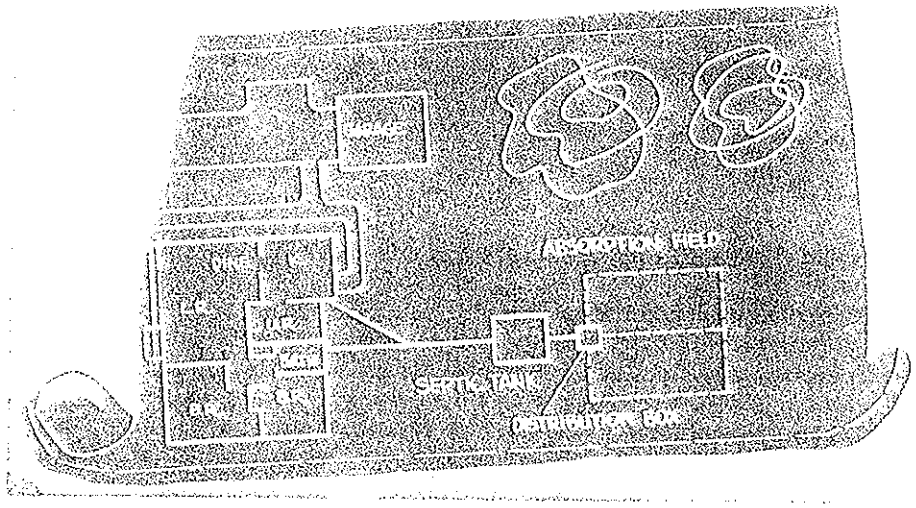
Bulletin No. S. E. 8
Indiana State Board of Health 1974

Septic Tank Sewage Disposal Systems



for Farm and Suburban Homes

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CONTENTS

Septic Tank Sewage Disposal Systems for Farm and Suburban Homes

PART I

Public Health Aspects

Limitations of Individual Sewage Disposal Systems

Modernization of farm homes and suburban housing construction have greatly increased the use of septic tank sewage disposal systems. The fact that many homes use septic tank sewage disposal systems does not mean that this is the best method of sewage disposal. **Wherever possible, the use of municipal sewers and sewage treatment facilities should be given preference over individual sewage disposal systems.**

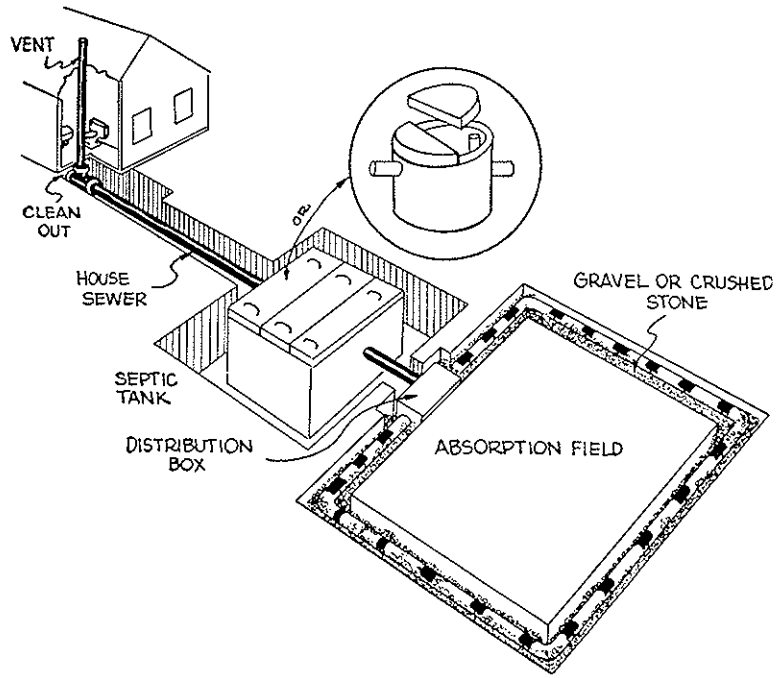

Figure 1—Typical Septic Tank Sewage Disposal System using either a single compartment rectangular or round tank.

Limitations of Soil Sites

Soils differ in their ability to absorb, transmit and hold liquids, to change or biodegrade organic residues, and to render pathogenic organisms and toxic substances harmless. Some soils have only slight limitations when used for septic tank sewage disposal systems; others have moderate limitations but can be used if the system is designed and constructed to overcome these soils conditions. Soils with severe limitations should not be used for septic tank-absorption systems.

Diseases

The use of unsatisfactory individual sewage disposal equipment and faulty location and construction has, in many instances, endangered public health. Typhoid fever, dysentery and diarrhea may be traceable to faulty sewage disposal and sickness and expense may result from these diseases. These disease organisms are found in the body discharges of individuals suffering from the diseases. Typhoid fever and dysentery may also be spread by "carriers" who are people that have disease organisms in their bodies but are not ill. Sewage must not be discharged into abandoned wells or fissured rock formations as it will contaminate the ground water. Sewage disposal systems located near wells may contaminate the water by surface drainage or underground seepage. Untreated or insufficiently treated sewage discharged to the ground surface also results in fly-breeding areas, filth and odors. Concentrations of insufficiently treated sewage discharged into lakes or streams can cause the water to be unfit for bathing, agricultural or other public and private uses.

