3.2.5 Equal Distribution

In equal distribution, wastewater effluent is distributed to all trenches within the subsurface sewage disposal system, which provides the opportunity to use the entire infiltrative surface of the disposal system. Equal distribution is the preferred method of wastewater discharge to any subsurface sewage disposal system on a flat or slightly sloped site. The best way to accomplish equal distribution is through drainfield pressurization (section 4.20). When gravity flow is used for wastewater discharge to the subsurface system, equal distribution to each subsurface sewage disposal trench can be accomplished by using a piping header or distribution box.

3.2.5.1 Piping Header

With a piping header system, wastewater is conveyed to each disposal trench using a network of solid piping. The discharge line from the septic tank should be split using a T-pipe fitting. The T-pipe should be offset equally from the distribution trenches. One-directional sweeping cleanouts should not be used in place of a bidirectional T-pipe. Install the T-pipe fitting on a solid surface in a level position. DEQ recommends that the piping header only be used in installations involving two trenches. Figure 3-4 shows an overhead view of this distribution setup.

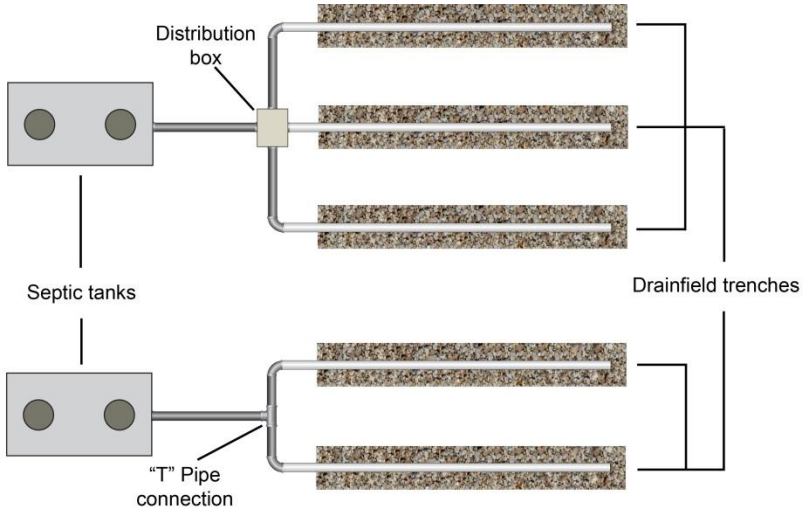

Figure 3-4. Overhead view of equal distribution methods for level sites.

3.2.5.2 Distribution Box

Distribution boxes (d-boxes) are used to divide wastewater effluent evenly among multiple subsurface distribution lines. The d-boxes are typically made of concrete or wastewater-grade plastics and are watertight with a single inlet set at a higher elevation in the d-box than the outlets. Outlets should be constructed at equal elevations to one another. The d-box should be constructed with an access lid. Access lids are recommended to be made accessible from grade. Install the d-box level and on sound footing (e.g., properly bedded to prevent settling and heaving).

Several leveling devices are available for installation on the distribution lines that leave the d-box to ensure each line receives equal amounts of effluent if the piping or d-box becomes unlevel. During initial installation, DEQ recommends installing leveling devices on the effluent

lines leaving the distribution box. Distribution boxes are highly recommended for situations when more than two trenches are installed and gravity flow is desired. Figure 3-4 provides an overhead view of this distribution setup on a level site. Figure 3-5 provides an overhead view of a distribution box setup on a sloped site.

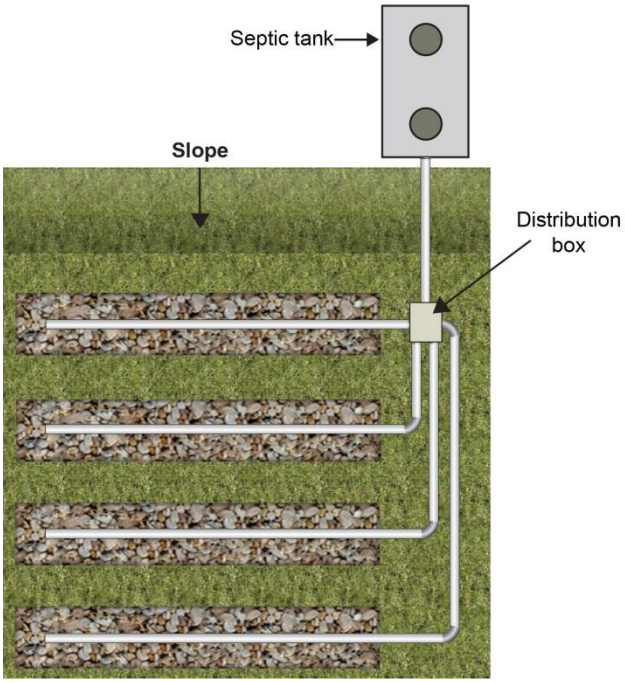

Figure 3-5. Overhead view of a distribution box layout on a sloped site.

3.2.6 Serial Distribution

Serial distribution allows each trench to load and completely flood with effluent before effluent flows to the next trench in series. Serial distribution is typically used on sites with slopes in excess of 20%. With this distribution method, trenches do not need to be constructed at the same length, but each trench must maintain a level installation by following an elevation contour. Serial distribution is accomplished either by installing relief lines or drop boxes between successive trenches. DEQ strongly recommends that serial distribution be accomplished by using drop boxes due to control and access aspects of the system design.

3.2.6.1 Relief Lines

Relief lines are overflow lines that connect one trench to the adjacent lower trench in series. Relief lines are constructed of solid-wall piping and may be placed at opposite ends of successive trenches or anywhere within the trench line. If relief lines are installed in the middle of trenches, successive relief lines should be offset by a minimum of 5 feet to avoid short-circuiting the distribution system. Exercise care in excavating the relief line between trenches. Bleeding of effluent down this excavation is a common cause of surfacing effluent in serial distribution systems. The excavation of the connecting trench to the next downslope trench should be just deep enough to accept the solid connector pipe. Figure 3-6 shows for an overhead view of a relief line installation system network. Figure 3-7 shows a cutaway view of relief line connections between trenches.