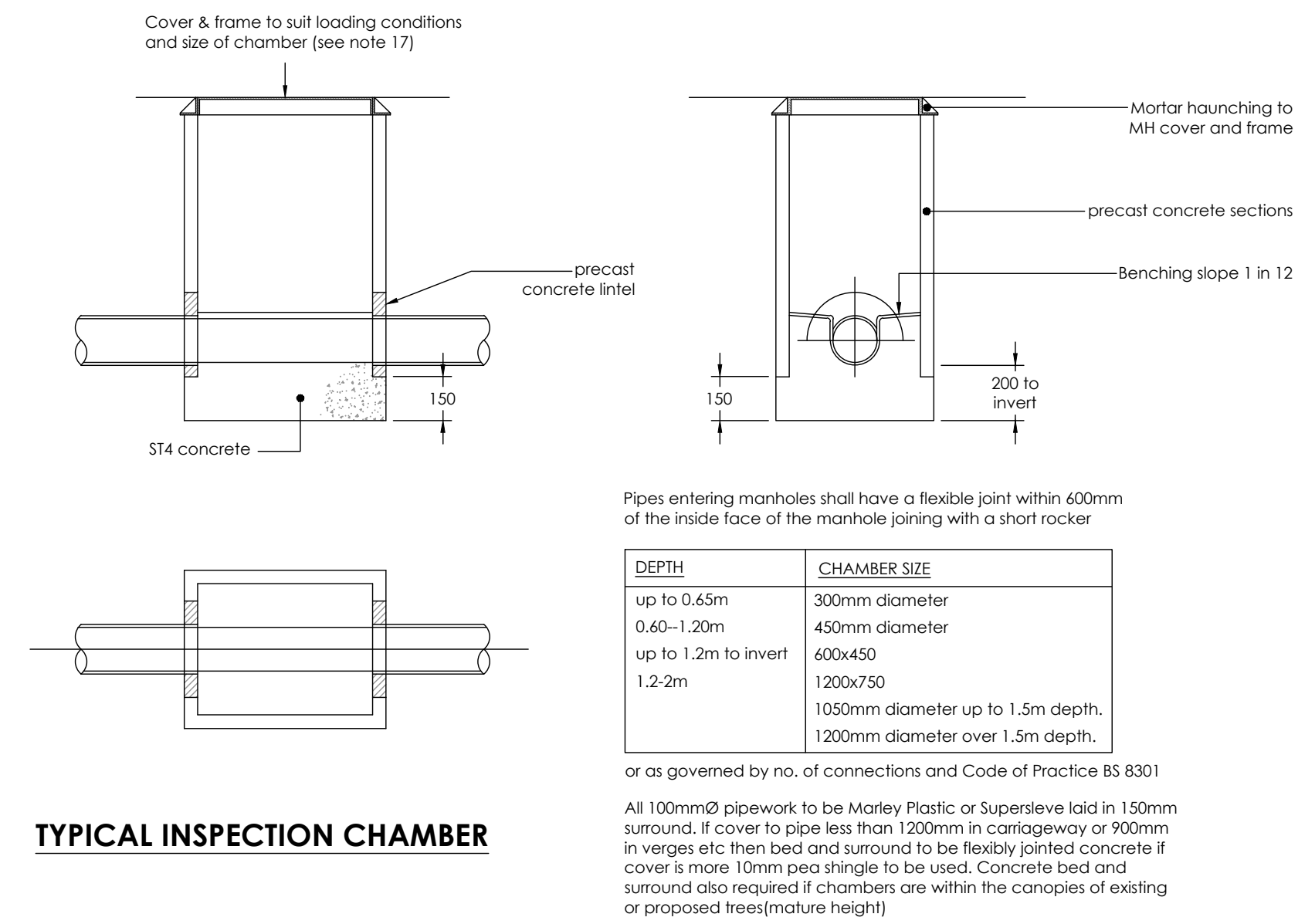