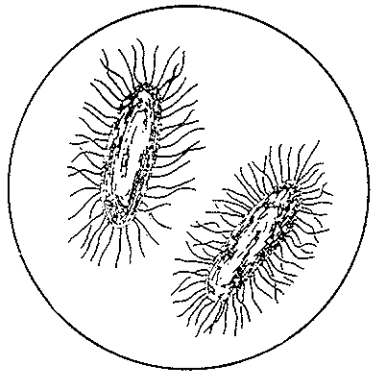

Figure 2 — Diagrammatic sketch of Filth-Borne Disease Bacteria (Enlarged 10,000 times).

Filth-borne disease organisms usually reach the people they infect through: (1) water, (2) milk, (3) food, (4) flies, (5) rodents and (6) personal contact.

PART II

Permits and Plans

Permits

Many counties and towns in Indiana require that a permit be obtained before a septic tank sewage disposal system is installed. It is recommended that a soil survey map with interpretations for septic tank absorption fields accompany the application. **Inquire about local ordinances before starting construction.**

Services

Advice and planning aid for individual residential sewage disposal system installation may be obtained from (1) local health departments, (2) city or county planning commissions, (3) county cooperative extension specialists, (4) local Soil and Water Conservation Districts, (5) Purdue University, and (6) the Indiana State Board of Health.

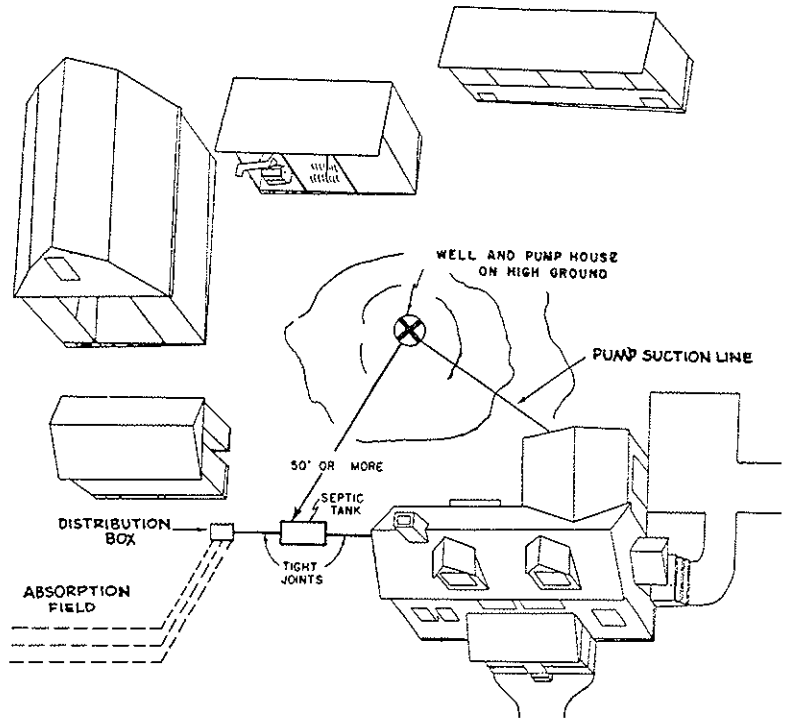

Figure 3—Location of the Sewage Disposal System for a Farm Home.

Plans

All sewage treatment facilities should be carefully laid out and installed. Good design and installation will reduce the possibility of failure. A plan of the sewage disposal system should be made and kept on file by the owner so that the location and details of construction are not forgotten. In case of failures or alterations, a plan of the system is essential so that the troubles can be easily located and repairs made at minimum expense. Pencil sketches are satisfactory as plans of residential sewage disposal systems, providing they show distances from buildings, property lines, wells, dimensions of the system and other similar information.

Some Planning Considerations

The plan for the septic tank sewage disposal system should fit into the overall planning of the home. Normally, hundreds of gallons of sewage must be disposed of each week from a home equipped with water-using facilities; therefore, it is important to consider and follow the Suggested Planning Guides. In platting subdivisions consideration should be given to planning the location of all wells and sewage disposal systems so that the development of any one lot will not restrict the development of an adjacent lot.

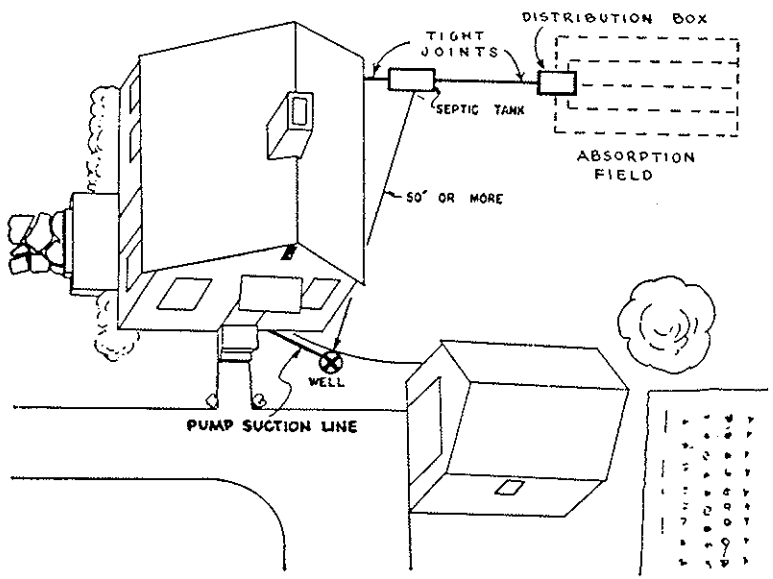

Figure 4—Location of the Sewage Disposal System for a Suburban Home.

The following suggested planning guides should be considered in the overall planning for the home before construction is started.

Suggested Planning Guides

1. Soil percolation test: These tests are used to determine the soil absorption rate and size of the absorption trench as explained in Part VI of this bulletin. In addition, soil survey information of the area planned is helpful in determining soil capabilities and hazards.

