

3.2.5 Equal Distribution

In equal distribution wastewater effluent is distributed to all trenches within the subsurface sewage disposal system thus providing the opportunity for utilization of the entire infiltrative surface of the disposal system. Equal distribution is the preferred method of wastewater discharge to any subsurface sewage disposal system. The best way to accomplish this is through pressurization of the drainfield (see section 4.20). When gravity flow is utilized for wastewater discharge to the subsurface system equal distribution can be accomplished through the use of a piping header or distribution box.

3.2.5.1 Piping Header

With a piping header system wastewater is conveyed to each disposal trench through the use of a network of solid piping. The discharge line from the septic tank should be split through the use of a T pipe fitting. The T should be offset equally from the distribution trenches. One-directional sweeping cleanouts should not be used in place of a bi-directional T. It is recommended that the piping header only be utilized in installations involving two trenches. See figure 3-3 for an overhead view of this distribution setup.

3.2.5.2 Distribution Box

Distribution boxes (d-box) are used to divide wastewater effluent evenly among multiple subsurface distribution lines. 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 box than the several 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. Distribution boxes should be installed level on a sound, frost-proof footing. There are several devices available for installation on the distribution lines leaving the d-box to ensure that each line is receiving equal amounts of effluent if the piping or d-box becomes un-level. It is recommended that leveling devices be installed on the effluent lines leaving the distribution box at time of initial installation. Distribution boxes are highly recommended for situations where there are more than two trenches installed. See figure 3-3 for an overhead view of this distribution setup.

