NOMINAL INTERNAL DIA DN (mm)	ASSUMED EXTERNAL DIA Bc (mm)	ASSUMED MAX. PERMISSIBLE TRENCH WIDTH Bd (mm)	DIMENSION 'Y' FOR UNIFORM SOILS (mm)
100	130	550	150
150	190	600	150

NOMINAL MAXIMUM AGGREGATE SIZE OF STONE (mm) TO BS 882 GRADING		
PIPE BORE (mm)	AGGREGATE TYPE	GRANULAR BEDDING CLASS 'B' or 'S'
100	SINGLE SIZE GRADED	10 N/A
150	SINGLE SIZE GRADED	10 or 14 5 - 14

NOTES:
1. 25mm EXPANSION JOINT MATERIAL TO FULL AREA OF CONCRETE BED & SURROUND AT ALL PIPE JOINTS

2. FINAL FORMATION TO BE DISHED TO GIVE FULL DEPTH OF CONCRETE BED AROUND PIPE COLLAR.

3. WHEN USING CONCRETE REFER TO THE SOIL REPORT FOR SULPHATE CONTENT.

4. ALL TRENCH FILL MATERIAL MUST BE INERT.

5. CONTRACTOR TO SUPPLY GRADING CERTIFICATES FOR ALL GRANULAR MATERIAL TO PROJECT MANAGER FOR APPROVAL.

25mm EXPANSION JOINT MATERIAL TO FULL AREA OF CONCRETE BED & SURROUND AT ALL PIPE JOINTS

FINAL FORMATION TO BE DISHED TO GIVE FULL DEPTH OF CONCRETE BED AROUND PIPE COLLAR

ROOT PROTECTION

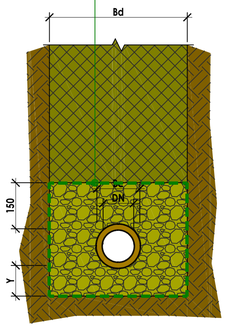
WHERE SHOWN, IF THE MAIN DRAINAGE LAYOUT INDICATES ROOT PROTECTION ADD ROOT BARRIER AS SPECIFIED AROUND THE CLASS S DETAIL.

BACKFILL WITH APPROVED AS DUG SELECTED MATERIAL, WELL COMPACTED IN NO LESS THAN 200mm THICK LAYERS - REMOVE ALL VEGETATION AND STONES AND DEBRIS.

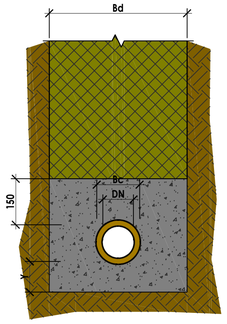
PIPE BEDDING GRANULAR MATERIAL - SEE TABLE

150mm THICK GRADE GEN1 MASS CONCRETE SURROUND

IF TREE PROTECTION IS REQUIRED USE GEO SYNTHETIC LTD 'ROOTBLOCK' ROOT BARRIER SYSTEM FITTED TO MANUFACTURERS STRICT INSTRUCTIONS

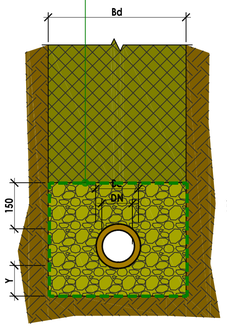


CLASS S BEDDING DETAIL (GRANULAR BED & SURROUND - WHERE GREATER THAN 0.9m - BEDDING FACTOR = 2.5)

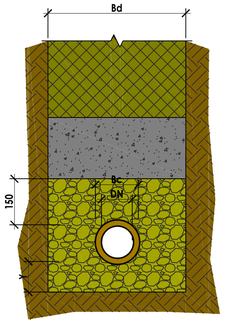


CLASS A BEDDING DETAIL (CONCRETE BED & SURROUND - WHERE COVER LESS THAN 0.9m - BEDDING FACTOR = 4.5)

IF TREE PROTECTION IS REQUIRED USE GEO SYNTHETIC LTD 'ROOTBLOCK' ROOT BARRIER SYSTEM FITTED TO MANUFACTURERS STRICT INSTRUCTIONS



