

Appendix B

Proposed Schematic Drainage JB-3216-001_P2
Typical Construction Details

Notes:

- This drawing is to be read in conjunction with all relevant architects, engineers and specialist sub-contractors drawings and the specification.
- All setting out to be in accordance with the schedules, any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Dimensions must not be scaled.
- All private drainage is to be in accordance with BS EN 752-1-2-3-4, BS EN 1295-1, BS EN 1610 and all relevant sections of approved document H of the building regulations (2002 Edition).
- All adoptable drainage is to be in accordance with 'Sewers for Adoption 7th Edition' - a design and construction guide for developers and the local highway authority requirements where appropriate.
- Where drainage pipework is to be flexibly jointed extra strength vitrified clay it should be to BS EN 295-1, Hepworth 'Supersleve' or equivalent.
- Where drainage pipework is plastic i.e. PVC-U it shall be to BS EN 1401-1 Osma or equivalent. Private pipework to be type SN4 and all adoptable pipework to be type SN8.
- Where drainage pipework is cast iron it shall be to BS EN 877 and for ductile iron it shall be to BS EN 598.
- All concrete pipework, shall be to BS EN 1916 and BS 5911-1. Manholes and fittings shall be to BS 5911 parts 3 and 4 and BS EN 1917.
- All materials for adoptable drainage are to be Kitemarked as appropriate.
- All adoptable manhole covers are to be badged as appropriate i.e. 'FW' or 'SW'.
- The position of the rising main should be a minimum distance of 1.0m from kerb face to the outside of the pipe nearest the kerb. Laid with a minimum of 1.2m of cover in the road and 0.9m of cover in the footpath.
- Where drains pass through foundations or connect to manholes, flexible pipe joints are to be provided within 150mm of the face of the structure and within a further 600mm to form a rocker pipe.
- Where pipes pass through screen walls, footings or retaining walls, lintels are to be provided.
- Where pipelines pass within 1.0m of buildings or walls the foundations are to be taken down below the bottom of the trench. Where pipelines are more than 1.0m away from foundations the trench shall be backfilled with concrete up to a point that meets a 45° angle line taken from the bottom corner of the nearest foundation.
- Where depth to invert does not exceed 600mm and the pipe size does not exceed 100mm diameter, 300mm dia. polypropylene access chambers may be used. Elsewhere, proprietary polypropylene or precast concrete manholes are to be used.
- Where connections are to be made to existing manholes / sewers, invert levels, pipe sizes and orientation should be checked prior to the commencement of the works and any variance reported to the engineer immediately. Where connections are to be made on or off site the contractor is to check the line and level of any services / mains, to ensure that no clashes exist prior to works commencing.
- Where pipelines cross, each is to be surrounded with grade ST4 mass concrete for a distance not less than 1.0m centred on the crossing point. Length of surround to be extended as necessary to within 150mm of the next nearest flexible joints.
- For adoptable drainage, a reinforced concrete cover slab is to be provided where the effective cover to the crown of the adopted pipe(s) is less than 0.9m in verges or 1.2m in carriageways and / or footpaths. Where effective cover is 1.0m or less in carriageways and / or footpaths, pipework will need to be ductile iron (ie. Stanton Pam St. Gobain type "Integral").
- For private drainage, concrete protection is to be provided where the effective cover to the crown of the pipe(s) is less than 1.2m in trafficked areas and 0.6m in soft landscaped or pedestrianised areas.
- 'Effective cover' is the minimum depth of cover over the pipe crown at any time during the construction process.
- All adopted foul drainage to be located a minimum of 1.2m finished depth to soffit. Unless specifically identified as otherwise with relevant protective measures.
- The contractor is to ensure that protective measures are taken to ensure that drainage pipework and fittings are not damaged by site traffic prior to oversite filling operations being completed around buildings.
- The top run of each private foul drainage network is to be laid to falls no slacker than 1:40. the head of each run is to be vented to atmosphere in accordance with approved document H.
- All surface water drainage to be min 100mm dia. laid at a gradient no slacker than 1/80. And all foul water drainage to be min 100mm dia. unless stated otherwise.
- The contractor is to ensure that all pipework connections are arranged to direct flows down or into the main channel of the main flow. Where necessary 3/4 bends are to be used on oblique connections inside the manhole benching where sufficient room exists or the pipelines on oblique connections are arranged outside the chamber to be able to divert flows down the main channel. Connections brought in perpendicular to the main channel are not acceptable. Where possible the main channel flow shall be from any connections with WC's to ensure a flush through the main channel is achieved.
- The contractor is to ensure that when preformed polypropylene manhole bases are used that they are orientated such that the main flow is through the main channel of the base. this should be achieved by incorporating long radius bends outside of the manhole.
- Any connection into a public sewer is to be inspected by the local water authority and carried out fully in accordance with their requirements. The contractor is to allow for obtaining the appropriate 'connection to a public sewer' forms and paying all necessary fees.
- The contractor is to allow for obtaining the appropriate road opening licences from the local highway authority and paying all necessary fees for any works associated with off-site sewer connections. All reinstatement works within the public highway are to be carried out in accordance with the requirements of the local highway authority.
- The contractors attention is drawn to the need to ensure that any trenches excavated through previously compacted filled areas, in particular under the building footprint and immediately around the outside, are re-compacted to ensure localised differential settlement does not occur.
- Package pumping station(s) to be 'specify manufacturer and references' or equivalent. For installation guidance refer to manufacturer's specification. Any vent pipe to be taken to a position agreed with the architect. A three phase electricity supply is required to provide power to the control panel of the pumping station. The control panel, if external, is to be located inside a kiosk within close proximity of the pumping station. If internally located within a building, the control panel may be incorporated on a wall. Localised re-grading of the ground around the pumping station may be required to accommodate new levels. An informative notice plaque should be located on or near the control panel stating 'in the event of the alarm sounding or warning light flashing please contact the number below 'insert contact telephone number'.
- Drainage channel(s) to be 'ACO MD100' or equivalent. For installation guidance refer to the manufacturer's specification. Refer to landscape architects details for surfacing treatments around units where applicable. Where channels are indicated as in-built falls the relevant units are to be incorporated to provide the necessary length of channel gradient from the head of the run to the sump unit.
- Modular crate attenuation tank system(s) to be 'Wavin Aquacell' or equivalent.