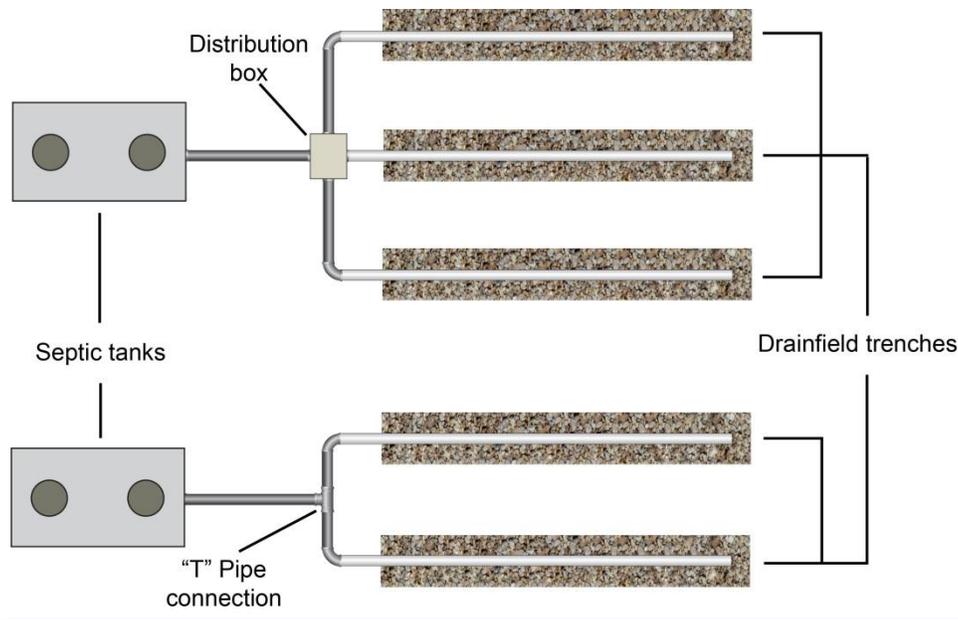


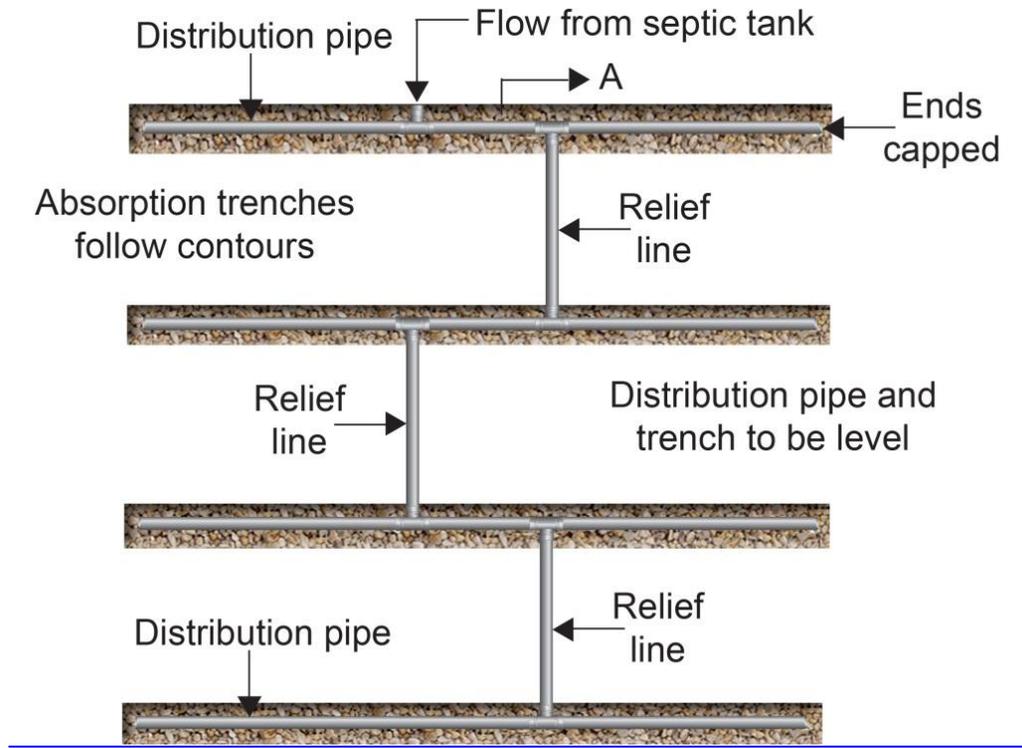
Figure 3-3. Overhead view of equal distribution methods.

