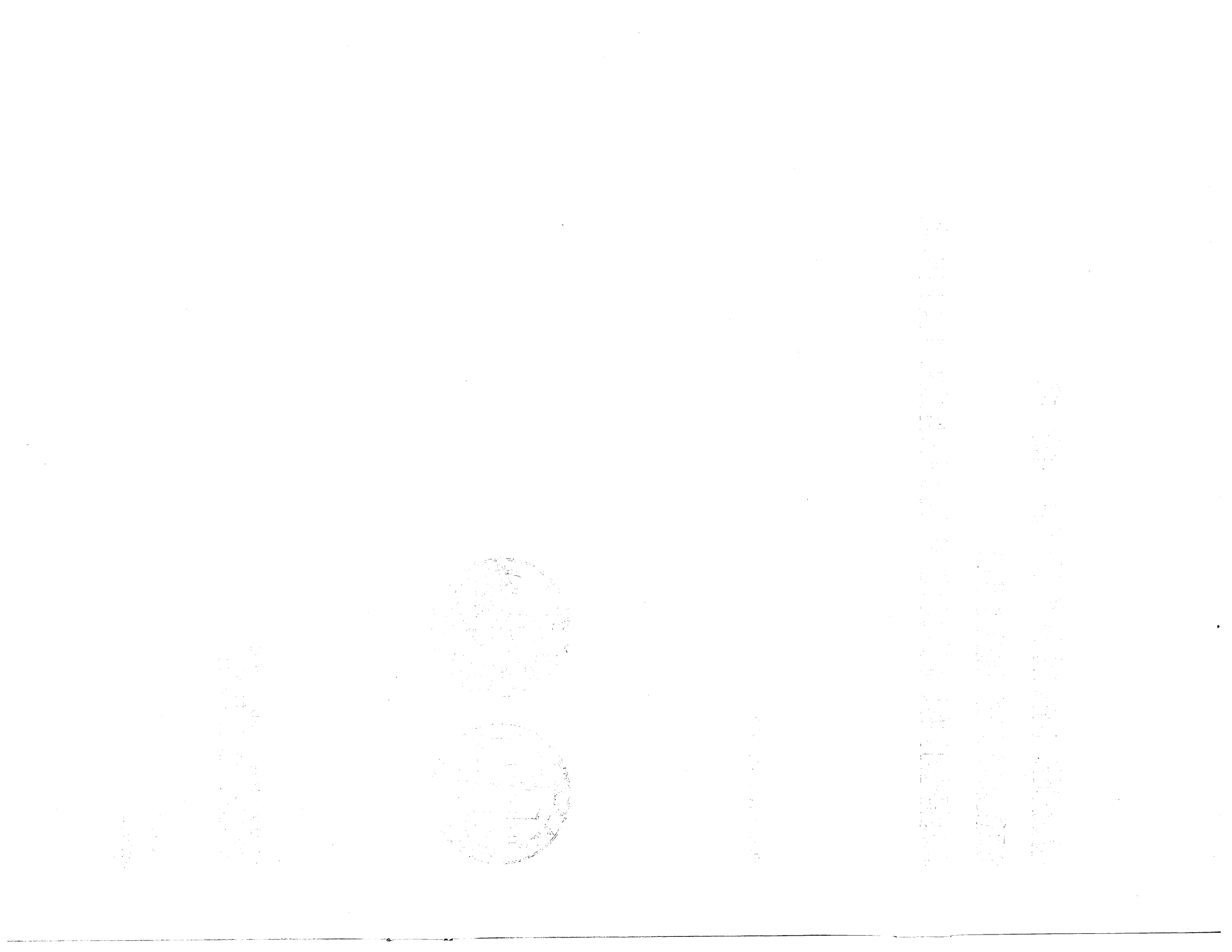
INDIANA STATE BOARD OF HEALTH
REGULATION HSE 25-R
RESIDENTIAL ON-SITE WASTEWATER DISPOSAL

Effective June 25, 1978

INDIANA STATE BOARD OF HEALTH
1330 WEST MICHIGAN STREET
INDIANAPOLIS, INDIANA 46206

7-78—5M



REGULATION HSE 25-R
RESIDENTIAL ON-SITE WASTEWATER DISPOSAL

A regulation (as authorized by IC 16-1-3-22 and IC 16-1-3-13) pertaining to the design, construction, installation, maintenance and operation of residential sewage disposal systems.

SECTION 1. This regulation shall be administered by the local boards of health through their Health Officer and his authorized representative.