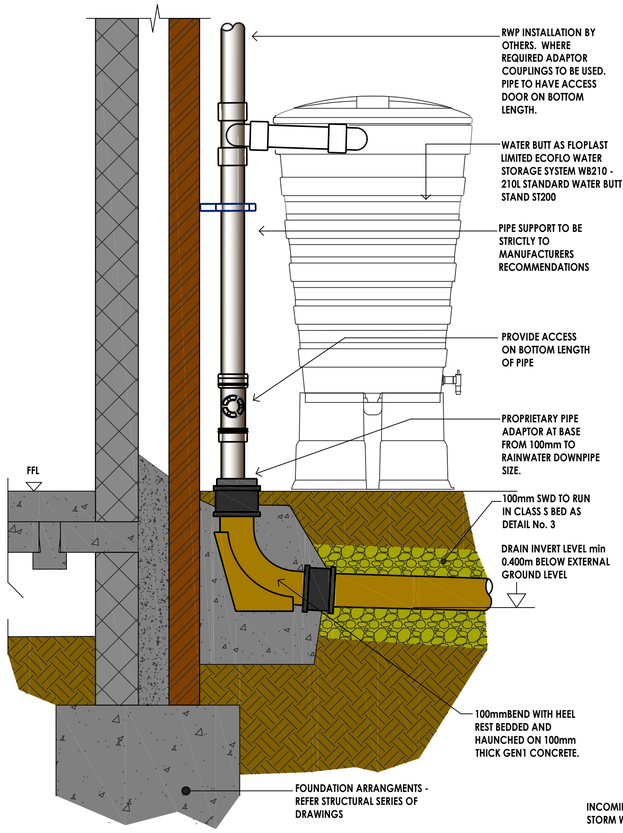
CLASS S BEDDING DETAIL (GRANULAR BED & SURROUND - WHERE GREATER THAN 0.9m - BEDDING FACTOR = 2.5)



CLASS A BEDDING DETAIL (CONCRETE BED & SURROUND - WHERE COVER LESS THAN 0.9m - BEDDING FACTOR = 4.5)

DETAIL No. 1A - EXTERNAL DRAINAGE RIGID PIPE BEDDING DETAILS - VITRIFIED CLAYWARE & CONCRETE PIPES

DETAIL No. 1B - EXTERNAL DRAINAGE FLEXIBLE PIPE BEDDING DETAILS - PLASTIC & DUCTILE IRON PIPES



DETAIL No. 2 - WATER BUTT AND EXTERNAL RAINWATER PIPE (RWP)

PROVIDE REMOVABLE 600mm DEEP BAFFLE BOARD ON CENTRE OF CHAMBER IN SLOT AND BASE GMS FINIGS BOLTED TO SIDE WALL USING GMS M12 THREADED BOLT, WASHER AND NUT. BOARD TO BE MAX 400mm FROM COVER LEVEL.

IMPORTANT NOTE:

PROVIDE 87.5° PVCu ACCESS TEE ON THE OUTLET AS OSMA 4D193 or 6D193 WITH ACCESS AS 4D292 or 6D292

OUTLET LEVEL TO BE 50mm BELOW THE INLET AND BELOW WATER LEVEL.

PROVIDE 600mm LONG ROCKER PIPE WITH FLEXIBLE CONNECTION 150mm AND 750mm FROM FACE OF CHAMBER STRUCTURE

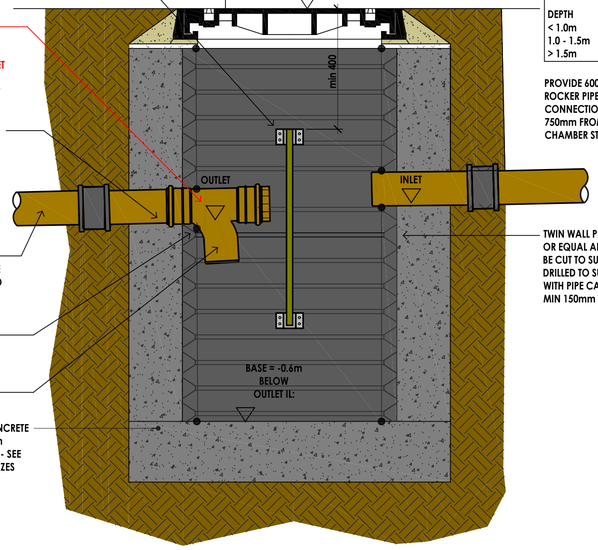
MAKE GOOD ALL HOLES AND JOINTS WITH HYDROPHILIC SEALANT.