3.2.6 Serial Distribution

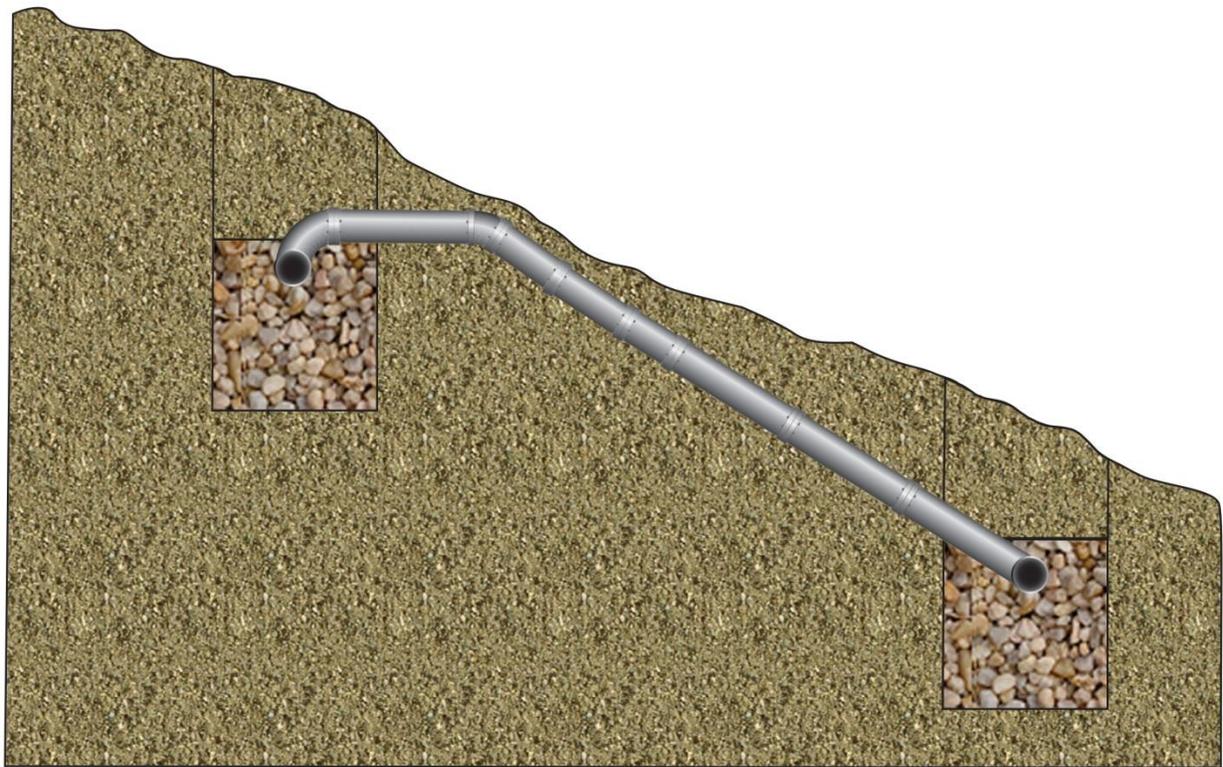
Due to continuous ponding over the infiltrative surface serial distribution trenches suffer hydraulic failure more rapidly and progressively because the infiltrative surface cannot regenerate its infiltrative capacity. With this in mind serial distribution should only be used where equal distribution is not achievable. On sloped ground, it is preferable to use serial distribution, that is, distribution functions so that each trench in order is completely filled loaded and completely flooded before effluent flows to the next lower trench. To maintain trenches between 2 to 4 feet below ground, it may be essential to use this kind of distribution. Loading and flooding is accomplished by installing relief lines or drop boxes between successive trenches.

3.2.6.1 Relief Lines

Relief lines are overflow lines that connect one trench to the adjacent lower trench. 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. Care must be exercised in excavating the connecting 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. See figure 3-4 for an overhead view of a relief line installation system network. See figure 3-5 for a cutaway view of relief line connection between trenches.



[Figure 3-4. Overhead view of a relief line system network.](#)



[Figure 3-5. Side view of relief line installation between trenches.](#)

3.2.6.2 Drop Boxes

Serial distribution may also be accomplished through the use of drop boxes. The drop boxes are constructed so that each trench is completely flooded before the effluent flow runs to the next downslope trench. ~~Care must be exercised in excavating the connecting 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.~~ The outlet invert of the drop box should be placed near the top of each trench to force the trench to fill completely prior to discharging to the next downslope trench. Solid-wall pipe should be used between drop boxes. ~~Figure 3-3~~ Figure 3-6 shows the detail of a drop box.

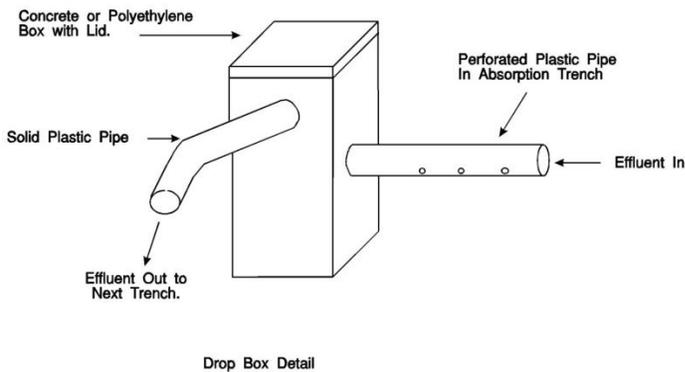


Figure 3-36. Drop box details.