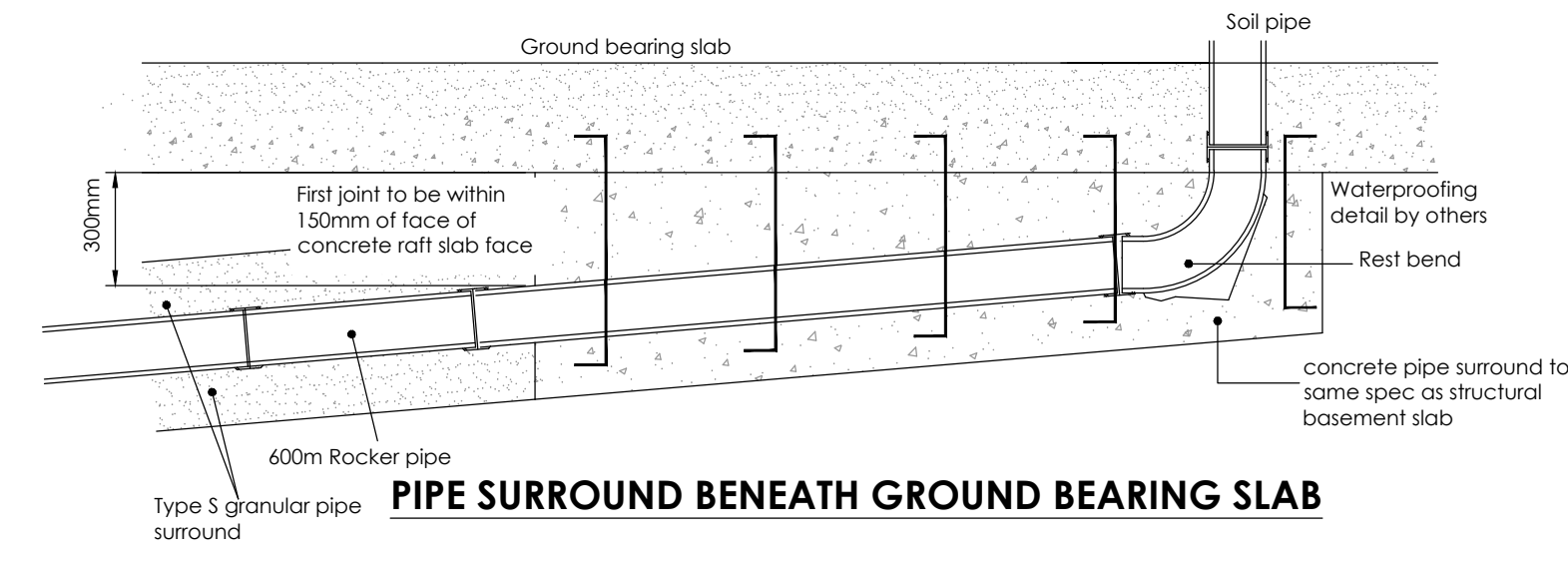


1. All private drainage must comply with the current edition of DTLR Building Regulations approved document H.
2. Drainage design to be to BS EN 752 2008.
3. Any intended changes to the drainage design must be discussed with the Engineer. If changes are made the Engineer must be supplied with sufficient information to enable drawings to be suitably updated for the Health & Safety file.
4. Before works commence the contractor should satisfy themselves that the use of the drainage system to be connected into are correct i.e. cover, invert levels, line, condition and type of sewer.
5. 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 1.200mm	Inspection chamber 475mmØ
	P.C. ring 400x450mm Brick/P.C.C. units
1200 to 1500mm	P.C.C. ring manhole 1050mmØ
1500 to 3000mm	P.C.C. ring manhole 1200mmØ
	sewer greater than 475mmØ)
6. 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.
7. Pipe materials shall be -
 - Vitrified clayware to BS EN 295
 - Cast iron to BS EN 545:2010
 - UPVC - BS EN 141 - PN 1 - BS EN 1852
8. For private sewers having 900mm or less cover beneath carriageways & hard standing or 600mm in landscape areas then they shall have concrete surround or slab protection. Slab protection shall be concrete to 100 C20 concrete slab with mesh reinforcement and a bearing of 150mm each side of the trench. Concrete surround to be 150mm DCA with flexible joints.
9. Foundations for underground walls should be filled with concrete of 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 the surface line from 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).
10. Foundations and ground to be granular type 3 unless otherwise noted.
11. Drains passing through walls or foundations should have either an arched or infilled opening to give 30mm 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 length with flexible joints 1.2m).
12. Drainage under buildings should be bedded and surrounded by at least 100mm of granular material.
13. Unless otherwise stated on the drawings or in the specification then all private drains shall be 150mmØ.
14. All road gully connections to be 150mmØ and surrounded with 150mm C20 concrete surround.
15. New connections to existing public sewers should be made in accordance with the Water Industry Act 1991 (Water Industry Act) "connection consent" and also under the supervision of the Water Authority.
16. Covers shall be to B.S. EN 124:1994.
 - Class B125 - for use in car parks and pedestrian areas where occasional vehicular access is likely.
 - Class C250 - areas where not extending more than 100mm from the kerb edge into the footway.
 - Class D400 - areas where cars and lorries have access including carriageways, hard shoulders.Cover and frames to be 150mm deep except residential car parks.
17. 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 construct the works from the outfall the contractor should satisfy themselves that the invert, line, position and type of existing outfall are correct.
18. Drainage works should be protected from possible damage by construction vehicles loadings during the construction period. Protection may be provided by barriers. Materials should not be stored over drainage works.
19. Buildings up to 3 storeys shall have a test bend at the base of the soil stack 450mm min below the invert of the lowest incoming drain. Buildings over 3 storeys must have a test bend at a minimum of 750mm below the lowest incoming drain. Buildings over 5 storeys that have a test bend at the base of the stack should have their own connections to the external drain.



