**Section 906.50 Mound Design**

a) A mound system shall include a septic tank for pre-treatment of sewage. The septic tank and piping between the septic tank and the pumping chamber shall conform to the applicable rules in the Private Sewage Disposal Code (77 Ill. Adm. Code 905).

b) The design of the mound shall be based upon the expected daily waste water volume using the data contained in Appendix A, Illustration A, of the Private Sewage Disposal Code, (77 Ill. Adm. Code 905) and the soil percolation rate. Mounds shall be sized such that they can accept the daily waste water flow without surface seepage, and the basal area, which is the natural soil area beneath the mound, shall be sufficiently large to conduct the effluent into the underlying topsoil. The system shall also be designed to avoid encroachment of the water table into the mound.

c) For homes having up to and including 4 bedrooms or for flows less than 800 gallons per day the mound shall be designed in accordance with 906.60. For homes with 5 or more bedrooms or for flows greater than or equal to 800 gallons the mound shall be designed in accordance with 906.70.

d) Design of the Absorption Area

1) Sizing the absorption area. The size of the absorption area is dependent upon the daily waste water flow. The design infiltration capacity of the fill material shall be 1.2 gal/ft2/day.

2) Absorption Area Design

A) System configuration. The absorption area within the mound shall be constructed as trenches or beds. An illustration of construction using trenches and bed is shown in Appendix A, Illustration A through D. The location of the water table and soil permeability will dictate whether a trench or bed shall be used. In slowly permeable soils, two or three narrow parallel trenches shall be used instead of a bed. Trench widths shall be between 24 and 48 inches. For permeable soils either a narrow rectangular bed or two or three narrow parallel trenches may be used. Bed widths shall not be greater than 10 ft.

B) On sloping sites, the trenches and beds shall be situated perpendicular to the slope in order to prevent the concentration of effluent into a small area as it moves laterally downslope. Sufficient basal area shall be provided so all the effluent infiltrates into the natural soil before it reaches the toe of the mound. With a trench system, the trench spacing shall be such that the effluent from an upslope trench shall be absorbed by the natural soil before reaching the area under the next trench downslope.

C) The bottom of the absorption area within the bed and trenches shall be level and at the same elevation.

e) Mound Dimensions

1) Mound height. The mound height shall consist of the fill depth (D & E), the trench or bed depth (F), and the cap and topsoil depth (G & H) as shown in Appendix A, Illustration A through D for trench and bed construction respectively. A minimum of 1 foot of fill is required under the bed or trenches. For sites where the soil depth is less than 3 feet over creviced bedrock, the fill depth (D) shall be a minimum of 2 feet.

2) Bed or trench depth (F). The depth of the bed or trenches shall be at least 10 inches. A minimum of 6 in. of aggregate shall be placed beneath the distribution pipe. Clean, ½-2 inch stone shall be used. The use of soft limestone is prohibited.

3) Cap and topsoil (H & G). The depth of soil over the aggregate at the apex (H) shall be a minimum of 1.5 ft. For a 3 parallel trench system, the depth shall be a minimum of 2 ft. At the outer edge of the gravel the cap and topsoil shall be at least 1 ft. deep. The cap shall be topsoil or finer textured subsoil. A minimum of 6 inches of topsoil shall be placed over the entire mound. The topsoil shall be seeded with grass seed to control erosion.

4) Side and end slopes. Side and end slopes shall be no steeper than one foot vertical rise in 3 feet horizontal.

f) Basal Area

1) The basal area is the natural soil-fill interface of the mound. The basal area required shall be dependent upon the soil and site conditions. For level sites, the total basal area beneath the mound can be used. For sloping sites the only basal area which may be considered for design is the area beneath and downslope of the bed or trenches (see Appendix A, Exhibit C). The percolation rate of the natural soil shall determine the mound area required. For the percolation rates shown the following design loading rates shall be used:

A) 60 min – 1.2 gal/ft2/day

B) 180 min – .74 gal/ft2/day

C) 360 min – .24 gal/ft2/day

2) If sufficient basal area is not available for the given design and site conditions, additional fill shall be used to make the mound wider for a level site or the fill used to extend the downslope width on a slope site until sufficient area is available.