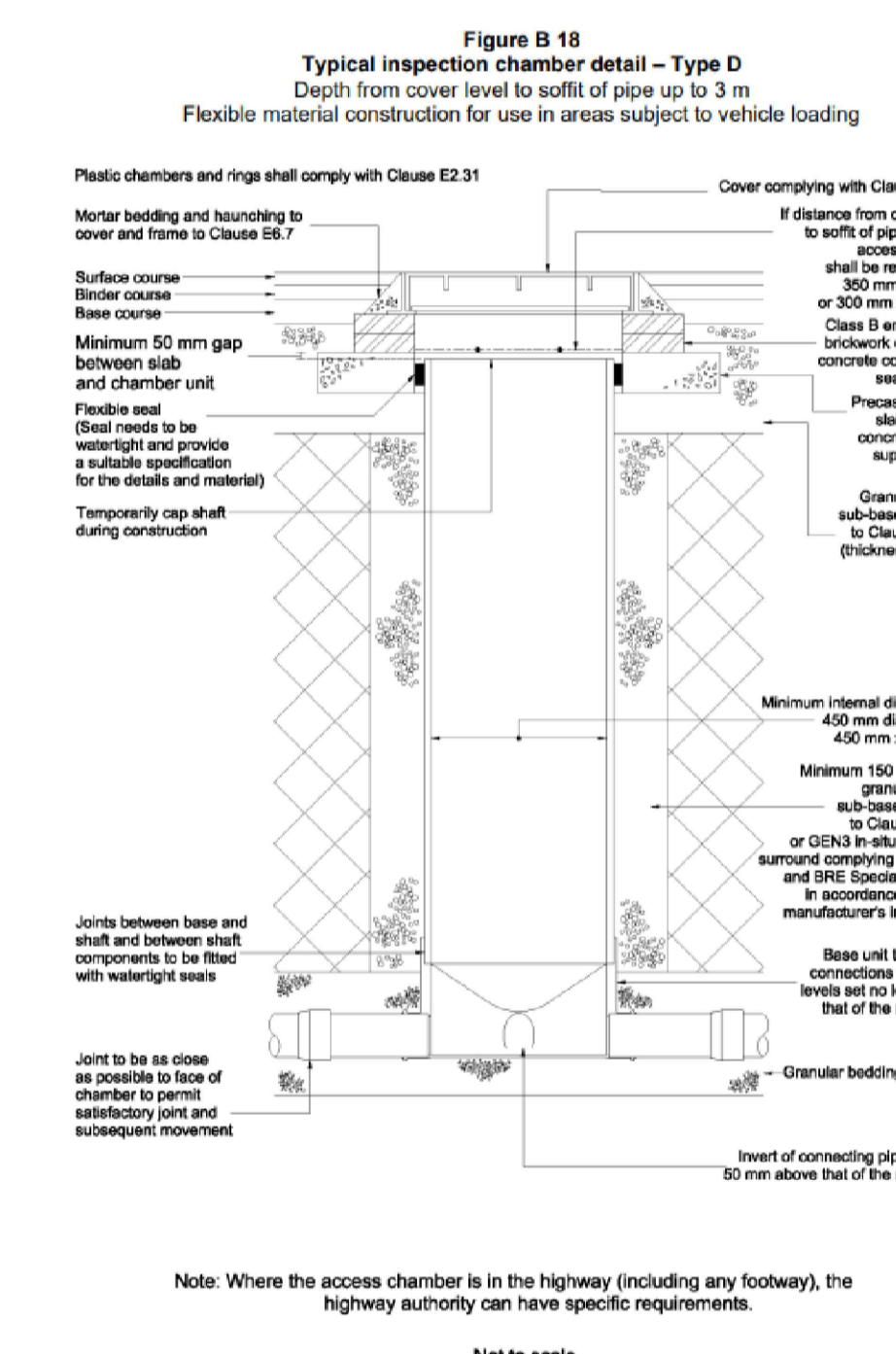


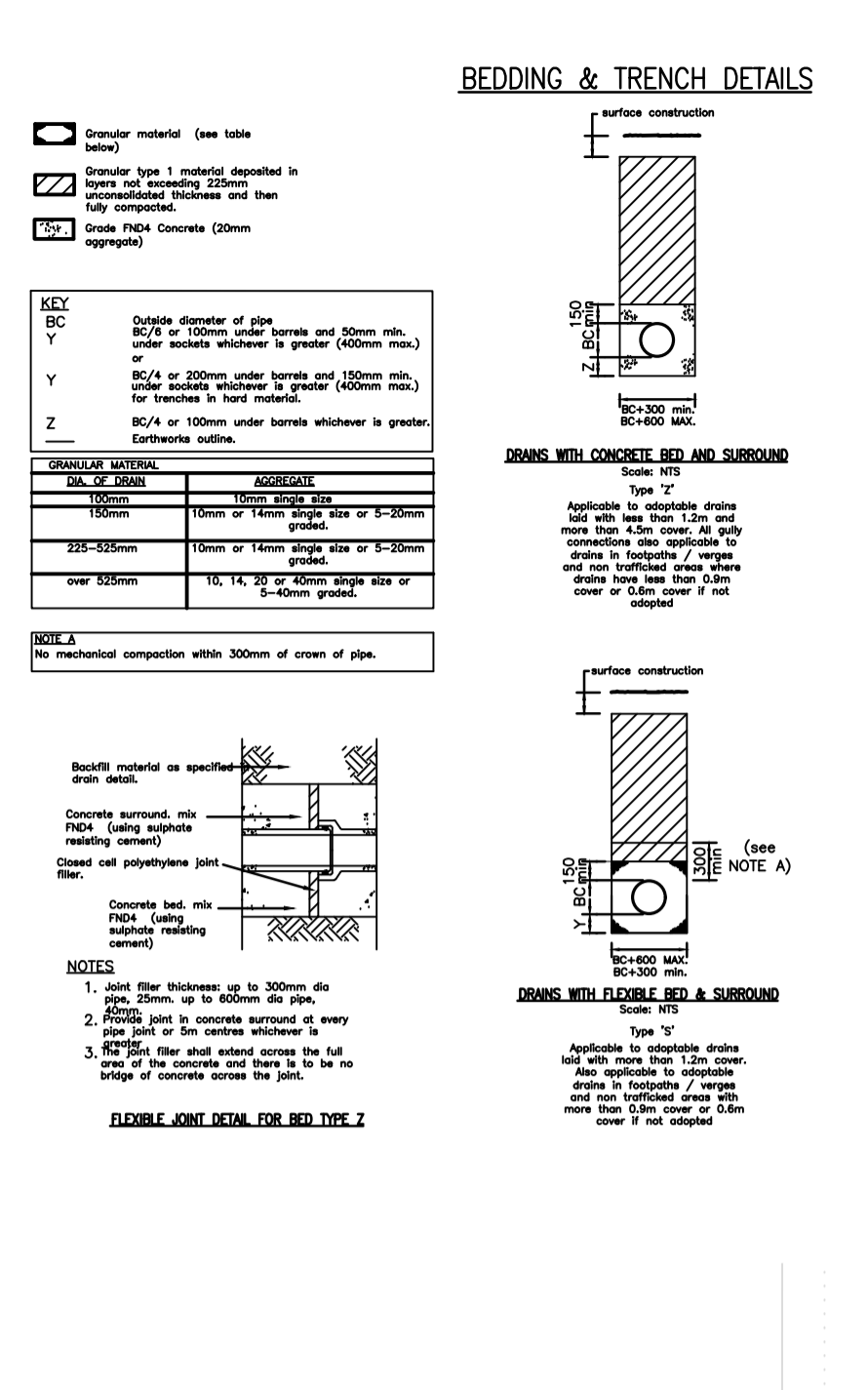
Graf Ecobloc Max detail - Crate Attenuation