P3	24.05.16	Updated with revised architects information	MJR
P2	09.05.16	St Mary's Rd Connection Omitted	MJR
P1	28.04.16	Drawn	MJR
Rev.	Date	Description	Issued By

Preliminary

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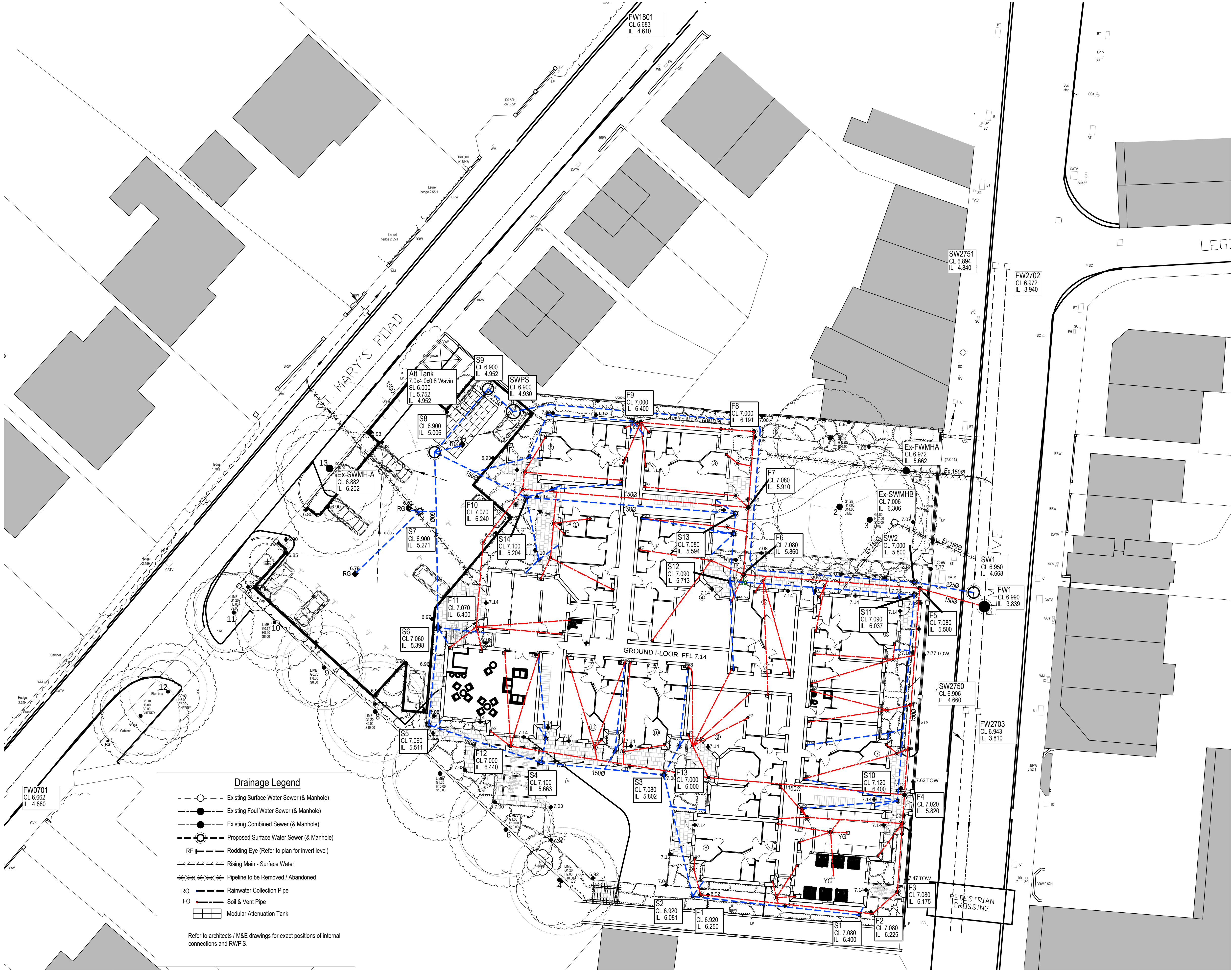
CONSULTING STRUCTURAL CIVIL AND ENVIRONMENTAL ENGINEERS

ADDRESS : 2nd Floor, Jonsen House, 43 Commercial Road, Poole, Dorset BH14 0HU
T: 0044 1202 237237 W: www.calcinotto.co.uk E: admin@calcinotto.co.uk

Client.	McCarthy & Stone
Project Title.	Elm Grove, Hayling Island
Drawing Title.	Proposed Drainage Plan

