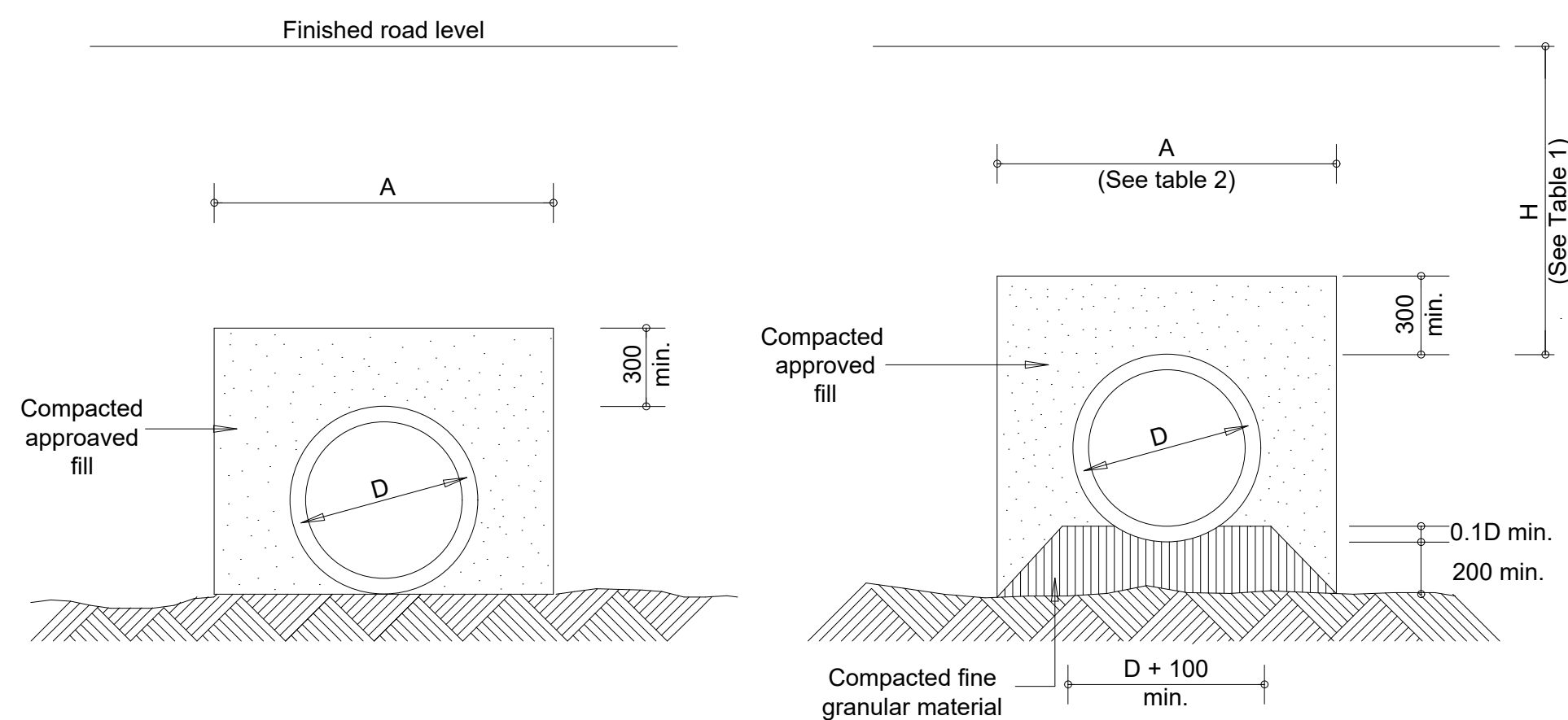


PIPE CULVERT ON SOIL

PIPE CULVERT ON ROCK

