SYSTEM DESIGN (Mound System)

1. Planned Residence/Septic Tank Size
   Usage: 5 Bedroom= 1,500 Gal.
   55 Fixture Units= 2,000 Gal.

2. Required septic tank capacity: 2,000 gals.

3. "Worst Case" percolation rate: 54 min./inch (from field tests)

4. Required hydraulic loading: 150 gals./bedroom

5. Required total hydraulic loading: 750 gals./day

6. Mound body infiltration rate (for silty sand): 1.5 gals./sq.ft./day

7. Distribution area: 750 total hydraulic loading
   1.5 mound body fill infiltration rate
   = 500 sq. ft.

8. Distribution bed dimensions: 50 ft. long x 10 ft. wide x 1 ft. deep

9. Mound body fill depth: 3 feet below bottom of distribution bed

10. Topsoil cover depth: 12 inches at center of distribution bed and
    6 inches at edge of distribution bed.

11. Overall dimensions of proposed mound system:
    75 ft. long x 35.5 ft. wide x 4 ft. deep*
    * 2 ft. above existing ground surface (Plus an additional 1 foot of soil cover)

12. Effluent Distribution System:
    Distribution Laterals
    (length/dia./number/flow per lat.) ........ 47'/1.5"/3/18.7
    Distribution Manifold
    (length/dia.) ............................... 7/3"
    Delivery Pipe
    (length/dia.) ............................... 50'/4"
13. **Minimum required pump flow rate**: 56 gals./min.

14. **Calculation for determining total dynamic head**:

   15*(Vertical relief between wet well pump cut-off and invert of the distribution laterals)
   0.1 (friction loss over the delivery pipe)
   0.1 (friction loss of fittings)
   2.0 (desired head over the distribution system)
   17.2 ft.

   *Based on the standard dimensions of the recommended Gould (3) A2-7 Pump on/off switch.*

15. **Wet well effluent pump requirements**:

   **Required flow rate**: 56 gals./min.
   **Required total dynamic head (+15%)**: 19.8 ft.

16. **Wet well sizing**: 200 gals. Plus 100 gals./bedroom Over the First.

   200 gals. + 400 gals. = 600 gallon Wet Well

   **Required Components**
   - Low level water alarm and redundant cut-off
   - Pump off switch
   - Pump on switch
   - High water alarm

17. **Wet well mechanical specifications**:

   - Effluent Pump ............ Rec.: Gould; Model No. 3887
   - Control Panel ............ Rec.: Gould; SES Series
   - Pump On/Off Switch Rec.: Gould; (3) A2-7
   - High/Low Level
   - Effluent Sensor ............ Rec.: Gould; Built into control box