2. The following minimum lot sizes should be provided where private sewage disposal facilities are utilized:

Class	Percolation test minimum required for water to fall one inch	Minimum lot area square feet
1	3 minutes or less	10,000
2	3 to 15 minutes	15,000
3	15 to 60 minutes	18,000
4	Over 60	Unsuitable for septic tank-absorption fields.
5		Soils classified as having severe limitations are not suitable for the development of private subsurface sewage disposal systems.

3. Topography: The slope of the land will affect construction costs, depth of sewers, direction of surface drainage, erosion and sedimentation control, and the method of draining the basement fixtures. Land on slopes of greater than 12 percent gradient should not be used for septic tank absorption fields. There are suggested plans for developing absorption fields on slopes up to 12 percent gradient in U. S. Public Health Bulletin No. 526.

4. Soil Wetness, Ponding and Flooding: Septic tank sewage disposal systems are not permitted in areas that are seasonally wet, pond water, or periodically flood during any part of the year.

5. Water Supply: Protect the water supply from contamination by safe location and construction of the sewage disposal system as described in this bulletin and in Bulletin S. E. 15. Some soils that absorb and transmit liquids at a rapid rate have a hazard of possible contamination of local water

supplies. Refer to minimum distance of sewage facilities to private water supply wells in this bulletin.

6. Plumbing: The plumbing in the house should be laid out so that there is a minimum of bends and turns required from facilities to the septic tank.
7. Location and Construction: Comply with local ordinances and the recommendations of this bulletin.

PART III

The Sewage Disposal System

The Parts of the System

The essential parts of a septic tank sewage disposal system are: (1) the house plumbing, (2) the sewer from the house to the septic tank, (3) the septic tank, (4) the tank outflow sewer or effluent sewer, (5) the distribution box and (6) the underground absorption or seepage lines.

Sewage Characteristics

Untreated household sewage is principally composed of human excreta, paper, garbage and wash water from the plumbing fixtures and drains. Many kinds of bacteria are present in the sewage. Some of these bacteria may be pathogenic or disease-producing bacteria. Much of the solid material in sewage is organic and will decompose readily.

Sewage Flows

Household sewage flows are usually 50 to 75 gallons per person each day, but in some instances they may be much higher.

PART IV

Sewers

The House Sewer Function

The house sewer conducts the sewage from the house to the septic tank.

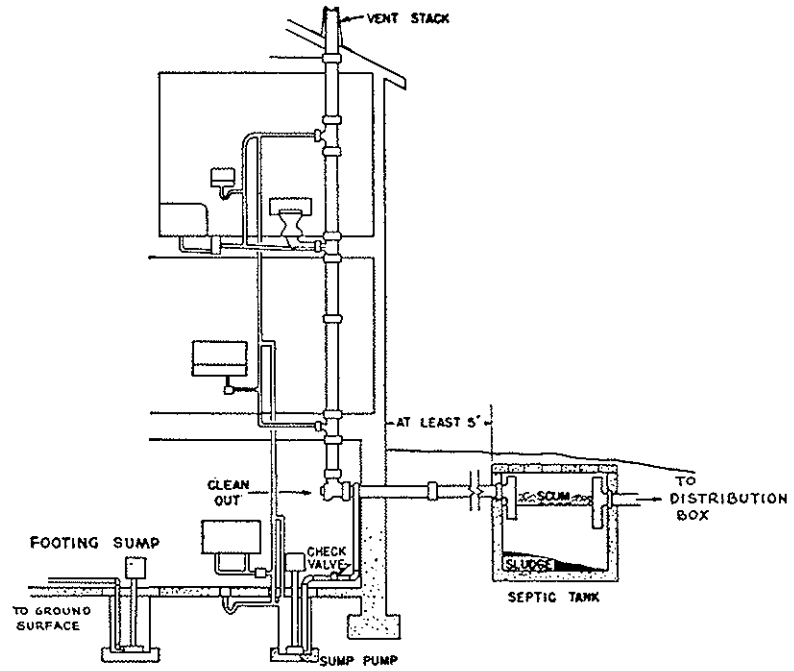

Figure 5—In reasonably level areas a sump pump may be used for elevating sewage from basement to the septic tank.

Where it is necessary to pump water from foundation drains, install a separate sump pump and pump this water to a separate drain discharging to the ground surface.