PIPE SURROUND BENEATH GROUND BEARING SLAB

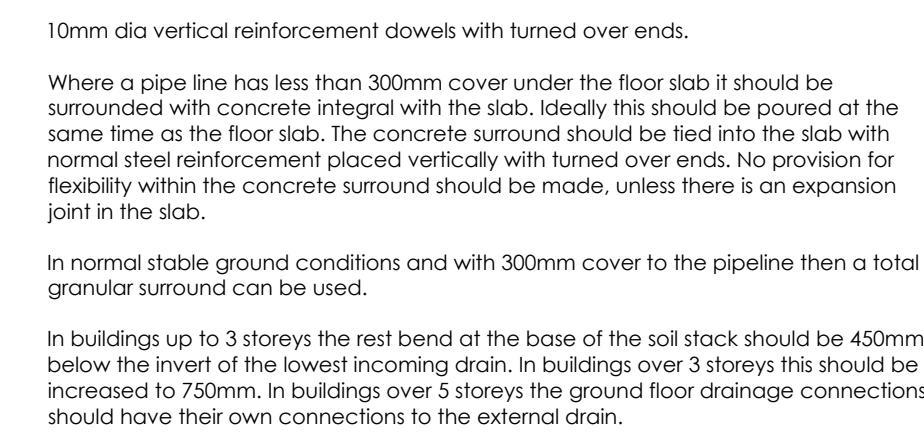


URROUND BENEATH GROUND BEARING SLAB



TYPICAL CELLULAR 'TANKED' STORAGE DETAIL

TYPICAL INSPECTION CHAMBER

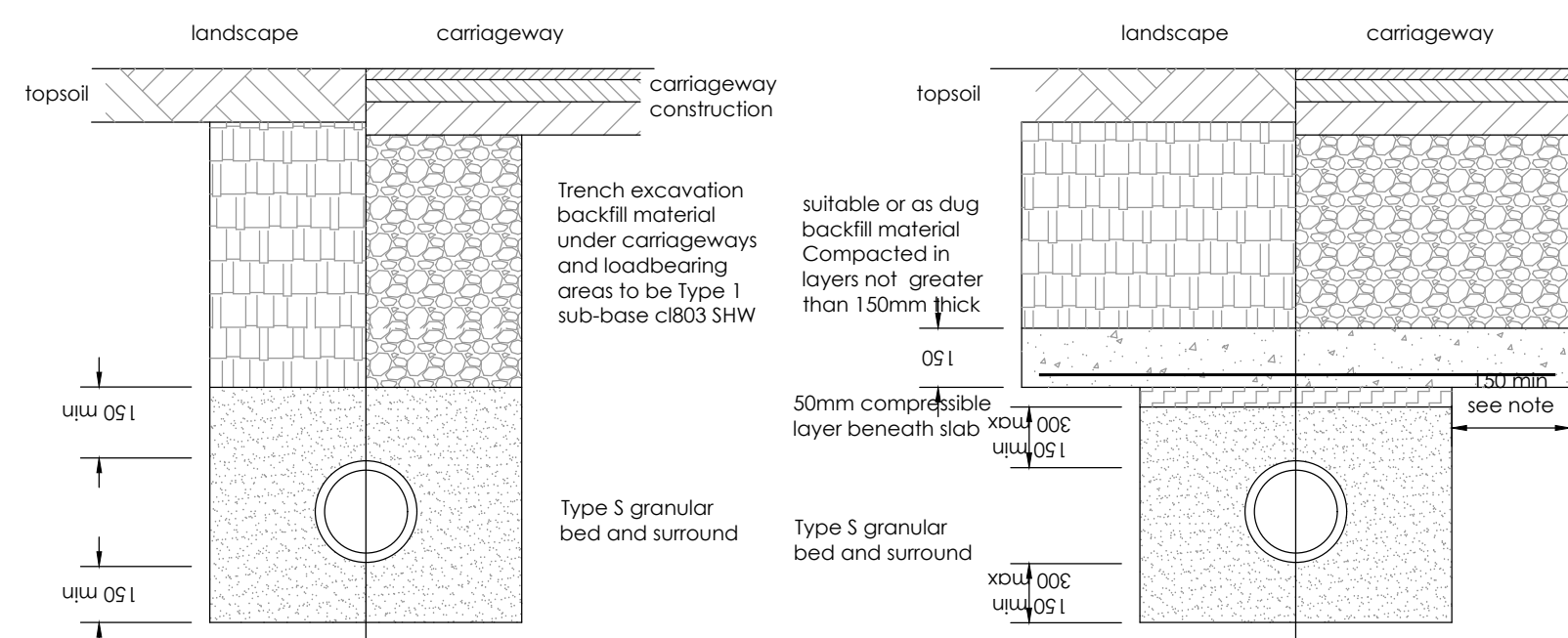


10mm dia vertical reinforcement dowels with turned over ends.

Where a pipe line has less than 300mm cover under the floor slab it should be surrounded with concrete integral with the slab. Ideally this should be poured at the same time as the floor slab. The concrete surround should be tied into the slab with normal steel reinforcement placed vertically with turned over ends. No provision for flexibility within the concrete surround should be made, unless there is an expansion joint in the slab.

In normal stable ground conditions and with 300mm cover to the pipeline then a total granular surround can be used.

In buildings up to 3 storeys the rest bend at the base of the soil stack should be 450mm below the invert of the lowest incoming drain. In buildings over 3 storeys this should be increased to 750mm. In buildings over 5 storeys the ground floor drainage connections should have their own connections to the external drain.



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	10 nominal single size
over 100 150	10 or 14mm nominal single size or 14mm to 5mm graded
over 150-300	10, 14 or 20mm nominal single-size or 14mm to 5mm graded or 20mm to 5mm graded or 20mm to 5mm graded
over 300-450	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded
Grades D-400	120x26x75 cover
over 550	14, 20 or 40mm nominal single-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)

MATERIAL GRADINGS

400 x 600 B125 cover & frame on mortar bedding
 D 400 garde where subject to heavy vehicle loadings
 2-4 courses Class B engineering bricks, concrete blocks or pre-cast concrete cover and seating frame
 Cover slab bedded on PC chamber section with mortar, proprietary bitumen or resin mastix sealant

150mm C20 concrete surround
 Precast concrete chamber sections (min length 150mm) bedded on cement mortar

1200

300

Sump

150 (Max)

