CHAPTER 2401-13 TOILET FACILITIES AND WASTEWATER DISPOSAL SYSTEMS REGULATIONS

GENERAL PROVISIONS

2401-13-01 Authority

These regulations are promulgated by the Republic of Palau Environmental Quality Protection Board pursuant to the authority vested in the Board under Section 5 of Palau Public Law 1-58 (24 Palau National Code Section 121 *et. seq.*) the Palau Environmental Quality Protection Act and Section of Palau Public Law No. 1-73 (34 Palau National Code Section 1201 *et seq.*), the Sewer Use Act of 1984. These regulations shall have the force and effect of law and shall be binding on all persons whether public or private subject to the Jurisdiction of the Republic of Palau.

(Effective May 26, 1996)

2401-13-02 Purpose

The purpose of these regulations is to establish standards and regulate toilet and wastewater disposal systems, and to require minimum standards governing the design, construction, installation and operation of toilet and wastewater disposal systems. Such standards are intended to:

(A) Establish minimum standards for toilet facilities and wastewater disposal to minimize environmental pollution, health hazards and public nuisance from such systems and facilities;

(B) Protect the health of the septic tank user and all neighbors; and,

(C) Establish minimum requirements that will ensure that wastes discharged:

(1) Will not contaminate any drinking water supply;

(2) Will not be accessible to insects, rodents, or other possible carriers of disease which may come into contact with food or drinking water;

(3) Will not pollute or contaminate the waters of any bathing beach, shellfish breeding grounds or stream used for public or domestic water supply purposes or for recreational purposes;

(4) Will not pose a health hazard by being accessible to children;

(5) Will not give rise to a nuisance due to odor or unsightly appearance; and,

(6) Will not violate any other laws or regulations governing water pollution or sewage disposal.

(Effective May 26, 1996)

2401-13-03 Definitions

As used herein, unless the context otherwise requires, the terms:

(A) "Abutting Property" means that property, which lies next to any road, street or easement in which a public sewer is located. The boundary of the private property abutting the sewer need not physically touch the sewer easement so long as that piece of land separating the sewer easement from the abutting property consists of a public right of way, easement, road, or street not owned or controlled by another private owner, so that the abutting property owned would be required to obtain a private easement in order to connect this property with that of the sewer.

(B) "Board" or "EQPB" means the Republic of Palau Environmental Quality Protection Board or its duly authorized representative.

(C) "Building Sewer" means the extension from the building drain to the public sewer or other place of disposal.

(D) "Cesspool" means excavation which receives or is intended to receive untreated sewage and from which the liquid directly seeps or leaches into surrounding porous soil. No cesspool construction is allowed under these regulations unless the Chairman gives prior written consent for such construction upon a showing of special mitigating circumstances by permit applicant.

(E) "Chairman of the Palau Environmental Quality Protection Board" or "Chairman" means the Chairman personally or the Chairman's duly authorized representative.

(F) "Duplex" means a building which is designed exclusively for the occupancy of one family in each of two units which are attached to each other and which are detached from any other dwelling or commercial building.

(G) "House Sewer or Building Drain" means that part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building, public or private, and conveys it to the building sewer, beginning five (5) feet outside the inner face of the building wall.

(H) "Individual Sewage Disposal System" or "Private Sewage Disposal System" means a system designed and installed to dispose of sewage from a single building or group of buildings located on one lot. Such a system may consist of a septic tank, together with a leaching field or seepage pit, or other treatment unit.

(I) "Leaching Field" means a buried system of open-jointed or perforated pipes, bedded in crushed rock or coral, or buried system of leaching chambers through which treated or partially treated sewage effluent may seep or leach into the surrounding porous soil.

(J) "Person" means the Republic of Palau, a state, a political subdivision, a public or private institution, corporation, partnership, joint venture, association, firm, or company organized or existing under the laws of the Republic or of any state or country, a lessee or other occupant or property, or an individual, acting singly or as a group.

(K) "Public Sewer" means a common sewage collection system serving more than one lot, directly controlled by public authority.

(L) "Seepage Pit" means covered pit with open-jointed lining through which treated or partially treated sewage effluent may seep or leach into the surrounding porous soil.

(M) "Septic Tank" means a water tight receptacle which receives the discharge of sewage and is designed and constructed so as to retain solids, digest organic matter through a period of detention, and allow the treated liquids to discharge into the subsoil through a leaching field or seepage pit.

(N) "Sewage" or "Wastewater" means untreated or insufficiently treated human excreta, food wastes disposed of through sewers; wash water; liquid wastes from residences, commercial buildings, agricultural operations, and industrial establishments or other places of assembly, and such diluting water as may have entered the waste disposal system.

(O) "Single Family Residence" means a building designed exclusively for occupancy of one family and containing only one dwelling unit.

(P) "Type 1" means a toilet which is flushed with water and is connected to a public sewer system.

(Q) "Type 2" means a toilet flushed with water and connected to a septic tank and leaching fields.

(R) "Type 3" means a structure and excavation for the disposal of human excreta by non-water carriage methods and includes the terms pit privy, trench latrine, bored hole latrine and outside benjo.

(S) "Type 4" or "Temporary Toilet Facility" means a toilet which is a mobile self-contained structure for the disposal of human excreta which waste is treated via chemicals, recirculation or combustion.

(T) "Waters of the Republic of Palau" means all waters in the Republic of Palau, including near shore waters, off-shore waters, and those brackish, fresh, and salt waters that are subject to ebb and flow of the

tide including salt water marshes, salt water swamps, fresh water marshes, fresh water swamps, cultivated wetlands, lakes, rivers, springs, streams, mudflats, and all waters otherwise classified under the Republic of Palau Marine and Fresh Water Quality Regulations.
(Effective May 26, 1996)

TOILET FACILITIES AND WASTEWATER DISPOSAL SYSTEMS REQUIREMENTS

2401-13-04 Facilities and Systems Required

All public and commercial residences and buildings and structures and all private residences, buildings and structures shall have toilet facilities and wastewater systems as described in these regulations
(Effective May 26, 1996)

2401-13-05 Public Sewer System

Where a public sewer system is available, all wastewater plumbing outlets from any and all buildings and structures public or private shall be connected to the public sewer system and all toilet facilities shall be of Type 1.
(Effective May 26, 1996)

2401-13-06 Public Sewer Not Available

(A) When no public sewer, intended to serve any lot or premises is available in any thoroughfare or right of way abutting such lot or premises, drainage piping from any building or structure, public or private, shall be connected to an approved private wastewater disposal system and all toilet facilities shall be of Type 2 unless upon a showing of special mitigating circumstances the Chairman gives prior written consent to the construction of a Type 3 facility.

(B) The public sewer may be considered as not being available when such public sewer or any building or any exterior drainage facility connected thereto, is located more than two hundred (200) feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such public sewer.

(C) Vertical Alignments - Where public sewer available to a particular building and sewer location is, (1) more than twenty (20) feet above the lowest floor level of the single family residence or a duplex; or (2) more than fifty (50) feet above the lowest floor level of any other structures, public sewer may be considered as not being available.
(Effective May 26, 1996)

2401-13-07 Temporary Toilet Facilities

Type 4 facilities shall be used only in the circumstances described in Sections 2401-13-31 through 2401-13-33, inclusive, of these regulations.
(Effective May 26, 1996)

2401-13-08 Public Sewer Connection

The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing specifications set up by the person responsible for the operations of the public sewer system and any applicable rules and regulations of the Republic of Palau. All such connections shall be made gastight and watertight. Any deviations from the prescribed procedures and material must be made before installation by the person responsible for the operation of the public sewer system.
(Effective May 26, 1996)

2401-13-09 Private Wastewater Disposal Systems

(A) Where permitted by Sections 2401-13-04 through 2401-13-07, inclusive of these regulations, a building may be connected to a private sewage disposal system which complies with other provisions set forth in these regulations. The type of system shall be determined on the basis of location, soil porosity, and ground water level and shall be designed to receive all sanitary sewage from the property. The system, except as otherwise provided, shall consist of a septic tank with effluent discharge into a sub-surface disposal field.

(B) Where conditions are such that the above system cannot be expected to function satisfactorily for commercial, agricultural and industrial plumbing systems; for installations where appreciable amounts of industrial or indigestible waste are produced; for hotels, hospitals, office buildings, or schools; for occupancies producing abnormal quantities of sewage or liquid wastes; the method of sewage treatment and disposal shall be first approved by the Chairman.

(C) Disposal systems shall be designed to utilize the absorptive portions of the soil formation. Subsurface soil disposal systems must have at least two feet of unsaturated soil between the bottom of the system and the seasonally high ground water level or bedrock. Where the ground water level extends to within eight feet or more of the ground surface or where the upper soil depth is sufficient and the underlying stratum is rock, or impervious soil, a septic tank and disposal field system may be installed. Where the ground water level extends less than eight

feet below the ground surface, the method of on-site sewage treatment and disposal shall be first approved by the Chairman.

(D) All private sewage disposal systems shall be so designed that additional subsurface drain fields, equivalent to at least 100% of the required original system, may be installed if the original system cannot absorb all the sewage. No division of the lot or erection of structures on the lot shall be made if such division or structure impairs the usefulness of the 100% expansion for its intended purpose.

(E) No property shall be improved in excess of its capacity to property absorb sewage effluent in the quantities and by the means provided in these regulations.

(F) When there is insufficient lot area or improper soil conditions for adequate sewage disposal from a building or proposed use of the land as determined by the Chairman, no building permit shall be issued and no private sewage disposal shall be permitted. Where space or soil conditions are critical, no building permit shall be issued until engineering data and test reports satisfactory to the Chairman have been submitted and approved.

(G) Where public sewers may be installed at a future date, provision should be made in the household plumbing system for connection to such sewer. Connection to the public sewer shall be required upon notification by the Chairman within a 5-year period after it is available.

(H) Nothing contained in these regulations shall be construed to prevent the Chairman from requiring compliance with higher requirements than those contained herein where such higher requirements are essential to maintain a safe and sanitary condition.

(Effective: May 26, 1996)

PERMITS

2401-13-10 Permit Required

No building construction, public or private, may commence without first obtaining a permit from the Board certifying that the following shall be in compliance with these Regulations:

(A) Toilet facilities; and,

(B) Individual wastewater disposal system or public sewer connection intended to serve such building.