DIPPED ACCESS TEE FOR WATER TRAP

MIN 150mm THICK ST2 CONCRETE SURROUND UPON A 200mm THICK ST2 CONCRETE BASE - SEE PROJECT DRAWINGS FOR SIZES

SEE TABLE FOR MANHOLE COVER, SIZE AND DUTY DETAILS - BED FRAME USING RESIN MORTAR ONLY

COVER LEVEL:



GENERAL SIZING OF CHAMBER (SEE PROJECT DRAWINGS FOR ACTUAL SIZES)

DEPTH	INT SIZE
< 1.0m	750Ø
1.0 - 1.5m	900Ø
> 1.5m	USE PCC SW CP DETAIL

PROVIDE 600mm LONG ROCKER PIPE WITH FLEXIBLE CONNECTION 150mm AND 750mm FROM FACE OF CHAMBER STRUCTURE

TWIN WALL PLASTIC PIPE AS POLYPIPE OR EQUAL APPROVED PRODUCTS TO BE CUT TO SUIT WITH PIPE HOLES DRILLED TO SUIT LEVELS REQUIRED WITH PIPE CAST AND SURROUNDED IN MIN 150mm THICK GEN1 CONCRETE.

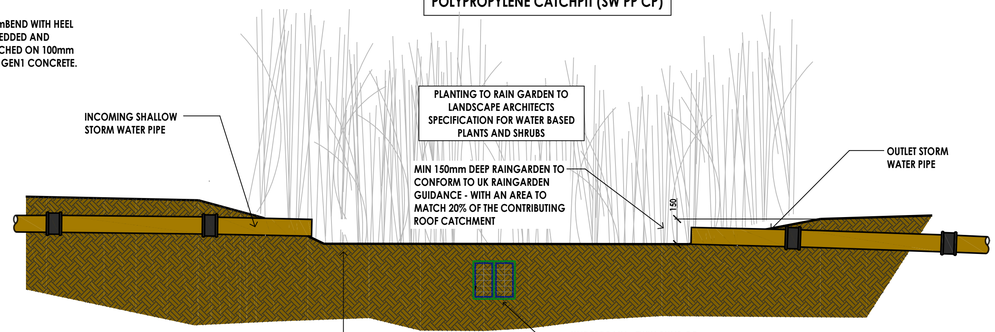
DETAIL No. 3 - STORM WATER POLYPROPYLENE CATCHPIT (SW PP CP)

INCOMING SHALLOW STORM WATER PIPE

PLANTING TO RAIN GARDEN TO LANDSCAPE ARCHITECTS SPECIFICATION FOR WATER BASED PLANTS AND SHRUBS

MIN 150mm DEEP RAINGARDEN TO CONFORM TO UK RAINGARDEN GUIDANCE - WITH AN AREA TO MATCH 20% OF THE CONTRIBUTING ROOF CATCHMENT

OUTLET STORM WATER PIPE



ENSURE RAINGARDEN HAS MIN 200mm LAYER OF TOPSOIL WITH WELL DRAINED MATERIAL BENEATH TO AID DRAINAGE TO UNDER DRAIN AND OUTLETS

UNDERDRAIN - TWIN RUNS OF AQUADRAIN 100 BY ALDERBURGH ESS ON END WRAPPED IN GEOTEX 225 FLEECE. DENOTED AS ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ON DRAWING 100

DETAIL No. 5 - RAINGARDEN & UNDER DRAIN CONSTRUCTION MAKE UP (SCALE 1:20)

GENERAL SIZING OF CHAMBER (SEE PROJECT DRAWINGS FOR ACTUAL SIZES)

