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Indiana State Board of Health
1951

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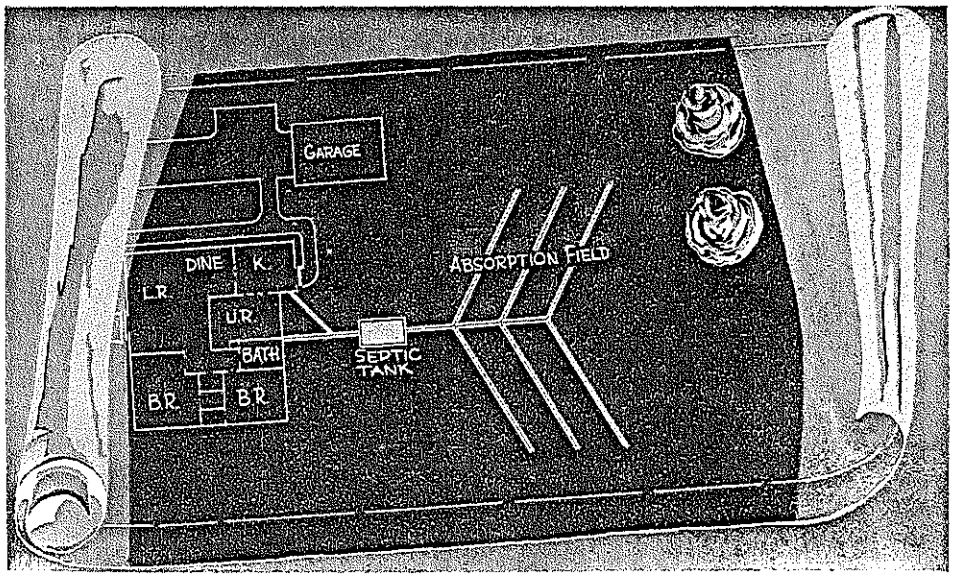
Septic Tank Sewage Disposal Systems



for Farm and Suburban Homes

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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.**

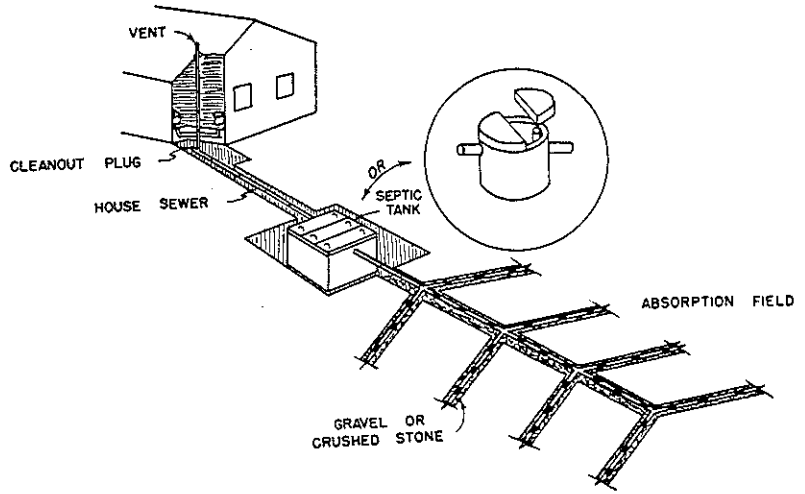


Figure 1—Typical Septic Tank Sewage Disposal System using either a single compartment rectangular or round tank.

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 are often traceable to faulty sewage disposal and much sickness and expense may result each year 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.

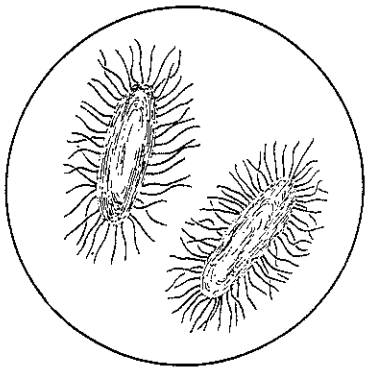


Figure 2 — Diagrammatic sketch of Filth-Borne Disease Bacteria (Enlarged 10,000 times)

Filth-borne diseases 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 may be installed. **Inquire about local ordinances before starting construction.**