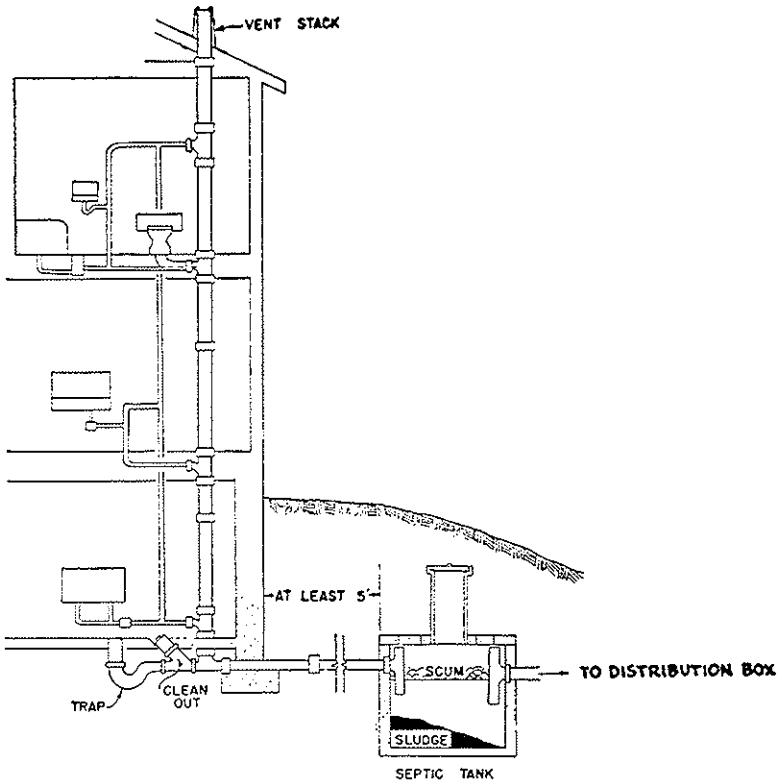

Figure 6—Where the land slopes down hill from the house, it may be possible to drain the basement fixtures directly into the septic tank.

Do not connect foundation drains to the septic tank or absorption field.

Location

Minimum Distance of House Sewer from—

Private water supply well	50 feet
Underground pump suction line	50 feet
Property lines	5 feet

If it is necessary to construct sewers closer than 50 feet to private water supply wells or underground pump suction lines, use cast iron soil pipe with leaded and caulked joints. Do not construct cast iron sewers 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.

Size

A four-inch sewer is satisfactory for residential disposal systems.

Slope

The house sewer should slope not less than 4 inches in 25 feet. Slopes from 4 inches to 8 inches in 25 feet are generally recommended. Slopes greater than 3 feet in 25 are undesirable and may result in agitation or mixing of the septic tank contents by the entering sewage.

Material

Where cast iron soil pipe is not required, the house sewer may be constructed with vitrified clay sewer tile, concrete sewer tile, cement-asbestos sewer, bituminous fibre, plastic, or copper (hard drawn, type K or L) sewer pipe, all with tight joints.

Construction

1. Use cast iron soil pipe or copper (hard drawn, type K or L) as the house sewer to at least three feet outside the foundation wall.
2. Use cast iron soil pipe, other special construction or materials where root clogging is likely.
3. Run the house sewer in a straight line. If bends or turns are unavoidable, install manholes or clean-outs.
4. Dig the sewer trench at least twelve inches wide at the bottom to provide room for laying the sewer.
5. Maintain a uniform slope on the sewer.
6. If the sewer runs at shallow depths under roads or drives protect the sewer pipe against damage.
7. Generally, mortar joints are not recommended for house sewers.
8. The first six to twelve inches of back fill around the sewer should not contain large stones or rubble.
9. The sewer should have at least eighteen inches of cover to prevent freezing.

The Effluent Sewer

Function

The effluent sewer carries the septic tank overflow to the absorption field.

Location

Minimum Distance of Effluent Sewer from—

Private water supply wells	50 feet
Underground pump suction lines	50 feet
Property lines	5 feet
Lake, stream, or ditch	25 feet

Size

The effluent sewer should be the same size as the house sewer.

Slope

The effluent sewer slope should not exceed 4 inches in 25 feet. Steeper slope will increase the velocity of the effluent and tend to concentrate it in the farthest absorption lines.

Material

The effluent sewer may be constructed from vitrified clay sewer tile, concrete sewer tile, cement-asbestos, bituminous fibre, plastic, or copper (hard drawn, type K or L) sewer pipe, all with tight joints.

Construction

1. Avoid locating effluent sewer near shrubs or trees or under walks or drives.
2. Dig the trench at least twelve inches wide at the bottom to provide room for the workmen laying the sewer tile.
3. Construct the effluent sewer with tight joints.
4. Maintain a uniform grade on the sewer.
5. Generally, mortar joints are not recommended for effluent sewers.

PART V

Septic Tanks

Function

The sewage flowing into the tank is slowed and distributed through the tank by the inlet baffling device without disturbing

the scum. The tank must be large enough to provide storage space for accumulations of scum and sludge in addition to detaining the sewage for twenty-four hours. While detained in the tank, a part of the sewage solids settle to the bottom of the tank and the greases and soaps rise to the liquid level of the tank. A free space above the liquid level of the tank is necessary for some scum storage, venting the tank and the absorption field, and changes in liquid level for different conditions of flow. The gas from the system is vented through the main vent stack in the house plumbing system. Bacteria which work in the absence of air digest the settled solids in the tank. The septic tank provides only partial sewage treatment. Additional treatment is needed in an absorption field.

Location

Minimum Distance of Septic Tank from—

Private water supply well	50 feet
Underground pump suction lines	50 feet
Dwelling	5 feet
Property lines	5 feet
Lake, stream, or ditch	25 feet

Types

When properly sized and constructed, compartmental or multiple unit tanks will give a satisfactory performance on a basis of settleable solids removed. However, performance may be influenced by compartment construction, inter-compartment flow arrangements, compartment size, sludge accumulations and overall capacity. Compartment or unit sizes should be not less than 200 gallons liquid capacity. The bottom of the inlet to the first compartment receiving the flow should be three inches above the bottom of the outlet from the compartment. Multiple unit tile tanks should be set on a six-inch thick concrete floor slab. The tile-to-slab connection should be sealed with mortar. The tanks should be constructed so that the sewage will flow from one tank into the second tank in series. Where two tanks of varying sizes are used the larger tank should be placed first and the smaller tank second.

From the standpoint of the individual builder who does not wish to install a prefabricated tank, built-in-place, single compartment, rectangular tanks are probably easiest to construct. When properly sized and constructed, satisfactory efficiencies are obtained with single compartment round or rectangular tanks.