Inlet/outlet as required see layout

Inlet/outlet as required see layout

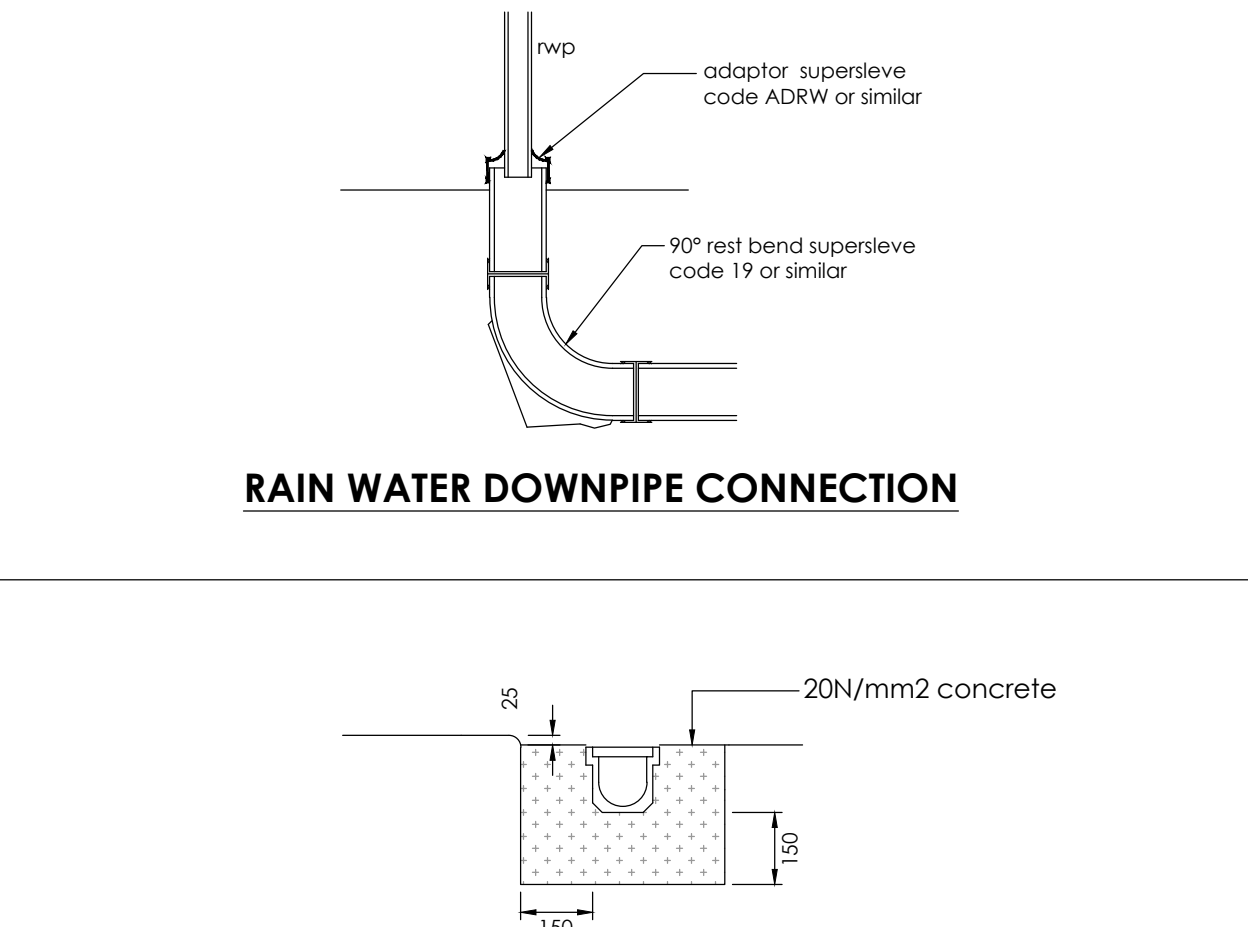
150mm C20 concrete
 75mm Blinding concrete

150

Rocker pipe of min. length 0.60m immediately outside manhole

Inlet/outlet as required see layout

RAIN WATER DOWNPIPE CONNECTION



TYPICAL CHANNEL DETAIL

- Channel drainage to be class C (NW100) with slotted cast iron grating laid to manufacturers recommendations. Units to be laid in 30m lengths falling to trapped drain gullies with 150mm connection to main surface water sewer. Channels should be set 2-3mm below finished levels
- Ensure that when concreting, asphaltting or paving near channels they should be strutted for example by inserting gratings.

1. All dimensions and levels are in metres unless otherwise noted
2. This drawing is to be read in conjunction with the relevant Architect/Engineer's drawings, specifications and CDM documentation
3. This drawings has been produced electronically and may have been photo reduced or enlarged when copied. Work to figured dimensions only (DO NOT SCALE). All dimensions to be checked on site. Any errors or omissions to be reported to the engineer immediately.
4. This drawing contains coloured lines / information that may not be clear if reproduced in black and white.
5. Digital copies of this plan can only be considered accurate if supplied directly by Infrastructure CS Ltd.

P01	SNN	TST	Initial Issue					12/10/20
REV	DRAWN	CHECK	REVISION COMMENTS					ISSUE DATE
DRAWING TITLE								SHEET NO.
Typical Details - Drainage Details								1/1
PROJECT								
Bairds Care Home Littlehampton Sussex								
CLIENT				 BRACKLEY  Infrastruct CS Ltd				
SCALE @ A1							ENGINEER	TST
Not to Scale							DRAFT	SNN
PROJECT NUMBER		STATUS		DATE		APPROVED		DJ
2868		F2		October 20				
PROJECT	ORIGIN	SIZE	LEVEL	TYPE	ROLE	DWG NO	REVISION	
BCH	ICS	01	XX	DR	C	010	P01	