Technical Solution Sheet 4.02
Drainage (Below Ground Stormwater)

Below Ground Stormwater Installations

AIM
The aim of this technical solution is to clarify the installation requirements for stormwater drains where the minimum gradient 1:100 is not achievable. This applies for drain sizes ranging from DN90 to DN150.

PLUMBING REGULATIONS 2008
The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part D2 of the PCA specifies the objectives and performance requirements related to the installation of surface and subsurface drainage systems. ***AS/NZS 3500.3: Plumbing and drainage Part 3: Stormwater drainage*** is a "deemed to satisfy" document listed in Part D2 of the PCA and contains sections on discharge point criteria, site stormwater drains and inspection openings.

STORMWATER INSTALLATIONS WILL BE DEEMED TO COMPLY UNDER THE FOLLOWING CONDITIONS:
Where the minimum gradient (1:100) is not achievable and there is a risk of internal damage to the building, then overflow provision must be made to prevent internal damage occurring.

- In the case of a property without a stormwater barrel drain connection, and requiring the stormwater to discharge to a roadside kerb: the best possible gradient achievable for that site will be acceptable (see Figure 1).
- In the case of a property with an available stormwater barrel drain connection: then the connection must be made to that stormwater barrel drain (see Figure 2).
- In the case of a property with an available stormwater barrel drain connection, but the given connection point is not at the level required to achieve the best possible gradient: then the connection point must be lowered to achieve the best possible gradient (see Figure 3).

MAINTENANCE PROVISIONS FOR DRAINS WITH REDUCED GRADIENT
In all cases where the stormwater installation has reduced gradient (less than 1:100), provision for cleaning and maintenance purposes is required. Inspection openings for cleaning and maintenance are to be installed in the following locations (see Figure 4):

1. At the head (upstream end) of the longest main line of drain
2. At the property boundary, or in the case where the property has a discharge point within an easement, then at, or near the point of connection to the barrel drain
3. At a mid-way-point on the longest main line of drain.

Note:
If the inspection openings are under slabs or paved surfaces then they must be extended to surface.

REQUIREMENTS IF THE DRAIN HAS ADVERSE (NEGATIVE) FALL
If the site has adverse fall and all options to remedy the situation have been explored, it is important that before installing the site stormwater system the plumber informs the consumer of potential problems.

The plumber should seek advice from the Victorian Building Authority before commencing work as a formal modification may be required.

A pump system with an appropriately sized wet well overflow provision may be the only option.

FIGURE 1 - STORMWATER DRAIN LAID WITH BEST POSSIBLE GRADE TO KERB AND CHANNEL

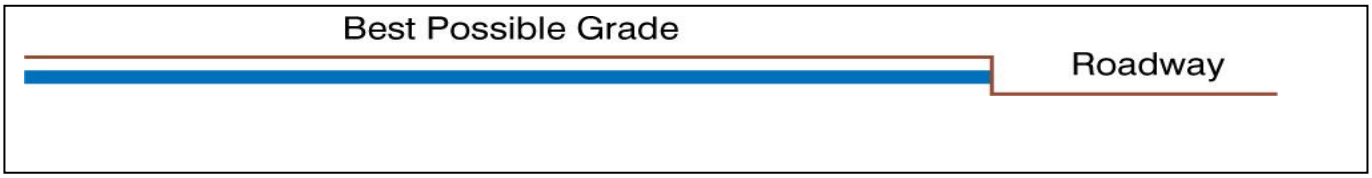

FIGURE 2 - STORMWATER DRAIN LAID AT GRADE TO BARREL DRAIN

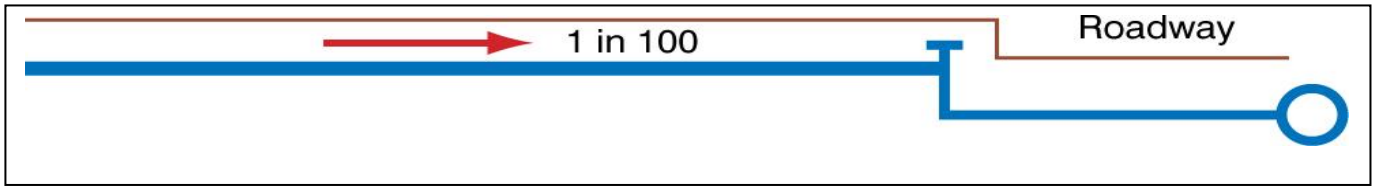

FIGURE 3 - STORMWATER DRAIN LAID WITH BEST POSSIBLE GRADE TO BARREL DRAIN

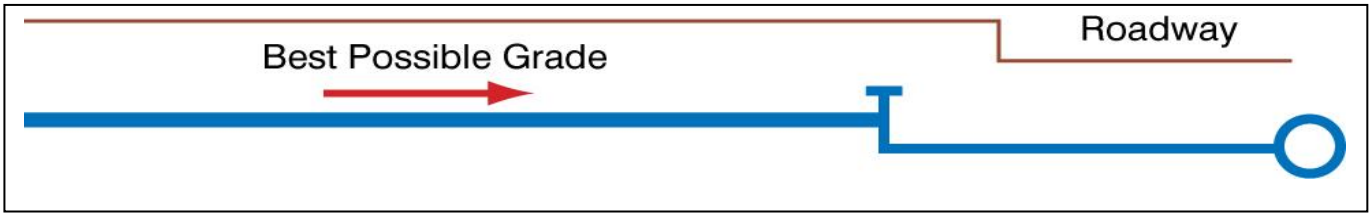

FIGURE 4 - EXAMPLE OF PROVISION FOR CLEANING IN STORMWATER DRAIN LAID AT REDUCED GRADE