Services

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

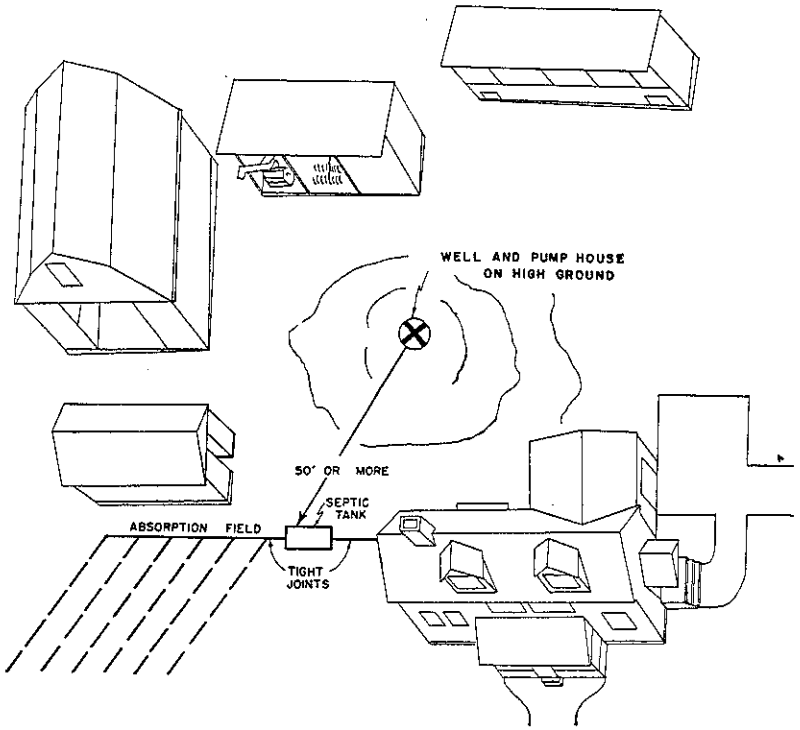


Figure 3—Location of the Sewage Disposal System for a Farm Home

Plans

All sewage treatment facilities should be carefully laid out and installed. 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, several hundred gallons of sewage must be disposed of each week from a home equipped with water-using fixtures. If the surrounding land is hilly and the soil relatively tight, the installation cost and the space needed for the system will be greater than where the land is reasonably level and the soil sandy or loose. 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.

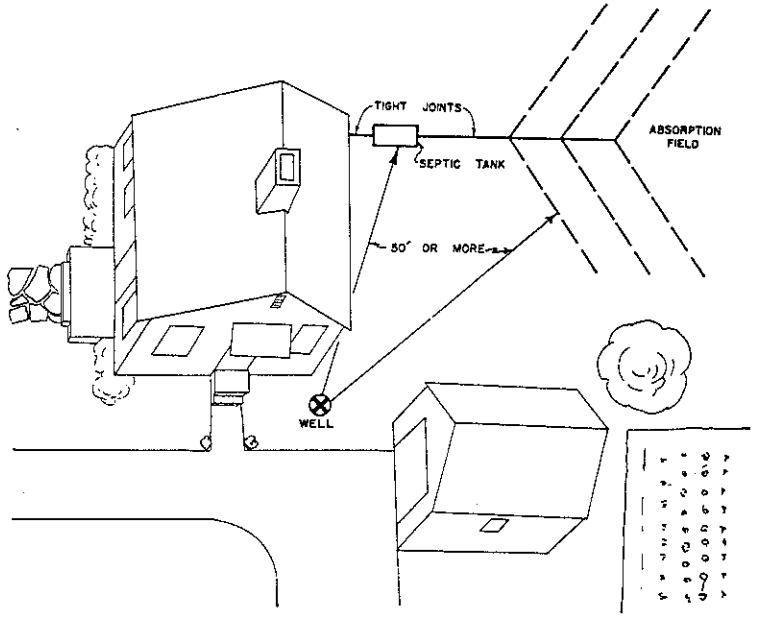


Figure 4—Location of the Sewage Disposal System for a Suburban Home

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 Tests: These tests are used to determine the soil absorption rate and the size of the absorption field as explained in Part VI of this bulletin. Small lots with tight soils may not provide enough clear area for the sewage disposal system.
2. Topography: The slope of the land will affect construction costs, depth of sewers, direction of surface drainage, and the method of draining the basement fixtures.
3. Ground Water Levels and Flooding: Septic tank sewage disposal systems will not operate satisfactorily where ground water levels are at, or near, the depth of the absorption tile, or in areas that are periodically flooded.
4. Water Supply: Protect the water supply from contamination by safe location and construction of the sewage disposal system.
5. Plumbing: The plumbing in the house should be laid out so that there is a minimum of bends and turns required to reach the sewer to the septic tank.
6. 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 and (5) the underground tile absorption field 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.

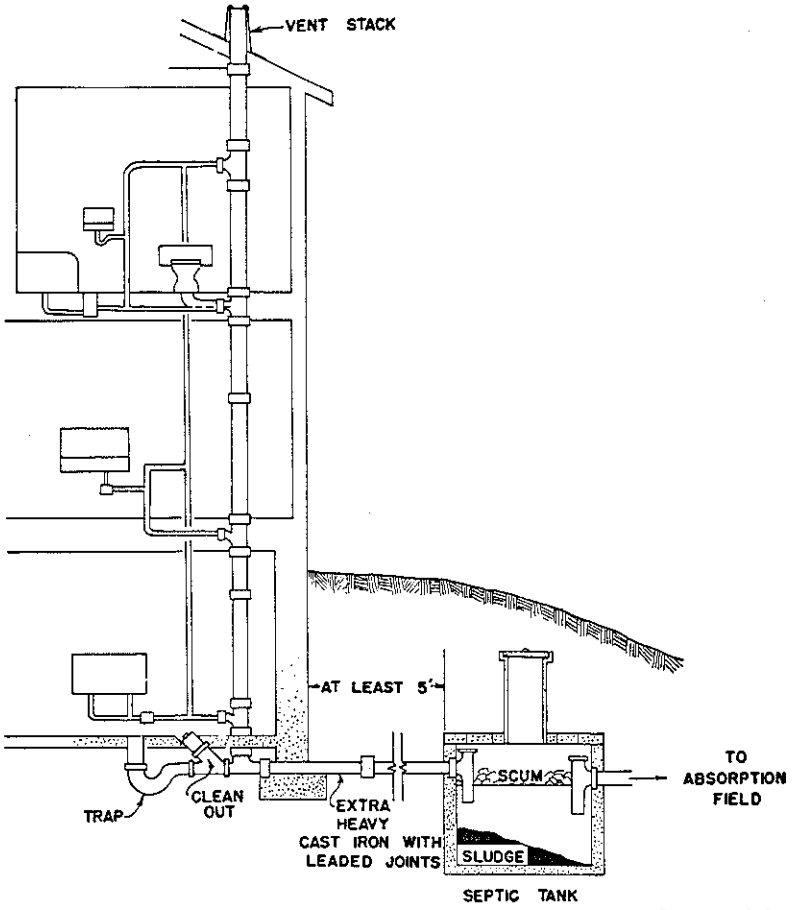


Figure 5—In reasonably level areas a sump pump may be used for elevating sewage from basement to the septic tank.