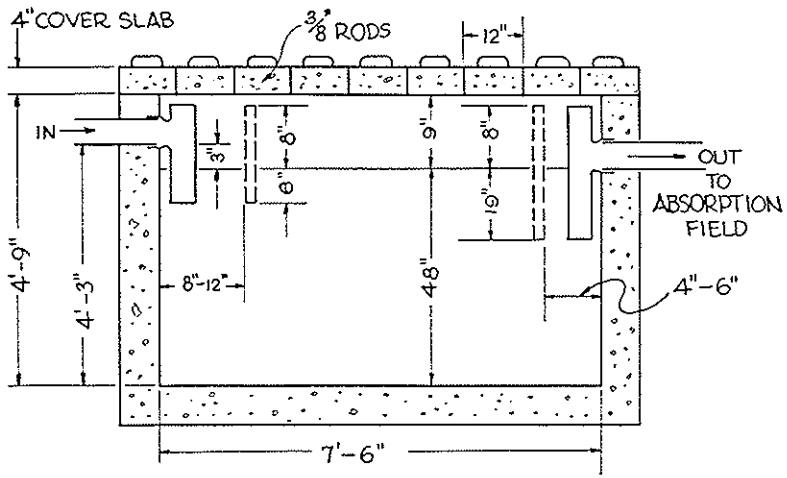

Figure 7—Typical section through a 750-gallon septic tank having a three-foot six-inch inside width. Cast-in-place concrete tanks have walls and floors six inches thick.

If tees are used instead of baffles with the nine-inch minimum scum and air space, the bells must be removed from the tees. This can be avoided by increasing the scum and air space.

Size

The septic tank for the usual single family residence must have at least 750 gallons liquid capacity. Larger tanks are sometimes necessary. Table I gives minimum tank capacities based on the number of bedrooms in the home. The dimensions shown are suggested for built-in-place, single compartment, rectangular tanks.

TABLE I

REQUIRED CAPACITIES AND SUGGESTED DIMENSIONS FOR SEPTIC TANKS
(Minimum size tank 750 gallons liquid capacity)

No. of Bedrooms in Dwelling	Max. No. of Persons Served	Normal Liquid Cap. of Tank in Gallons	Suggested Dimensions for Rectangular Tanks			
			Inside Width	Inside Length	Liquid Depth	Total Depth
2 or less	4	750	3'-6"	7'-6"	4'-0"	4'-9"
3	6	900	3'-6"	8'-6"	4'-0"	4'-10"
4	8	1,100	4'-0"	8'-6"	4'-6"	5'-5"
5	10	1,250	4'-0"	9'-6"	4'-6"	5'-5"
6	12	1,500	4'-6"	10'-0"	4'-6"	5'-6"

Material

The home owner may construct a septic tank from cast-in-place concrete or masonry units or purchase a prefabricated tank which meets the minimum standards in the Appendix.

A cast-in-place concrete tank should have walls and floors six inches thick, poured in one operation. It is important that the volume of mixing water for each batch of concrete be only two-thirds the volume of cement used in the batch. This should make a mushy, workable mix by using one part cement, two parts sand, and three parts gravel or crushed stone by volume. Using more than two-thirds as much mixing water as cement is apt to make the concrete too porous to be water-tight. Spade or puddle the concrete in the walls with a board or spading hoe to assure smooth, tight walls. Forms for a single installation may be made of scrap lumber.

Bill of Materials for 750-Gallon Cast-in-Place Concrete Septic Tank

(Approximately three and one-half cubic yards of concrete)

22 bags of cement
2¼ cubic yards of fine gravel
2¾ cubic yards of coarse gravel or crushed stone

Mixing water
18 ⅜-inch steel bars 4'-6" long—Cover slabs
18 ⅜-inch steel bars 1 foot long—Cover slab handles

Metal tanks are acceptable when adequately protected from corrosion by suitable coatings. Field investigations conducted by the U. S. Public Health Service indicate that improperly coated metal tanks suffer serious corrosion damage after an average of seven years' service.

Fibre glass tanks may be acceptable when properly designed and constructed for strength and operating characteristics.

Concrete block tanks should have eight-inch walls. Fill cores with concrete. Brick tanks should have two-course walls. Use tight mortar joints for brick or concrete block construction. Reinforce the walls at the corners as shown in Figure 8. Set the walls on a six-inch thick concrete floor slab and seal the wall-to-floor connection with mortar.