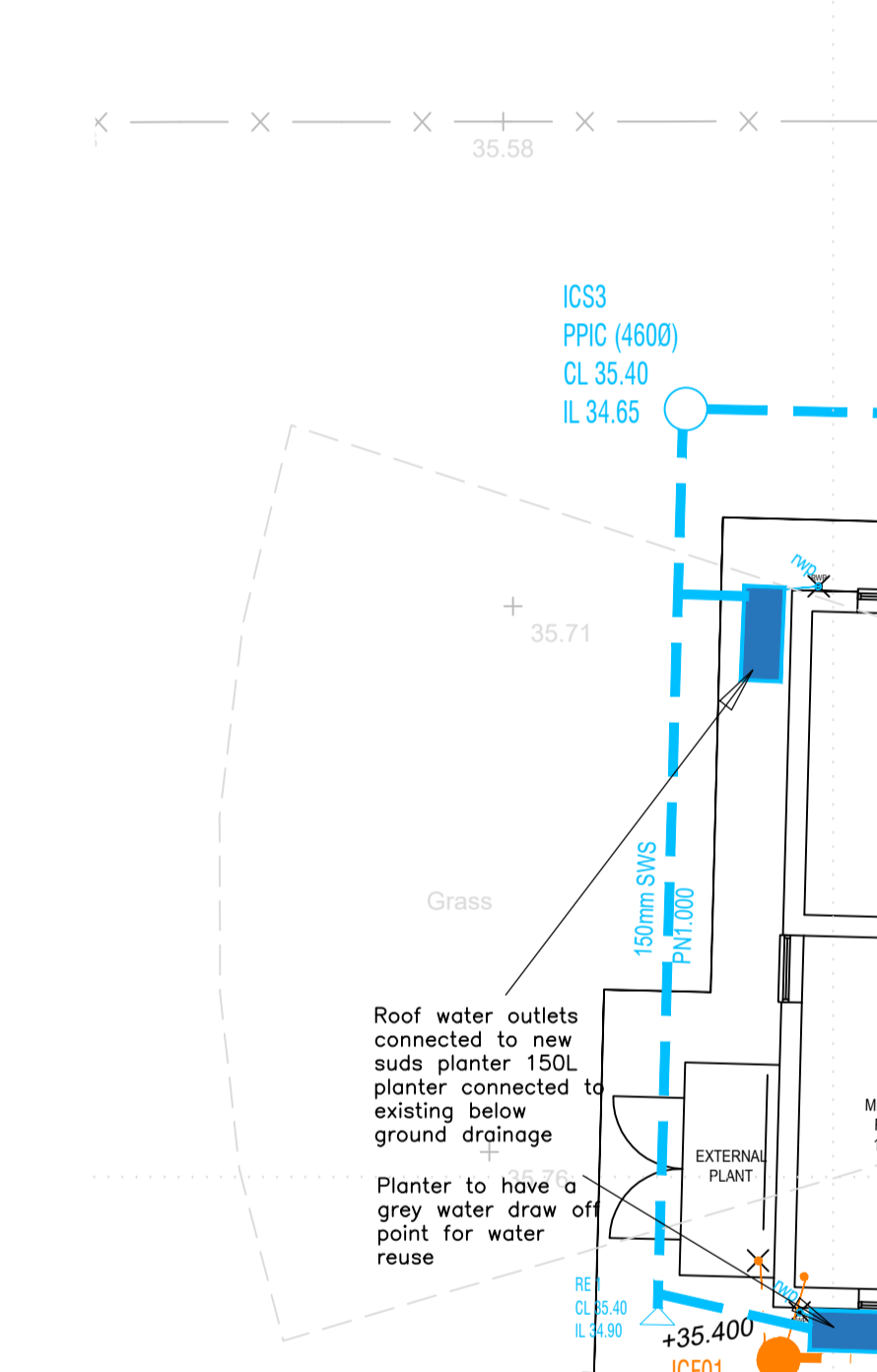
PPIC chamber details



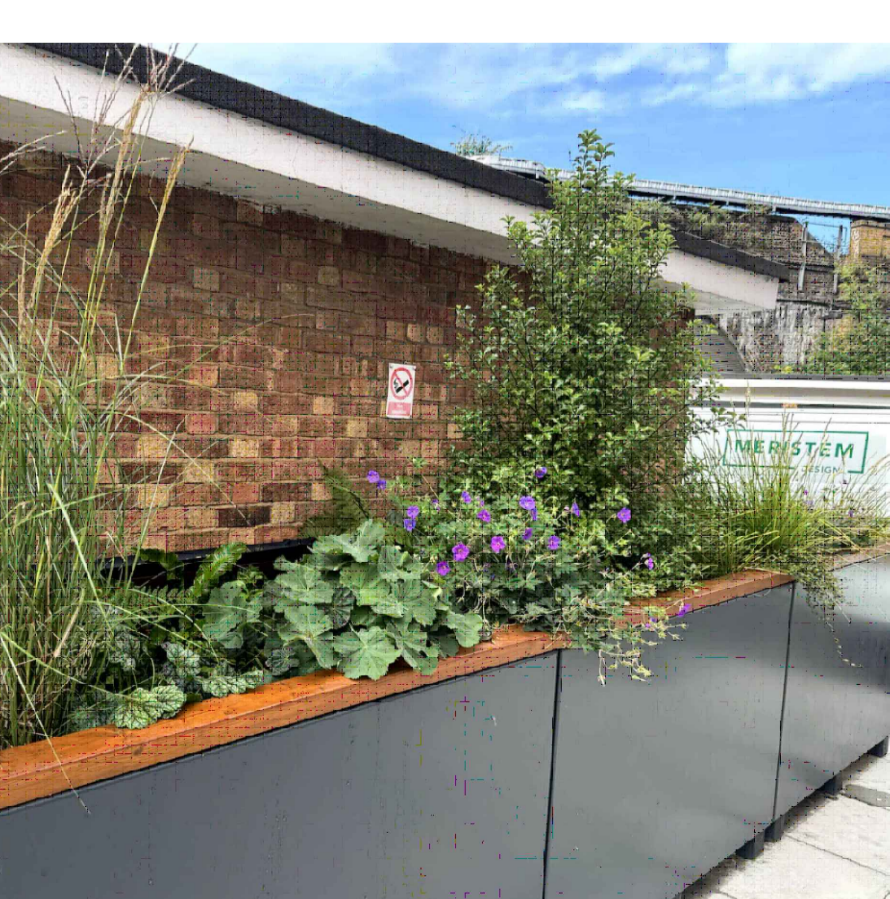
300L Rain water Suds planter example



GRAF Ecobloc Max detail - 1-lagig komplett



Proposed Surface Water Drainage Strategy - 1:125



Sizing your SuDSplanter\*

**Attenuation tank 1**  
 Surface water attenuation unit to be provided.  
 Crate units. 11.5m<sup>3</sup> storage volume. minimal/no infiltration assumed.  
 Minimum 650mm cover depth (12T) size currently based on 350mm deep crate units, 95% void ratio.  
 Graf Eco Max range 350mm deep crates (2layers) or similar approved. (with base plate)  
 Crate size noted: 2.4m x 7.2m x 0.70m (800mm x 800mm x 350mm crate units)  
 BOT - 33.85  
 TOT - 34.55  
 CL - 35.20 min  
 10% urban creep allowed to SW calculations

attenuation based on 100 year storm event and 40% climate change allowance.