Where it is necessary to pump excessive quantities of water from foundation drains, install a separate sump pump and pump this water to a separate drain.

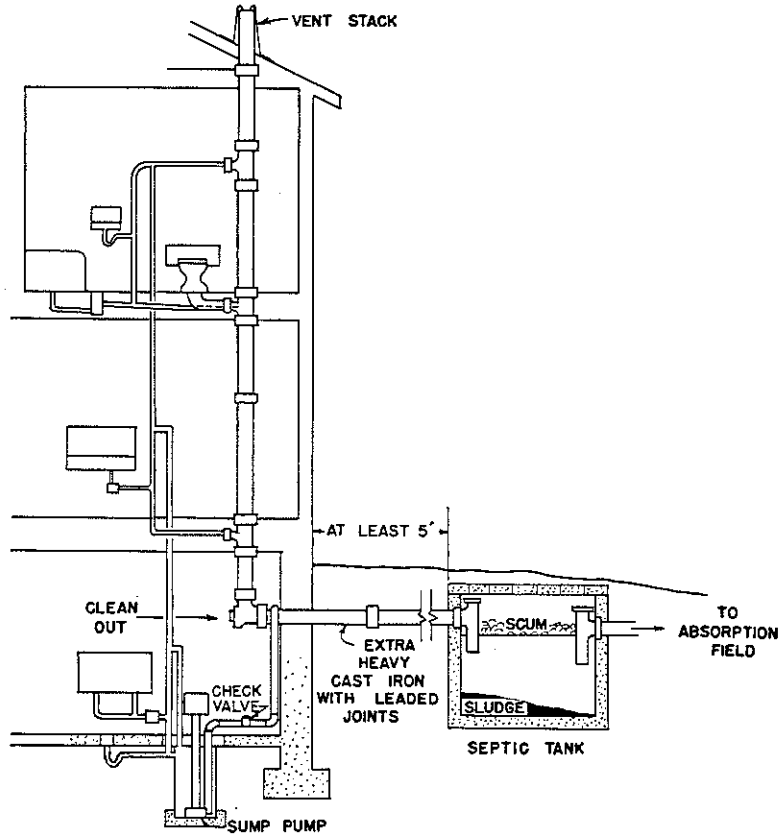


Figure 6—Where the land slopes down hill from the house, it may be possible to drain the basement fixtures directly into the septic tank. ***Do not connect foundation drains to the septic tank or absorption field.***

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 extra heavy cast iron soil pipe with leaded and calked 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 extra heavy cast iron soil pipe is not required, the house sewer may be constructed with vitrified clay sewer tile, concrete sewer tile or asbestos-cement sewer pipe all with tight joints.

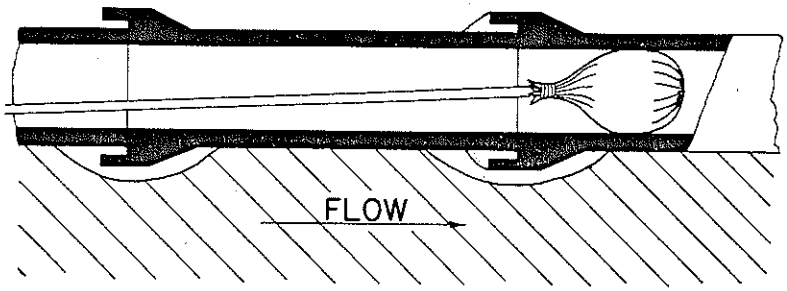


Figure 7—Pull a swab through the sewer tile to remove any jointing material which may have been forced through to the inside. *Care should be taken so that under side of bell is filled with jointing material.*

Construction

1. Use extra heavy cast iron soil pipe inside the house and to at least three feet outside the foundation wall.
2. Use cast iron soil pipe or other special construction 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.

