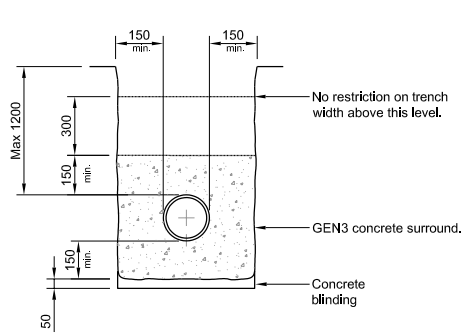
Project **Hemel Hempstead Crematorium**

Drawing Title **Below Ground Drainage Details Sheet 1**

Drawing Status **Technical Design**

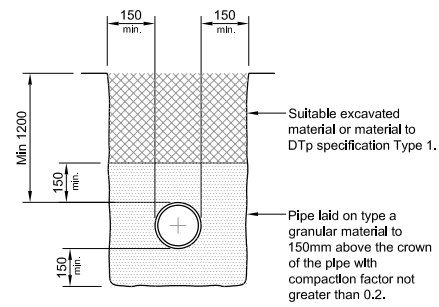
Drawn by	Checked by	Sheet size	Scale	Rev status
GB	GPD	A1	NTS	S4

Drawing Number	Revision
J4053-C-DE-0401	00



Bedding for pipes with less than 1200mm cover (Class Z)

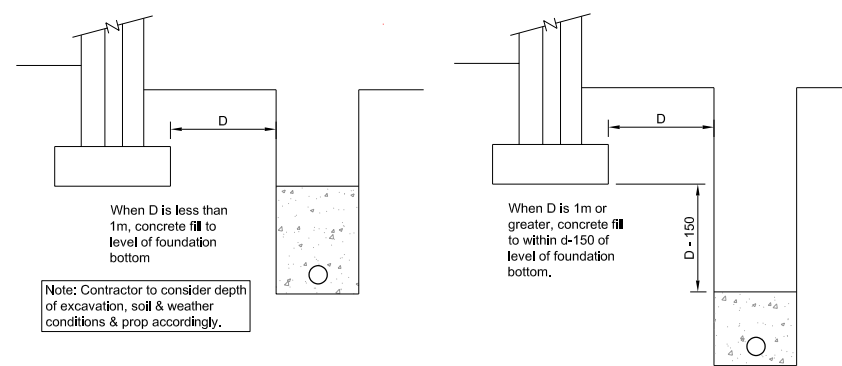
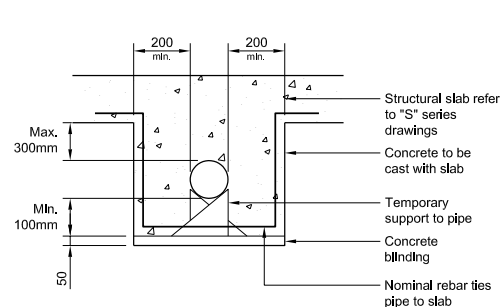
Scale NTS



Bedding for pipes with cover greater than 1200mm (Class S)

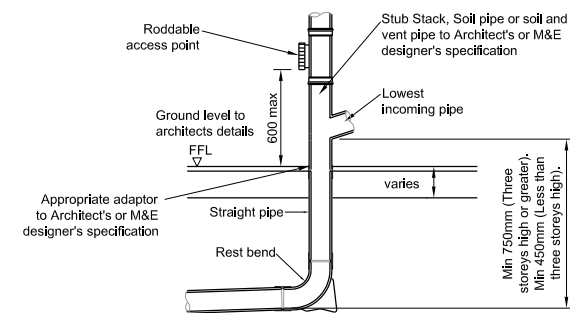
Monolithic concrete surround for pipelines less than 300mm below ground bearing slabs (Class Y)

Scale NTS



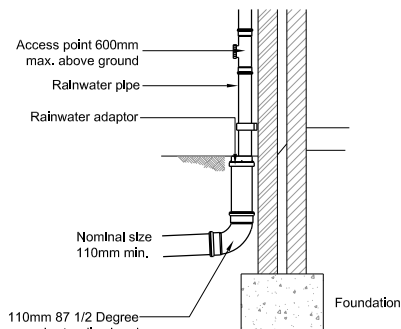
Pipes Near Buildings

Scale NTS



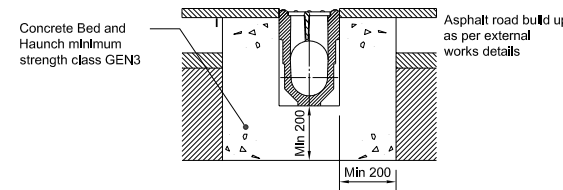
Internal Rainwater Pipes & Soil Stacks

Scale 1:20



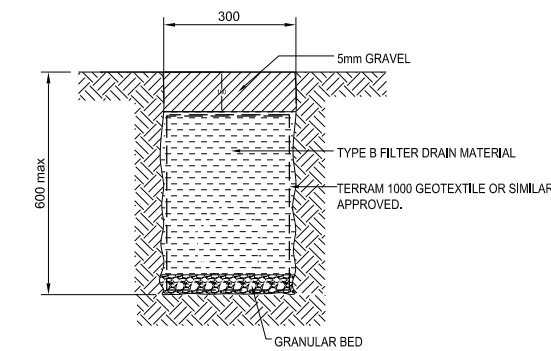
Typical External Rainwater Pipe to Drain