**ACO Q-Brake detail - Flow Control Unit**  
 For circular chamber  
 For flat walled chamber  
 1. Construct the chamber that is to house the ACO Q-Brake. Note that if the chamber has a curved wall (e.g. a concrete ring manhole), the diameter of the chamber should be specified on the order for the ACO Q-Brake.  
 2. The base of the chamber must be at a level 200mm below the bottom of the ACO Q-Brake. When the chamber base is benched, there must be a sump at the location of the unit, 200mm below the bottom of the unit as shown on the sketch.  
 3. Offer the ACO Q-Brake unit up to the outlet pipe. Ensure the unit is upright (arrow pointing vertically up). Mark the position of the fixing holes on the chamber wall. Remove the unit and drill the fixing holes to suit the M12 bolts supplied with the unit. (Note bolts are Rawlplug R30PT-Q stainless steel M12 bolts requiring a hole 13mm diameter and 60mm deep).  
 4. Place bolts into the drilled holes. Locate the ACO Q-Brake onto the bolts (again check it is upright). Ensure that the gasket is flat against the wall. Fit the nuts and tighten them to pull the unit against the gasket and seal it against the wall.  
 5. Fix the two wire guide rings (supplied) to the chamber wall, one approximately mid height and one just under the access cover. Thread the bypass door lifting wire through the rings. Adjust the length of the wire by fixing the handle in the correct position and cutting the cable to length.

Connection into existing sewer, contractor to review outfall conditions and confirm position and outfall level at least 1 week prior to construction work starting.

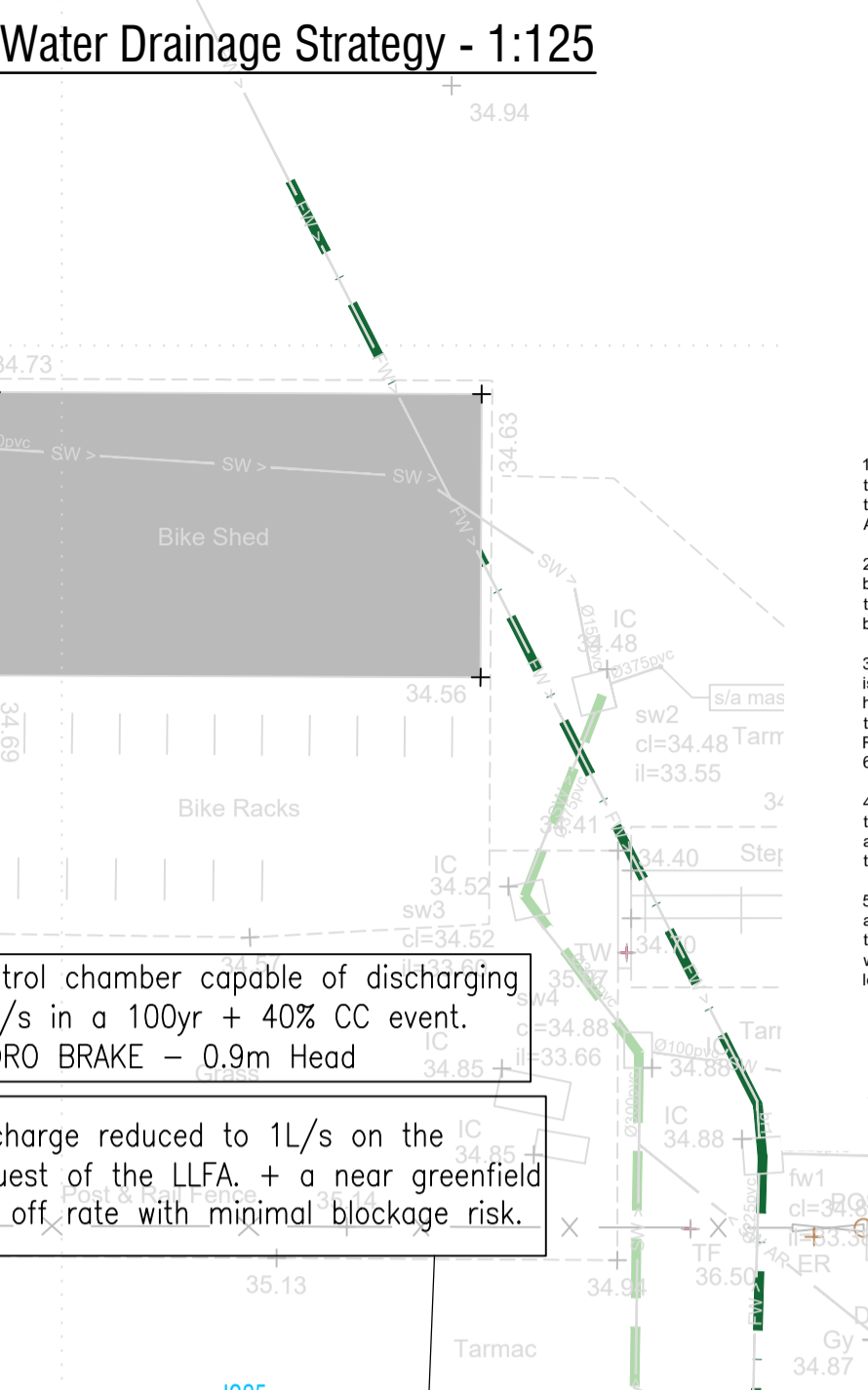
Connection to existing sewer Junction connection - connection level = 33.75

Connection into existing sewer, contractor to review outfall conditions and confirm position and outfall level at least 1 week prior to construction work starting.