(Effective: May 26, 1996)

2401-13-11 Required Information

Before specific plans and specifications for a permit application will be reviewed for compliance with Environmental Quality Protection Board regulations, plans and specifications shall contain the following as a minimum:

(A) Vicinity Map. Plans must include vicinity map to locate property showing adjacent streets with names and other land marks that can easily locate the property where the proposed improvement is to be established.

(B) Plot Plan (*See Appendix, Figure 1*). Plans must include a plot plan, drawn to scale, complete with all dimensions and must contain the following:

(1) †Delineation of property boundaries, lot number and zone designation;

(2) Delineation of public rights of way, easements and access roads, if applicable;

(3) Indication of all existing structures on the lot including their location with respect to the lot boundaries:

(4) Location of proposed disposal system in relation to property boundaries, public rights of way, easements and access roads, existing structures and utilities, other bodies of surface water, public sewer, if any and proposed building;

(5) Topography of the area, showing contour lines and floor elevation of the existing or proposed building;

(6) A log of soil formations and ground water levels.

(C) Description of the complete installation of:

(1) Toilet facilities; and,

(2) Individual wastewater disposal system or public sewer connection.

The above information must include quality, kind and grade of material, equipment and method of assembly and installation.

(D) Regardless of the type of disposal system applied for, the permit application should bear the signature of the Director of Public Works for water availability verification, and approval for sewer connection if sewers are available.

(E) Design calculation of the proposed private wastewater disposal system is required and the design must be done by a licensed specialty contractor or registered professional engineer.

(F) Percolation and water table tests for private wastewater disposal systems should be done by a registered professional engineer and such test results should bear the engineer's stamp and signature.

(G) Complete septic tank and leaching field or aeration tank and leaching field design and construction details should be included in the building plans and specifications for private wastewater disposal systems.

(H) A building permit application form, completely filled out with name(s) and address of applicant, job location, lot, block and tract numbers and area of lot in square feet or square meters.

(I) Three (3) complete sets of building plans, one (1) for the Environmental Quality Protection Board and the other two (2) for distribution to other agencies.

(J) Such other information as the Board may require.

[1]Location of all property lines must be verified by the Chief of the Division of Lands and Surveys or a designated representative.

(Effective May 26, 1996)

2401-13-12 Permit Automatically Void When

Any septic tank permit shall be void if the work authorized by said permit is not commenced within three (3) months after its issuance; or is suspended or abandoned for a period of three (3) months at any time after the work has commenced; provided that for just cause stated in writing to the Chairman, the Chairman may allow up to a maximum of three (3) months extension. All such extensions shall be in writing and noted on the septic tank permit and in the individual wastewater records of the Individual Wastewater Program Section.

(Effective May 26, 1996)

CONSTRUCTION STANDARDS

2401-13-13 General Requirements

(A) Every septic tank system, seepage pit, disposal field, subsurface absorption field, cesspool or Type 3 toilet facility (privy) shall have a substantial and watertight curbing around the top thereof to retain the earth outside and to prevent the seepage of the contents to the surface of the earth. Every, Septic tank, seepage pit, disposal field, subsurface absorption field or cesspool shall have a substantial and watertight cover and shall have a manhole not less than 12 inches in diameter for cleaning purposes. All Type 3 and Type 4 toilet housing structures shall be constructed of such material as will prevent access to human excreta by rodents, flies or other vectors. Every disposal system where caving in of earth is possible shall be lined with concrete building blocks, stones, pre-cast concrete or similar durable material. Ventilation shall be provided for all Type 3 and Type 4 toilet facilities to extend outside the building and to be not less than six feet high, measured from ground level. All toilet seats for all toilet facilities shall have a close fitting cover.

(B) No septic tank system, seepage pit, disposal field, subsurface absorption field, cesspool or Type 3 or Type 4 toilet facility (privy) shall be located, constructed or maintained so as to contaminate any potable or drinking water supply, and in no case shall any septic tank system, seepage pit, disposal field, subsurface absorption field, cesspool, type 3 or type 4 toilet facility be locate at a horizontal distance of less than fifty (50) feet from any body of surface water or marine water. No septic tank system, seepage pit, disposal field, subsurface absorption field, cesspool, Type 3 or Type 4 toilet facility shall be constructed or maintained less than five (5) feet from the boundary line of the property on which it is located.

(Effective May 26, 1996)

2401-13-14 Septic Tank Capacity

(A) The net volume or effective capacity below the flow line of a septic tank, for flows up to 500 gpd, should be at least 750 gallons. For flows between 500 and 1500 gpd, the capacity of the tank should equal to at least 1-1/2 days sewage flow. The liquid capacity and sizes of septic tank as determined by the number of bedrooms or duplex units in any dwelling occupancies shall be as established in Table I, "Guidelines for Construction of Septic Tank: Liquid Capacity".

TABLE I

GUIDELINES FOR CONSTRUCTION OF SEPTIC TANK: LIQUID CAPACITY

Number of Bedrooms	Recommended Sewage Flow (Gallons) GPD	Recommended Minimum Tank Capacity (Gallons)	Recommended Minimum Inside Tank Dimension (L x W x D)
2	480	750	6' x 4' x 6'
3	720	1,080	7'6" x 4' x 6'
4	960	1,440	7' x 6' x 6'
5	1,200	1,800	7' x 7' x 6'
6	1,440	2,160	7' x 7' x 7'

Source: Manual of Septic Tank Practice - U.S. Department of Health; Education and Welfare, Public Health Service Publication #526

(B) For Large Septic Tanks—For flows between 1,500 and 15,000 gal./day—the minimum tank capacity should be equal to 125 gallons plus 75% of daily sewage flow. The formula V = 1,125 + 0.75 Q may be used, where value V is the net liquid flow in gallons. Table II, "Quantities of Sewage Flow" may be used to determine average flow per day for determining size of large septic tanks.

Example: A motel providing bath, toilet, and kitchen facilities is to serve a maximum of 80 persons. Determine the capacity and dimensions of the septic tank needed. Table II indicates 50 gal of sewage per capita per day, or a total of 4,000 gal. This is Q in the formula. Then V = 1,125 + 0.75 X 4,000 = 4,125 gal. There are 7.48 gal in a cubic foot. Then 4,125 ÷ 7.48 = 552 cu ft. A tank 5 ft deep (liquid), 7 ft wide, and 16 ft long will provide 560 cu ft.

(Effective May 26, 1996)

2401-13-15 Private System Location and Installation

(A) No part of the system shall be located so that it is nearer to any water supply than outlined in Figure 2 (See Appendix, Figure 2) and Table III, or so that surface drainage from its location may reach any

domestic water supply. The distances given in Figure 2 (See *Appendix, Figure 2*) are the minimum distances to any water of the Republic, property lines, dwelling, school, public building, or a building used for commercial or industrial purposes or a place of assembly.

TABLE II

QUANTITIES OF SEWAGE FLOW

Type of Establishments	Gallons per person per day
Small dwellings and cottages with seasonal occupancy	50
Single-family dwellings	75
Multiple-family dwellings (apartments)	60
Rooming houses	40
Boarding houses	50
Additional kitchen wastes for nonresident boarders	10
Hotels without private baths	50
Hotels with private baths (2 persons per room)	60
Restaurants (toilet and kitchen wastes per patron)	7-10
Restaurants (kitchen wastes per meal served)	2-1/2-3
Additional for bars and cocktail lounges	2
Tourist camps or trailer parks with central bathhouse	35
Tourist courts or mobile-home parks with individual bath units	50
Resort camps (night and day) with limited plumbing	50
Luxury camps	100-150
Work or construction camps (semipermanent)	50
Day camps (no meals served)	15
Day school without cafeterias, gymnasiums or showers	15
Day schools with cafeterias but without gymnasiums or showers	20
Day schools with cafeterias, gymnasiums, and showers	25
Boarding schools	75-100
Day workers at schools and offices (per shift)	15
Hospitals	150-250+
Institutions other than hospitals	75-125
Factories (gal per person per shift, exclusive of industrial wastes)	15-35
Picnic parks (toilet wastes only, gal per picnicker)	5
Picnic parks with bathhouses, showers, and flush toilets	10
Swimming pools and bathhouse	10
Luxury residences and estates	100-150
Country clubs (per resident member)	100
Country clubs (per nonresident member present)	25
Motels (per bed space)	40
Motels with bath, toilet, and kitchen wastes	50
Drive-in theaters (per car space)	5
Movie theaters (per auditorium seat)	5
Airports (per passenger)	3-5
Self-service laundries (gal per wash, i.e., per customer)	50
Stores (per toilet room)	400
Service stations (per vehicle served)	10

Source: Manual of Septic Tank Practice, Public Health Service Pub. 526 Municipal and Rural Sanitation 6th Edition.

(B) Suggested locations of tanks and disposal fields on varying ground slopes are found in Figure 2A (See *Appendix, Figure 2A*).

(C) Location shall be such as to provide not less than the stated minimum distances in Table III.

(Effective May 26, 1996)

2401-13-16 Area of Disposal Fields and Seepage Pits

The minimum effective absorption area in disposal fields in square feet of leachfield bed, shall be predicated on the required size of septic tank for the type of soil percolation rate as established in Table IV, "Guidelines for Construction of Septic Tanks and Leachfields on Palau" and Table V, "Minimum Leachfield Sizes".

(Effective May 26, 1996)

TABLE III

MINIMUM SAFE DISTANCES IN FEET

From	To Septic Tank	To Absorption Bed	To Absorption Field
Any water of the Republic	50'	50'	50'
Any dwelling, school, public building, or a building used for commercial or industrial purpose	10	20'	20'
Property boundary lines	5'	5'	5'
Water lines	10'		
Wells	50'	50'	50'

2401-13-17 Septic Tank Standards

(A) Septic tank design shall be such as to provide access for cleaning, adequate volume for setting, and for sludge and scum storage (See *Appendix, Figures 3 and 3A*). The structural design shall provide for a sound durable tank which will sustain all loads and pressures and will resist corrosion.

(B) Location shall be such as to provide not less than the stated distances in Figure 2 (See *Appendix, Figure 2*) and Table III.

(C) Liquid capacity shall be based on the number of bedrooms proposed or reasonably anticipated and shall be at least as required in Table I.