SECTION 2 **DEFINITIONS**—as used in this Regulation:

a. **"Administrative Authority"** means the local board of health.

b. **"Dwelling"** means any house or place used or intended to be used by human occupants as a place of residence.

c. **"Foundation drain"** means that portion of a building drainage system provided to drain ground water from the outside of the foundation or under basement floor, not including any sewage.

d. **"Building drain"** means that part of the lowest horizontal piping of a house drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the building sewer beginning 2 feet outside the building.

e. **"Building sewer"** means that part of the horizontal piping from the end of the building drain to its connection with the main sewer or private sewage disposal system and conveying the drainage of but one building site.

f. **"Residential sewage disposal system"** means all equipment and devices necessary for proper conduction, collection, storage, treatment, and on-site disposal of sewage from a one or two family dwelling. Included within but not limited to the scope of this definition are building sewers, septic tanks, subsurface absorption fields, and privy vaults.

g. **"Percolation test"** means a procedure used to determine the ability of soils to absorb sewage effluents.

h. **"Person"** means any individual, partnership, co-partnership, firm, company, corporation, association, trust, estate or his legal representative or agent.

i. **"Septic tank"** means a watertight structure into which sewage is discharged for settling and solids digestion.

j. **"Distribution box"** means a structure designed to distribute the effluent from a septic tank equally into the various sections of pipe of an absorption system.

k. **"Sewage"** means the water-carried waste derived from ordinary living processes.

l. **"Sanitary sewerage system"** means, for the purposes of this regulation, a system of sewers which conveys sewage away from the lot on which it originates for treatment.

m. **"Sludge"** means the digested or partially digested solid material accumulated in a sewage treatment facility.

n. **"Subsurface absorption field"** means open-jointed or perforated pipes laid in a system of trenches into which the effluent from the

distribution box is discharged for direct absorption into the soil.

o. **"Limiting layer"** means any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch.

p. **"Health Officer"** means the health officer of a local board of health.

q. **"Soil Profile Observation"** means observations of the physical characteristics of the soil horizons or layers to a depth of at least five feet.

SECTION 3. GENERAL REQUIREMENTS

A. No person shall throw, run, drain, seep, or otherwise dispose into any of the streams or waters of this state, or cause, permit, or suffer to be thrown, run, drained, allowed to seep or otherwise disposed into such waters, any organic or inorganic matter that shall cause or contribute to a polluted condition of such waters unless a permit for such disposal has been obtained as authorized by IC 13-1-3 or IC 13-7.

B. The design, construction, installation, location, maintenance and operation of residential sewage disposal systems shall comply with the provisions of this regulation.

C. All residential sewage disposal systems utilizing sanitary privies shall conform to the standards of the Indiana State Board of Health.

D. Any dwelling which is not connected to a sanitary sewerage system shall be provided with a residential sewage disposal system.

E. Where soil conditions preclude the installation of a subsurface absorption field sewage disposal system, the Indiana State Board of Health, after consultation with the local health agency, may approve uses of such alternative equipment, facility or pollution control device as is deemed necessary.

SECTION 4 BUILDING SEWER

A. The building sewer shall be located at least 50 feet from any water supply well or pump suction line serving a residence; however sewers constructed of water works grade cast iron having mechanical or push type joints or of waterworks grade pressure type plastic with an SDR rating of 26 having gasketed or push-type joints may be located within the 50 foot distance but not closer than 20 feet to dug and bored wells and not closer than 10 feet to drilled and driven wells or underground pump suction lines.

B. The building sewer shall be so designed and constructed to give mean velocities, when flowing full, of not less than 2.0 feet per second, based on Kutters formula using an "N" value of 0.013.

SECTION 5 SEPTIC TANKS

A. **General Requirements**

1. All septic tanks shall be located in accordance with the distance in Table II.

2. No septic tank shall be located upon another property or lot other than that property or lot upon which the sewage originates unless easements to that effect are legally recorded and approved by the proper authority or commission.

3. Access must be provided to all parts of septic tanks where necessary to enable adequate inspection, operation, and maintenance.

B. **Capacity**

1. Every septic tank shall have a minimum capacity below the water line as specified in Table I.

TABLE I

REQUIRED MINIMUM CAPACITIES FOR SEPTIC TANKS

(Minimum size tank 750 gallons liquid capacity)

No. of Bedrooms in Dwelling	Normal Liquid Cap. of Tank in Gallons
2 or less	750
3	900
4	1,100
5	1,250
6	1,500

2. Minimum water depth in any compartment shall be 32 inches.
3. Maximum depth of water for calculating capacity of the tank shall not exceed 6 feet.
4. Septic tanks shall not be used for the disposal of chemical wastes in quantities which will be detrimental to the bacterial action in the tank, roof drainage, foundation drains, or area drains.
5. All septic tank effluent shall discharge into a subsurface absorption field or other treatment system as approved in accordance with Section 3E of this regulation.