Drawn by	MJR	Project No.	Drwg No. [Rev]
Scale	1:200	JB-3216	001 P3
Date	Apr' 16		

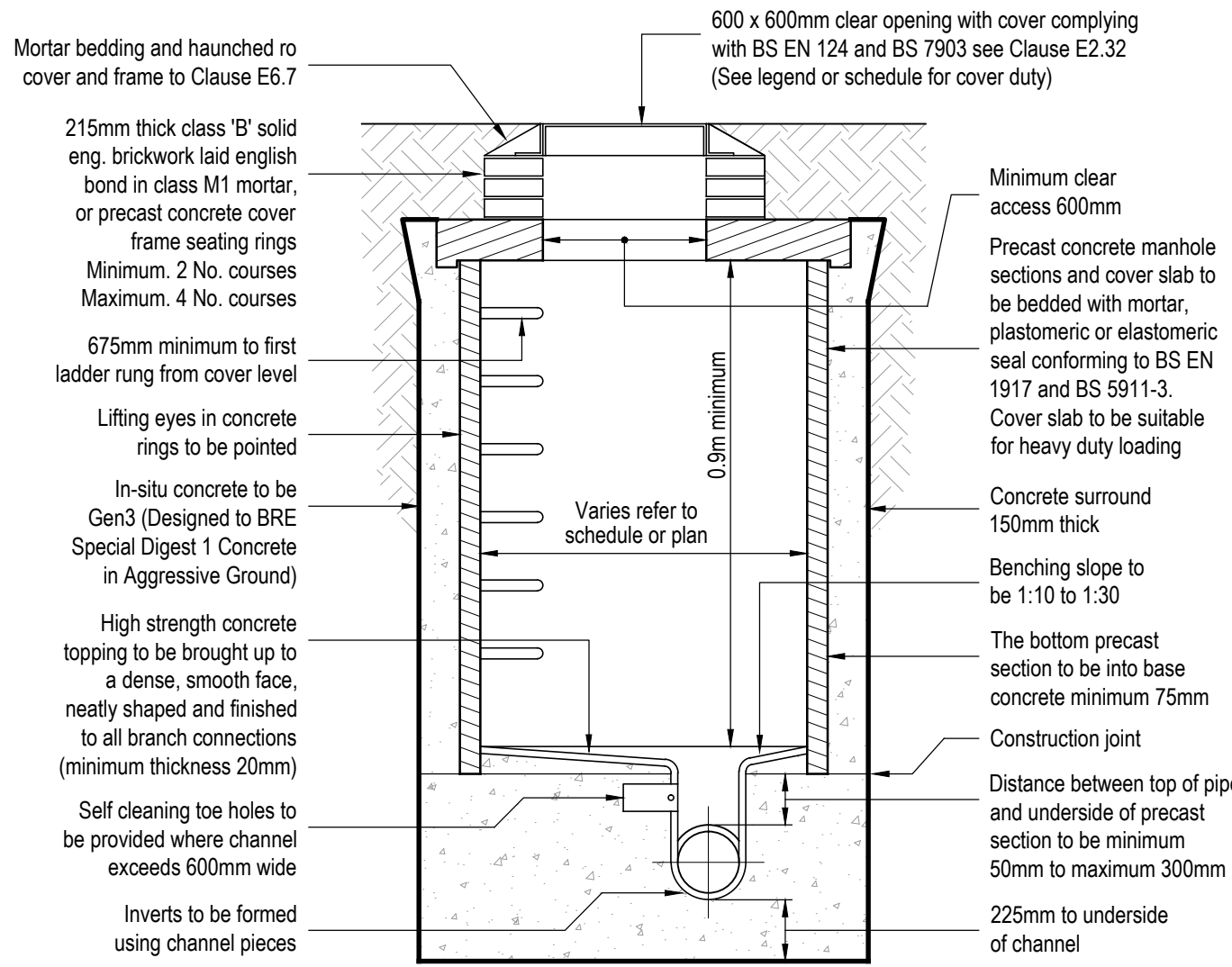
The Preliminary layout is based on assumed outlet positions will be subject to detailed design when exact outlet positions are confirmed and final Approval by and Legal Agreement with Southern Water for a Section 106 Agreement of the proposed connections into the public Sewer