(1) The liquid depth of the tank or compartment thereof shall be five (5) feet and not more than six (6) feet. A liquid depth greater than six (6) feet shall not be considered in determining tank capacity;

(2) No tank or compartment thereof shall have an inside horizontal dimension of less than four (4) feet or 48 inches. Scum storage shall equal 15% of the total liquid depth and shall be measured from the top of the liquid level to the vertical top of the inlet tee and outlet tee excluding the one (1) inch high air space at the top of the tank. In no case shall this space be less than seven (7) inches in height;

(3) The vertical leg of the inlet tee shall extend not less than six (6) inches below the liquid surface and above the liquid surface as required in (D)(2) above.

(D) Inlet and outlet connections shall be submerged so as to obtain effective retention of scum and sludge. The inlet invert shall be at least three (3) inches above the outlet invert.

(E) The vertical leg of the outlet tee shall extend upward to within 1 inch of the underside of the cover and downward to a point which is 40% of the liquid depth below the liquid surface. When a partition wall is used to subdivide the tank, it shall have a 4 inch diameter minimum opening, with the same

invert elevation as the tank outlet (*See Appendix, Figure 3A*). The partition wall opening shall have an outlet device equivalent to the tank inlet or outlet, so that outside air can enter both sides of the partition.

(F) When multi-compartment tanks are used, the volume of the first compartment shall be equal to or greater than that of any compartment.

(G) Access to each compartment of the tank shall be provided by a 18" x 18" minimum manhole or removable cover. The inlet and outlet tee connections shall also be accessible through properly placed manholes, handholes or by easily removed covers.

(H) Where the top of the septic tank is below ground grade level, manholes shall be built up to ground grade level.

(I) The wall of the tank shall not be less than 4 inches thick reinforced concrete poured in place, or less than 8 inches thick load bearing concrete hollow block reinforced at every 16" on center laid on a solid foundation and mortar joints well filled, plastered with 1/2 inch concrete mortar in the inside of the tank. The tank covers and floor slabs shall be not less than 4 inch thick reinforced concrete. Septic tank covers may either be poured-in-place or pre-cast. The minimum compressive strength of any concrete septic tank wall, top and covers, or floor shall not be less than 2500 psi (pound per square inch).

(J) All septic tank covers shall be capable of supporting an earth load of not less than 300 pounds per square foot where the maximum coverage does not exceed three (3) feet.

(K) After the completion of the septic tank, the inside shall be cleaned and all forms removed, before occupancy permits will be issued.

(Effective May 26, 1996)

TABLE IV

GUIDELINES FOR CONSTRUCTION OF SEPTIC TANKS AND LEACHFIELDS IN PALAU

Number of Bedrooms	Wastewater Flow (GPD)	Septic Tank Capacity (Gal)	Percolation Test Rate	Required Absorption Area (Ft^2)
			1" - 5 min	250
			1" - 10 min	330
2	480	750	1" - 15 min	380
			1" - 30 min	500
			1" - 45 min	600
			1" - 60 min	800
			1" - 5 min	328
			1" - 10 min	450
3	750	1,080	1" - 15 min	545
			1" - 30 min	806
			1" - 45 min	900
			1" - 60 min	1,200
			1" - 5 min	436
			1" - 10 min	600
4	960	1,440	1" - 15 min	738
			1" - 30 min	1,070
			1" - 45 min	1,200
			1" - 60 min	1,600
			1" - 5 min	436
			1" - 10 min	600
5	1,200	1,800	1" - 15 min	738
			1" - 30 min	1,340
			1" - 45 min	1,500
			1" - 60 min	2,000
			1" - 5 min	660
			1" - 10 min	900
6	1,440	2,160	1" - 15 min	1,100
			1" - 30 min	1,600
			1" - 45 min	1,800
			1" - 60 min	2,400

TABLE V

MINIMUM LEACHFIELD SIZES

No. of Bedrooms	Daily Sewage Flow (GPD)	Tank Capacity (Gals.)	Percolation Test Rate	Required Absorption Area (Gal/Ft^2/Day)	Leaching Field Dimension (W x L)	Absorption Area (Ft^2)
			1- 5 Min.		12' x 21'	250
			1-10 Min.		18' x 20'	330
2	480	750	1-15 Min.		18' x 22'	380
			1-30 Min.		Trench	500
			1-45 Min.		System	600
			1-60 Min.		Required	800
			1- 5 Min.	2.2g/da.	18' x 19'	328
			1-10 Min.	1.6g/da.	18' x 25'	450
3	750	1,080	1-15 Min.	1.3g/da.	18' x 31'	545
			1-30 Min.	0.9g/da.	Trench	800
			1-45 Min.	0.8g/da.	System	900
			1-60 Min.	0.6g/da.	Required	1,200
			1- 5 Min.		18' x 25'	436
			1-10 Min.		18' x 34'	600
			1-15 Min.		18' x 41'	
4	960	1,440			or 24 x 3	738
			1-30 Min.		Trench	1,070
			1-45 Min.		System	1,200
			1-60 Min.		Required	1,600
			1- 5 Min.		18' x 31'	545
			1-10 Min.		18' x 42'	750
5	1,200	1,800	1-15 Min.		24' x 38'	924
			1-30 Min.		Trench	1,070
			1-45 Min.		System	1,500
			1-60 Min.		Required	2,000
			1- 5 Min.		18' x 37'	660
			1-10 Min.		24' x 38'	900
6	1,440	2,160	1-15 Min.		30' x 37'	1,100
			1-30 Min.		Trench	1,600
			1-45 Min.		System	1,800
			1-60 Min.		Required	2,400

PERCOLATION TESTS

2401-13-18 Percolation Tests Required

(A) The absorption areas or disposal field and seepage pits for individual residences whenever applicable shall be computed or determined from Table IV.

(B) The proposed site shall be subjected to percolation tests acceptable to the EQPB if it is determined that the absorption quality of soils are other than those shown in Table IV.

(1) For individual lots, one (1) percolation test per lot is required as a minimum, provided the soil is uniform and of one type. Where the soil is not uniform or there is more than one type of soil on the lot, one percolation test is required as a minimum at the center of each variation or type of soil of significant size.

(2) For subdivisions or multiple lots, one percolation test per acre is required as a minimum for each area consisting of uniform soil of one type.

(Effective May 26, 1996)

2401-13-19 Test Procedure.

All percolation tests required should be performed in accordance with the following (*See Appendix, Figure 4*):

(A) Dig or bore the holes with horizontal dimensions from 4 to 12 inches and vertical sides to the depth of the bottom of the proposed absorption device. Holes can be bored with 4 inch diameter port-hole type auger.

(B) Roughen or scratch the bottom and sides of the holes to provide a natural surface. Remove all loose materials from the hole. Place about 2 inches of coarse sand or fine gravel in the hole to prevent bottom scouring.

(C) Fill the hole with clear water to a minimum depth of 12 inches over the gravel. By refilling, or by supplying a surplus reservoir of water (automatic siphon), keep water in hole for at least four hours, and preferably overnight. In granular soils, i.e., GW, GP, SW, or SP classified according to the Unified Soils Classification System," the test can be made after the water from one filling has seeped away.

(D) Percolation rate measurements should be made on the day following the saturation process, except in sandy soils.

(E) If water remains in the test hole on overnight saturation, adjust water level to a depth of 6 inches over the gravel. From a fixed reference point, measure the drop in water level at approximately 30-minute intervals over a 4-hour period. The drop which occurs during the final 30-minute period is used to calculate the percolation rate. It must be noted that if a soil or site is determined to be poorly drained with an accompanying high water table, it is unsuitable regardless of percolation test data.

(F) If no water remains in the hole after overnight saturation, add clear water to a depth of about 6 inches over the gravel. From a fixed reference point, measure the height of the water surface at approximately 30 minute intervals over a 4-hour period, refilling the hole to a depth of 6 inches when the percolation rate indicates the hole will run dry before the next reading is made. The drop which occurs during the final 30-minute period is used to calculate the percolation rate. It should be noted that if a hole must be refilled to obtain a final 30-minute reading, determine from the previous reading the water level drop during that interval and add water until the level above the bottom equals this figure plus one-half inch. Continue the test, measuring the drop during the final 30-minute period.

(G) In sandy soils, or other soils in which the first six (6) inches of water seeps away in less than 30 minutes, after the overnight saturation period, the time interval between measurements can be taken as 10 minutes and the test run over a period of one hour. The drop which occurs in the final 10-minute period is used to calculate the percolation rate.

(Effective May 26, 1996)

SUBSURFACE ABSORPTION FIELD

2401-13-20 Absorption Bed

Where percolation rates are faster one inch per thirty (30) minutes and soil characteristics and site conditions are acceptable to the Chairman, an absorption bed system may be installed. (*See Appendix, Figure 5*).

(Effective May 26, 1996)

2401-13-21 Absorption Trench

Where percolation rates are one inch per thirty minutes or slower but faster than one inch per sixty minutes and all other soil conditions and site characteristics are acceptable to the Chairman, an absorption trench system may be installed. (*See Appendix, Figure 5*). Minimum required absorption areas are given in Tables IV and V. For a bed type system this represents the floor area of the bed. For a trench type system this represents the bottom area of the trench. The standard trench width is three feet.

(Effective May 26, 1996)

2401-13-22 Subsurface Leaching System

Subsurface leaching system, if found to be applicable by a percolation test, should be designed and constructed in accordance with Table IV and Table V, and the minimum distances given below shall be used when determining where the disposal field can be located:

(A)	Sources of domestic water supplies	300 feet
(B)	Water of the Republic	50 feet
(C)	Dwellings:	
(1)	Septic Tank	10 feet
(2)	Leaching system	20 feet
(3)	Privy	20 feet
(D)	Property Lines	5 feet
(E)	Wells	300 feet

Note: Where existing wells are involved or exceptionally coarse soil formations are encountered, the 300 foot distance from any water supply shall be evaluated and separations maintained in accordance with the recommendations of the Chairman.

(Effective May 26, 1996)

2401-13-23 Subsurface Seepage Fields

Subsurface seepage fields (leachfield), if found to be applicable by percolation test, shall be designed and constructed in accordance with Table IV and V,

and the minimum distances given below shall be used when determining where the disposal field can be located:

(A) Sources of domestic water supplies . . 300 feet
(B) Water of the Republic . . . . . 50 feet
(C) Dwellings . . . . . 20 feet
(D) Property lines . . . . . 5 feet
(E) Wells . . . . . 300 feet

Note: When existing wells are involved or exceptionally coarse soil formations are encountered, the 50 foot-distance from any water supply shall be increased in accordance with the recommendations of the Chairman.