Scale 1:20



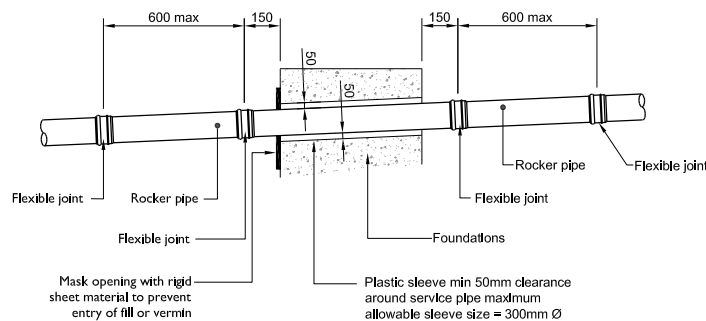
Linear Channel Drain Installation in Asphalt

Scale 1:10



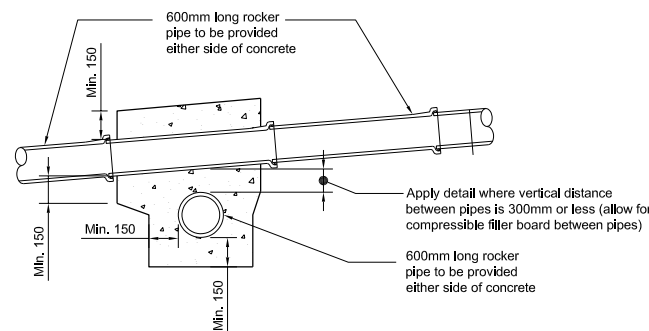
TYPICAL FILTER DRAIN NO PIPE OPTION

SCALE 1:10



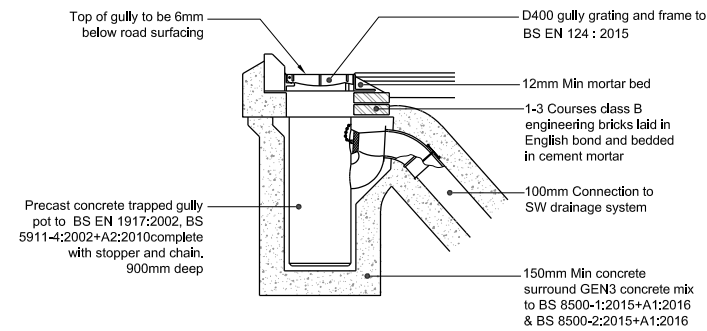
Pipes Passing Through Foundations

Scale 1:20



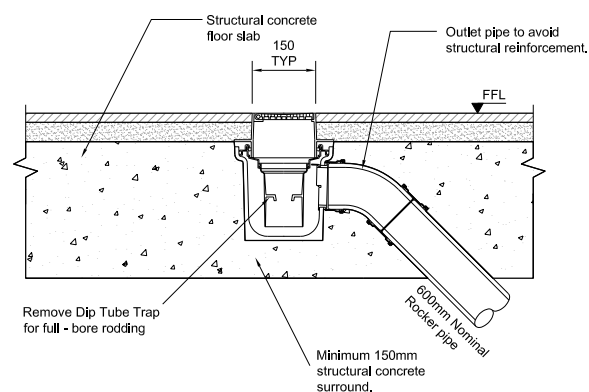
Pipes Passing Within 300mm

Scale NTS

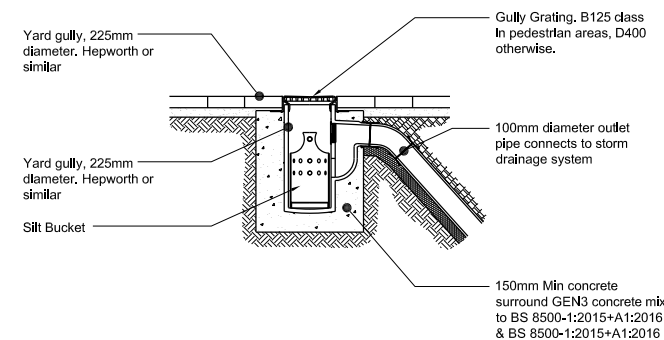


Road Gully

Scale 1:20



Internal Trapped Gully Typical Connection Detail - Within New Slab



Typical Yard Gully Detail

Scale NTS

Notes

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00	21.07.20	Stage 4 Issue	GB	GPD

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Drawing Title **Below Ground Drainage Details Sheet 2**

Drawing Status **Technical Design**

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GB	GPD	A1	As shown	S4

Drawing Number	Revision
J4053-C-DE-0402	00