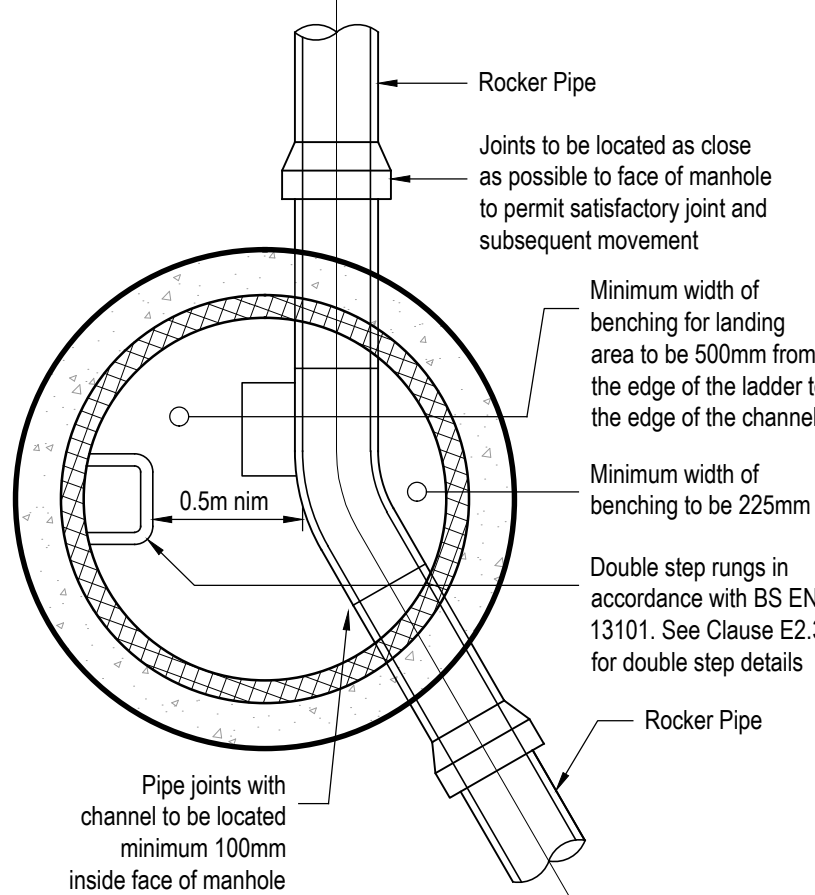
Drainage Legend

- Existing Surface Water Sewer (& Manhole)
- Existing Foul Water Sewer (& Manhole)
- Existing Combined Sewer (& Manhole)
- Proposed Surface Water Sewer (& Manhole)
- RE Rodding Eye (Refer to plan for invert level)
- Rising Main - Surface Water
- Pipeline to be Removed / Abandoned
- RO Rainwater Collection Pipe
- FO Soil & Vent Pipe
- Modular Attenuation Tank

Refer to architects / M&E drawings for exact positions of internal connections and RWPS.



Type 2 Manhole - Section Detail

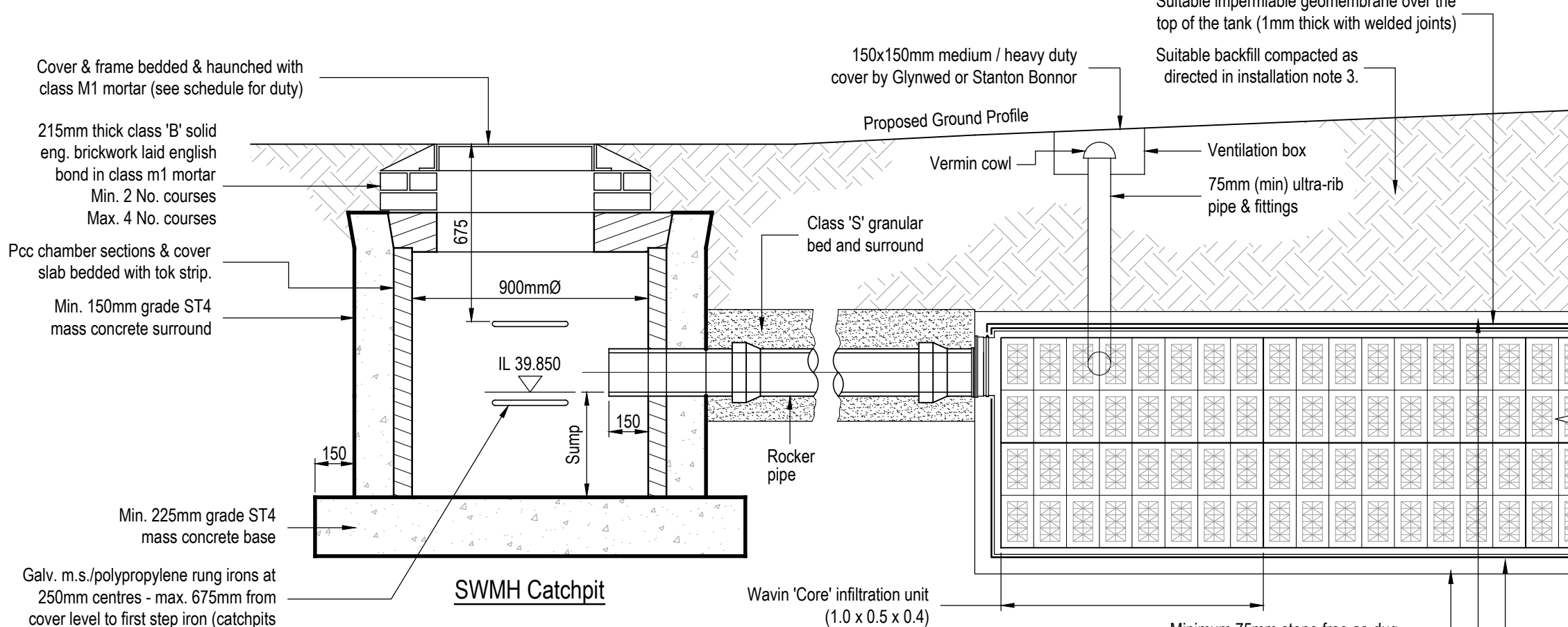


Type 2 Manhole - Plan Detail

Type 2 - P.C.C Ring Manhole Construction Detail
(Depth to Soffit = 3.0m Max)