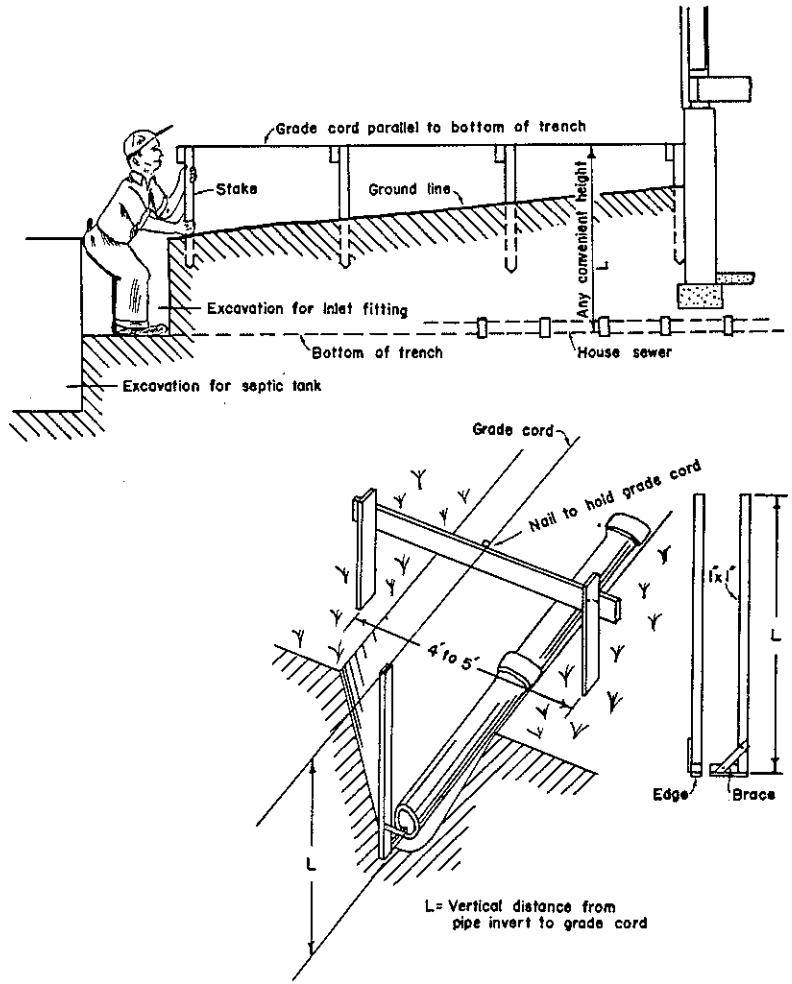


Figure 8—Slope of sewers should be carefully established with level and string.

5. Maintain a uniform slope on the sewer.
6. If the sewer runs at shallow depths under roads or drives, use cast iron soil pipe and protect it against breakage.
7. Pull a swab through sewers constructed of materials other than cast iron or asbestos-cement to clean out any jointing material that has worked through to the inside of the pipe. (See Figure 7.)
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 outflow 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
Lakes, stream, or ditch	25 feet

Size

The effluent sewer should be the same size as the house sewer. A four-inch sewer is satisfactory.

Slope

The effluent sewer should slope from **2 to 4 inches per 100 feet.** Steeper slopes 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, or asbestos-cement 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. Pull a swab through the sewer to clean out the mortar.

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 125 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 that 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.

STEP BY STEP

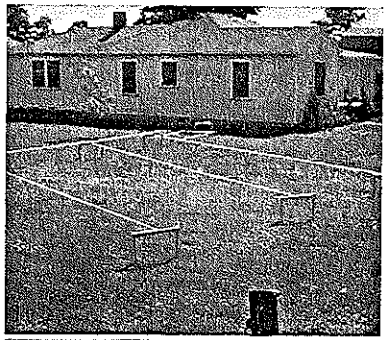


Figure 1—Laying out the septic tank sewage disposal system.

Figure 2—Tank-Hole ready for installation of wooden forms.

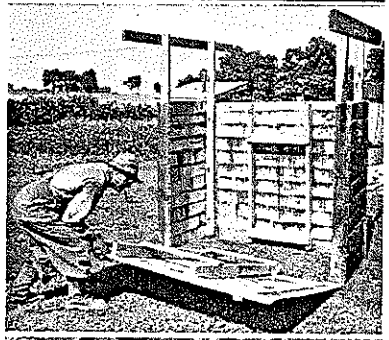


Figure 3—Assembling re-usable wooden tank forms.

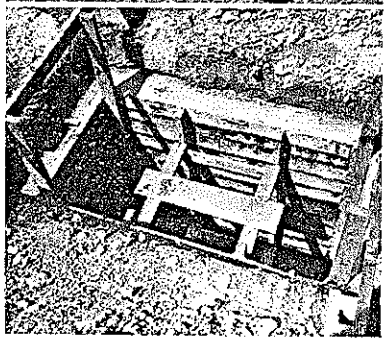


Figure 4—Newly poured tank with re-usable wooden forms still in place.

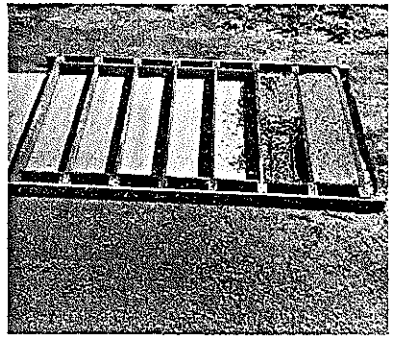


Figure 5—Pouring the concrete tank cover sections.

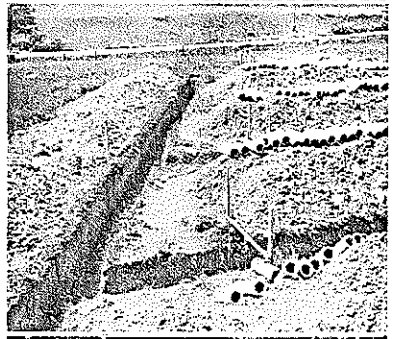


Figure 6—Effluent sewer trench and absorption trenches.

Figure 7—Constructing the absorption field.

Figure 8—Cross section of a partially completed absorption tile line.

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.

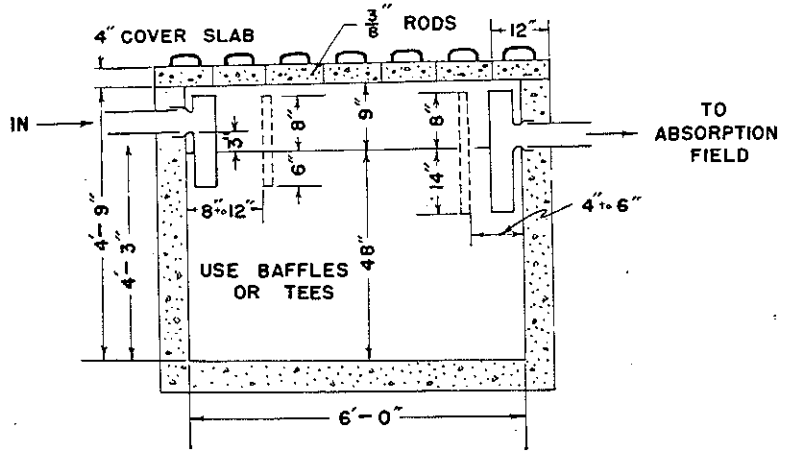


Figure 9—Typical section through a 500-gallon septic tank having a three-foot inside width. Cast-in place concrete tanks have walls and floors six inches thick.

