

TYPICAL SECTION THROUGH RODDING EYE

N.T.S.

Concrete Support

Rodding Eye Terminal

UG402 Coupling

UG403 Double socket bend

Polypipe or similar approved rodding eye at head of each drainage run

2.000m MAX

TYPICAL PLAN AND SECTION THROUGH POLYPIPE OR SIMILAR APPROVED 280MM DIA. AND 450MM DIA. INSPECTION CHAMBERS

N.T.S.

PERMEABLE TOP LAYER OF 20mm COTSWOLD CHIPPINGS OR SIMILAR APPROVED

300MM MIN.

DEPTH - SELECTED FILL FREE FROM STONES LARGER THAN 40MM, LUMPS OF CLAY OVER 100MM, TIMBER, FROZEN MATERIAL, VEGETABLE MATTER:
NOTE: SUITABLE CONCRETE SUPPORT IF REQUIRED FOR TRAFFICED AREAS

100mm min. GRANULAR FILL FREE FROM STONES LARGER THAN 40mm

100mm GRANULAR MATERIAL- GRADED FROM 5mm to 10mm maximum

Manufacturer's details

150mm x 150mm concrete surround required for support of cover and frame where the inspection chamber is being installed on a driveway subject to light vehicular traffic. Where B125 covers are being used, the concrete support should be 300mm wide x 200mm deep

Selected site material free from stones larger than 20mm

100mm layer of granular material above crown of pipe

100mm layer of 10mm granular material below main channel of inspection chamber

Direction of flow

PLAN VIEW

1. In all installations, the main channel of the inspection chamber should always be used. Where the chamber is being used as a change of direction for the drainage system, short radius bends of 15°, 30° and 45° can be used in the inlet and outlet to achieve the required angle.

2. Side inlet branch connections enter the inspection chamber approx. 50mm above the invert of the main channel.

3. 300mm dia. chambers are supplied with 2no. blanking plugs for the side inlets and 400mm dia. chambers are supplied with 3no. blanking plugs.

BRANCH PIPE INLETS BLANKING PLATES INSTALLED WHERE REQUIRED

INLET

OUTLET

INSPECTION CHAMBER PLAN

TYPICAL SECTION THOUGH ATTENUATION TANKS

N.T.S.

PERMEABLE TOP LAYER OF 20mm COTSWOLD CHIPPINGS OR SIMILAR APPROVED

Previous surface (chippings) on 350mm DOT Type 3 Sub-base Fully wrapped in Polypipe or similar approved permeable Geotextile Attenuation area:

Permavoid crates are sufficient for expected vehicle loadings based as per Polypipe recommendations. 50m² plan area of 300mm deep Permavoid Modular cell 150, geocellular interlocking system used as a replacement for aggregate sub-base, (2x 150mm deep units)

Crates stacked 2 high and interlocked to form a 300mm deep tank. Crates sides and base to be tanked using Polypipe (or similar approved) Permavoid Geomembrane impermeable liner to create a rainwater attenuation tank. The Permavoid tanks shall be backfilled with an initial layer minimum 50mm thick of 20/6 clean crushed stone or sand to BS EN 13242:2002 with 300mm thick DOT Type 3 aggregate layer- refer to notes below.

INLET: 110mm dia. uPVC inlet pipe laid to min. 1:80mm fall

150mm TANKING OVERLAP TO TOP

varies

50

300

Notes from Manufacturers: Attenuation applications

Joining of membrane shall be formed using fusion or extrusion bead welding in accordance with manufacturing recommendations. Double sided tape may be used when specifically requested by the contractor and when advised by Polypipe technical department. Adjacent sheets to be lap jointed with a minimum overlap of 300mm or heat sealed. Corners to be formed in folded welts and heat sealed if required. Ensure geotextile is clean and free from debris before installing Permavoid.

Where required, all penetrations through an impermeable encapsulation shall be sealed. Create an impermeable seal using a preformed spigot connector with a weldable membrane. The adaptors comprise a rigid body and spigot with a flexible outer membrane manufactured from compatible material to the geomembrane encapsulating the tank. Adaptors are available as invert or standard type and come in a range of diameters. The adaptors are fully welded to the main tank encapsulation. All joints should be sealed, using proprietary techniques recommended by the manufacturer. Advice on seam testing procedures is given in CIRIA Report SP124.

Protection: Permatex protection geotextile should be installed to the outside face of the base, top and sides of the installation as protection layer to geomembrane. Trafficking over laid material to be kept to a minimum. It is recommended that site vehicle traffic is prevented from trafficking the Permavoid tanks until the installation is complete.

Backfilling: The Permavoid tanks shall be backfilled with an initial layer minimum 50mm thick of 20/6 clean crushed stone or sand to BS EN 13242:2002. The preferred method of aggregate placement is for the plant to be situated on top of a minimum of 300mm thick aggregate layer. Recommended plant to be used for placement of the aggregate to be a tracked machine with a maximum operating bearing pressure of 200kN/m². Wheeled machines to have low bearing pressure tyres (maximum permitted pressure 30psi), maximum tread/cleat projection 15mm. Under no circumstances should plant operate in direct contact with Permavoid units.