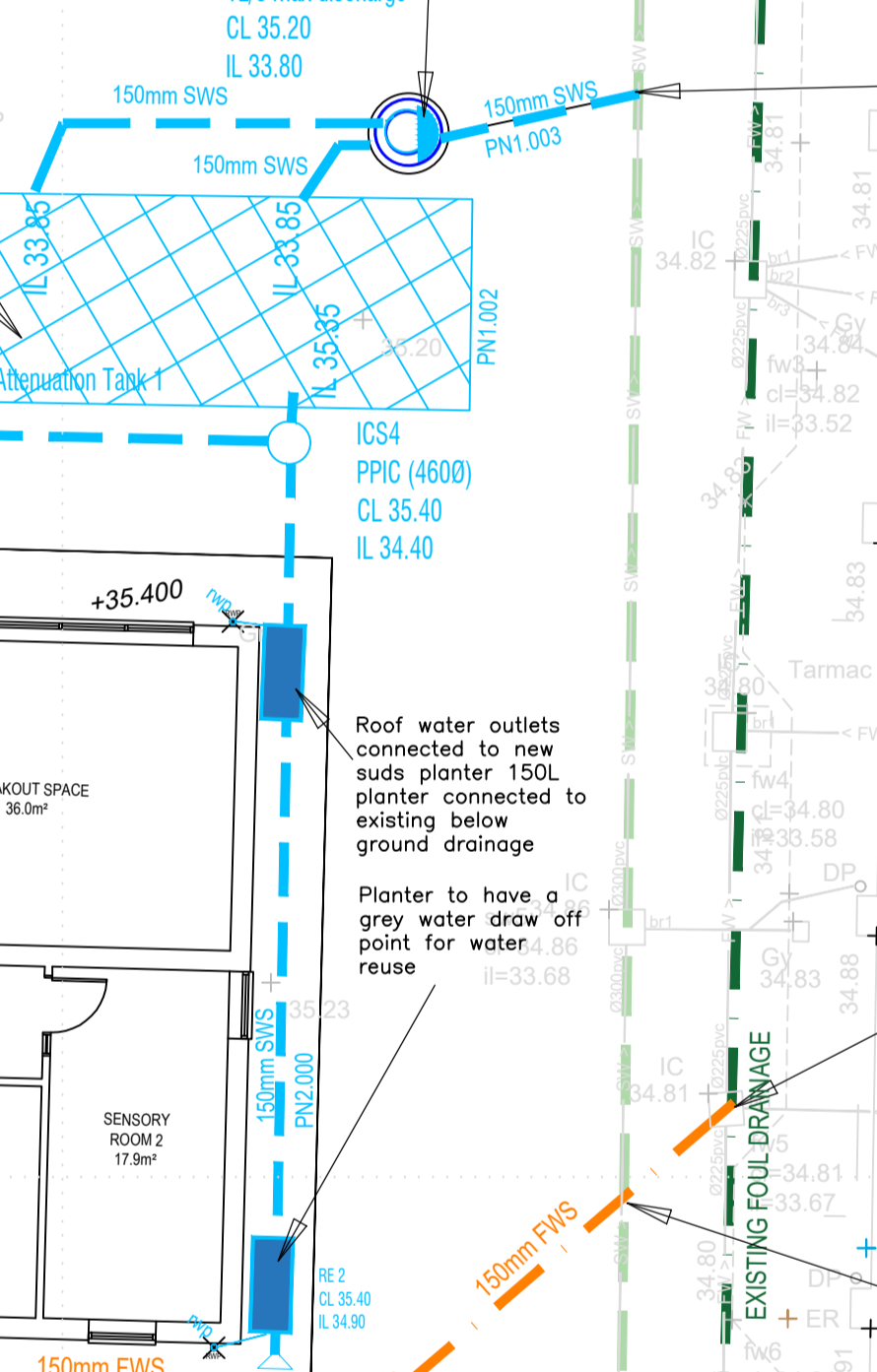
Connection to existing sewer Junction/MH connection - connection level = 33.75

contractor to check for clash prior to starting, raise foul connection over Ex storm pipe as required