C. **Construction Details**

1. Either tees or baffles shall be used as inlet and outlet fixtures. Inlet baffles shall extend at least 8 inches above and 6 inches below the water level of the tank. The outlet baffle shall extend above the water level a distance of at least 8 inches and below the water level a distance of 40 percent of the liquid depth. A minimum clearance of one inch shall be provided between the lid of the tank and the top of the baffle or tee. The invert of the inlet pipe shall be a minimum of 3 inches higher than the invert of the outlet pipe.
2. An access opening shall be brought close to the ground surface and shall be so located that sludge and scum measurements may be readily ascertained in each compartment of the tank. This opening shall be a minimum of 8 inches in its least dimension. In the event the tank is covered by 24 inches or more of earth backfill, a manhole with a suitable cover shall be extended to within 6 inches of the ground surface, such manhole to be least 30 inches in diameter and placed over an access opening in the top of the tank.

D. Materials for construction shall be watertight concrete, metal or other impervious material.

E. Minimum wall thickness of tanks shall conform to the following specifications:

Steel _____ ¼ inch thick
Fiberglass _____ ¼ inch thick
Segmented blocks, bricks, etc. ____ 8 inches thick
Poured concrete __ 6 inches thick
Poured concrete, reinforced (≤4000 psi) _____4 inches thick
Poured concrete, reinforced (>4000 psi) __2½ inches thick

F. Septic tank bottoms shall conform to the specifications set forth for septic tank walls.

G. Concrete septic tank tops shall be a minimum of 4 inches in thickness and reinforced with ¼-inch reinforcing rods in a 6-inch grid or equivalent.

H. All concrete surfaces above the water line inside septic tanks shall be given a protective coating of bituminous or similar material.

I. **Connecting Pipes**

1. The pipes connecting septic tanks installed in series shall be 4 inches minimum diameter.
2. All inlet and outlet connections at the septic tanks shall be

sealed with an appropriate material.

3. All joints in the sewer connecting septic tanks in series shall be watertight.

SECTION 6 DISTRIBUTION BOXES

A. A distribution box or series of distribution boxes shall be installed between the septic tank and the subsurface absorption system and each absorption line shall connect directly thereto. It shall be installed in such a manner that it will remain level and provide equal distribution of flow to the individual lines of the subsurface absorption field.

B. The pipe connecting septic tanks installed in series, the septic tank to the distribution box and the pipe connecting the distribution box to the absorption system must be watertight and be constructed of cast iron, vitrified clay tile, concrete sewer tile, asbestos-cement, copper (hard drawn, type K or L) or plastic sewer pipe or equivalent.

C. Distribution boxes shall be constructed of watertight concrete, metal or other impervious material.

D. Distribution boxes shall be provided with an opening, such as a removable lid, which will serve as a ready access for inspection, cleaning, and general maintenance.

SECTION 7 CONSTRUCTION OF SUBSURFACE ABSORPTION FIELD

A. All subsurface absorption fields shall be located in accordance with the distances shown in Table II. In soils underlain by fissured or creviced rock formations or by sand or gravel, greater separation distances may be necessary to minimize the possibility of water contamination.

B. Minimum trench width is 18 inches with maximum trench depth of 48 inches. Depths of 18 inches to the top of the tile are satisfactory.

TABLE II

Minimum Distance in Feet from — to	Septic Tank	Absorption System
Private water supply source	50	50
Semi-public water supply source	100	100
Public water supply source	200	200
Lake or reservoir	50	50
Stream, ditch, or drainage tile	25	25
Dwelling or other structure	10	10
Side or rear lot lines	5	5
Front lot lines	5	5
Water lines continually under pressure	10	10
Suction water lines	50	50

C. The absorption tile or perforated pipe shall be completely surrounded by coarse gravel, stone or other approved materials with at least 6 inches below the tile or pipe and extending upward to at least 2 inches above the tile or pipe.

D. The top of the stone shall be covered with untreated building paper, 2-inch layer of straw, or other like material in such a manner as to prevent the stones becoming clogged with the earth fill.

E. Field tile shall be lain with ¼-inch separation between the ends or joints.

F. Absorption lines located near trees or shrubs should have at least 12 inches of coarse gravel, stone or other approved materials below the pipe or tile.

G. The gravel, stone or other approved materials shall be a mixture ranging in size from ½ to 2½ inches. Fines, dust, sand and clay must be removed from the material before placing in the trench.

