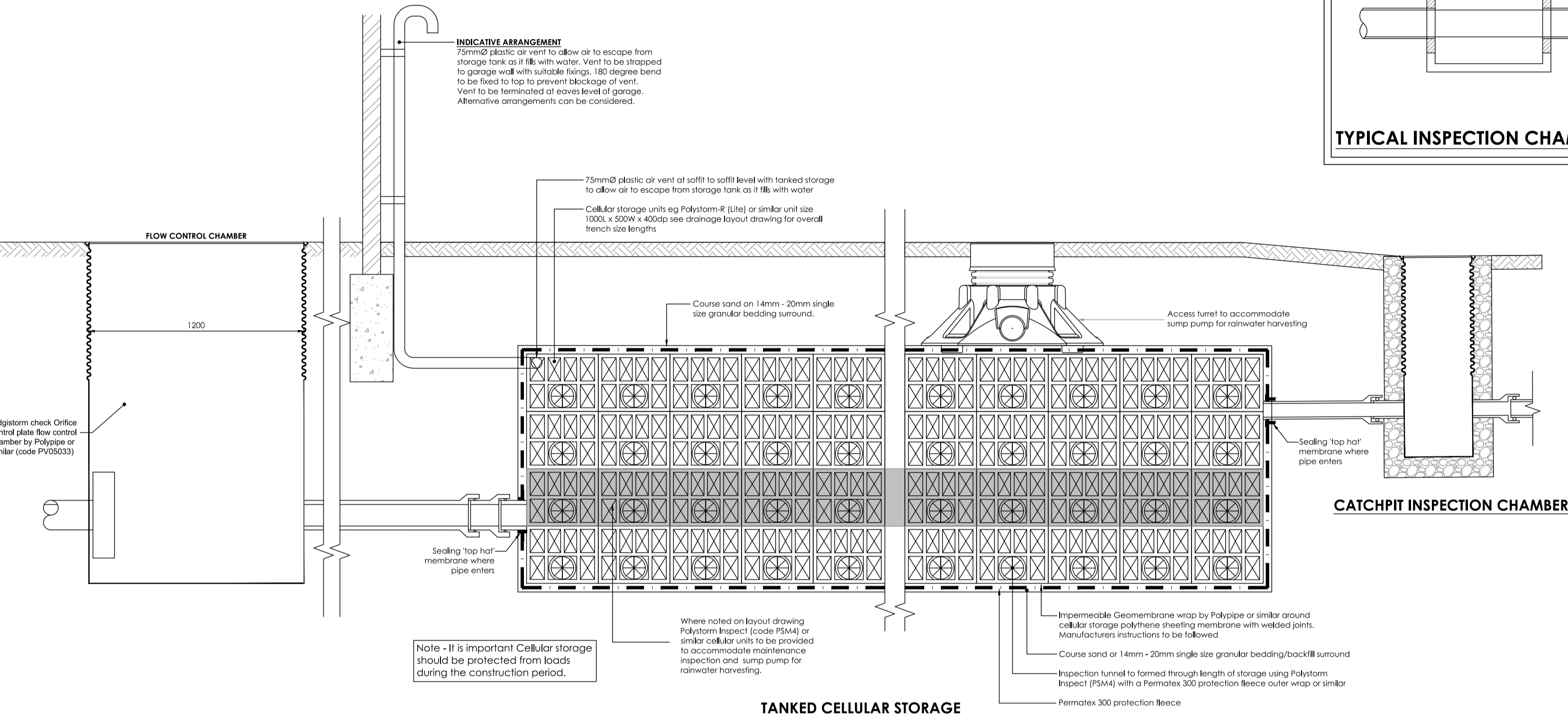