SCALE = 1:25

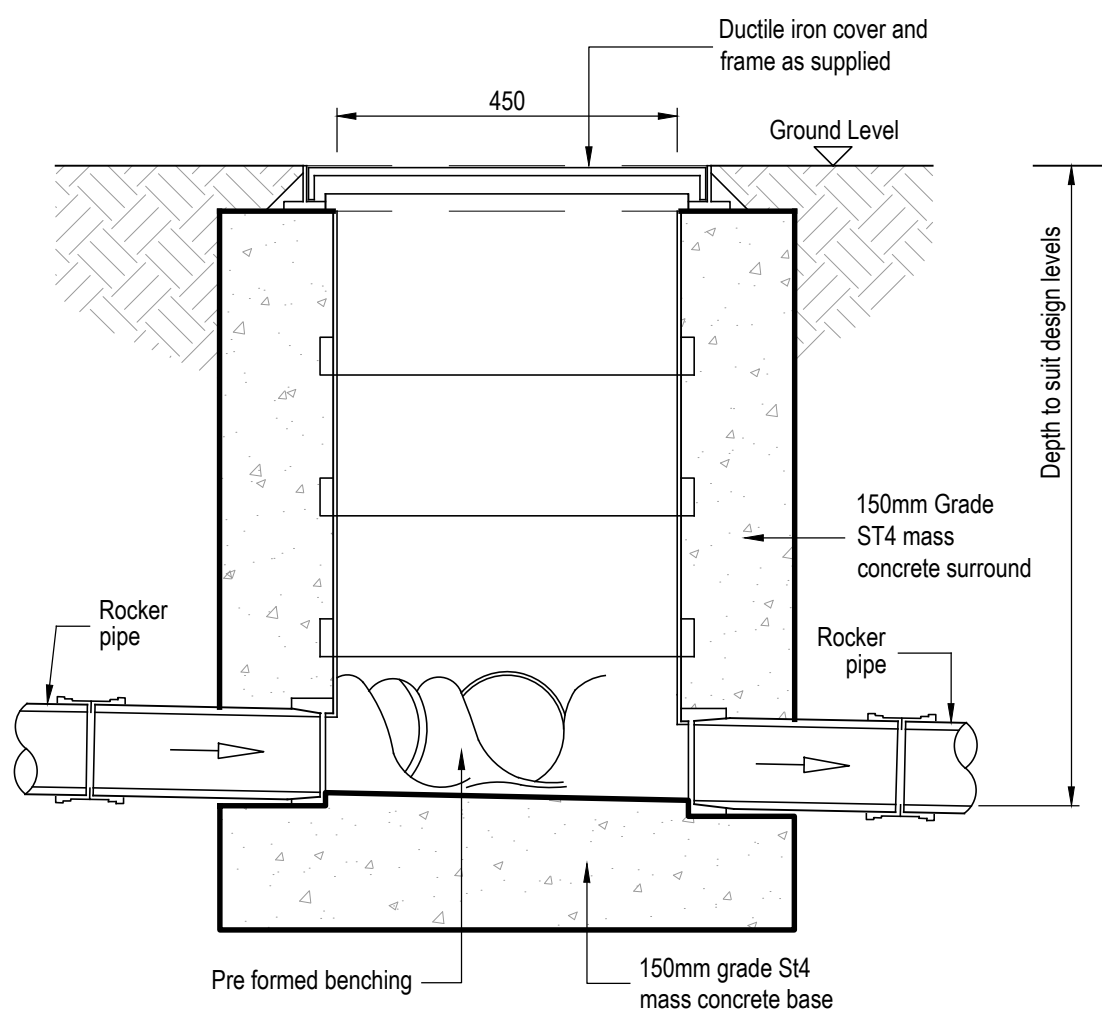
- Notes:
1. This detail is noted in accordance with Sewers for Adoption 7th Edition, please refer to this document for further information on manhole requirements and details of Clauses.
 2. Manhole opening to be located centrally over a 900mm shaft and offset approximately 200mm for a 1200mm diameter shaft with ladder.



Wavin Aquacell 'Core' Soakaway

SCALE = 1:20

Note:
This detail is for arrangement use only and does not reflect the actual on site levels.