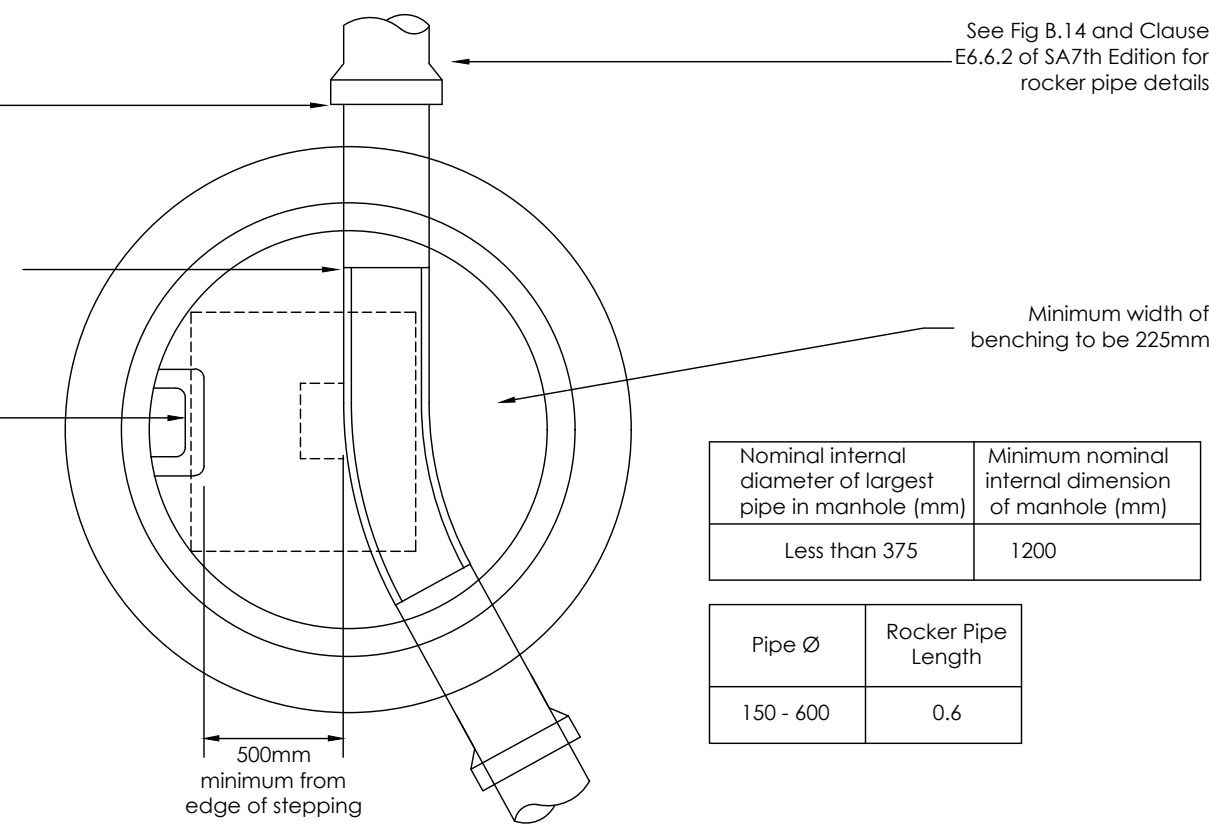