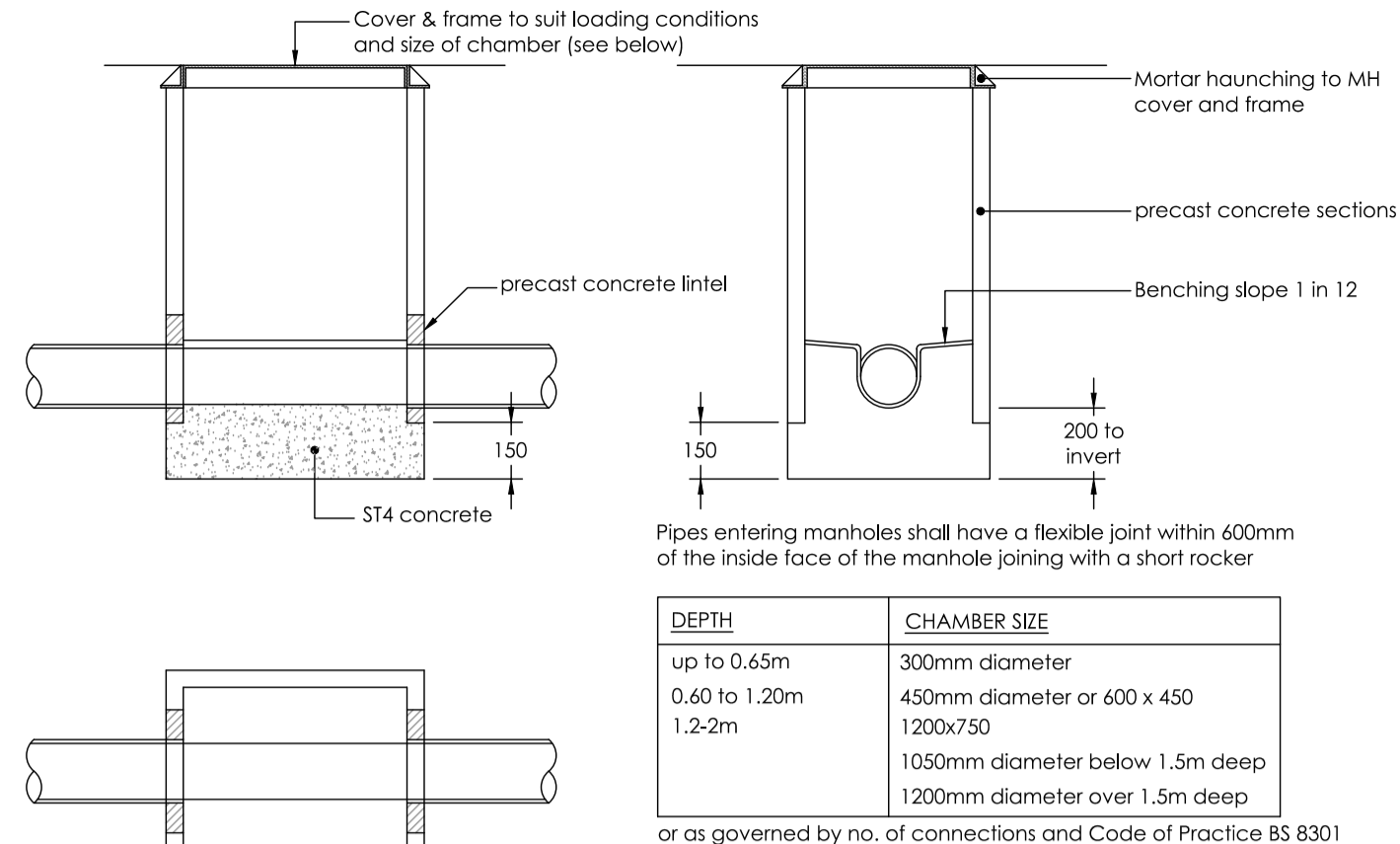