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 500-gallons liquid capacity. Larger tanks are sometimes necessary. Table I gives minimum tank capacities based on the number of bedrooms in the home providing a garbage grinder is not used. 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 500-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
3 or less	6	500	3'-0"	6'-0"	4'-0"	4'-9"
4	8	750	3'-6"	7'-6"	4'-0"	4'-9"
5	10	900	3'-6"	8'-6"	4'-0"	4'-9"
6	12	1,100	4'-0"	8'-6"	4'-6"	5'-3"

* Increase the tank liquid capacity 50% if a garbage grinder is used.

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. Re-usable forms may be made as shown in Figure 11. Forms for a single installation may be made of scrap lumber.

Bill of Materials for 500-Gallon Cast-in-Place Concrete Septic Tank

(Approximately three cubic yards of concrete)

19 bags of cement
2 cubic yards of fine gravel
2½ cubic yards of coarse gravel or crushed stone
Mixing water
14-⅜-inch steel bars 4 feet long—Cover slabs
14-⅜-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.

Concrete block tanks should have eight-inch walls. Fill the 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 10. Set the walls on a six-inch thick concrete floor slab and seal the wall-to-floor connection with mortar.

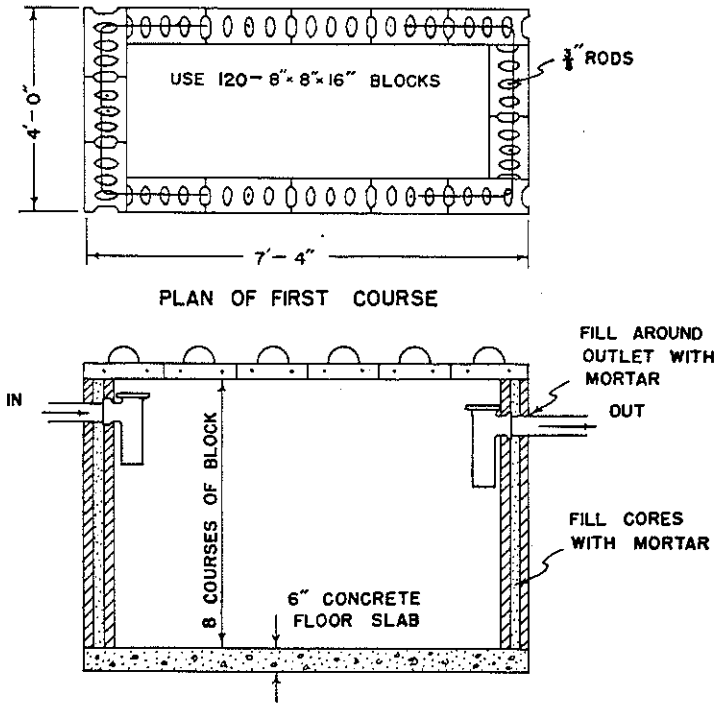
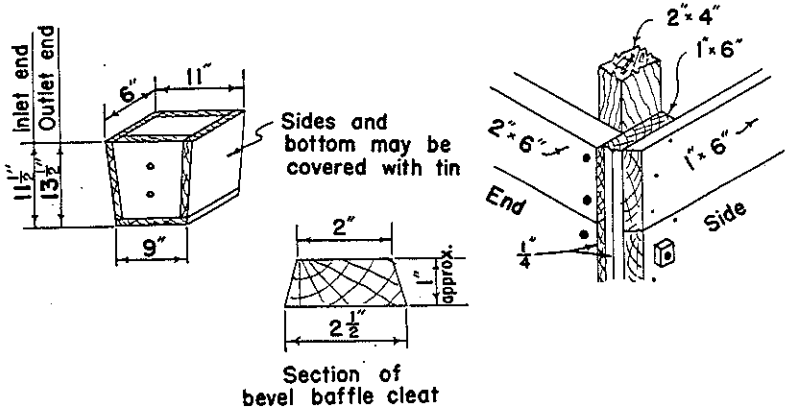


Figure 10—Concrete blocks may be used for the walls of the septic tank. Fill all the cores with concrete and reinforce the corners. This is a 500-gallon septic tank.