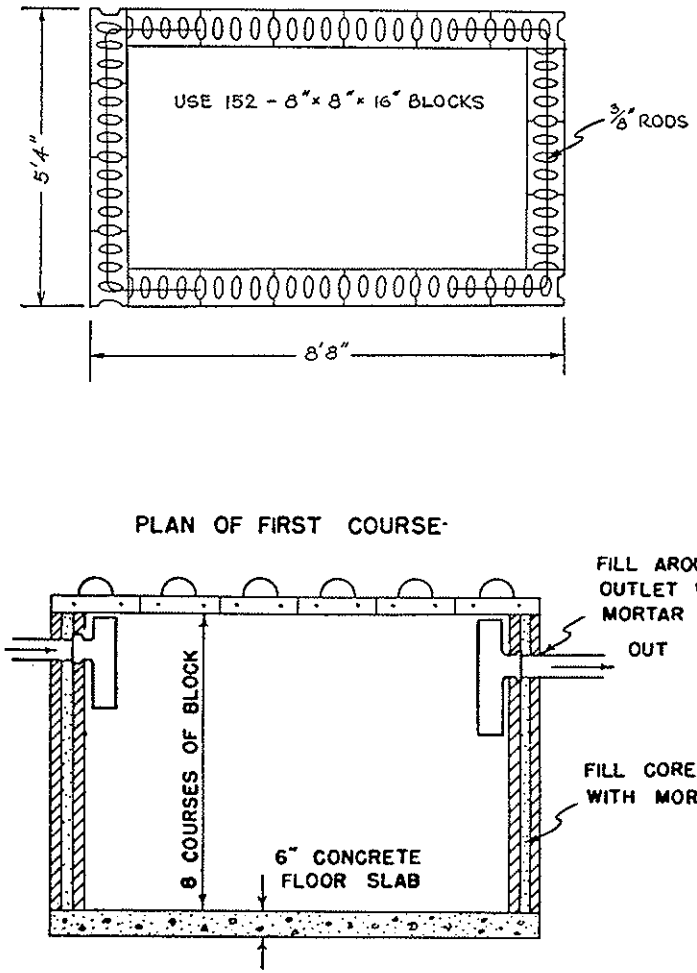

Figure 8—Concrete blocks may be used for the walls of the septic tank. Fill all the cores with concrete and reinforce the corners. This is a 750-gallon septic tank.

Construction

1. Do not locate the tank near trees or in areas subjected to flooding.
2. Do not locate the tank inside any building or where remodeling or right-of-way changes will interfere.
3. The tank may be placed near the surface of the ground. If the top of the tank is above the ground surface, mound soil over it. If the system is used every day it will not freeze.

4. Removable top slabs or manholes should be provided for each tank or compartment so that they can be readily cleaned. Tanks buried more than eighteen inches should have man-holes extending up to within eighteen inches of the ground surface.
5. The walls and floor of the tank should be constructed as nearly watertight as possible.
6. Septic tank outflow or effluent should discharge to an absorption system and **not** into lakes, streams or ditches.

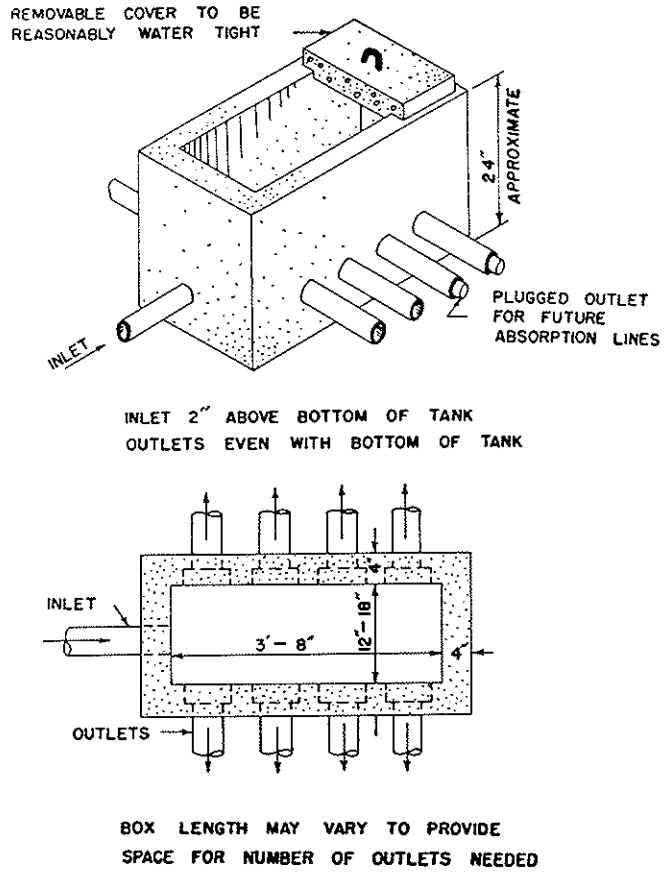

Figure 9—Details of Effluent Distribution Box.

PART VI

Septic Tank Effluent Disposal

Absorption Trench

Function

The absorption trench gives needed additional treatment to the sewage from the septic tank. Regardless of its appearance of clarity or transparency, the outflow or effluent from a septic tank is a dangerous source of contamination. The satisfactory operation of the sewage disposal system is largely dependent upon the proper design and construction of the absorption trench. Seepage pits and absorption beds are not satisfactory substitutes for absorption trenches. In the absorption trench the effluent is treated by bacteria that live in the upper reaches of the soil. Final disposal is accomplished by ground absorption. The absorption area needed is determined by percolation tests. The procedure for making percolation tests is explained below.

Location

Minimum Distance of Absorption Trench from—

Private water supply wells	50 feet[1]
Underground pump suction lines	50 feet
Dwellings	10 feet
Property lines	10 feet
Lake, stream, or ditch	25 feet

Percolation Test

After a tentative site for the absorption trench has been selected, at least two percolation tests should be made in the area to be used for the absorption system. The percolation test determines the absorption rate of the soil. Knowing the absorption rate of the soil, the absorption area needed per bedroom can be taken from Table II.

The procedure for conducting the percolation test is as follows:

1. 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.

(1) If the subsoil receiving the sewage is **not** effectively separated from the water supply formation by an extensive, continuous, impervious strata of clay, hardpan, rock, etc., a separation distance of 100 feet is advisable.

2. 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.