- DRAINAGE NOTES**
- All private drainage must comply with the current edition of DTLR Building Regulations approved document H.
 - Where drainage is to be adopted it should meet with the requirements of Sewers for Adaption 7th edition.
 - Drainage design to be to BS EN 752-3 1996
 - Any intended changes to the drainage design must be discussed with the Engineer. If changes are made the Engineer must be supplied with as-constructed information to enable drawings to be suitably updated for the Health & safety file.
 - Before works commence the contractor should satisfy themselves that the details of the drainage system to be connected into are correct i.e. cover, invert levels, line, condition and type of sewer.
 - Private access chambers are to be appropriate to the depths and loadings as follows:-

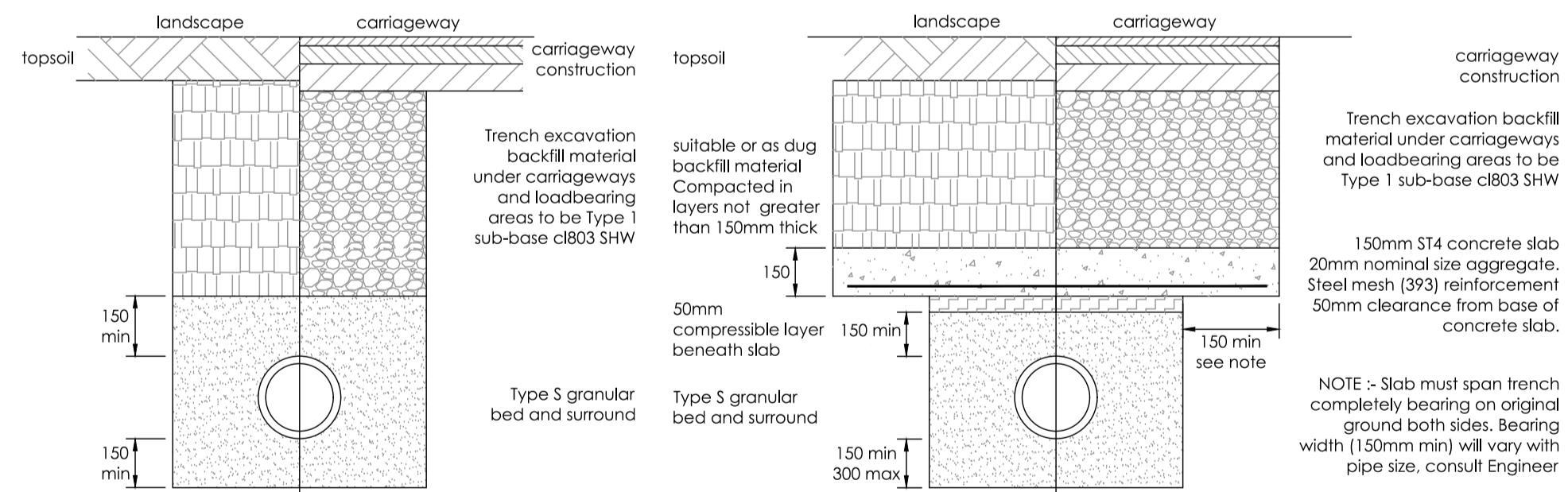
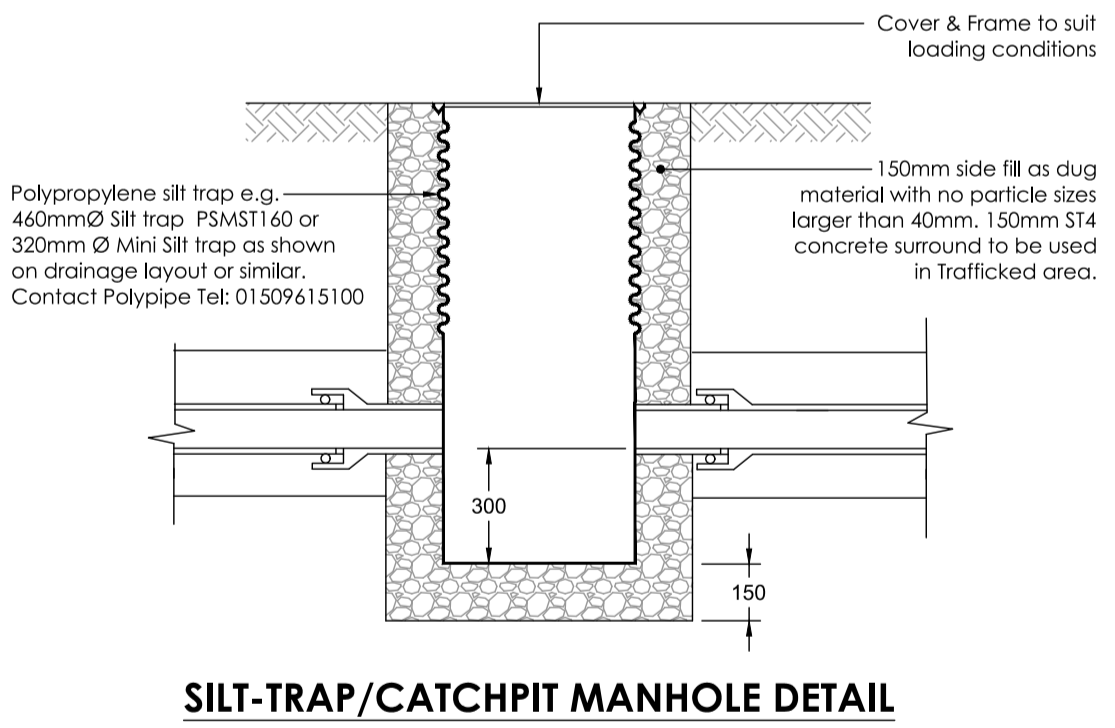
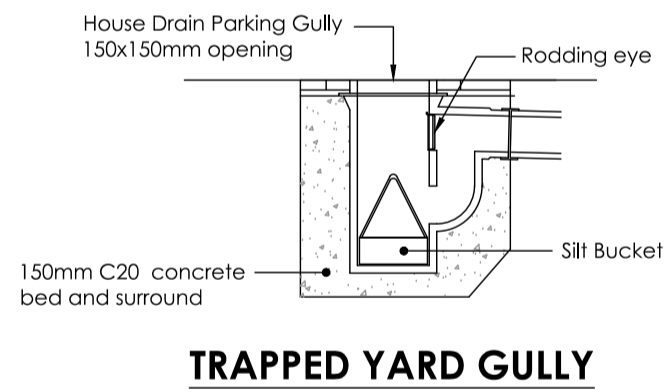
- | Depth to invert | Access size |
|-----------------|---|
| Up to 600mm | Mini access chamber 300mmØ |
| Up to 1200mm | Inspection chamber 475mm Ø (PPIC) |
| 1200 to 1500mm | 600mmx450mm Brick/P.C.C units |
| 1500 to 3000mm | P.C.C. ring manhole 1050mmØ |
| | P.C.C. ring manhole 1200mmØ |
| | (ring diameter increased if sewer greater than 475mmØ). |
- All manholes shall have a flexible joint within 150mm of the face of the structure and a "rocker pipe" which should not exceed 600mm in length.
 - Pipe materials shall be -
Vitrified clayware to BS EN 295
Cast iron to BS EN 545:2010
UPVC - BS EN 1401 PP - BS EN 1852
Structure wall-BS EN 13476
 - For private sewers having 900mm or less cover beneath carriageways & hardstanding or 600mm in landscape areas then they shall have concrete surround or slab protection. Slab protection to be 100mm thick C20concrete slab with mesh reinforcement and a bearing of 150mm each side of the trench. Concrete surround to be 150mm C20 with flexible joints.
 - Trenches within 1.2m of load bearing walls should be filled with concrete at least to the underside of the foundation. Where the distance is more than 1.2m from the foundations the concrete should be taken at least up to a 45degree line from the bottom of the foundations. Alternatively, the foundations could be taken to a deeper level to avoid undermining by the drainage trench (check with the Engineer where this is required).
 - Pipe bed and surround to be granular Type S unless otherwise noted.
 - Drains passing through walls or foundations should have either an arched or linteled opening to give 50mm clearance around the pipe. The opening shall be masked both sides with a rigid non-perishable material, or alternatively a short length of pipe may be built in solid if it is connected within 150mm to rocker pipes (max 600mm long) with flexible joints.
 - Drainage under buildings should be bedded and surrounded by at least 100mm of granular material.
 - Unless otherwise stated on the drawings or in the schedules then all private drainage shall be 100mmØ.
 - All road gully connections to be 150mmØ and surrounded with 150mm C20 concrete surround.