FORM DETAILS

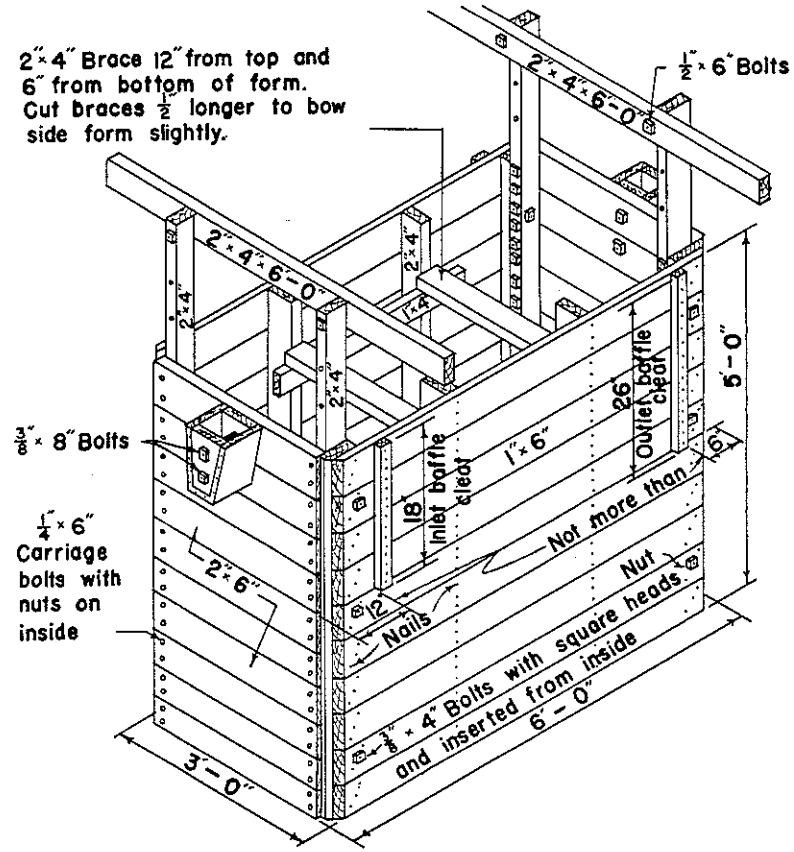
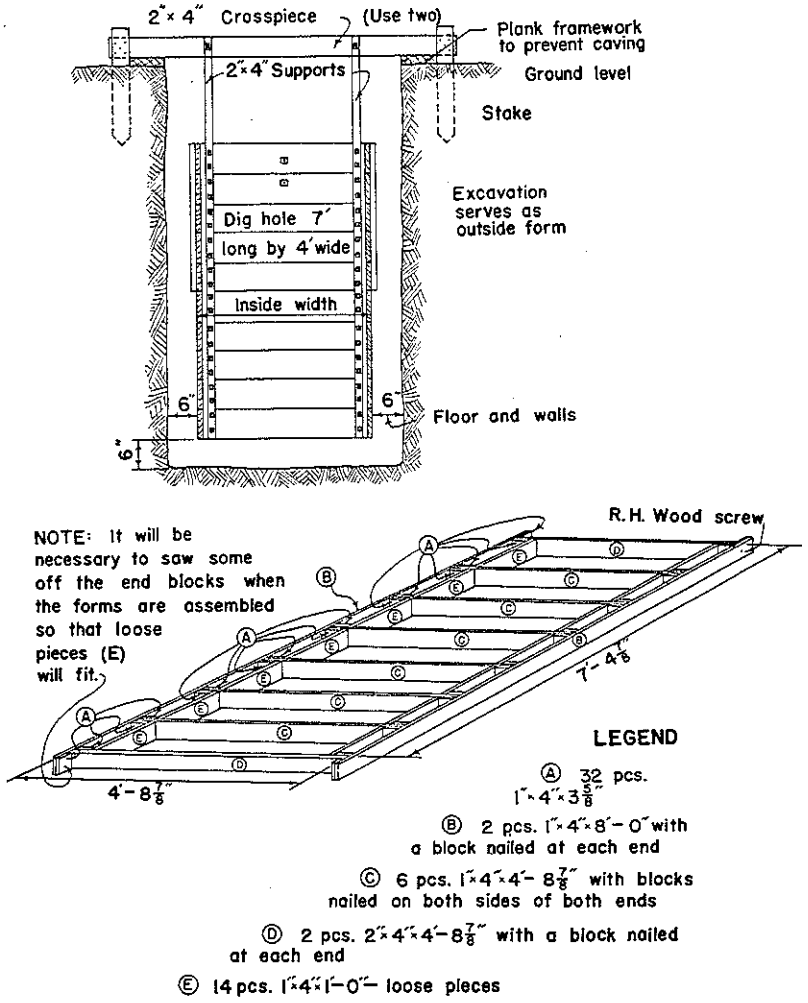


Figure 11—Details of re-usable wooden form for a 500-gallon cast-in-place concrete septic tank.
For a single installation the forms may be made from scrap lumber.



SLAB COVER FORM

Fig. 12—Form for cover slabs and end view of re-usable tank form.

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 manholes 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. Increase the tank capacity fifty per cent if a garbage grinder is used.
7. Septic tank outflow or effluent should discharge to an absorption field and **not** into lakes, streams or ditches.

PART VI

Absorption Fields

Function

The absorption field 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 size and construction of the absorption field. In the absorption field 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 Field from—

Private water supply wells	50 feet
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 field has been selected, at least two percolation tests should be made. The

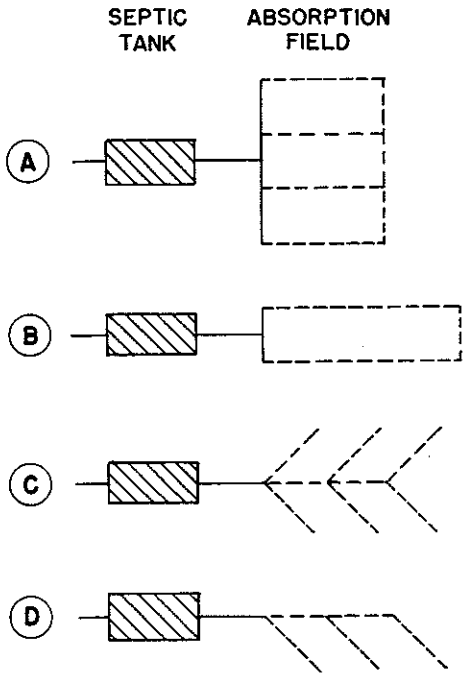


Figure 13—Absorption field patterns for reasonably level land.

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 tests is as follows:

1. Dig or bore holes with straight sides to the estimated depth of the absorption trench. A post hole auger may be used.
2. Careful saturation of the test hole is essential. Fill the hole with water and allow it to seep completely away.
3. After saturating the sides and bottom of the test hole, pour approximately 6" of water into the test hole and record the time and exact depth of water.
4. Allow the water to seep away completely. **Record the time required for the water to seep away completely.**
5. Divide the total time required for the water to seep away completely by the number of inches of water which has seeped away to obtain the average time for one inch of water to seep away.