(Effective May 26, 1996)

LEACHFIELD CONSTRUCTION

2401-13-24 In Filled Ground

No person may construct any portion of any leachfield in filled ground witnout the prior written approval of the Chairman.

(Effective May 26, 1996)

2401-13-25 Construction Standards

All leaching fields shall be constructed within the following standards:

(A) Distribution drain lines shall be constructed of perforated PVC pipes or perforated clay pipes, concrete or fiberglass leaching chambers or other approved materials may be used, provided that sufficient openings are available for distribution drain lines of the effluent into the leach bed area.

(B) Before placing filter material, leaching chambers or drain lines in a prepared excavation, all smeared or compacted surfaces shall be removed from leaching bed area by raking to a depth of 1-inch and the loose material removed. In standard perforated pipe/filter materials leachfields, clean stone, gravel slag or similar filter material acceptable to the Chairman, varying in sizes from 3/4" to 2-1/2" shall be placed in the trench or bed to the depth and grade required in Table VI and Figure 5.(See *Appendix, Figure 5*).

(C) Drain lines shall then be covered with filter material to the minimum depth required on Table VI and this covered with untreated building paper, straw, or similar porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance by the Chairman.

(D) Leachfields employing leaching chambers shall be constructed in accordance with the leaching chambers' manufacturer's recommendations and/or as directed by the Chairman.

(E) Connections between a septic tank and main distribution lines shall be laid with approved pipe with water tight joints on natural ground or compacted fill.

TABLE VI

SUBSURFACE LEACHING FIELD CONSTRUCTION DETAILS

Item	Unit	Bed Max.	Bed Min.	Trench Max.	Trench Min.
Number of Distribution Drain Lines	—	7	2	8	2
Distance from drain line perimeter of leachfield	feet	3	3	1-1/2	—
Length of Leachfield	feet	100	21	100	—
Width of Leachfield	feet	50	12	3	3
Depth of coarse material:					
Under pipe (Minimum)	inches	6			6
Over pipe (Minimum)	inches	2			2
Total (Minimum)	inches	12			12
Size of coarse material	inches	2-1/2	3/4	2-1/2	3/4
Depth of backfill over coarse material	inches	36	12	36	12
Distance bet. drain lines *(center to center)*	feet	6	—	—	6

Note: Exception to the above table may be made by ECPC when soil conditions warrant.

(F) Disposal or leaching field shall be constructed as follows:

Minimum number of drains 2
Maximum length of each line . . . . . 52 feet
Minimum bottom width of leachbed . . . . . 12 feet
Maximum bottom width of leachbed . . . . . 42 feet
Minimum bottom length of leachbed . . . . . 21 feet
Maximum bottom length of leachbed . . . . . 57 feet
Maximum spacing of drain lines center to center . . . . 6 feet
Preferred depth of cover of lines . . . . . 24 inch
Minimum depth of earth cover over lines . . . . . 18 inch
Minimum filter material under drain lines . . . . . 6 inch
Minimum filter material over drain lines . . . . . 2 inch
Minimum Total Filter Material . . . . . 12 inch
Maximum grade of lines . . . . . 6 inches per 100 feet
Minimum grade of lines . . . . . 3 inches per 100 feet

(G) Notwithstanding the requirements set forth in Division F of this Section:

(1) When perforated pipe is used it shall be laid level and the end of the line capped.

(2) Where leaching beds are permitted, distribution drain lines in leaching beds shall not be more

than six (6) feet apart on centers and no part of the perimeter of the leaching bed shall be more than three (3) feet from a distribution drain line.

(3) When necessary on sloping ground to prevent excessive line slope, leach lines or leach beds shall be stepped. The lines between each horizontal section shall be made with watertight joints and shall be utilized to the maximum capacity before the effluent shall pass to the next lower leach line or bed. The lines between each horizontal leaching section shall be made with approved watertight joints.

(Effective May 26, 1996)

SEEPAGE PITS

2401-13-26 General

(A) Seepage pits may considered to be used to supplement the subsurface disposal field or in lieu of such field where conditions favor the operation of seepage pits, as may be found necessary and approved by the Chairman on a case-by-case basis. (*See Appendix, Figure 6*).

(B) Care should be taken to avoid extending the seepage pit into ground water table. Where the pit is used to receive the septic tank effluent, the same limitations established on Table III shall govern the location of the pit.

(Effective May 26, 1996)

2401-13-27 Construction Standards

(A) The capacity of seepage pits shall be such as based on the quantity of liquid waste discharging thereunto, and on the character and porosity of the surrounding soil and shall conform to the guidelines established in Table IV and Table VII.

(B) Use of seepage pits with septic tanks is acceptable only when soil conditions or topography are appropriate, and only with the approval of the Chairman. Seepage pits are not acceptable in limestone areas nor in localities where shallow wells are used.

(C) When more than one seepage pit is used, installation may be operated in series or in parallel. If operated in series each pit shall be equipped with an inlet tee or ell. If operated in parallel a tee, wye, or distribution box shall be used. An outlet tee or ell shall be raised to prevent scum from floating into the second pit. (*See Appendix, Figure 6*).

(D) Effective absorption area of a seepage pit shall be calculated as the side area only below the inlet, exclusive of any hard span, rock or impermeable clay soil layer. Required seepage pit size shall be determined from Table IV and VII.

(E) A minimum depth of 4 feet of porous formation shall remain or be provided at the bottom of each pit. Pits less than 20 feet deep shall have an inside diameter established on Table VII. No pit excavation shall extend into the water table. Where ground water is encountered the bottom of the pit shall be backfilled with clean coarse sand at least 3 feet above the water table. (*See Appendix, Figure 6*).

TABLE VII

GUIDELINES FOR SIZES OF SEEPAGE PITS

Seepage Pit Dd = A

No. of Pits	Diameter	Depth Ft.
1	6' diameter	14' - 0"
1	8 'diameter	13' - 6"
1	8' diameter	15' - 6"
2	6' diameter	13' - 6"
2	8' diameter	12' - 0"
2	8' diameter	13' - 6"
1	6' diameter	17' - 6"
2	6' diameter	12' - 0"
2	6' diameter	14' - 6"
3	6' diameter	14' - 6"
3	6' diameter	16' - 0"
4	6' diameter	16' - 0"
2	6' diameter	12' - 0"
2	6' diameter	16' - 0"
2	8' diameter	15' - 0"
3	8' diameter	14' - 5"
3	8' diameter	16' - 0"
4	8' diameter	16' - 0"
2	6' diameter	14' - 6"
2	8' diameter	15' - 0"
3	8' diameter	12' - 6"
4	8' diameter	13' - 6"
5	8' diameter	12' - 0"
5	8' diameter	16' - 0"
2	8' diameter	13' - 6"
3	6' diameter	16' - 0"
3	8' diameter	14' - 6"
4	8' diameter	16' - 0"
5	8' diameter	14' - 0"
6	8' diameter	14' - 0"

Note:
1. If two or more seepage pits are being used as a leaching pits, the distance between seepage pit should be at least 3 times the diameter of seepage pits.
2. Minimum distance of at least 20' ft. for pits over 20' ft. in depth.
3. Seepage pits should not be used when percolation rates are less than 1" - 60 min.

(F) Pipe with tight joints shall be used in connecting the septic tank to the pit.

(G) All seepage pits shall be either lined or filled with coarse stone. The lining may be brick, stone, block, or similar durable materials, laid in cement mortar above the inlet and with tight butted joints below the inlet. The annular space between the

lining and the earth wall shall be filled with clean 3/4 inch crushed rock or gravel. Where caving is possible, seepage pits shall be lined with concrete building blocks, stones or pre-cast ring or similar materials.

(H) Provide for each pit a 4 inch thick concrete top, not less than 12 inches or more than 18 inches in diameter or of equal area for inspection and cleaning purposes. The top shall bear on at least 12 inches of soil around the pit, or on top of the pit wall. The top shall be not more than 18 inches below the finished grade.

(I) All brick or block used in seepage pit construction shall have a minimum compressive strength of twenty-five hundred (2,500) pounds per square inch.

(J) The bottom of the pit is not compacted for absorption. It should be noted therefore that a 6-foot-diameter pit has 28.26 square feet of absorption area per foot of depth while an 8-foot-diameter pit has 25.14 square foot of wall area per foot of depth.

(Effective May 26, 1996)

INSPECTION AND CERTIFICATE OF OCCUPANCY

2401-13-28 Inspections and Notice

(A) Each project shall be subject to regular inspections by representatives of the Environmental Quality Protection Board to assure that construction of septic tanks, leaching fields, seepage pits, disposal fields, subsurface absorption fields, toilet facilities and connections to public sewers and any and all other related construction is in compliance with approved plans and specifications, and in accordance with the Environmental Quality Protection Board regulations.

(B) The EQPB must be notified twenty-four (24) hours in advance of any concrete pouring and all such concrete work must be performed in the presence of an EQPB Inspector.

(C) All construction work such as septic tank or seepage pits, and leaching field installation must be inspected by an EQPB inspector prior to covering or concealment.

(D) Failure to comply with the requirements of this Section may result in unnecessary delays to the project or a suspension of work or denial of a Certificate of Occupancy and an order to remove or uncover portions or all of the offending structures.

(Effective May 26, 1996)

2401-13-29 Final Inspection

After completion of the project, final inspection by the EQPB shall be conducted on these disposal systems, sewer connections and toilet facilities to ensure that the work was performed in accordance with the approved plans and specifications issued as part of the permit and that EQPB regulations and requirements are met.

(Effective May 26, 1996)

2401-13-30 Certificate of Occupancy

After a final inspection satisfactory to the EQPB has been performed on the project pursuant to Section 2401-13-29, and said inspection indicates that the work performed was done in accordance with approved plans and specifications and has met all EQPB requirements, the Chairman shall issue a Certificate of Occupancy.

(Effective May 26, 1996)

TEMPORARY TOILET FACILITIES (TTF)

2401-13-31 Temporary Toilet Facilities Required

Temporary Toilet Facilities (TTF), also known as Type 4 toilet facilities, shall be provided for:

(A) Any construction job-site where working toilets connected to an approved type sanitary disposal system are insufficient or unavailable or such facilities are determined to be not readily available for the needs of the employees;

(B) The number of facilities required, whether permanent, temporary or combination thereof shall be in accordance with the requirements detailed in Table VIII.