DEPTH	INT SIZE
< 1.0m	750Ø
1.0 - 1.5m	900Ø
> 1.5m	USE PCC SW CP DETAIL

SEE TABLE FOR MANHOLE COVER, SIZE AND DUTY DETAILS - BED FRAME USING RESIN MORTAR ONLY

COVER LEVEL:

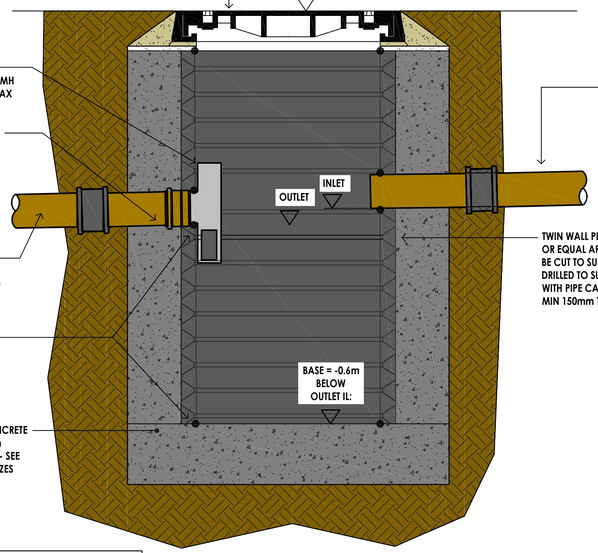
VORTEX FLOW CONTROL DEVICE AS HYDROBRAKE SMH TO PASS 12.0 LIT/SEC AT MAX 0.75m HEAD.

OUTLET LEVEL TO BE 50mm BELOW THE INLET AND BELOW WATER LEVEL.

PROVIDE 600mm LONG ROCKER PIPE WITH FLEXIBLE CONNECTION 150mm AND 750mm FROM FACE OF CHAMBER STRUCTURE

MAKE GOOD ALL HOLES AND JOINTS WITH HYDROPHILIC SEALANT.

MIN 150mm THICK ST2 CONCRETE SURROUND UPON A 200mm THICK ST2 CONCRETE BASE - SEE PROJECT DRAWINGS FOR SIZES



TWIN WALL PLASTIC PIPE AS POLYPIPE OR EQUAL APPROVED PRODUCTS TO BE CUT TO SUIT WITH PIPE HOLES DRILLED TO SUIT LEVELS REQUIRED WITH PIPE CAST AND SURROUNDED IN MIN 150mm THICK GEN1 CONCRETE.

MANHOLE COVER SPECIFICATION

LOCATION	FINISH	DUTY	COVER TYPE
EXTERNAL	PAVED	FACTA B	RECESSED COVER AS SAINT GOBAIN STEELWAY 'BRIPAVE' RANGE
EXTERNAL	BLACKTOP	D400	SLIDE OUT COVER AS SAINT GOBAIN 'INTER-AX'
INTERNAL	TILED/VINYL	FACTA B	COVER TO BE 'HOWE GREEN' AIR AND WATER TIGHT AS 7500 SERIES.

1. CLEAR OPENINGS SHOULD BE AT LEAST SIZE OF INSPECTION CHAMBER:- 300 x 300 FOR PPACs AND 450 x 450 FOR PPICs.
2. CLEAR OPENINGS FOR CATCHPITS TO BE MIN 600 x 600.
3. FOR LARGER CONCRETE AND BRICK MANHOLE CHAMBERS MIN SIZE SHOULD BE 600 x 600 - REFER TO MH DATA BOX ON PROJECT DRAWINGS

DETAIL No. 4 - POLYPROPYLENE STORM WATER FLOW CONTROL CHAMBER

GEOTEXTILE AS GEOTEX 225 FABRIC.