6. 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.
7. 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

Average time in minutes for water to fall one inch	*Effective absorption area in square feet needed in trench bottom per bedroom
2 minutes or less per inch.....	* 50 square feet per bedroom
3 minutes per inch.....	* 60 square feet per bedroom
4 minutes per inch.....	* 70 square feet per bedroom
5 minutes per inch.....	80 square feet per bedroom
10 minutes per inch.....	100 square feet per bedroom
15 minutes per inch.....	120 square feet per bedroom
30 minutes per inch.....	180 square feet per bedroom
60 minutes per inch.....	240 square feet per bedroom

Size*

The size of the absorption field 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 150 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	6.0
30	18 to 36	2.5	7.5
36	24 to 36	3.0	9.0

Slope

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

Material

Absorption lines are usually constructed with four-inch field tile. Place strips of building paper or similar material over the open joints of the field tile. Surround the tile completely with coarse gravel or stone. See figure 14.

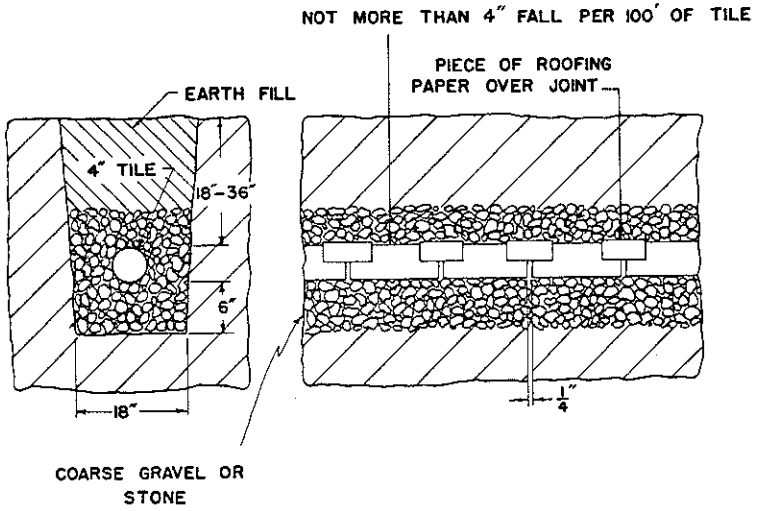


Figure 14—Details of Absorption Field Tile Line.

Construction

1. Do not locate under drives, walks or in vegetable gardens.
2. Absorption fields will not work in areas that are periodically flooded or where ground water levels rise to the field tile. Absorption fields 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 should be completely surrounded by coarse gravel or stone with at least six inches below the tile and extending upward to at least two inches above the tile.
6. Lay the field tile one-fourth inch apart and cover the open joints with strips of building paper or similar material.
7. Absorption lines located near trees or shrubs should have at least twelve inches of coarse gravel or stone below the tile.

8. The gravel or stone should be a mixture ranging in size from one-half to two and one-half inches.
9. Single or double Y branches may be used for connecting the absorption tile to the effluent sewer.
10. Make all 90° bends or turns with an appropriate fitting.

Absorption Fields in Hilly Land

On rolling or hilly land each absorption line should follow approximately the land surface contour. This procedure is necessary to **keep the slope of the lines between two and four inches per 100 feet.** A distribution box should be used to receive the effluent from the septic tank and distribute it to the absorption lines. The slope of the effluent sewer may exceed four inches per 100 feet between the septic tank and the distribution box.

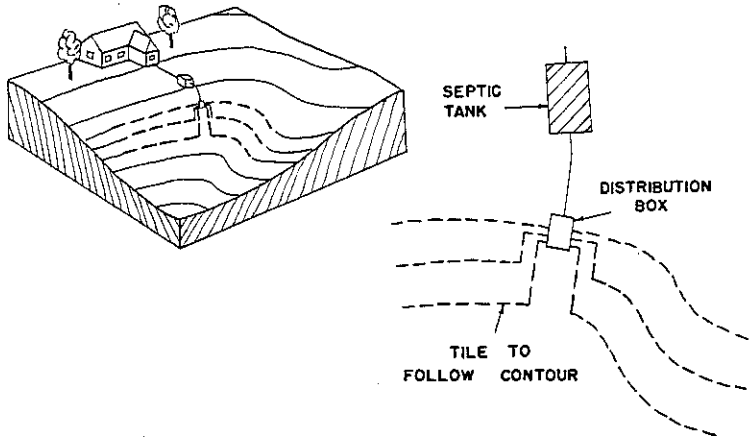


Figure 15—Absorption Field for Rolling or Hilly Land.

Absorption Fields in Tight or Wet Soils

Absorption fields will not function in tight soils or in wet soils where the ground water level is near the bottom of the field tile. Where these conditions are encountered, consult your local health department, county agricultural agent or planning commission before construction is started.

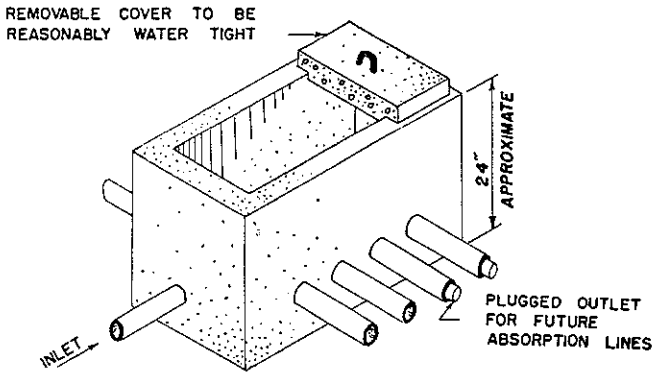


Figure 16—Details of Effluent Distribution Box.