(C) The term readily available as used in Division A of this Section, shall be defined as being within 300 feet of the work area. Facilities which are within this distance but are not under the direct control of the developer/contractor shall require a written authorization/certification from the owner of such facilities that unrestricted access to these toilet facilities will be available to the contractor's workers for the entire period of the construction project.

(D) All arrangements for sanitary facilities must be made and in place before any clearing or construction may proceed.

(Effective May 26, 1996)

2401-13-32 Construction Standards

(A) Temporary Toilet Facilities may be chemical, recirculating or combustion providing they comply with existing Palau Codes.

(B) The minimum number of TTF required for construction site shall be based in accordance with Table VIII.

(C) Any construction site requiring EQPB approval for permitting will provide proof that the minimum required number of toilet facilities are

available or will be available for the period of time that the permits are valid.
(Effective May 26, 1996)

TABLE VIII

NUMBER OF TTF REQUIRED FOR CONSTRUCTION SITES

No. of Employees	Minimum Numbers of Units
1 to 15	1
16 to 30	2
31 to 51	3
52 to 72	4
73 to 93	5
Over 93	1 Add'l unit per 20 employees

2401-13-33 Failure to Provide Required TTF

In addition to any other remedies provided by law, any construction site not complying with the minimum number of TTF will be given a written warning and given 48 hours to comply. Failure to comply within the given period will result in the revocation of the EQPB approval required for the building permit which will temporarily suspended all construction at this site.
(Effective May 26, 1996)

CLEANING WASTEWATER DISPOSAL SYSTEMS AND DISPOSAL OF WASTEWATER

2401-13-34 Registration Certificate Required

No person shall engage in the business of cleaning individual sewage disposal systems or disposing of the wastes therefrom unless a Registration Certificate has first been secured from the EQPB.
(Effective May 26, 1996)

2401-13-35 Standards for Operation

Such cleaning and/or disposal operations shall be conducted in conformity with the following requirements and in accordance with all applicable regulations:

(A) The name and address of the person, shall be legibly lettered on both sides of each vehicle used for cleaning purposes;

(B) Every vehicle used for cleaning purposes shall be equipped with a watertight tank or body and be maintained in a clean and sanitary condition. Sewage waste shall not be transported in an open body vehicle;

(C) All portable receptacles used for transporting liquid or solid waste shall be watertight, equipped with tight-fitting lids, and shall be cleaned daily;

(D) All pumps and hose lines shall be properly maintained so as to prevent leakage;

(E) Approval in writing shall be obtained from the Chairman for every site at which the person plans to discharge the waste material collected. The approval may be given after consultation with the Bureau of Public Works;

(F) The hose or any similar device used for discharging waste must be inserted into the ear-marked manhole to a depth of approximately two (2) feet, to prevent any spray or spillage into the surrounding area;

(G) Every precaution must be taken to prevent any public nuisance or health hazard which may be caused by the cleaning and disposal operations service.
(Effective May 26, 1996)

2401-13-36 Registration Certificate Standards

(A) A registration certificate shall be issued to any person properly making application therefor, who is not less than twenty-one (21) years of age, has successfully demonstrated the ability to handle the equipment, and only after the place or places and manner of disposal of the cleanings proposed by said applicant are approved by the EQPB.

(B) A certificate issued pursuant to this Section is not transferable and shall expire December 30th of each year. A certificate may be renewed for an ensuing year by making application for renewal, upon determination of the applicant's observance of sanitary laws, ordinance, and directions. Such application shall have the effect of extending the validity of the current registration certificate until a new certificate is issued or the renewal of the registration is denied by the EQPB.

(C) Non-compliance of the requirements of these regulations may result in the revocation or suspension of the registration certificate. Any applicant whose registration certificate is suspended must correct all discrepancies noted in the suspension within 30 days, otherwise the registration certificate may be revoked.

(D) Registration under these regulations shall not be construed as impairing in any manner, the existing powers and duties of the other national government agencies of the Republic of Palau or the state governments of the Republic of Palau under other laws.
(Effective May 26, 1996)

MAINTENANCE

2401-13-37 General

(A) Toilet facilities, wastewater disposal systems and connections from the building drain to the public sewer shall be maintained at all times in good repair

and in a clean and sanitary condition.

(B) The owner of the property is primarily responsible for the completeness of all structures, good repair, cleanliness and maintenance of the toilet facilities, wastewater disposal systems and connections from a building drain to the public sewer in compliance with all applicable regulations of the Republic of Palau, and any other standard sanitation practices.
(Effective May 26, 1996)

2401-13-38 Septic Tank Maintenance

(A) Owners of septic tanks or seepage pits shall empty and clean the tank or pit when necessary, and the contents disposed of in such place and manner as shall be authorized by the Chairman.

(B) Septic tanks should be inspected by the owner at intervals of no more than 2 years to determine the rates of scum and sludge accumulation. The inlet and outlet structures and key joints should be inspected for damage after each pump-out.

(C) The septic tank should be cleaned whenever either of the following conditions exists:

(1) The bottom of the scum layer is within 3 inches of the bottom of the outlet device; or

(2) The sludge level is within 8 in. of the bottom of the outlet device.

(D) Septic tank sludges shall be disposed of by hauling to a sewage treatment facility whenever this is possible. When no treatment facilities are available, may be disposed by sludge spreading or spraying, in permitted sites only, by licensed pumpers. Permit for sludge spreading sites shall be obtained from EQPB and approved by the Chairman.
(Effective May 26, 1996)

2401-13-39 Prevention of Odor

All non-water carriage sewage disposal pits including those for Type 3 toilet facilities shall be covered as often as necessary with earth or lime to exclude flies and prevent odor.
(Effective May 26, 1996)

2401-13-40 Abandonment of System

Each septic tank, seepage pit, disposal field, subsurface absorption field, and cesspool shall be properly filled with earth when replaced by an approved new system. Privy pits including those for Type 3 toilet facilities shall be sealed with earth when the level of sewage reaches within two (2) feet of the ground surface.
(Effective May 26, 1996)

2401-13-41 Repair, Replacement, Removal

Any toilet facility or sewage disposal system or connections from a building drain to a public sewer which fails to comply with the provisions of these regulations shall be repaired, altered, cleaned emptied or removed and replaced by the owner of the property at the owner's sole cost. The Board may issue any Order deemed necessary setting forth the parameters, terms and conditions of such repair, alteration, cleaning emptying or removal and replacement.
(Effective May 26, 1996)

2401-13-42 Grease Traps

In order to be effective, grease traps shall be operated properly and cleaned regularly to prevent the escape of appreciable quantities of grease. Cleaning shall be done when 75% of the grease-retention capacity has been reached.
(Effective May 26, 1996)

ENFORCEMENT

2401-13-43 Disposal of Sewage Prohibited

It shall be unlawful to dispose of treated or semitreated sewage into any river, stream, pond, well, reservoir, body of fresh water, marine water or onto the ground unless prior written consent is given by the Board or its authorized representative.
(Effective May 26, 1996)

2401-13-44 Stop Work Orders

In the event a project is commenced without a permit, or work performed is not in accordance with approved plans and specifications or any approved changes or revisions thereto, or unsafe construction practices are found and continued after sufficient warnings by the Chairman, a Stop Work Order shall be issued and take effect until the conflict is resolved.
(Effective May 26, 1996)

2401-13-45 Compliance Orders

(A) In addition to any other remedies provided by law, when an investigation reveals that in the course of construction, toilet facilities or sewage disposal systems or building drain connections to a public sewer have been constructed or altered in violation of any provision of the construction permit or of these regulations, the EQPB may issue an administrative order directing those persons not complying with the requirements of the permit or these regulations to:

(1) Comply forthwith; or

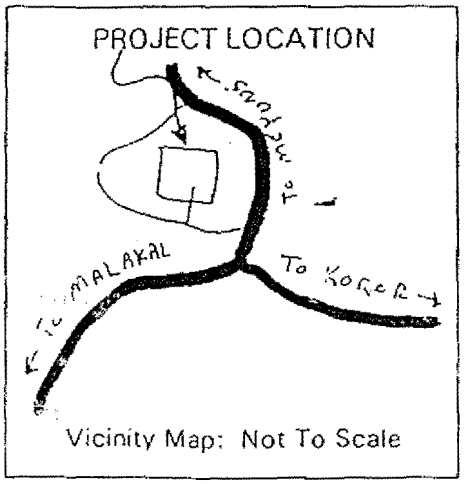
(2) In the event of a threatened violation, take appropriate remedial or preventive action.