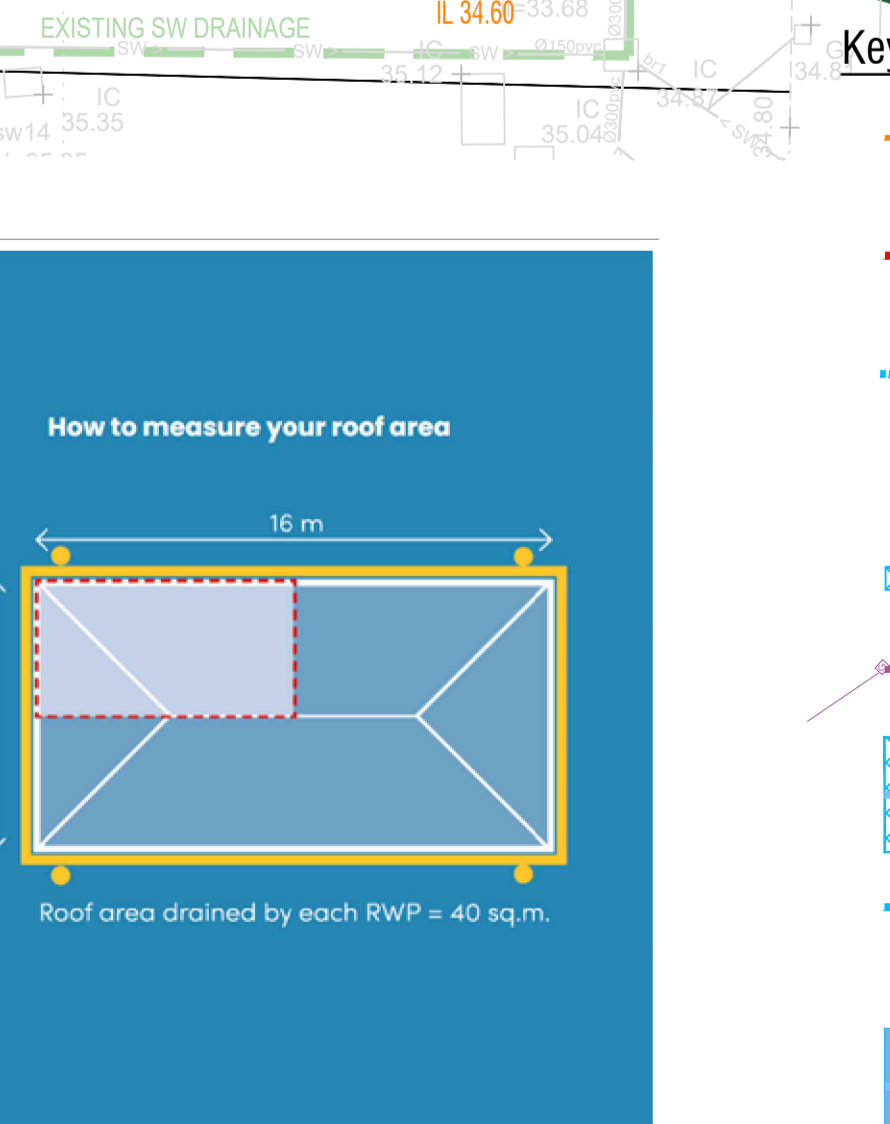
Planter Size	Storage (litres)	Receiving Area (m <sup>2</sup> )
Extra Small	150	Up to 30
Small	300	Up to 40
Medium	400	Up to 70
Large	500	Up to 100
Extra Large	900	Up to 150



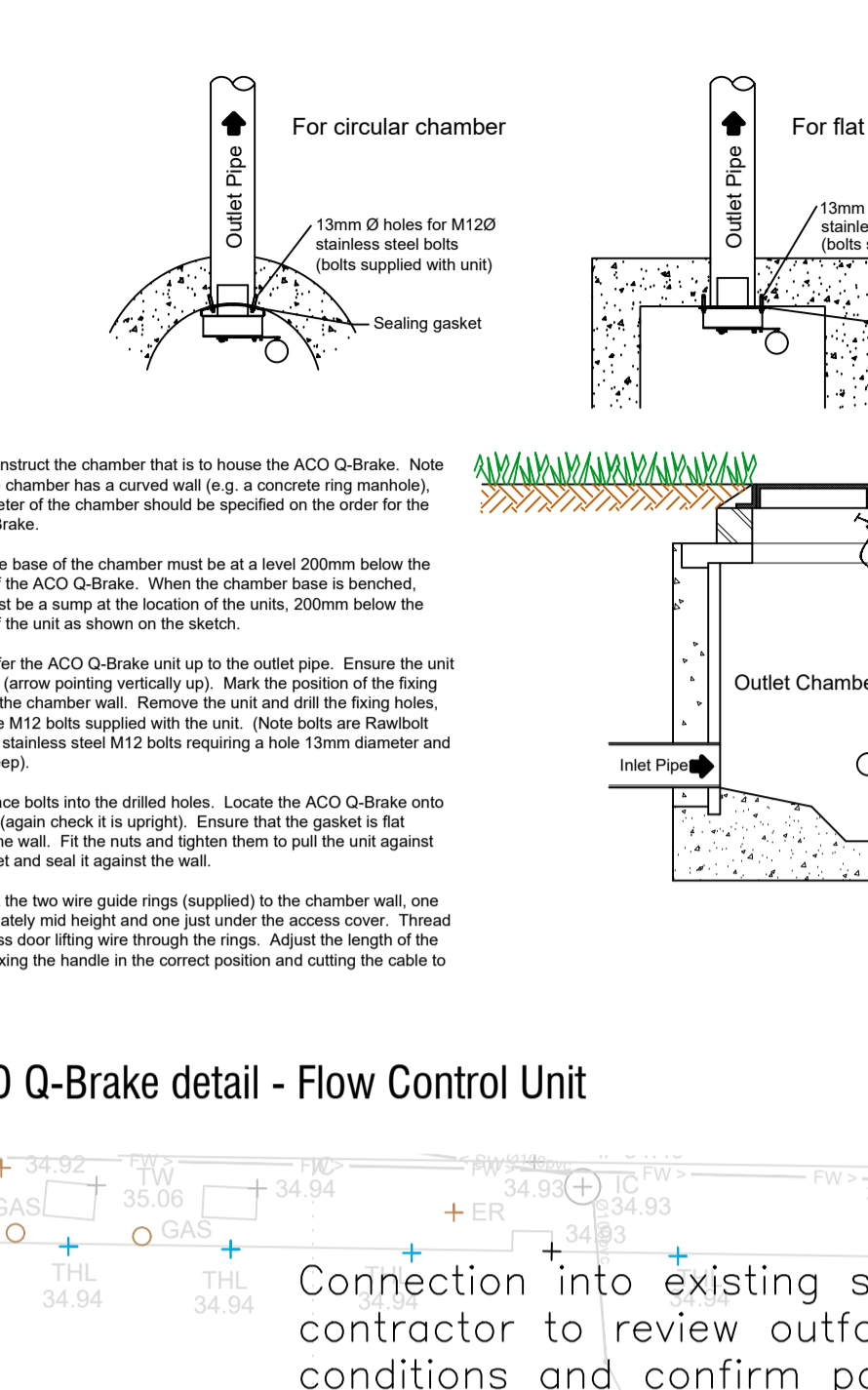
Key.