 - Where schemes require soakaways they shall not be positioned closer than 5m from the nearest dwelling or structure. Where solution features can occur in the underlying strata such as chalk then this distance will need to be increased to 10m.
 - New connections to existing public sewers should be carried in accordance with appropriate Section 106 (Water Industry Act) 'connection consent' and also under the supervision of the Water Authority.
 - Covers shall be to B.S. EN 124:1994
Class A15 - areas where only pedestrians have access.
Class B125 - for use in car parks and pedestrian areas where occasional vehicular access is likely.
Class C250 - areas where not extending more than 500mm from kerb face into the carriageway
Class D400 - areas where cars and lorries have access including carriageways, hard shoulders.
Cover and frames to be 150mm deep except residential cul-de-sacs
 - If it is recommended that drainage works should be constructed from the outfall particularly where the outfall depth is relatively shallow. If it is not possible to commence works from the outfall the contractor should satisfy themselves that the invert, line, position and type of existing outfall are correct.
 - Drainage works should be protected from possible damage by construction traffic loadings during the construction period. Protection may be provided by barriers, materials should not be stored over drainage works.
 - Buildings up to 3 storeys shall have a rest bend at the base of the soil stack. 450mm min below the invert of the lowest incoming drain. Buildings over 3 storeys must be a minimum of 750mm below the lowest incoming drain. Buildings over 5 storeys then the ground floor drainage connections should have their own connections to the external drain.
 - Where piling works are undertaken the positions of existing sewers must be accurately located before piling takes place.



TYPICAL INSPECTION CHAMBER



- NOTE:**
- DO NOT SCALE, IF IN DOUBT ASK.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT STRUCTURAL ENGINEER'S DRAWINGS AND DETAILS, THE SPECIFICATION FOR THE WORKS, THE RELEVANT ARCHITECT'S DRAWINGS AND ANY OTHER SPECIALIST'S DRAWINGS.



TYPE S GRANULAR SURROUND BED

To be used where cover to pipe soffit is greater than 1200mm in vehicular areas and greater than 900mm in non-trafficked areas (ie footpaths, verges, etc)

CONCRETE SLAB PROTECTION

To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)

Pipe nominal size (DN)	Pipe Bedding Requirement (mm)
100	10mm nominal shingle size
over 100-150	10mm or 14mm nominal shingle size or 14mm to 5mm graded
over 150-300	10, 14 or 20mm nominal shingle size or 14mm to 5mm graded or 20mm to 5mm graded
over 300-550	14, 20 or 40mm nominal shingle size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded
over 550	14, 20 or 40mm nominal shingle size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

GRANULAR BEDDING AND SIDEFILL MATERIAL GRADINGS

TYPE Z CONCRETE BED AND SURROUND

To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)