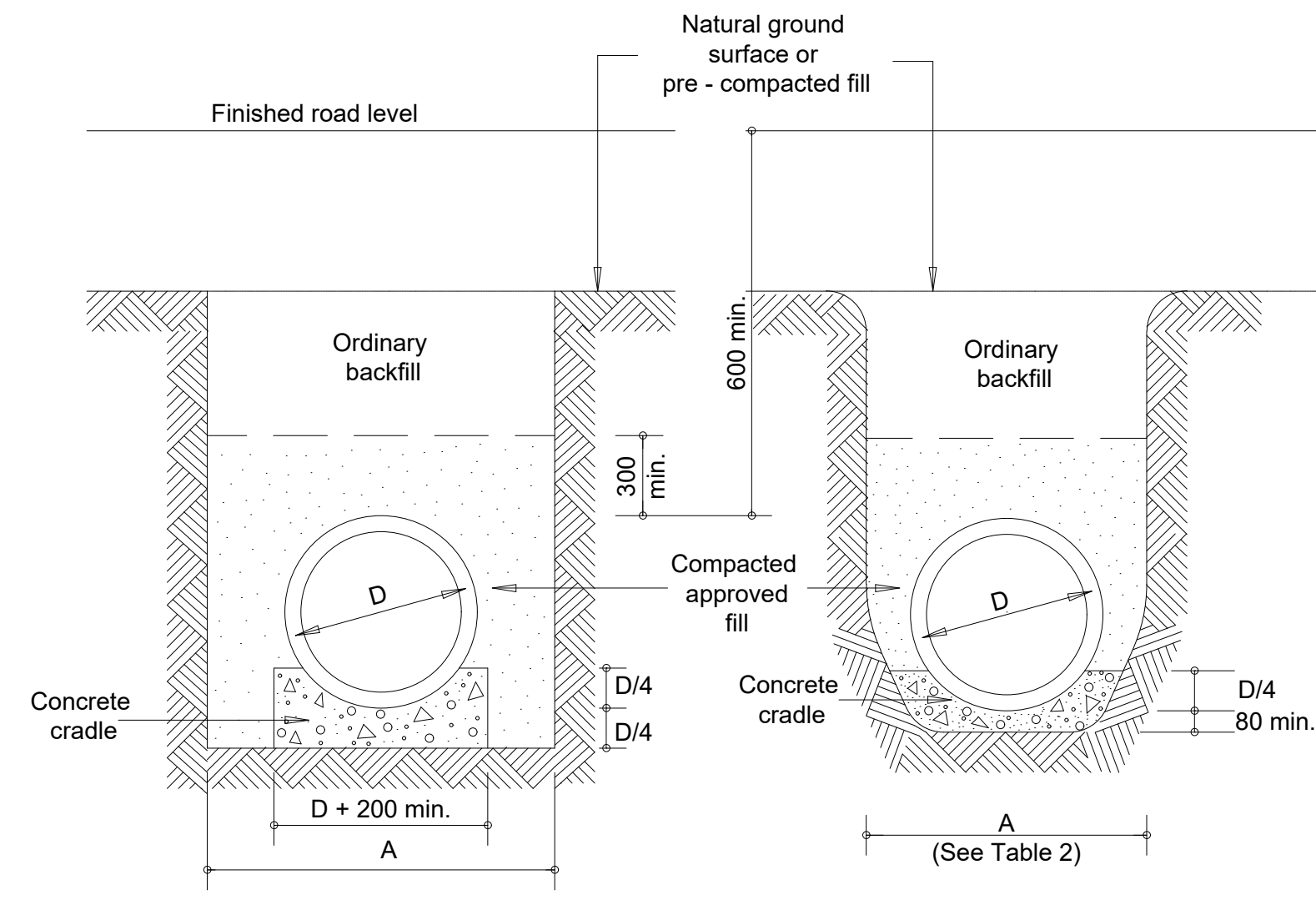
CLASS A BEDDING
(EMBANKMENT CONDITION)