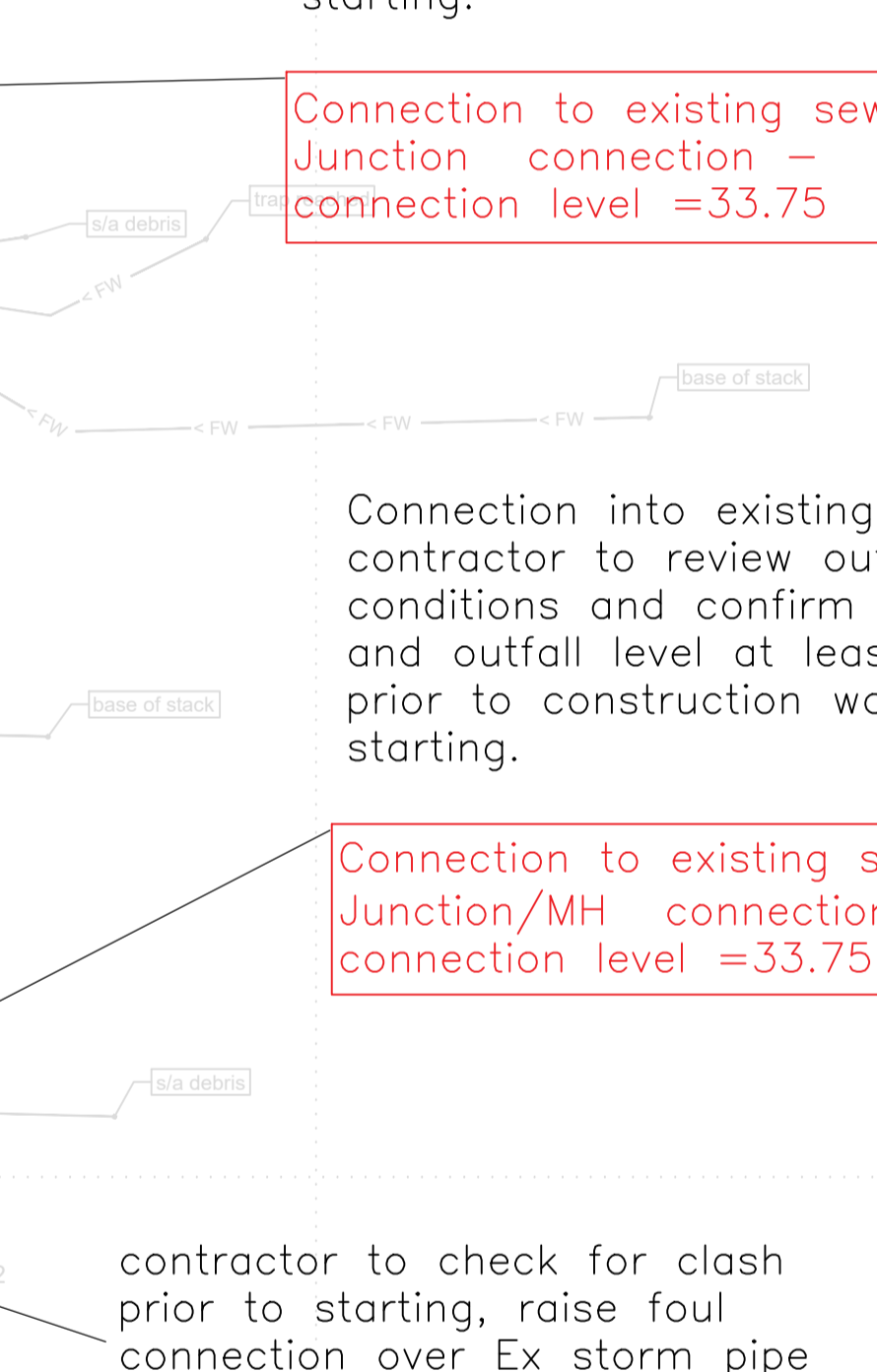
Drainage Design Subject to confirmation on proposed finished site levels and surface finishing. + infiltration testing



How to measure your roof area



ACO Q-Brake detail - Flow Control Unit



Connection into existing sewer, contractor to review outfall conditions and confirm position and outfall level at least 1 week prior to construction work starting.