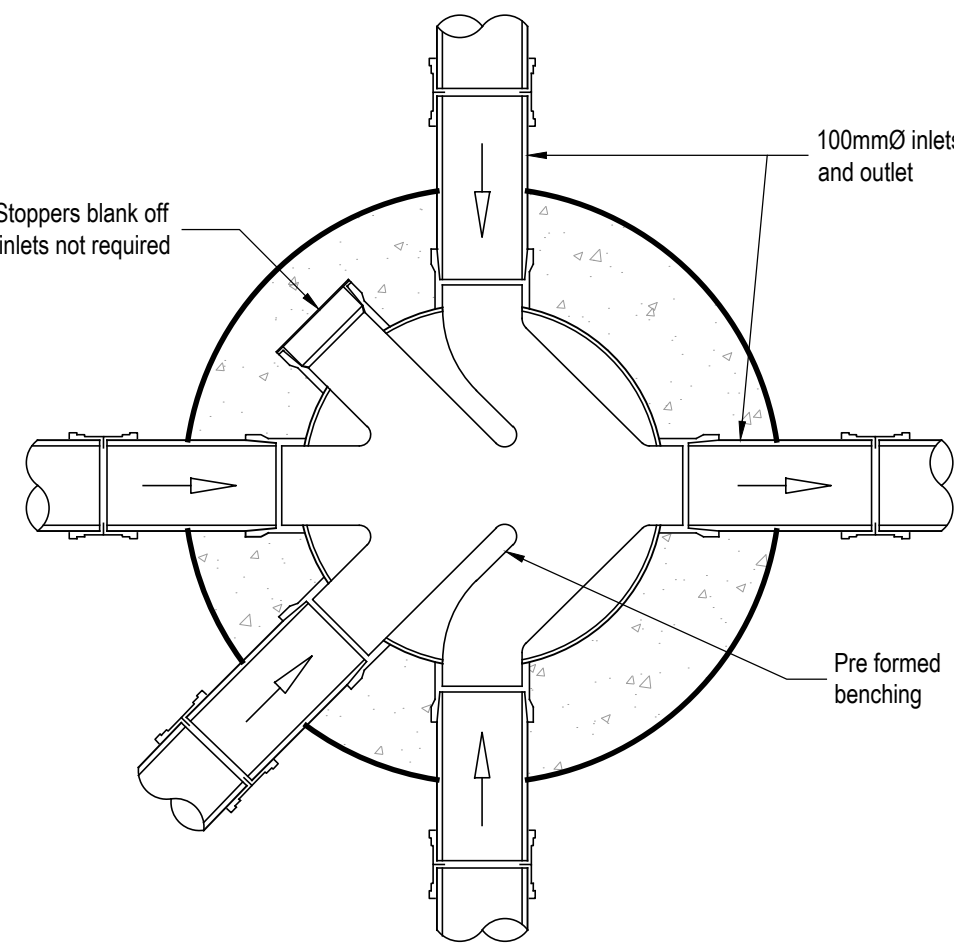


Plastic I.C Section Detail

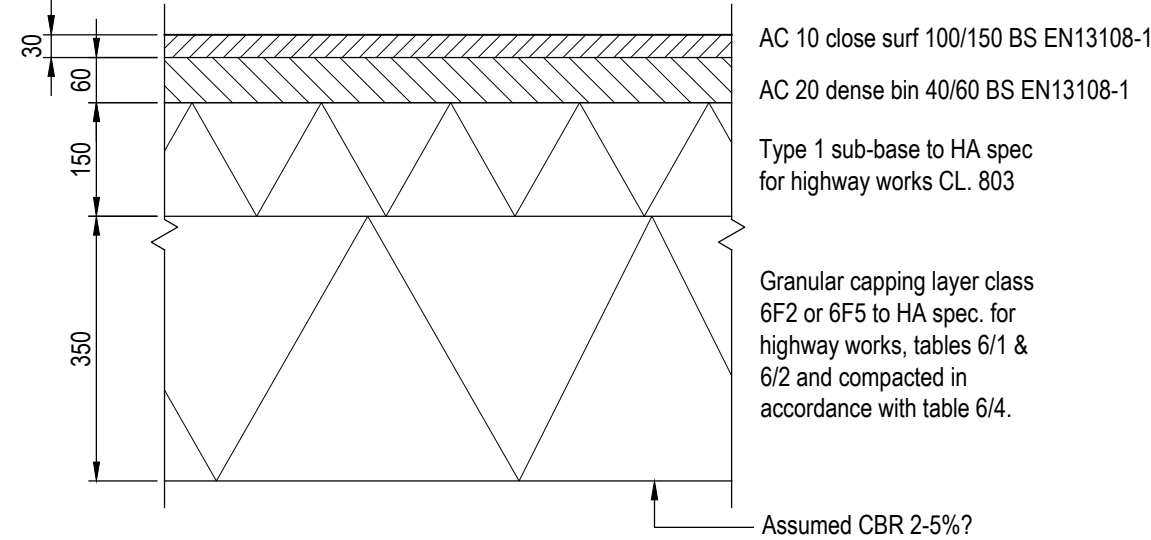
Private Drainage
Plastic I.C Construction Detail

SCALE = 1:10

Note:
This detail is to be used in pedestrianised areas only

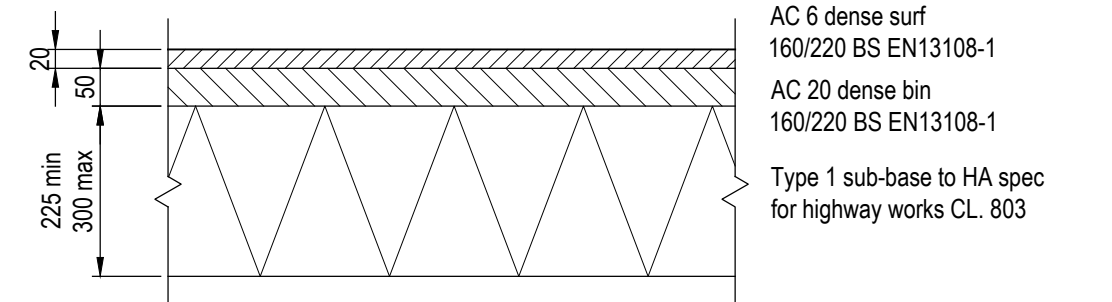


Plastic I.C Base Detail



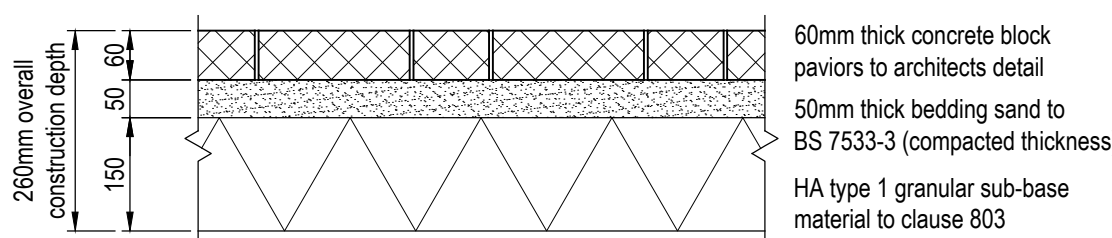
Macadam Parking Bays
Construction Detail