PIPE CULVERT ON SOIL

PIPE CULVERT ON ROCK

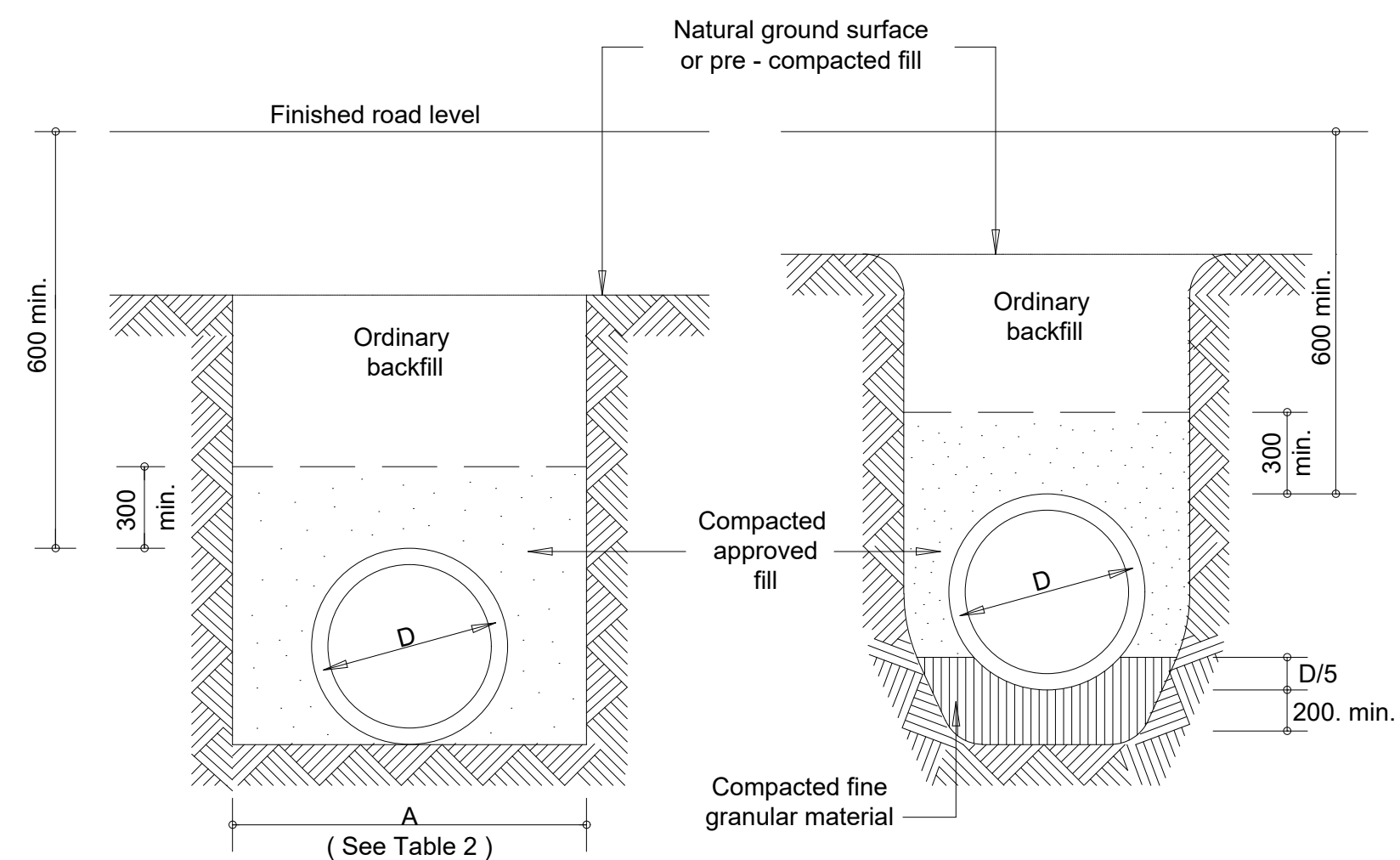
CLASS C BEDDING
(EMBANKMENT CONDITION)



TRENCH IN SOIL

TRENCH IN ROCK

CLASS A BEDDING
(TRENCH CONDITION)



TRENCH IN SOIL

TRENCH IN ROCK

CLASS C BEDDING
(TRENCH CONDITION)

NOTES:

- When possible pipes shall be laid by first constructing the required compacted fill to allow a pipe trench to be excavated into it, thereby satisfying requirements for negative projecting pipeline. The recommended trench widths are listed in Table 2. The maximum trench widths apply to deep trenches where shoring is required.
- All pipes shall comply with SABS 667-1986, "Standard specifications for concrete non-pressure pipes", and shall be installed in accordance with SABS 0102-1987, "Code of practice for design and installation of precast concrete pipes."
- Joints shall either be spigot and socket with rubber ring, ogee with rubber collar or modified ogee with rubber ring seal.
- In selecting the type and class of pipe it is generally preferable to use the stronger class of pipe with a class C bedding rather than the lower strength pipe with a class A bedding.
- Actual internal diameter of heavy duty pipes are to be checked against waterway requirements.
- For fill heights exceeding 10m or pipeline length exceeding 40m a minimum nominal pipe diameter of 900mm is recommended.
- Construction joints in concrete cradle to coincide with pipe joints. All insitu concrete shall be 15MPa
- The following minimum nominal pipe diameters shall apply :
450mm for minor access roads and bellmouths.
600mm for other roads.
- The minimum cover over any pipe culvert shall be 600mm. In exceptional cases pipes may be encased in concrete and the cover reduced to 200mm.
- All pipe lifting holes must be plugged to the satisfaction of the Engineer.
- Pipes to be laid to a minimum grade of 2%.

'D' Load	Permissible Maximum Height (H) of Fill in metres	
	Class A Bedding	Class C Bedding
25 D	3.0	1.5
50 D	6.0	3.0
75 D	9.0	4.5
100 D	12.0	6.0
125 D	15.0	7.5
150 D	18.0	9.0
200 D	24.0	12.0

TABLE 1

Trench width		
Normal Pipe Diameter (D) (mm)	Recommended Dimension (A)(mm)	Maximum Trench Width (mm)
450	1100	1100
600	1300	1300
750	1500	1500
900	1600	1700
1050	1800	2200
1200	2000	2400

TABLE 2