(B) A person who is adversely affected by such

APPENDIX A
FIGURES AND DIAGRAMS

FIGURE 1

SAMPLE PLOT PLAN



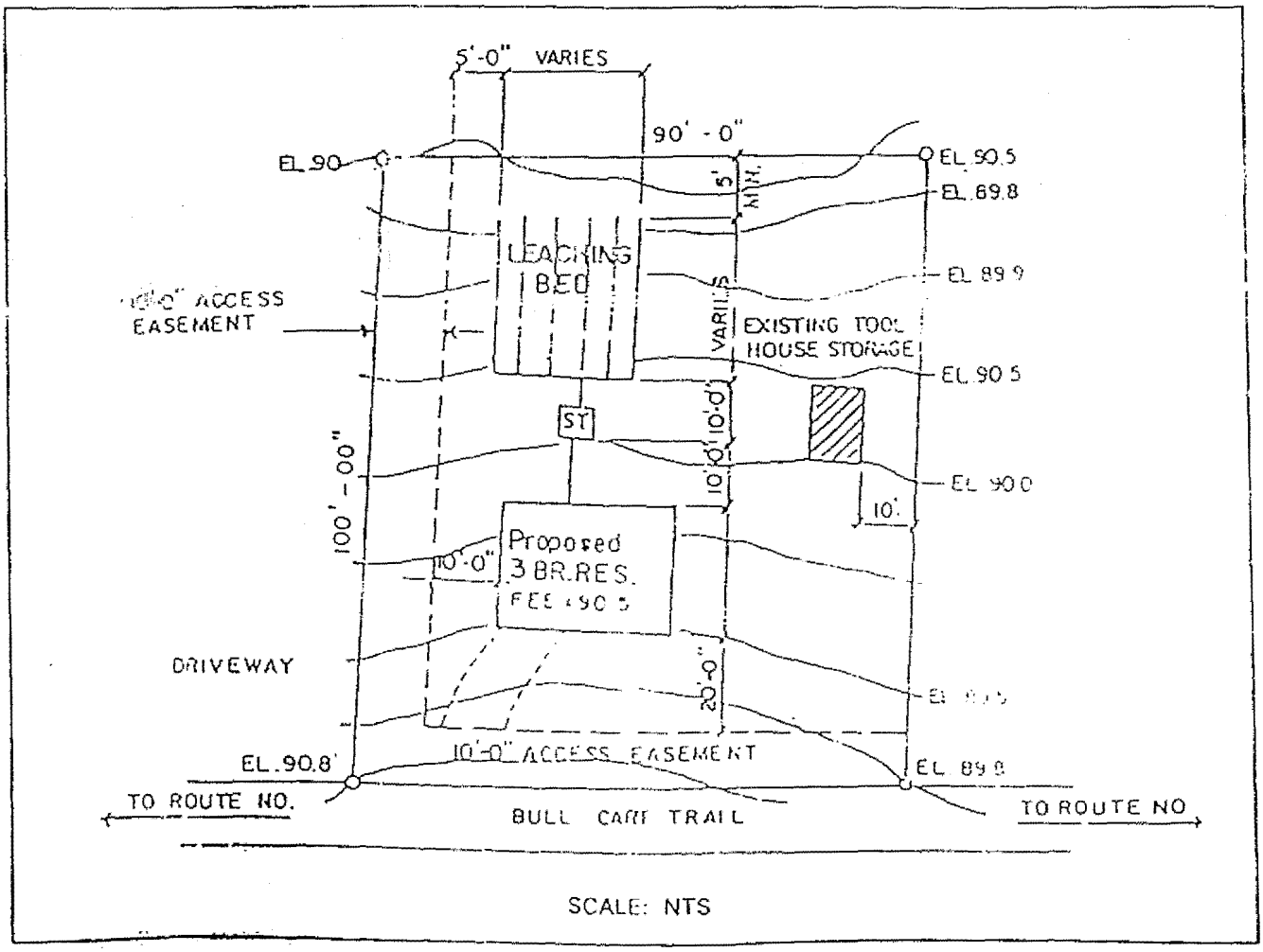


FIGURE 2

SEWAGE DISPOSAL SYSTEM

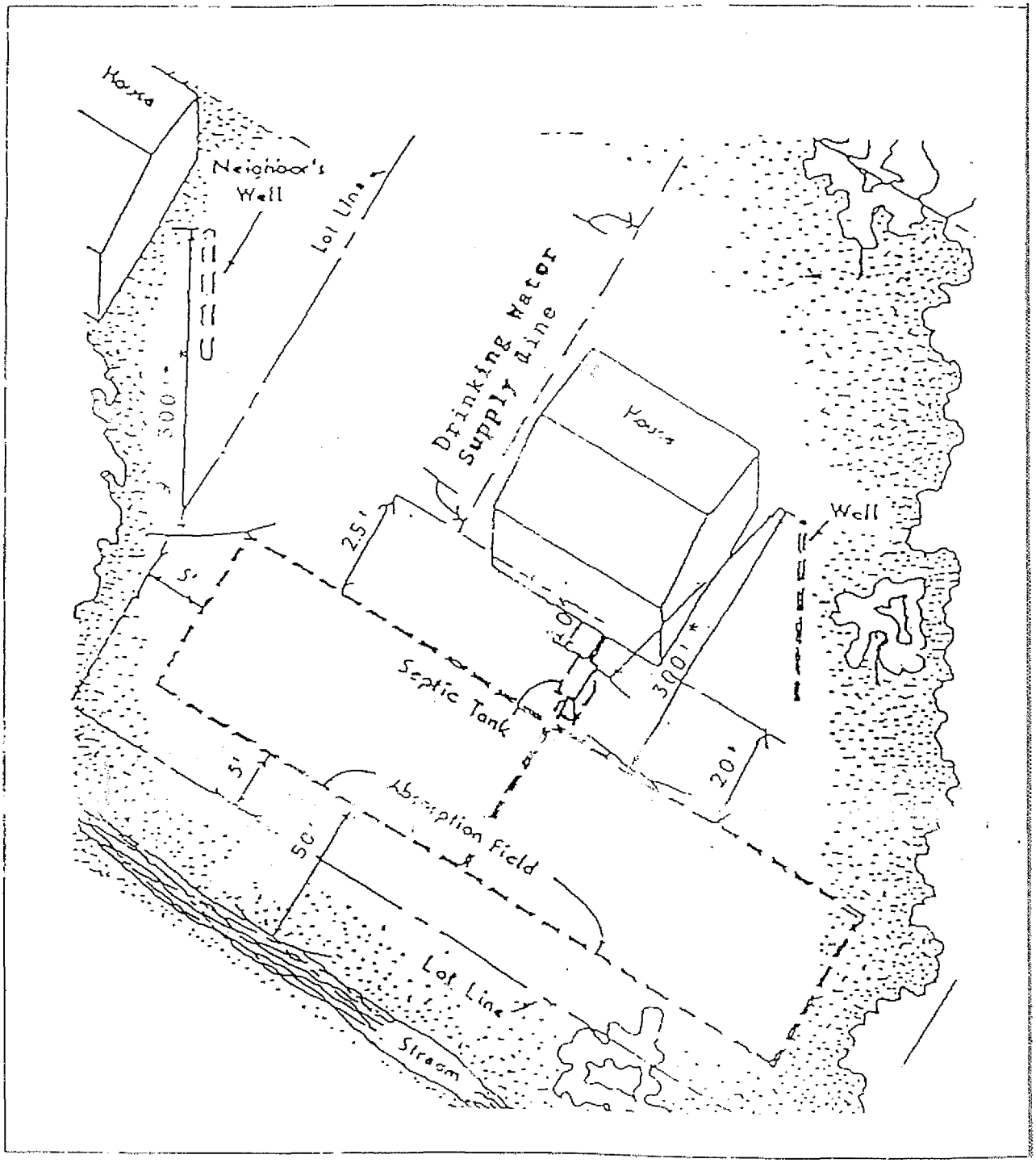
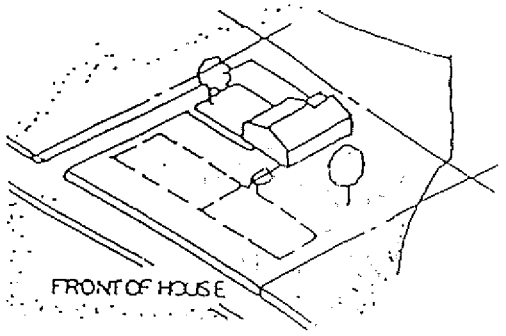
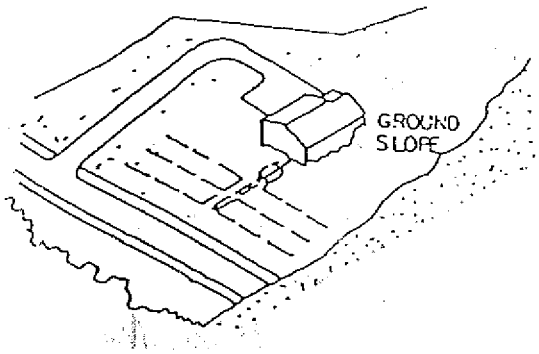


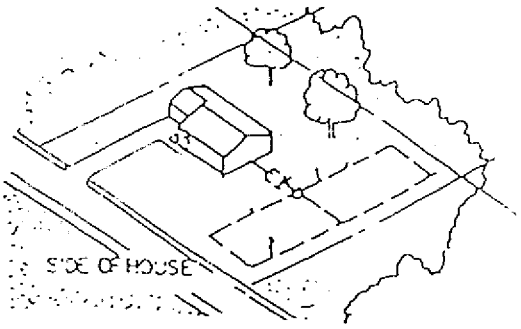
FIGURE 2A

LOCATION OF SEPTIC TANKS ON VARYING GROUND SLOPES

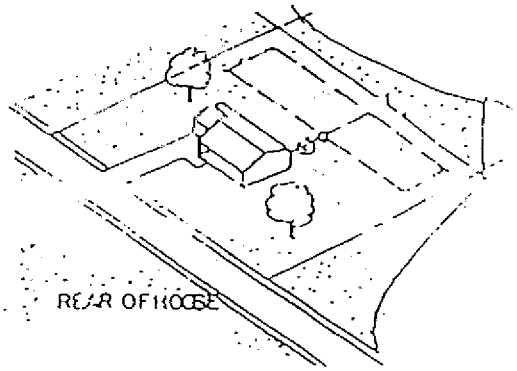




When the ground slopes to the front of the house, the tank and field should be located as shown.



Illustrates the location when ground slopes to the sides.

