For example: if a PVC field drain has a total length of 360 m, pipe roughness coefficient of 0.011, calculated flow of 1.7 l/s and a slope of 0.2 percent, the pipe internal diameter is calculated at 84 mm.

Pumping station design shall be carried out in accordance with Section 6.

5.6. Drainage Installation

Pipes shall be laid in accordance with Volume 4: Standard Specifications.

Manufacturer should be obliged to study the soil condition with the Contractor and the supervising Consultant in order to ensure the suitability of the pipe geometrical and material characteristics, including the joints, for installation in the given soil condition, may need to be added.

5.7. Construction near Utilities

Information shall be obtained by the Consultant on existing and proposed utilities.

As far as possible, drain lines shall not be installed across buried cables, pipelines and other facilities.

5.8. Maintenance

Maintenance of sub-soil drainage systems shall be carried out in accordance with the requirements of Volume 3: Operation and Maintenance.

5.9. Tubewell Drainage Design

Tubewell drainage consists of pumping from a series of wells an amount of groundwater equal to the drainage surplus. The pumped water is then discharged into a pipe or open surface drain network.

Tubewell drainage is not a substitute for subsurface drainage and shall be used only in combination with near surface drainage options to minimise the extent of subsurface drainage requirements over wider areas.

5.9.1. Patterns of Tubewell Drainage

Lowering of the water table sufficiently and uniformly requires considered placement of each well. Two regular configured tubewell patterns are permitted:

Triangular pattern is hydraulically the most favourable well-field configuration, with a maximum area to be drained by one well and with no extra drawdown induced by neighbouring wells.

Rectangular pattern in which wells are placed along parallel collector drains. For this well field configuration, a reduced length of collector drains is required when compared to a triangular configuration.

Alternate patterns are permitted only upon the approval of DMAT.

5.9.2. Well Field in a Triangular Pattern

A triangular well field pattern is shown in Figure 5-5. Limited overlap of individual radii of influence occur when the wells are placed in a triangular pattern. A simplifying assumption infers that drawdown and discharge of each well will not be affected by neighbouring wells, and therefore, the theory of a single well can be used.