

### ***III. MATERIALS AND METHODS***

#### ***A. RESEARCH SITE DESCRIPTION FOR ALTERNATIVE OSWTDS***

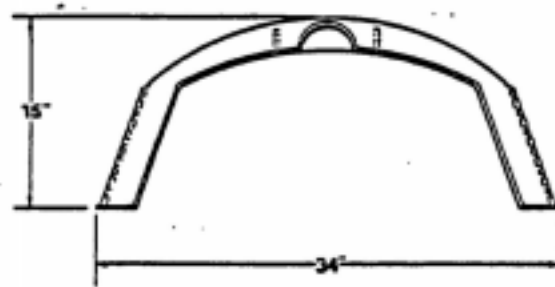
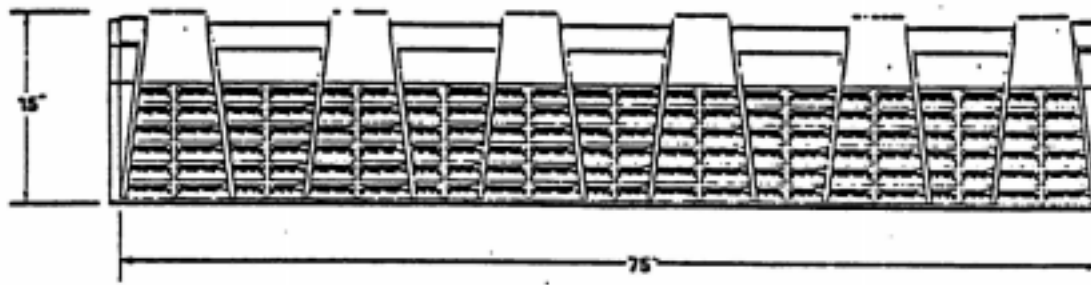
A soil infiltrator low-pressure distribution (LPD) system was developed based on the soil restrictions and water table limitations present at the chosen site. The system was sized according to the Commonwealth of Virginia Sewage Handling and Disposal Regulations (1982) that specify 567.8 L/bedroom/d. The experimental loading rates were selected and the system designed by Dr. Raymond B. Reneau, Jr., Professor, and Dr. Marcia J. Degen, Research Associate, Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University (VPI&SU).

#### ***A. 1. CHAMBERS***

The chambers (Infiltrator Systems, Inc., Old Saybrook, CT) were designed to replace conventional stone in drainfields (Infiltrator Systems, Inc., 1998). They were constructed of molded PolyTuff, a proprietary blend of polyolefin plastic and formulated for optimum strength and chemical resistance (Figure 1). Impervious to wastewater constituents, the infiltrators were placed directly onto the soil surface, leaving the entire area open to infiltration.

#### ***A. 2. SOIL INFILTRATOR LOW-PRESSURE DISTRIBUTION SYSTEM IN BLAIRTON SOIL***

The field site (Blairton fine-loamy, mixed, mesic Aquic Hapludults, Tables 1 and 2) was located 0.4 km north of Stephens City, Frederick County, on Virginia Route 11N. The soil infiltrator low-pressure distribution system was installed to



**THE INFILTRATOR**  
No Scale

Figure 1. Longitudinal view and cross-section sketches of a soil infiltrator manufactured by Infiltrator Systems, Inc.