Connection to existing sewer Junction connection - connection level = 33.75

Connection into existing sewer, contractor to review outfall conditions and confirm position and outfall level at least 1 week prior to construction work starting.

Connection to existing sewer Junction/MH connection - connection level = 33.75

contractor to check for clash prior to starting, raise foul connection over Ex storm pipe as required

Rev	Date	Amendments	By	Chk
P01	10.08.25	For approval - initial issue		BD

ST Bebe's Catholic Voluntary Academy  
 Collum Ave, Scunthorpe, DN16 2TF

**General Notes**  
 Do not scale this drawing. If in doubt, consult with the Engineer.  
 1. This drawing is to be read in conjunction with all other relevant Engineers, Architects and Specialist design drawings and specifications.  
 2. All dimensions and levels are in metres unless noted otherwise.  
 3. This drawing is for information purposes and all information displayed is subject to detailed design.  
 4. Cover levels noted are indicative or best design levels. Constructed levels should take into account as-built surfacing levels and gradients.  
 5. The Contractor shall be responsible for checking all fit-ins for line and level with existing foul and surface water systems before commencing any works.  
 6. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works. All work is to be carried out in accordance with current British Standards, Building Regulations and NHBC Standards.  
 7. All drainage work is to be strictly in accordance with the requirements of the Building Regulations 2010, Approved Document Part H, "Drainage and waste disposal".  
 8. It is the responsibility of the Contractor to ensure the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974, and the C.D.M. Regulations 2015. The Contractor will be deemed to have allowed for full compliance, including full liaison with the Principle Contractor, within his rates.  
 9. All existing land drains encountered on site during construction are to be re-connected.  
 10. Should any departure from the proposed slab or external levels be considered, agreement shall be sought from the Engineer immediately and prior to the commencement or continuation of any works. Proposals should take full account of all restrictions to the slab level.  
 11. Temporary protection to be provided to drainage work during construction as necessary.  
 12. Power supply to separator/treatment units, alarm, panel, vent etc to be provided by contractor in accordance with manufacturers recommendations.  
 13. Topographical survey shown is based upon - Clear View Surveys existing site plan  
 14. Architects layout shown is based upon Make Consult site 1485-MAKE-ZZ-XX-DR-A-1600 This layout may be subject to change and is intended for indicative purposes only.

**Specification Notes**  
 15. The following types of pipe may be used unless noted or agreed otherwise:  
 • Pipes up to 300mm diameter to be Structured Wall to BS EN 13476, Polypropylene to BS EN 1852 or PVC-U to BS EN 1401.  
 • Pipes 300mm diameter or over to be Concrete to BS 5911.  
 16. Both Clay and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 28kN/m<sup>2</sup>). Thermoplastic pipes shall have a minimum ring stiffness of SN4.  
 17. Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.23 to 2.25.  
 18. All pipes, chambers and fittings shall be installed, bedded and backfilled in accordance with the manufacturers instructions subject to the following minimum requirements:

Pipe Location	Cover to crown	Clay/Concrete Pipe Bedding	Plastic Pipe Bedding	Backfill
Roads (HGV)	>1.2m <1.2m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete)	Type 1 Granular
Drives / car parking	>0.9m <0.9m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete)	Type 1 Granular
Hard and soft Landscaping	>0.6m <0.6m	Class S Class 'A' (Concrete)	Class S (S1or2) Class 'A' (Concrete)	Suitable as dug material

19. The first flexible joint in pipes adjoining a manhole shall be a maximum length of 600mm from the inside face of the manhole, connecting to a rocker pipe. The length of the rocker pipe shall be as follows:

Pipe diameter	Length of Rocker pipe
150-600mm	600mm
675-750mm	1000mm
over 750mm	1250mm

20. All manholes and inspection chambers situated in areas subject to vehicular loading to have class B400 covers and frames to BS EN124 and those not subject to vehicular loading to have class minimum class B125 covers and frames.

21. Drainage frames must be tied to manhole risers by use of manufacturers tie (eg. Polyprop ref FRK500 fixing kit and FRK501 black ties). The ground works contractor will be held fully responsible for any accidents due to incorrect fitting or failure to use the correct manufacturers fixing equipment.

22. All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of NHBC Practice Note 3.

Rev	Date	Amendments	By	Chk
P01	10.08.25	For approval - initial issue		BD

ST Bebe's Catholic Voluntary Academy  
 Collum Ave, Scunthorpe, DN16 2TF

Below Ground Drainage Strategy

Engineer



Client

Our Lady of Lourdes Catholic Multi-Academy Trust

Status

INFORMATION/APPROVAL

Scale	Drawn	Checked	Date
1:126	BD	CW	11.08.25

Drawing Number

25165-HWC-00-xx-DR-C-2000

BIM Drawing Reference

N/A

Copyright © Howard Wynne Consulting Engineering