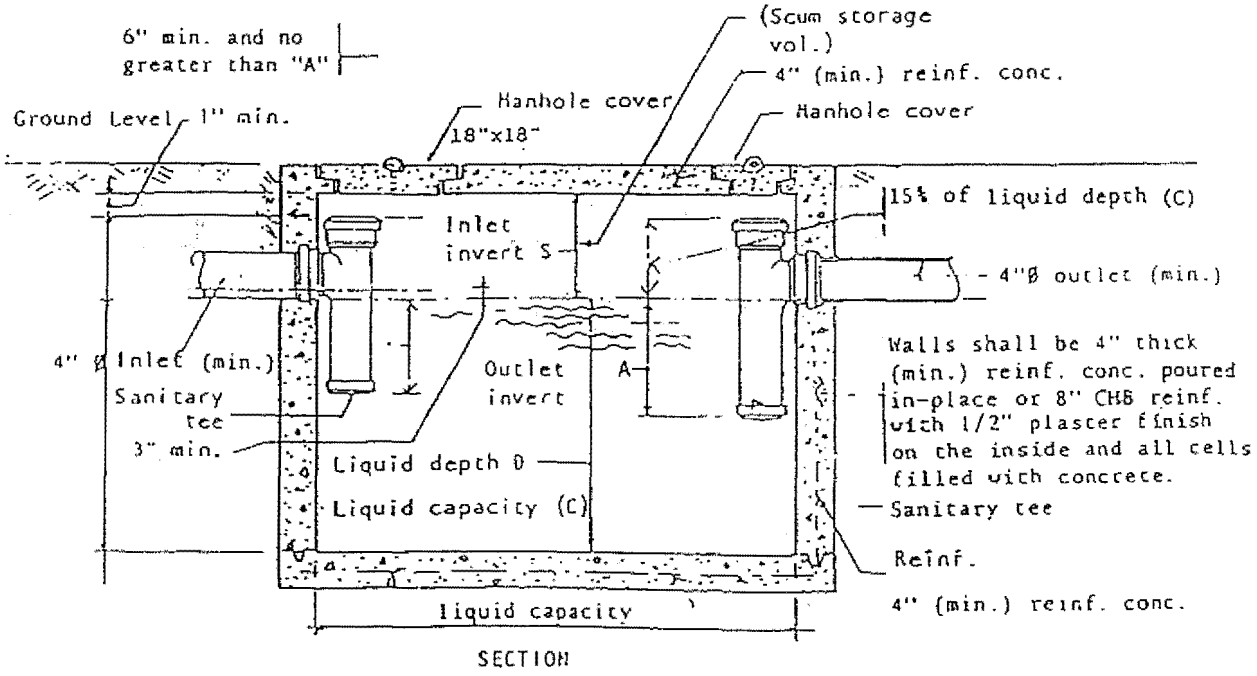


Illustrates the location when ground slopes to the rear.

In Locating Septic [illegible] Consider Future Extension of a Public Sewer So That a Minimum [illegible]ting of the Building Sewer Will Be Necessary

FIGURE 3

SINGLE COMPARTMENT SEPTIC TANK PLAN/DESIGN



SECTION

A - Approx. 40% of the depth D.
D - 5' depth to 6' max. depth. Greater than 6 ft. should not be considered in tank capacity.
S - Not less than 20% of the liquid capacity C.

1. Septic tank size, depends on number of bedrooms contemplated in the dwelling served. Refer to Table 1 for septic tank size.

2. Schedule of concrete reinforcement (Min.)

A. Cover - #4 at 8" O.C. EW.
B. Walls - 1. Conc. PIP - #4 at 10" O.C EW.
2. CHU - #4 vert. bar at 16" O.C and 8" DUR-O-WALL at every two layers
C. Bottom slab - #4 at 10" O.C. EW.