TYPICAL SECTION THROUGH POLYPIPE RIDIGID TORM ADVANCED
SILT TRAP- 460mm diameter
N.T.S.

Removable
Fine Mesh Filter

OUTLET
BS EN 1401-1
Ø160mm
Outlet Coupler

546

Ø460

386

BS EN 1401-1 Ø1
or Ø160mm Inlet
Coupler

Removable
Silt Bucket

BS EN

826

520

440

Removable
filter

Removable silt
bucket

Polypipe or similar approved inspection chamber with silt trap 460mm diameter

Fine Mesh Filter

Silt Bucket

BS EN 1401-1 Ø110mm
or Ø160mm Outlet
Coupler

BS EN 1401-1 Ø110mm
or Ø160mm Inlet
Coupler

Ø460

715

TYPICAL DETAILS OF PROTECTED ORIFICE CHAMBER AND HEADWALL SECTION

N.T.S.

Polypipe Permavoid Orifice Plate Flow control Chamber 500mm dia. With Perforated riser. Discharge limitations are normally achieved by the incorporation of prefabricated orifice plate flow control devices, fitted with removable filters to protect the orifices. These are sized to suit the permitted discharge rate and the size of the subcatchment using standard hydraulic theory.

Attenuation tanks

Cover Level 5.90

Cover Level 5.85

Mahole cover

Invert Level at Outflow 4.88

Invert Level 4.9

True Ditch Base Level 4.15

Road Level - Maypole Lane 4.76

Steel spikes to hook over top of bagwork

70 degree max. angle

Invert level 4.85

50mm

110mm

690mm

SEE DETAIL 11- 710/O4 FOR ELEVATION

Bedding on min 50mm granulated material with paving slab- Backfill in Granulated material

Backfill behind bagwork to be placed and tamped as work proceeds

Apron- min. two layers of bagwork Unsuitable material in foundation to be excavated and backfilled with ST4 concrete

50-100mm thick PCC paving slab laid on class 1 mortar bed

Notes:

- Bags shall be of Hexanix and shall be of a size to provide a wall thickness of 500mm.
- Concrete bagwork shall be to Clause S19 and be three quarter filled with 25mm slump ST4 concrete immediately prior to placing with the ends square.
- The bags shall be placed in a modified Flemish bond so as to "break joint" with the mouths away from the surface and be lapped into position to form a rectangular block.
- Extent of outer protection to be the greater of 1500mm or pipe diameter + 1200mm spanning the outlet pipe.
- Headwall design may need to be adjusted to on site conditions following approval from ADC Engineer.
- Ditch to be regressed as requested.
- All exposed pipework to be certified UV stable.
- Pipe details to be as specified on supporting drawings.

Orifice Ø (mm)	Depth to Orifice centre line (m) from top of water	Predicted Flow Rate (l/s)
10	0.10	0.13
15	0.15	0.31
20	0.20	0.58
25	0.25	0.98
30	0.30	1.38
40	0.40	2.58
50	0.50	3.92
60	0.60	4.80
70	0.70	6.30

NOTE: Discharge coefficient assumed to be 0.6
Figures shown in the table above are for guidance purposes only.

TYPICAL DETAILS OF GREEN ROOF AT EAVES

N.T.S.

Labels in the diagram include:

- GROWTH MEDIUM WITH PLANTINGS
- FILTER FABRIC
- OPTIONAL RESERVOIR LAYER
- MOISTURE RETENTION LAYER
- AERATION LAYER
- SEDUM ROOF FROM SEDUMGREENROOF.CO.UK
- PPC lightweight aluminium edge trim to retain green roof system
- Square profile PPC aluminium gutter and downpipes from Alumasc sized area
- 15 degree roof slope
- SIPS PANELS
- Alumasc PPC aluminium fascia and soffit profiles

SECTION THROUGH EXISTING CULVERT AT ROAD CROSSING

N.T.S.

- Type 3 MOT fully wrapped in geotextile membrane
- Slab spanning to undisturbed ground
- Min. 50mm cover to A142 reinforcing mesh on top bottom and sides
- ST4 300mm reinforced concrete slab to SE specifications
- 150mm min. spacing to u/s of slab
- 225mm uPVC drainage
- pipe on granular bedding

Project:		Rev.	Amendments	By	Chkd	Date	Notes:	Scale:	Drawn By:	Date:
Land Adjacent to Lake Barn, Maypole Lane, Yapton, Arundel, West Sussex BN19 0DR		A	Updates following request from Paul Cann	BC	RS	15 May 2020	1. All dimensions and levels must be verified on site prior to construction. 2. Do not scale from this drawing. 3. All discrepancies to be reported to the architect before carrying out work. 4. Read with other contract documents. 5. If in doubt ask. 6. This drawing is copyright.	N.T.S	BC	30/04/'20
Drawing Title:	Drawing Status:							Project:	Drawing No.	Revision
DRAINAGE	DISCHARGE OF CONDITIONS							MAY01	710/02 A	A
RAINWATER	APPLICATION									