GEOMEMBRANE AS ALDERPRUFE 'TUFLEX' 1mm THICK

GEOCELL ATTENUATION TANK TO HAVE FOLLOWING DUTIES TO SUIT AREAS:-

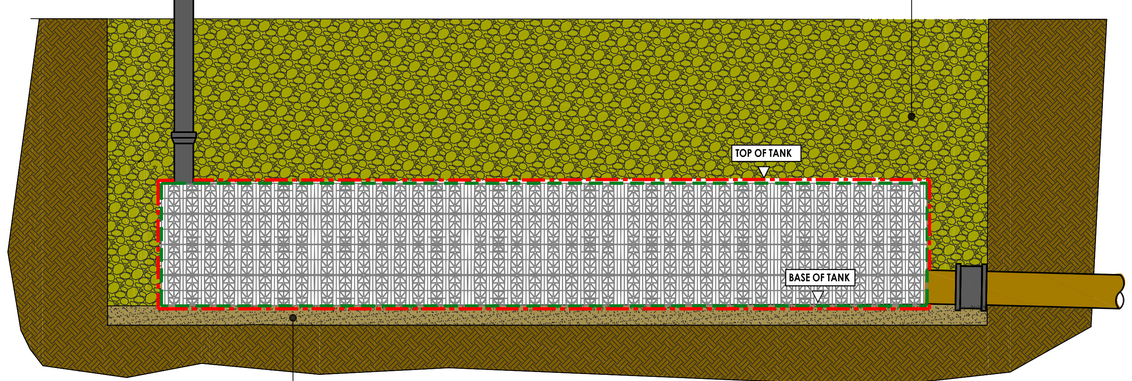
PATIOS / GARDENS	200 KNM²
LIGHT CAR PARKS	650 KNM²
ROADS / MED-HEAVY CAR PARKS	900 KNM²

TYPE: USE ALDERBURGH, WAVIN OR POLYPIPE UNITS WITH ACCESSIBLE MAIN CHANNEL THROUGHOUT TANK FOR JETTING CAPABILITY.
REFER MAIN PROJECT DRAWING FOR DEPTH AND SIZE OF MODULES REQUIRED FOR PROVIDING THE REQUIRED STORAGE.
ALL UNITS TO BE BEDDED ON MIN 200mm THICK 10-20mm REGULATING STONE LAYER AND SURROUNDED IN FREE DRAINING MATERIAL AND WRAPPED IN GEOMEMBRANE AND GEOTEXTILE AS KEY

FOR PATIO AND GARDEN AREAS - BACKFILL ABOVE ATTENUATION TANK IN LAYERS OF 200mm MIN USING SELECTED AS DUG MATERIAL.

FOR LIGHT CAR PARKS AND ROADS - BACKFILL ABOVE ATTENUATION TANK IN LAYERS OF 200mm MIN USING DTp TYPE 1 MATERIAL UP TO THE CAR PARK OR ROAD CONSTRUCTION

TANK VENT PIPES TO SIZE SHOWN ON PROJECT DRAWINGS TO TERMINATE AT LOW LEVEL WITH VENT COWL ON TOP.



LAY GEOCELL MODULES UPON A 200mm LAYER OF 10-40mm GRADED STONE. FREE DRAINING GRANULAAR MATERIAL

DETAIL No. 6 - GEOCELLULAR ATTENUATION STORAGE TANK AND FLOW CONTROL CHAMBER (SCALE = 1:20)

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This drawing should be read in conjunction with the design team's relevant documents, drawings & details.

Existing public & private utility services and drainage locations shown have been derived from non-intrusive survey techniques. Their location is not accurate and the contractor must satisfy himself using open excavation where the location of such plant and apparatus is critical in construction.

If the contractor has constructed from this drawing without necessary approvals from Local Planning Authorities, Building Control, Sewerage Undertakers, Environment Agency etc then any abortive work shall be at his own financial risk and not the responsibility of SDA.

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The contractor should NOT construct any works should there be any doubt with information shown from any of the source. ALWAYS USE GIVEN DIMENSIONS ONLY. ALWAYS ASK IF IN DOUBT.

ALWAYS PRINT THIS DRAWING IN COLOUR

Rev	Description	Date	Chkd
P1	PRELIMINARY ISSUE - WIP	02-05-24	SAD

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Client	Mr and Mrs Allen
Project	Eastlands Farmhouse Malthouse Lane Hurstpierpoint West Sussex BN6 9LA
Drawing title	Drainage details
Drawing status	PRELIMINARY

Project no	Scales	Drawing no	Rev
1894	A1 - 1:10 A3 - 1:20	200	P1