H. Absorption lines shall be individually connected to a distribution box to insure equal distribution to the entire field.

I. Subsurface absorption fields shall not be constructed in areas where the land surface gradient is greater than 12 percent.

J. A maximum grade of 4 inches per 100 feet of run shall be given the distribution tile.

K. No single lateral shall exceed 100 feet in length.

L. All open joints in the distribution lines which would permit entry of material into the tile shall be covered with paper treated to prevent its decomposition.

M. There shall be a minimum separation of 7½ feet, on center, between the absorption field trenches.

SECTION 8 SITE EVALUATION

A. Properties of the soil profile of each site shall be evaluated using guidelines as set forth in the soil manuals and handbooks of the Soil Conservation Service, U.S. Department of Agriculture, and, where necessary, by percolation tests conducted in accordance with the provisions of this regulation. If soil profile observations are used to determine site feasibility, the following table shall be used to determine the absorption system size.

TABLE III

Data for Determining Square Feet of Absorption Area Needed Per Bedroom for Absorption Trenches Using Soil Analysis Figures

Permeability Rating	Square Feet Needed in Trench Bottom per Bedroom
More than 6 inches per hour	165 sq. ft. per bedroom
2 inches to 6 inches per hour	250 sq. ft. per bedroom
1 inch to 2 inches per hour	330 sq. ft. per bedroom
Less than 1 inch per hour	Unsuitable for absorption field

B. Subsurface absorption fields shall not be constructed in soils rated as having severe or very severe limitations for subsurface sewage disposal by the Soil Conservation Service, U.S. Department of Agriculture, unless that limitation is not present as shown by field investigation or can be overcome.

C. Subsurface absorption fields shall not be constructed in soils in which a seasonal high ground water level, bed rock, or a limiting layer exists within 3 feet of the proposed trench bottom. A greater vertical distance is desirable and may be required where aquifers are in danger of contamination.

D. No absorption field lateral shall be installed in unstable ground such as unconsolidated fill.

E. Roof, foundation and storm water drains shall not discharge into nor upon subsurface absorption systems.

F. There shall be no construction of any kind, including driveways, covering any portion of a residential sewage disposal system. The connecting sewers between the house and the septic tank (building sewer), the septic tank and the distribution box and the distribution box and the absorption lines may be installed under driveways if the sewer is constructed of cast iron.

SECTION 9 PERCOLATION TESTS

When percolation tests are required before a subsurface absorption field is installed a minimum of three test holes distributed evenly over the proposed lateral field are required. The square feet of subsurface absorption field required shall be as specified in Table IV.

TABLE IV

DATA FOR DETERMINING SQUARE FEET OF ABSORPTION AREA NEEDED PER BEDROOM FOR ABSORPTION TRENCHES

Time in Minutes For Water to Fall One Inch	Effective Absorption Area in Square Feet Needed in Trench Bottom per Bedroom
3 mniutes or less per inch	100 sq. ft. per bedroom
4 minutes per inch	115 sq. ft. per bedroom
5 minutes per inch	125 sq. ft. per bedroom
10 minutes per inch	165 sq. ft. per bedroom
15 minutes per inch	190 sq. ft. per bedroom
30 minutes per inch	250 sq. ft. per bedroom
60 minutes per inch	330 sq. ft. per bedroom
Over 60 minutes	Unsuitable for absorption field

SECTION 10 PERCOLATION TEST PROCEDURE

The procedure for conducting the percolation test is as follows:

A. Dig or bore holes with horizontal dimensions of from 4 to 12 inches and vertical sides to the estimated depth of the bottom of the proposed absorption trench. In order to save time, labor and volume of water required per test, the holes may be bored with a 4-inch auger.

B. Scratch the bottom and sides of the hole with a knife blade or sharp pointed instrument in order to remove any smeared soil surfaces and to provide a natural soil interface into which water may percolate. Remove all loose soil from the hole. Place about 2 inches of clean coarse sand or fine gravel in the bottom of the hole.

C. Carefully fill the hole with clear water. By refilling if necessary, keep the hole full of water for at least 12 hours. This saturation procedure will give most soils ample time to swell and approach the conditions that prevail during the wetter seasons of the year.

D. After the 12-hour saturation period, allow the water in the hole to seep away completely. Remove that portion of the sand or gravel which has become coated with soil particles.

E. Pour about 12 inches of water into the hole and wait until about 6 inches of this water remains.

F. With about 6 inches of water remaining in the hole, establish a reference point by use of a nail stuck in the side of the hole near the top of the hole. From this point obtain a measurement to the top of the water level. Record the measurement and the exact time.