PART VII

Operation and Care of Septic Tanks and Absorption Fields

Starters

Starting compounds such as yeast and sugars do no good in putting a new septic tank into service. The sewage flowing into the tank will soon provide sufficient bacteria to start the tank working. The addition of so-called "bacterial feeds" or "cleaners" after the tank is in operation is not necessary.

Water Softening Brine and Roof Drainage

Backwash from water softeners should not be run through the septic tank or the absorption field. Do not run roof drainage into the sewage disposal system. This would needlessly overload the system. Roof water may be drained to the ground surface.

Drain Solvents and Household Cleaners

Moderate use of household drain solvents, cleaners and disinfectants 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 eighteen to twenty inches 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 or bailing. 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

Garbage grinders may be used with septic tank sewage disposal systems. When the garbage grinder is used, the tank capacity should be increased at least fifty per cent above the capacities given in Table I. The tank will probably need the sludge and scum removed oftener where garbage grinders are used.

If garbage grinders are used with septic tank-absorption field sewage disposal systems, the trench bottom absorption area should be increased. Experimental evidence at this time indicates an increase of 25% to 50% in absorption area above the requirements in Table II.

Grease Interceptors

Grease interceptors are not normally needed with residential sewage disposal systems. A properly sized and installed system will take care of all the household wastes excepting water softener backwash and roof drainage.

PART VIII

Seepage Pits

Use

Use seepage pits only with septic tanks, and then only under conditions where the construction of an absorption field is not possible. Seepage pits are not a substitute for absorption fields 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. Cesspools are not approved by the Indiana State Board of Health and shall not be used as a substitute for a septic tank.

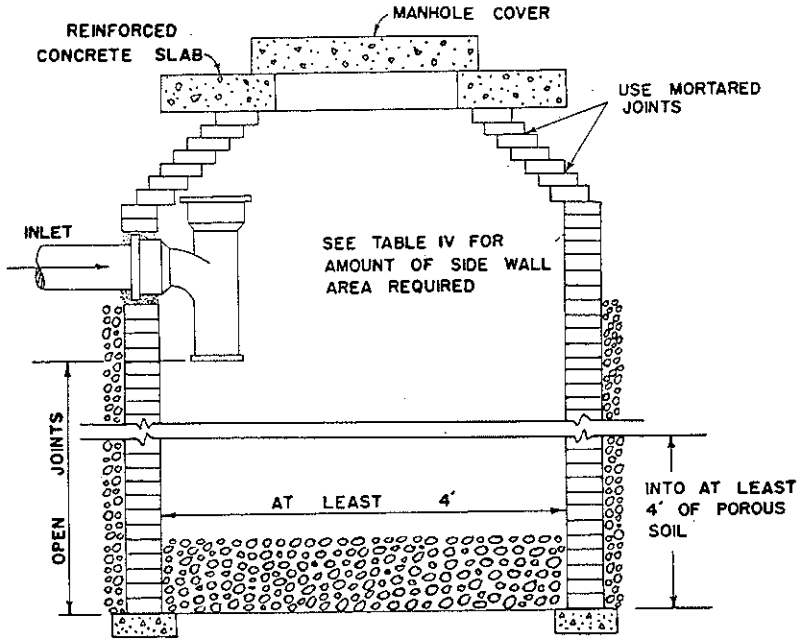


Figure 17—Details of Seepage Pit. Connect septic tank to pit with a tight jointed sewer.

Location

Minimum Distance of Seepage Pit from—

Dwellings .....20 feet
Property lines .....10 feet

Function

Seepage pits facilitate the disposal of liquid wastes from the septic tank. The pit must penetrate a porous layer of soil for it to function properly.

Material

The lining may be brick, stone, concrete block or similar material at least four inches thick.

TABLE IV

SQUARE FEET OF PIT WALL ABSORPTION AREA NEEDED PER BEDROOM

Character of Soil	Effective absorption area required in square feet of wall area of pit, exclusive of curbing, per bedroom.
Coarse sand or gravel	20
Fine sand	30
Sandy loam or sandy clay	50
Clay with considerable sand or gravel	80
Clay with small amount of gravel or sand	160
Heavy tight clay, hardpan, rock or other impervious formation	unsuitable

Construction

1. Below the inlet, construct the pit wall with open joints. Draw in the portion of the pit wall above the inlet using tight mortar joint construction as illustrated in Figure 17.
2. There should be at least a three-inch space between the outside of the pit lining and the encircling earth wall. Fill this space with gravel up to the pit inlet. Place two feet of gravel in the bottom of the pit. If the pit clogs, remove the old gravel and replace with clean gravel to prolong service.
3. Make connection from the septic tank to pit with a tight jointed sewer.
4. Cover pit top with a reinforced concrete slab or manhole ring and cover.
5. The pit should penetrate at least four feet of porous soil.

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.

MINIMUM DIMENSIONAL AND STRENGTH REQUIREMENTS FOR SEPTIC TANK PIPE

Pipe Diameter in Inches	Wall Thickness in Inches	Crushing Strength in Lbs. per Linear Ft.
24	1⅝	1800
27	2	2100
30	2⅛	2400
36	2½	2900

1. The liquid capacity of precast or prefabricated tanks shall be based on recommendations under Table I, page 17.
2. The liquid depth of any tank or compartment shall not be less than four feet. 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 125 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 per cent 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 liquid surface to 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 subtracting one foot from the liquid depth and multiplying this result 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 baffle 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 500 gallons. The tank shall be constructed of sound, durable material not subject to excessive corrosion or decay.