1. All private drainage must comply with the current edition of DTLR Building Regulations approved document H.
2. Drainage design to be to BS EN 752 2008.
3. Any intended changes to the drainage design must be agreed with the Engineer.
4. The Engineer must be supplied with as-constructed information to enable drawings to be suitably updated for the Health & safety file.
5. 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.
6. Where necessary, chambers should be appropriate to the depths and loadings as follows :

Depth to invert	Access size
up to 600mm	Man access chamber 300mmØ
up to 1.200mm	Man access chamber 475mmØ [PPC]
1200 to 1500mm	600mmx450mm Brick/PPC C. units
1500 to 3000mm	P.C. ring manhole 1500mmØ

[ring diameter increased if sewer greater than 475mmØ].
7. 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.
8. Pipe materials shall be -
 - Vitrited clayware to BS EN 295
 - Cast iron to BS EN 242010
 - UPVC - BS EN 1401 PP - BS EN 1852

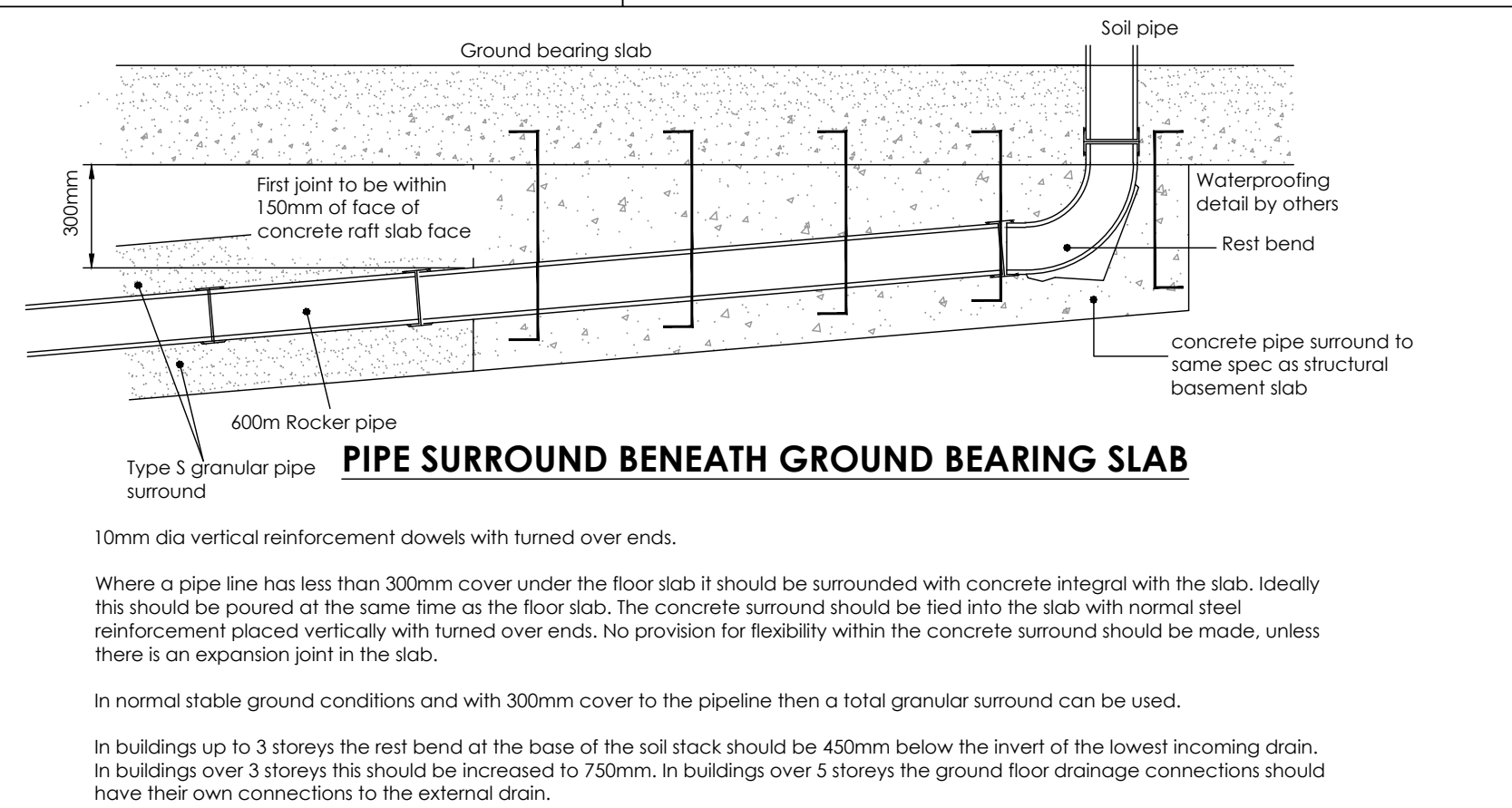
For private sewers having 90mm or less cover beneath carriageways & hard standing or 600mm in landscaped areas the contractor shall have concrete surround up to 45 degree line. Slab protection to be 100mm thick DC2 concrete slab with mesh reinforcement and a bearing of 150mm each side of the trench. Concrete surround to be 150mm DCA with firefighter where this is required.
9. 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 trench should be backfilled with concrete up to 45 degree 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).
10. Pipe bed and surround to be granular Type 3 unless otherwise noted.
11. Drains passing through walls or foundations should have face of the structure and/or lintelled opening to give 50mm clearance around the pipe. The opening shall be masked both sides with a rigid non permeable material, or covered with a concrete slab 100mm thick. Pipe may built in solid if it is connected within 150mm to rocker pipes (max 600mm long) with flexible joints.
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 schedules then all private drainage shall be 100mmØ.
14. All road gully connections to be 150mmØ and surrounded by concrete to 220 concrete.
15. 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 local authority.
16. Covers shall be to B.S. EN 124/1994
 - Class A15 - for use where only pedestrians have access.
 - Class B125 - for use in car parks and pedestrian areas where cars are parked or driven over.
 - Class C250 - for use where not extending more than 500mm from kerb face into the carriageway
 - Class D400 - areas where cars and lorries have access including car parks and roads.
17. Cover and frames to be 150mm deep except residential cul-de-sacs.
18. It is recommended that drainage works should be carried out on the foul side of the road 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 drains are correct.
19. Drainage works should be protected from possible damage by construction traffic loadings during the construction period. Protection may be provided by barriers. Materials should be stored over 5 storeys.
20. Buildings up to 3 storeys shall have a rest bed 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 2 storeys above the lowest incoming drain. Buildings over 5 storeys then the ground floor drainage connections should have their own connections to the external drain.