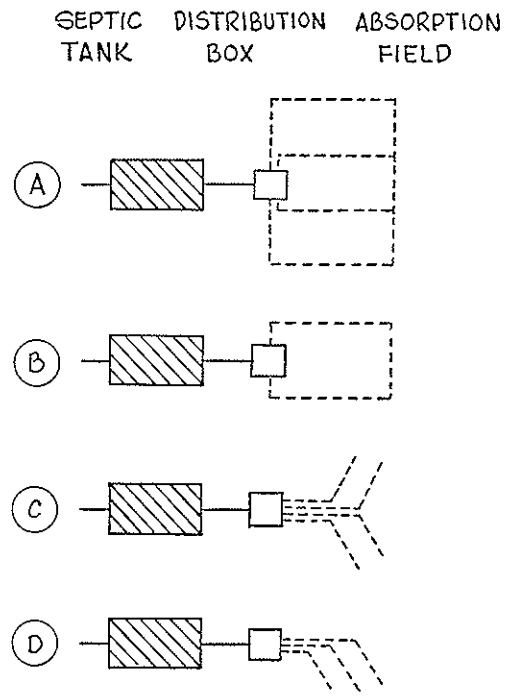

Figure 10—Absorption field patterns for reasonably level land.

3. 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. Thus, the test will give comparable results whether made during a wet or dry season.

4. 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.

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

6. 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.
7. Continue the measurement to the top of the water surface and time recording 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.
8. Convert the time interval obtained in "7" 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.
9. Determine from Table II the square feet of trench bottom area needed for each bedroom. See Table III for width and spacing of absorption trenches.
10. 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.

TABLE II

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

Average time in minutes for water to fall one inch	*Effective absorption area in square feet needed in trench bottom per bedroom.
3 minutes 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

*Size

The size of the absorption trench will vary with soil absorption rate and house size. Any system must have a minimum of two absorption tile lines. The minimum area in any absorption field is 200 square feet of trench bottom area. The maximum length of any one trench is 100 feet. Space the trenches according to Table III.

TABLE III

SIZE AND SPACING 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	Minimum Spacing of Lines C to C in Feet
18	18 to 30	1.5	6.0
24	18 to 30	2.0	6.5
30	18 to 36	2.5	7.0
36	24 to 36	3.0	7.5

Slope

Slope the absorption lines **two to four inches per 100 feet.** Progressive clogging of the absorption lines may develop if the slope of the lines is increased or decreased.

Material

Absorption lines may be constructed with four-inch field tile or properly perforated sewer tile. Place strips of building paper or similar material over the open joints of the field tile. Surround the pipe completely with coarse gravel or stone. (See figure 11.)

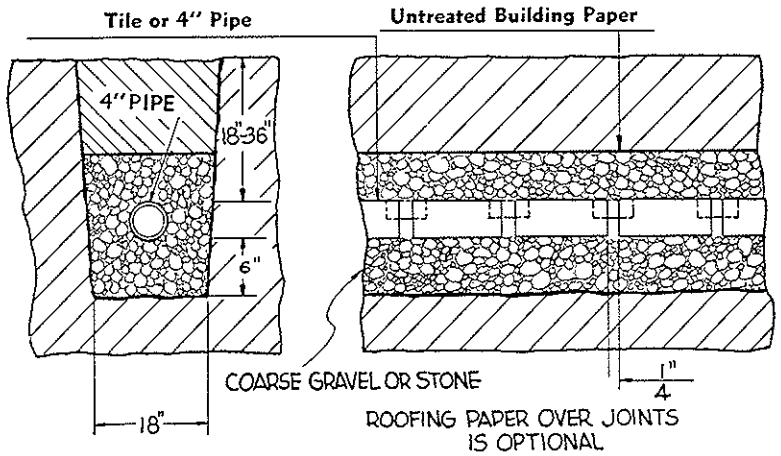

Figure 11—Details of Absorption Trench and Line, for Non-Perforated Sewer Pipe.

Construction

1. Do not locate under drives, walks or in vegetable gardens.
2. Absorption trenches will not work in areas that are periodically flooded or where ground water levels rise to the pipe

or tile. Absorption trenches will not work in extremely tight soils.

3. Do not locate where surface drainage is toward the well or house.
4. Minimum trench width is eighteen inches with a maximum trench depth of forty-eight inches. Depths of eighteen inches to the top of the tile are satisfactory.
5. The absorption tile or perforated pipe should be completely surrounded by coarse gravel or stone with at least six inches below the tile or pipe and extending upward to at least two inches above the tile or pipe.
6. The top of the stone should be covered with untreated building paper, 2" layer of straw, or equal to prevent the stones becoming clogged with the earth fill.
7. Lay field tile one-fourth inch apart.
8. Absorption lines located near trees or shrubs should have at least twelve inches of coarse gravel or stone below the pipe or tile.
9. The gravel or stone should be a mixture ranging in size from one-half to two and one-half inches. Fines, dust, sand and clay must be removed from the material before placing in the trench.
10. Absorption lines should be individually connected to a distribution box to insure equal distribution to the entire field.
11. Make all 90° bends or turns with an appropriate fitting.

Absorption Trenches in Sloping Land

Absorption fields should not be constructed in areas where the land surface gradient is greater than 12 percent.