SCALE = 1:10



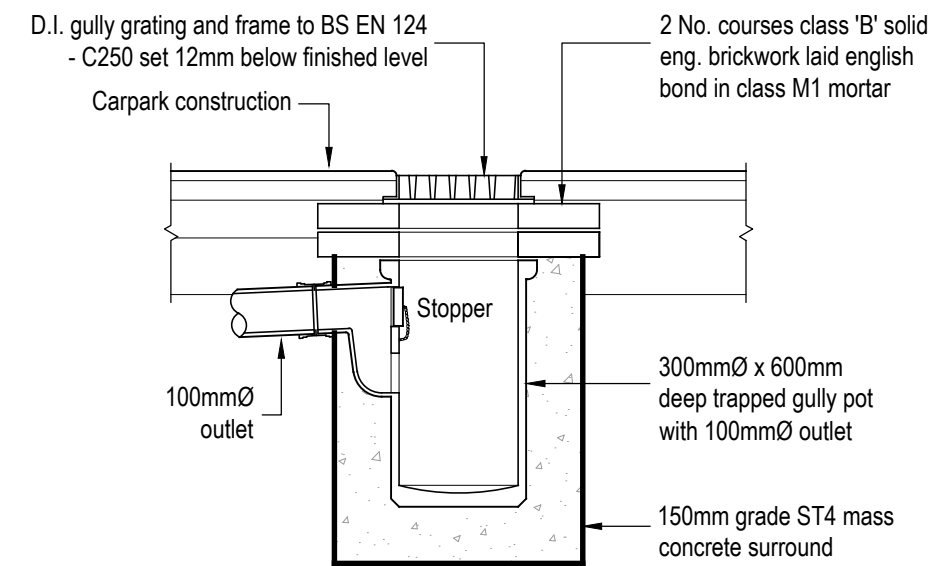
Macadam Footpath
Construction Detail

SCALE = 1:10



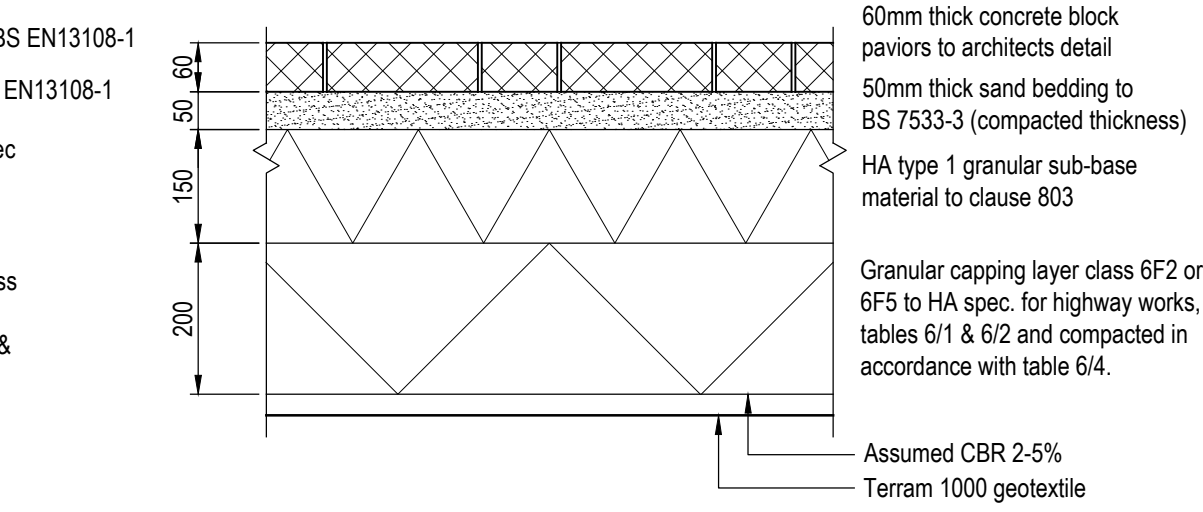
Block Paved Footpaths
Construction Detail