G. Continue the measurement to the top of the water surface for a period of at least three hours and time recording at 15 minute intervals until at least three consecutive readings of approximately the same rates of percolation are obtained. It may be necessary to add another 6 inches of water more than once to obtain the consecutive same-rate readings.

H. Convert the final time interval obtained in "G" above to minutes and divide this figure by the number of inches of water which has seeped away in that interval to obtain the time for one inch of water to seep away. The system design should be based on the percolation rate of the slowest hole on the proposed site.

I. Determine from Table IV the square feet of trench bottom area needed for each bedroom. See Table V for width and spacing of absorption trenches.

TABLE V

SIZE REQUIREMENTS FOR ABSORPTION TRENCHES

Width of Trench at Bottom in Inches	Depth of Trench in Inches	Effective Absorption Area in Square Feet per Linear Foot
18	18 to 30	1.5
24	18 to 30	2.0
30	18 to 36	2.5
36	24 to 36	3.0

J. Multiply the square feet of trench bottom absorption area needed for each bedroom by the number of bedrooms in the house to get the total trench bottom area needed.

SECTION 11 DEFECTS

Should any defects exist or occur in any residential sewage disposal system or privy which would cause said sewage disposal system or privy to fail and cause an insanitary condition, the defect shall be corrected by the owner or agent of the owner, occupant or agent of the occupant within the time limit set by the Health Officer.

SECTION 12 PERMITS AND INSPECTION

A. Before commencement of construction of any private residence where a residential sewage disposal system or privy is to be installed and before the construction of any additions to existing systems, except as provided in Section 12B, the owner or agent of the owner shall first obtain a written permit signed by the Health Officer. The application for such permit shall be made on a form approved by the Indiana State Board of Health, which application shall be supplemented by any plans, specifications and other information as deemed necessary by the Health Officer.

B. Where any alteration of an existing residential sewage disposal system is planned or required, or where the construction of a residential sewage disposal system is planned on a tract of land at least ten (10) acres in size which system is at least one thousand (1000) feet from any other residential sewage disposal system and on which tract of land the resident is engaged in farming, the owner or agent of the owner must first obtain a written permit signed by the Health Officer. The application for such permit shall be made on a form approved by the Indiana State Board of Health, which application shall be supplemented by any plans, specifications and other information as deemed necessary by the Health Officer. The provisions of this regulation relating to system design and installation shall not apply where alterations are proposed or required or where construction is proposed as described in this section. Such repairs, alterations or construction will be made in accordance with the best judgment of the local board of health.

C. Subdivisions designed to utilize on-site residential sewage disposal systems, the plans for which were duly approved, in writing, by the administrative authority prior to December 18, 1977, are exempt from the provisions of this regulation relating to the design and installation of residential sewage disposal systems.

D. The permittee shall notify the Health Officer when the work is ready for final inspection, and before any underground portions are covered. The provisions of the permit for the construction of a residential sewage disposal system or privy shall not be considered to be fulfilled until the installation is completed to the satisfaction of the Health Officer or his agent.

E. The Health Officer or his agent shall be permitted to enter upon all properties at the proper time for purposes of inspection, observation, measurement, sampling and testing necessary to carry out the provisions of this regulation.

SECTION 13 ENFORCEMENT PROCEDURE

A. Any person found to be violating any provision of this regulation may be served by the Health Officer with a written order stating the nature of the violation and providing a time limit for satisfactory correction thereof.

B. After receiving an order in writing from the County Board of Health or the duly appointed Health Officer, the owner, agent of the owner, the occupant or agent of the occupant of the property shall comply with the provisions of this regulation as set forth in said order and within the time limit included therein. Said order shall be served on the owner or the owner and the occupant or on the agent of the owner, but may be served on any person who, by contact with the owner, has assumed the duty of complying with the provisions of an order.

SECTION 14 APPEAL PROCEDURES

A. If an applicant is refused a permit, the administrative authority shall, upon request, afford the applicants a fair hearing in accordance with the provisions of IC 4-22-1.

B. The administrative authority may, after reasonable notice and opportunity for fair hearing, in accordance with the provisions of IC 4-22-1, revoke a permit authorizing the construction of a residential sewage disposal system if it finds that the holder of the permit has failed to comply with any provision of this regulation.

SECTION 15 VALIDITY

If any section, paragraph, sentence, clause, phrase, or word of this regulation, or any other part thereof be declared invalid for any reason, the remainder of said regulation shall not be affected thereby and shall remain in full force and effect.