Technical drawing showing a cross-section of a 90° rest bend supersleeve assembly. The assembly consists of a vertical pipe (labeled 'rwp') and a horizontal pipe connected by a 90° rest bend supersleeve. The bend is labeled '90° rest bend supersleeve code 19 or similar'. An adaptor supersleeve is shown connecting the vertical pipe to the bend, labeled 'adaptor supersleeve code ADRW or similar'.

TYPICAL CHANNEL DETAIL

- Channel drainage to be class C (NW100) with sloped 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 struted for example by inserting gratings.

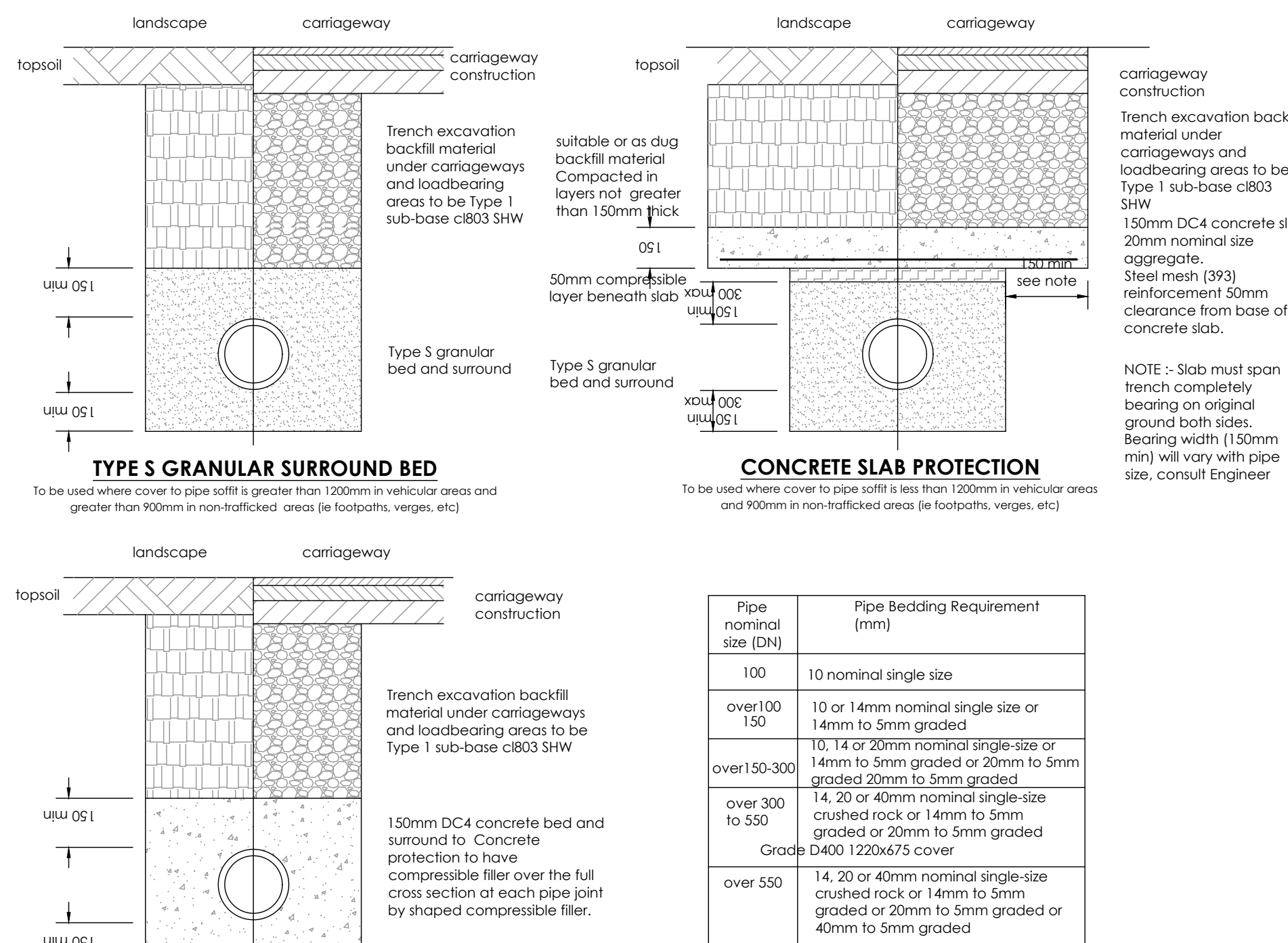
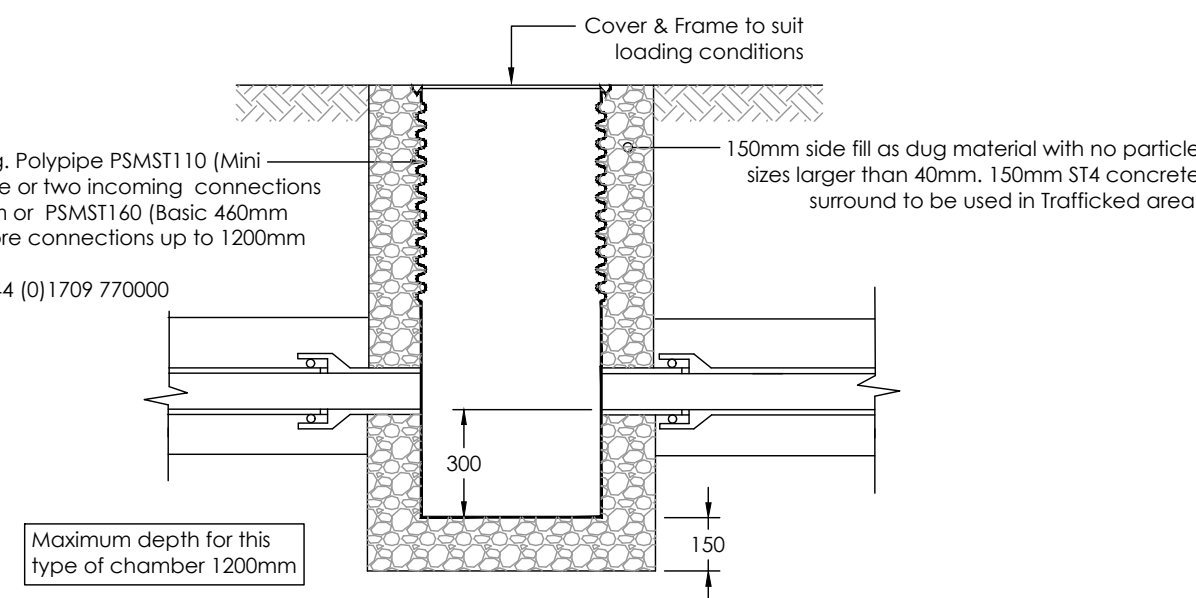