SCALE = 1:10



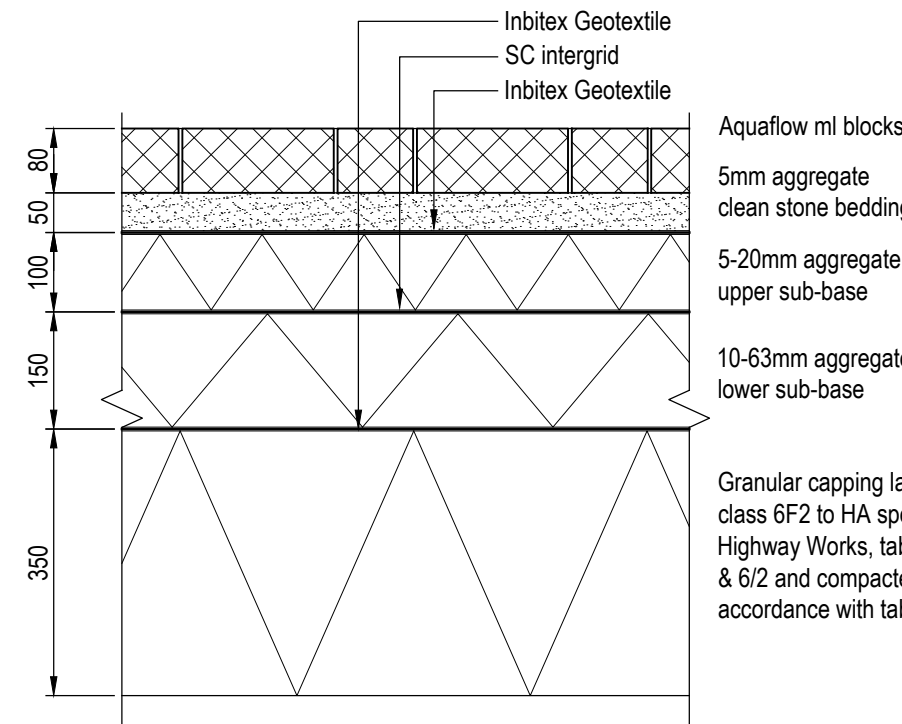
TYPICAL (VIT CLAY)
YARD GULLY DETAIL

SCALE = 1:20



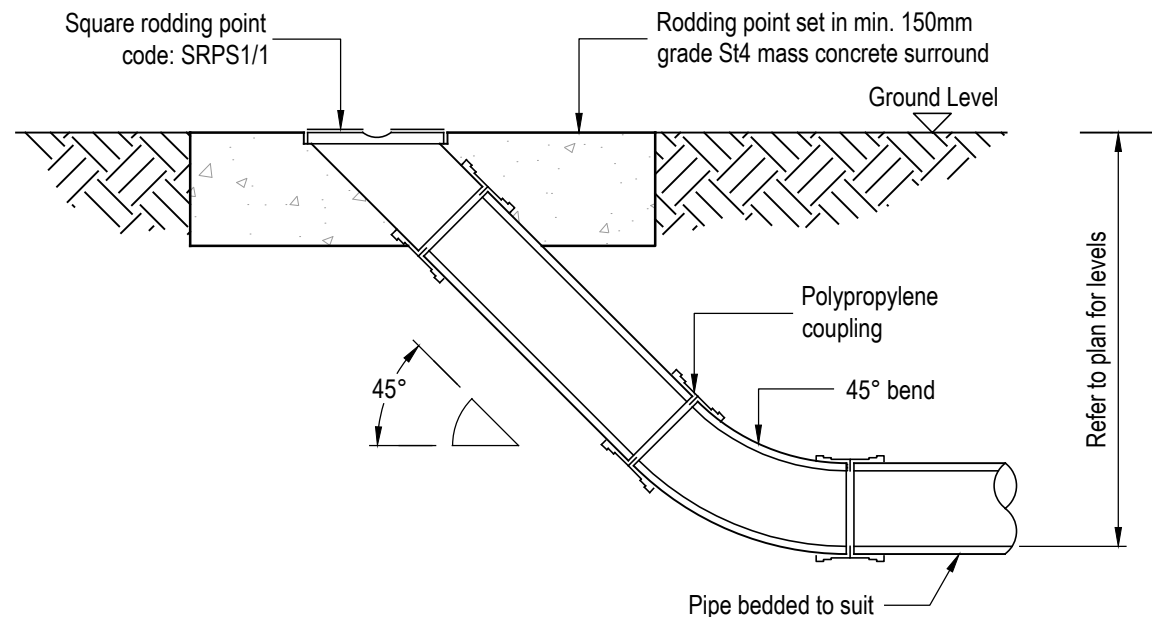
Block Paved Parking Bays / Aisles (Car Traffic Only)
Construction Detail

SCALE = 1:10



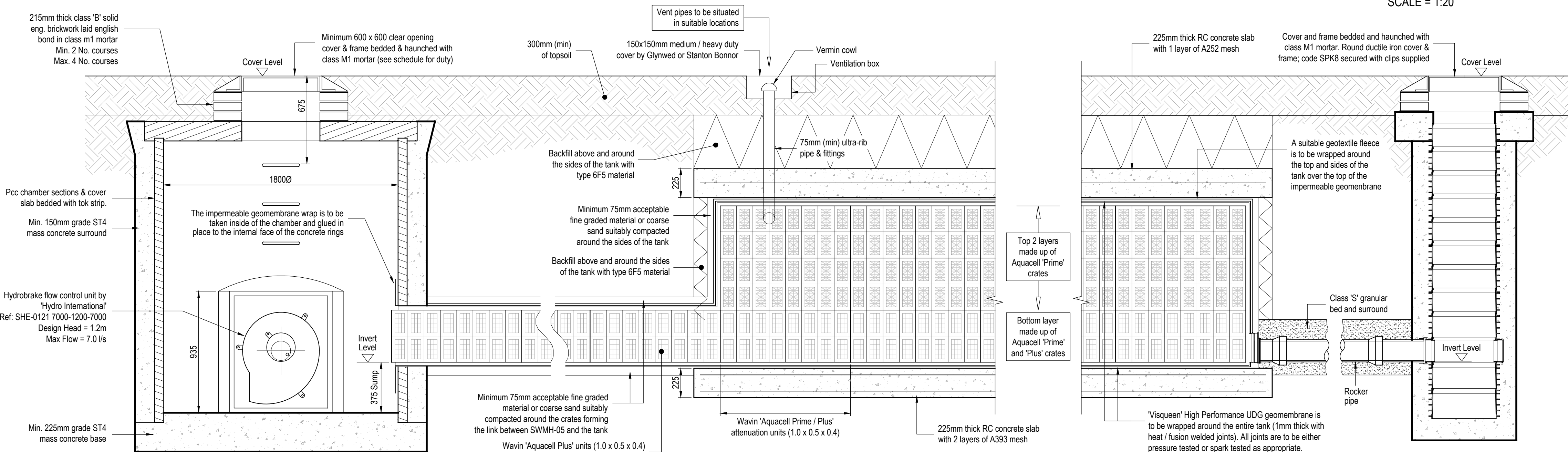
Light Duty Formpave Construction Detail
(Car Parks, Drives and Moderately Trafficked Areas)

SCALE = 1:10



Rodding Point Installation Detail

SCALE = 1:10



Wavin Aquacell 'Prime / Plus' Attenuation Tank

SCALE = 1:20

- Note:
1. This detail is for arrangement use only and does not reflect the actual on site levels.
 2. Refer to drainage plans for pipe arrangements, tank sizes and levels.

P1	15.01.16	Drawn	MJR
Rev.	Date	Description	Issued By

Information Only

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CONSULTING STRUCTURAL CIVIL AND ENVIRONMENTAL ENGINEERS

ADDRESS: 2nd Floor, Jonsen House, 43 Commercial Road, Poole, Dorset BH14 0HU
T: 0044 1202 237237 **W:** www.calcinotto.co.uk **E:** admin@calcinotto.co.uk

Client: **McCarthy & Stone**

Project Title: **Hayling Billy Site**

Drawing Title:

Typical Construction Details

Drawn by	MJR	Project No.	Drwg No. [Rev]
Scale	As Shown	3216	050 P1
Date	Jan'16		