On rolling or sloping land where the gradient is less than 12 percent, each absorption line should follow approximately the

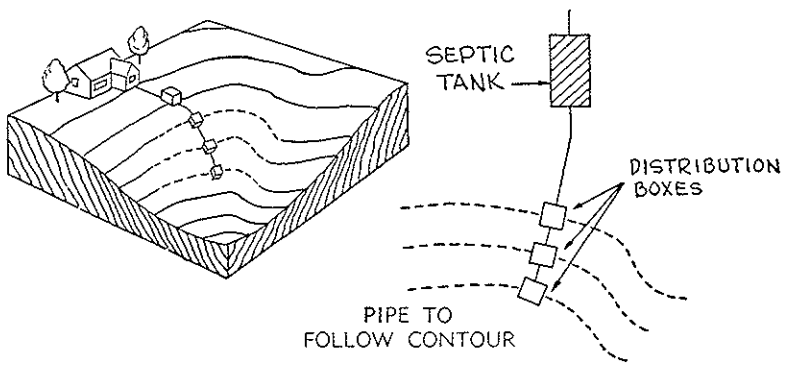

Figure 12—Absorption Trench for Rolling or Sloping Land.

land surface contour. This procedure is necessary to **keep the slope of the lines between two and four inches per 100 feet.** Each line should be served by a distribution box. These boxes should be placed so the discharging sewer is at a higher elevation than the inlet sewer and the distribution lines. The slope of the effluent sewer may exceed four inches per 25 feet between the septic tank and the distribution box if necessary because of sloping land.

Cesspools

Cesspools are not approved by the Indiana State Board of Health and shall not be used as a substitute for a septic tank.

Use seepage pits only with septic tanks, and then under conditions where the construction of an absorption trench is not possible. Seepage pits are not a substitute for absorption trenches and they will not function in tight soils or in soils having high ground water levels. Do not use seepage pits where private wells are the water supply source.

PART VII

Operation and Care of Septic Tank Systems

Starters

The sewage flowing into the septic tank will soon provide sufficient bacteria to start the tank working. The addition of so-called "starters," "bacterial feeds" or "cleaners" after the tank is in operation is not necessary.

Footing and Roof Drainage

Do not run footing and roof drainage into the sewage disposal system, as this would needlessly overload it. Water from these drains may be discharged to the ground surface or to a storm water drain.

Drain Solvents and Household Cleaners

Moderate use of household drain solvents, cleaners, disinfectants and softeners will not interfere with the operation of the sewage disposal system.

Cleaning the Tank

It is difficult to fix a definite time interval for sludge and scum removal from the tank. Sludge and scum accumulations will vary with the many conditions of tank use. Periodic inspection of the tank is advisable to determine the extent of sludge and scum accumulation. Sludge depths of 18 inches or more will indicate a need for sludge removal. Normally the tank should be cleaned every three to five years. Sludge and scum are removed by pumping. There are no chemicals or compounds which will clean the tank. The tank does not need to be "scrubbed down" or "washed out" after the sludge and scum have been removed. The remaining tank contents will help restart the septic tank action.

Garbage Grinders

Private sewage disposal systems do not need to be increased in size where garbage grinders are used, if these systems are designed in accordance with this bulletin.

Locations

A chart showing the location of the septic tank and absorption field should be kept to enable future maintenance and repair to be made when necessary.

Grease Interceptors

Properly sized and installed septic tanks are designed to take care of all household wastes including normal household greases.

Abandoned Septic Tanks

Abandoned septic tanks should be filled with earth, sand or gravel, or removed.

APPENDIX

State Board of Health Minimum Standards for Commercial Septic Tanks

Precast concrete septic tanks shall have the walls and floor at least two inches thick and preferably poured in one operation. The walls and floor shall be adequately reinforced to withstand excessive tensile, temperature and shrinkage stresses. The concrete shall have a minimum of 4,000 pounds per square inch compressive strength.

All vitrified clay and concrete pipe used for septic tanks shall meet the American Society for Testing Materials (ASTM) specifications for standard strength sewer pipe except for the following minimum dimensional and strength requirements and shall be plainly marked "SEPTIC TANK PIPE" with at least one-half inch letters.

All metal septic tanks must be coated in compliance with Commercial Standard 177-51 U. S. Department of Commerce.

Fibre glass tanks may be acceptable when properly designed and constructed for strength and operating characteristics.

MINIMUM DIMENSIONAL REQUIREMENTS FOR SEPTIC TANKS

1. The liquid capacity of precast or prefabricated tanks shall be based on recommendations under Table I, page 14.
2. The liquid depth of any tank or compartment shall not be less than 30". A liquid depth of greater than six and one-half feet will not be considered in computing tank capacity.
3. No tank or compartment shall have an inside horizontal dimension of less than two feet.
4. In multiple compartment tanks the liquid capacity of any compartment shall not be less than 200 gallons.
5. Scum storage capacity (space between the liquid surface and the top of the inlet and outlet devices) shall not be less than 15 percent of the total required liquid capacity. In multi-compartment tanks the scum storage shall be approximately equally distributed among the compartments.

6. The inlet baffle or sanitary tee shall extend six inches below the liquid surface and above the crown of the inlet sewer.

7. The depth below the liquid level of the outlet baffle or sanitary tee and the baffles or submerged pipe outlets between compartments will be determined by multiplying the liquid depth by 4/10.

8. There shall be at least one-inch space between the underside of the tank cover and the top of the inlet and outlet baffles, sanitary tees and partitions.

9. Where baffles are used, the inlet baffles shall not be more than twelve inches or less than eight inches from the inside inlet end of the tank. The outlet baffle shall not be more than six inches or less than four inches from the inside outlet end of the tank. Baffles will be constructed from sound, durable material not subject to excessive corrosion or decay.

10. The bottom of the inlet to the first compartment receiving the flow shall be not less than three inches above the bottom of the outlet from that compartment.

11. Where the top of the tank is less than eighteen inches below the finished grade, removable entrance slabs or manholes shall be provided and, if more than eighteen inches below the finished grade, manholes will be extended up to within eighteen inches of the finished grade.

12. The liquid capacity of the tank shall be based on the number of bedrooms in the dwelling served. The minimum tank liquid capacity is 750 gallons. The tank shall be constructed of sound, durable material not subject to excessive corrosion or decay.

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