cement dowels with turned over ends.

If more than 300mm cover under the floor slab it should be surrounded with concrete integral with the slab. Ideally the same time as the floor slab. The concrete surround should be tied into the slab with normal steel mesh or wire fabric. It should be specifically with turned over ends. No provision for flexibility within the concrete surround should be made, unless it is required by the design in the slab.

If the ground level is above the conditions and with 300mm cover to the pipeline then a total granular surround can be used.

The rest bend at the base of the soil stack should be 450mm below the invert of the lowest incoming drain. This depth should be increased to 750mm. In buildings over 5 storeys the ground floor drainage connections should terminate at least 1m from the external drain.



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)

Pipe nominal size (DN)	Pipe Bedding Requirement (mm)
100	10 nominal single size
over 100 to 150	10 or 14mm nominal single size or 14mm to 5mm graded
over 150 to 300	10, 14 or 20mm nominal single-size or 14mm to 5mm graded or 20mm to 5mm graded
over 300 to 550	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded
Grade	D400 12x20x75 cover
over 550	14, 20, 40 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

SCALE @ A1							ENGINEER
Not To Scale							TST
							DRAFT
							SNN
PROJECT NUMBER	STATUS		DATE		APPROVED		This Website Is Not For Construction
2868	S2		October 20		DJ		
PROJECT	ORIGIN	PHASE	LEVEL	TYPE	ROLE	DWG NO	
BCH	ICS	01	XX	DR	C	010	P03