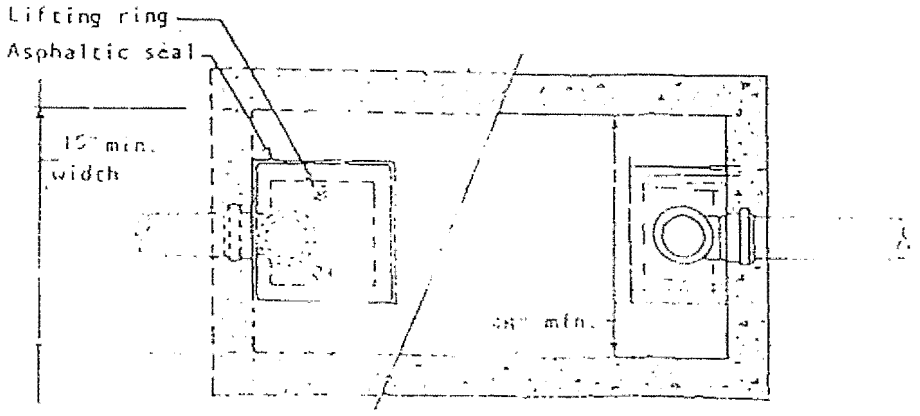


FIGURE 3A

DOUBLE COMPARTMENT SEPTIC TANK PLAN/DESIGN

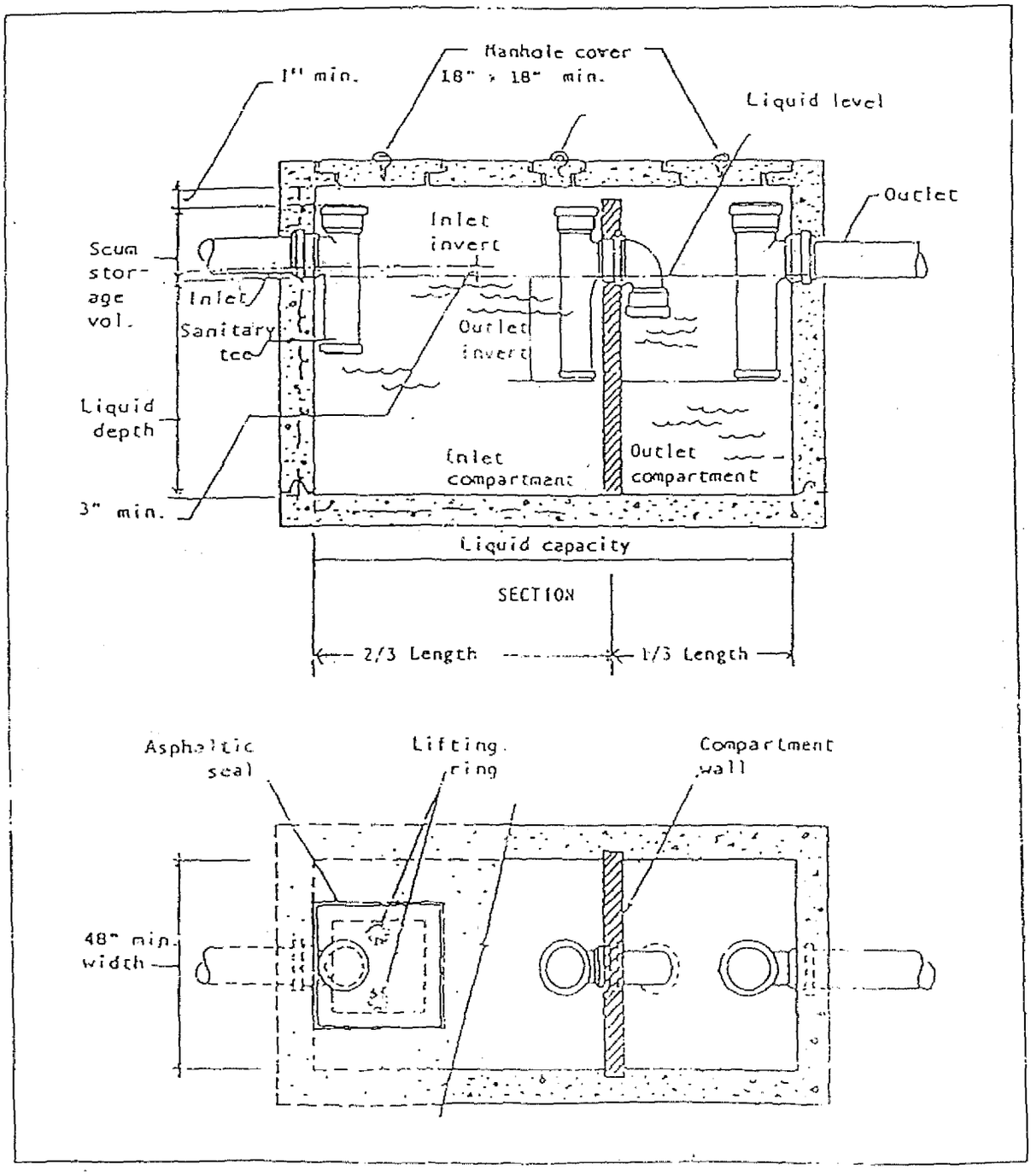


FIGURE 3

PERCOLATION TEST SET-UP

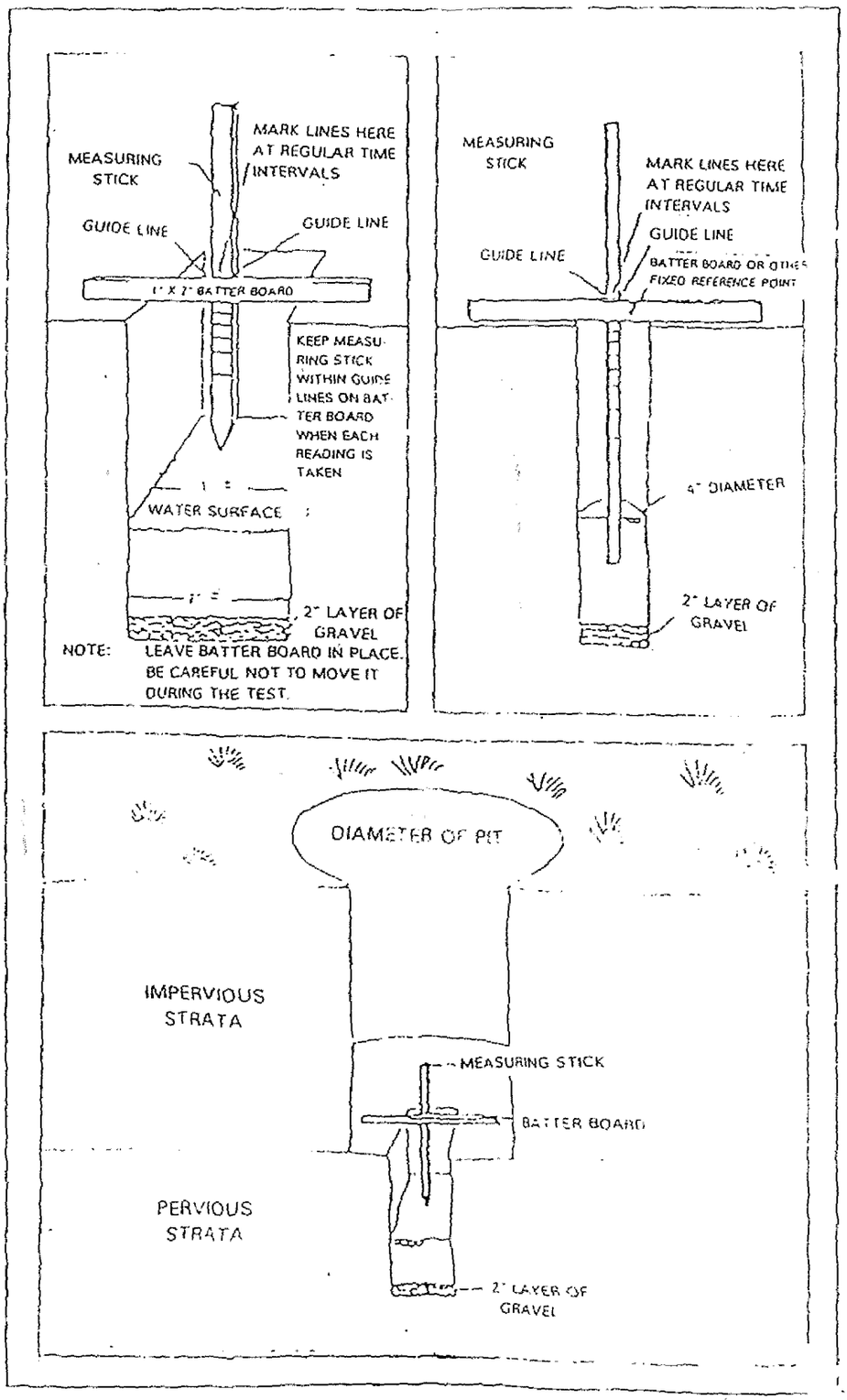
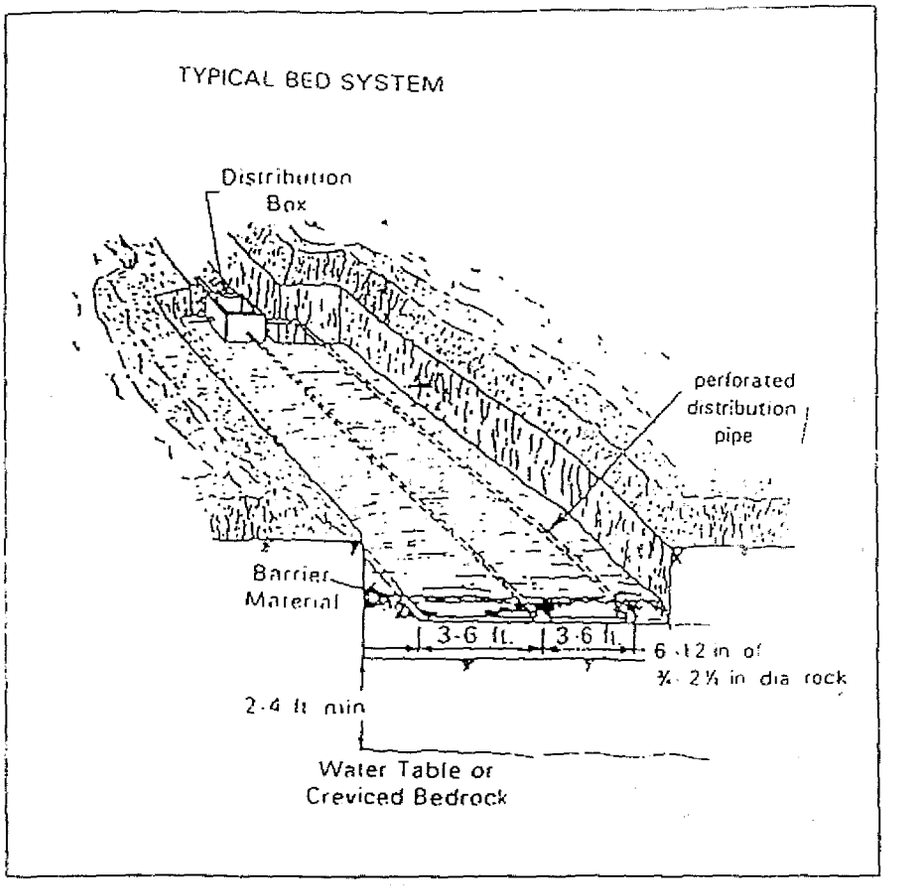


FIGURE 5

TYPICAL LEACHFIELDS



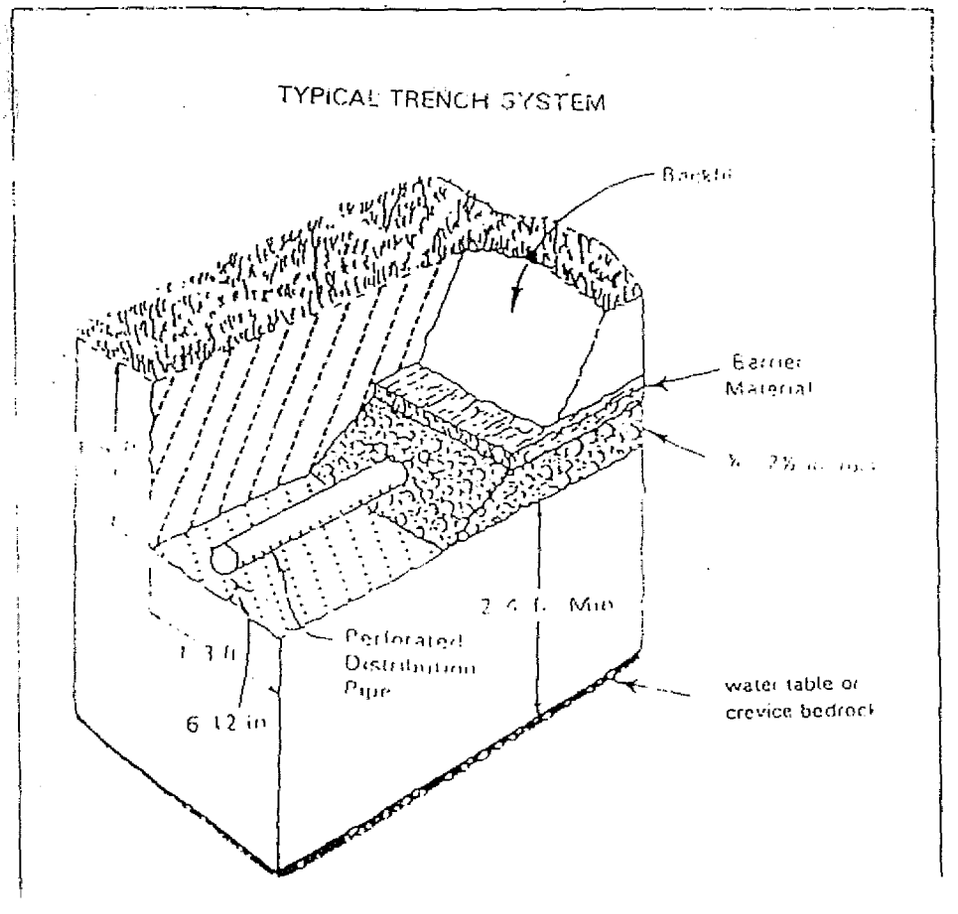
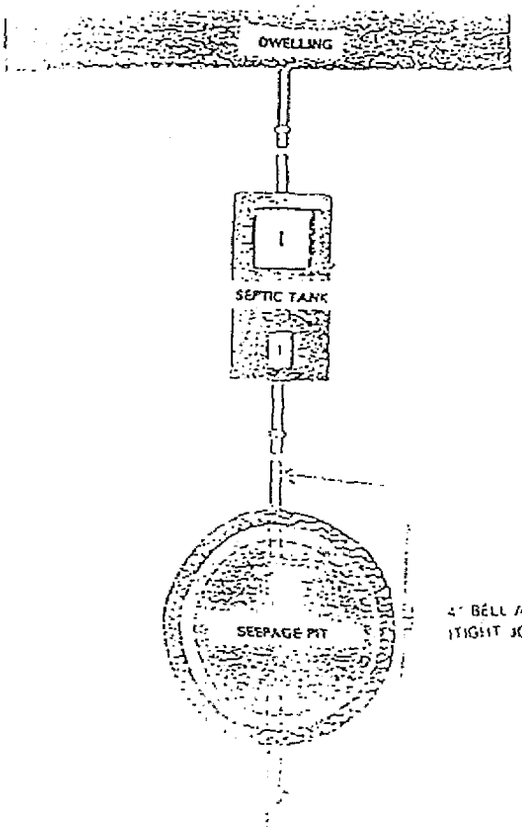
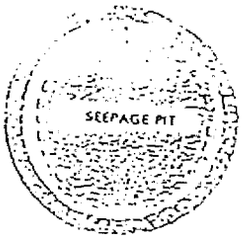


FIGURE 6

SEEPAGE PIT

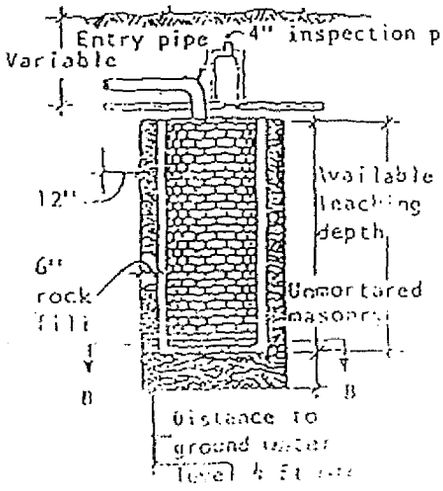


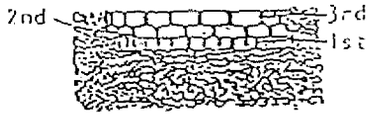


"D" SHOULD BE AT LEAST 3 TIMES THE DIAMETER OF THE SEEPAGE PIT

MINIMUM "D" AT LEAST 20 FEET FOR PITS OVER 20 FEET [illegible]

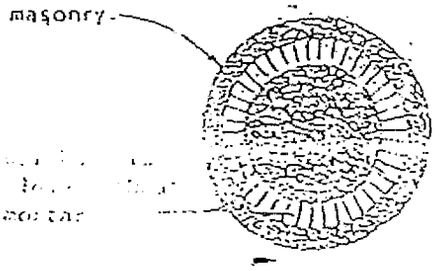
Precast reinforced concrete slab not resting on lining



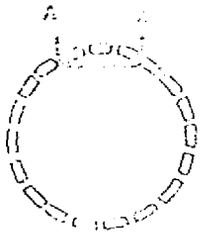


Bricks Overlap On Each Layer

Place 6" coarse aggregate (1/2" to 1") around unmortared masonry



Second and remaining layers are laid end to end



Second Layer of Brick

Seepage pits details