

STATE OF MAINE
PLUMBING CODE, PART II
Private Sewerage Disposal Regulations
July 1974



Department of Health & Welfare
Bureau of Health
Division of Health Engineering
Edition of 1974

Printed Under Appropriation No. 4305

Maine Plumbing Code, Part II—Private Sewage Disposal Regulations
TABLE OF CONTENTS

Contents	Chapter	Section	Page
Definitions	1	1.1-1.59	5-10
Administration	2		
Scope		2.1	11
Permits Requires		2.2	11
Application for Permits		2.3	11
Issuance of Permits		2.4	12
Denial and Revocation of Permits		2.5	12
Fees		2.6	12
Inspection and Testing		2.7	13
All work to be Inspected		2.8	14
Severability		2.9	14
Code Enforcement		2.10	14
General Provisions	3		
General		3.1	15
Sewer Required		3.2	15
Prohibited		3.3	15
Privies, Chemical Toilets, Etc.		3.4	16
Treatment		3.5	16
Responsibility		3.6	16
Abandoned Systems		3.7	16
Soil Loading		3.8	16
Installations		3.9	16
Additional Requirements		3.10	16
Cesspools, Dry Wells		3.11	16
Surface and Storm Water Disposal		3.12	17
Large Systems		3.13	17
Existing Construction		3.14	17
Location		3.15	17
Site Considerations	4		
Soil Conditions		4.1	18
Observation Holes		4.2	18
Groundwater, Bedrock, Impervious Strata		4.3	19
Surface Water		4.4	19
Flood Plain		4.5	19
Ground Slope		4.6	19
Location of Disposal Facilities		4.7	20
Volume of Sanitary Sewage	5		
Single Family Dwellings		5.1	21
Other Structures		5.2	21
Building Sewer	6		
General		6.1	23
Material		6.2	23
Size of Building Sewer		6.3	23
Grade of the Building Sewer		6.4	23
	2		

Contents	Chapter	Section	Page
Support and Protection of the Building Sewer		6.5	23
Trenching, Excavation and Backfill		6.6	24
Water Service Pipes		6.7	25
Cleanouts		6.8	25
Treatment And Holding Tanks	7		
Septic Tanks		7.1	26
Capacities of Septic Tanks		7.2	26
Aerobic Tanks		7.3	27
Vehicular Traffic		7.4	27
Saturated Conditions		7.5	27
Holding Tanks		7.6	27
Details And Special Designs	8		
Dosing Facilities		8.1	28
Venting of Disposal Fields		8.2	28
Vehicular Traffic and Paved Areas		8.3	28
Percolation Lines		8.4	28
Diversion Boxes		8.5	29
Distribution Boxes		8.6	30
Man-Made Areas		8.7	30
Subsurface Absorption Area Material		8.8	30
Reserve Area		8.9	31
Approved Private Sewage Disposal Systems	9		
An approved private sewage disposal system		9.1	32
Combined System		9.2	32
Separated System		9.3	32
Non-Discharge Systems		9.4	32
Permitted Private Sewage Disposal System		9.5	32
Soil Conditions—Type And Size			
Of Systems Permitted—Table		Table 9-1	34
Guide For Textural Classifications In			
Soil Families—Diagram		Table 9-2	37
Trenches		9.6	32
Beds		9.7	40
Chambers		9.8	42
Mounds		9.9	44
Special		9.10	46
Non-Discharge		9.11	48
Open Pit Privy		9.12	50
Sealed Vault Privy		9.13	51
Compost Toilet Units		9.14	52
Incinerating, Chemical, Recirculating, and			
Vacuum Toilets		9.15	52
Other Systems	10		
Lagoon Treatment and Spray Disposal Systems		10.1	54
Industrial Wastes		10.2	54
Other Systems, Devices, and Techniques		10.3	54
APPENDIX I			
A GUIDE FOR MINIMUM LOT SIZE DETERMINATION FOR			55
SINGLE FAMILY DWELLINGS WHEN ON-SITE WASTE			
DISPOSAL IS REQUIRED			

RECOMMENDATION TO LOCAL GOVERNMENTS

It is recommended that the local communities require a plumbing permit be obtained for the private sewage disposal system which will serve a building before a building permit is issued for that building's construction or alteration. Such a requirement will often eliminate the hardship to an owner of investing in a structure and then not having an adequate, economical means of sewage disposal.

This is a minimum code addressing the engineering aspects of private sewage disposal. It is imperative that this code be accompanied by local zoning and/or lot size restrictions or ordinances to address the unique situations which most communities have.

CHAPTER 1
DEFINITIONS

- 1.1 **ALTERNATE PLUMBING INSPECTOR (API)** — Alternate Plumbing Inspector means the appointed municipal official in each incorporated municipality authorized to act for the LPI in his absence or when he is not able to serve.
- 1.2 **APPLICANT** — Applicant means a person, owner, or his authorized agent responsible for the completion of Application for Private Sewage Disposal Permit.
- 1.3 **APPLICATION FOR PRIVATE SEWAGE DISPOSAL PERMIT** — Application for Private Sewage Disposal Permit means an application kit furnished by the Department which, when fully completed, will document the feasibility of the proposed system for the denial or issuance of a permit from the LPI.
- 1.4 **BLACK WASTE WATER** — Black Waste Water means waste water containing human excrement, feces, and/or urine.
- 1.5 **BUILDING DRAIN** — The building drain is that part of the lowest piping of a drainage system which received the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning eight (8) feet outside the building wall.
- 1.6 **BUILDING SEWER** — The building sewer is that part of the horizontal piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage disposal system or other point of disposal.
- 1.7 **CERTIFICATE OF APPROVAL** — Certificate of Approval means a printed form furnished by the Department, the issuance of which by the LPI, means the proposed system has complied with all local ordinances and the Plumbing Code.
- 1.8 **CESSPOOL** — A cesspool is a lined excavation in the ground which receives the discharge of a drainage system or part thereof, so designed as to retain the organic matter and solids discharging therein, but permitting the liquids to seep through the bottom sides.
- 1.9 **CHEMICAL TOILET** — Chemical toilet means (1) A commode chair in which a pail containing a chemical solution for deodorizing and liquefying fecal matter is placed immediately beneath the seat. (2) A non-water-carriage toilet arranged to discharge fecal matter directly into a deodorizing and liquefying chemical solution contained in a watertight tank.
- 1.10 **CODE** — The word "code" or "this code" unless otherwise indicated, shall refer to all rules and regulations adopted by the Department pursuant to Title 22, Sect. 42(3).
- 1.11 **COMMUNITY SEWERAGE SYSTEM** — Community Sewerage System means a private sewage disposal system designed to handle over 2000 gallons per day.

- 1.12 **DEPARTMENT** — Department means the State of Maine Department of Health and Welfare.
- 1.13 **DISTRIBUTION BOX** — Distribution Box means a device with openings to accommodate separate disposal lines which evenly distributes liquid waste to separate portions of the subsurface absorption area.
- 1.14 **DIVERSION BOX** — Diversion Box means a device which provides for alternating use of one-half of the subsurface absorption area.
- 1.15 **DOSING** — Dosing means to discharge predetermined volumes of liquid waste into a subsurface absorption area by pumping or siphons.
- 1.16 **DOSING CHAMBER** — Dosing Chamber means a receptacle for retaining liquid waste until pumped or siphoned to the subsurface absorption area.
- 1.17 **DRAINAGE DITCH** — Drainage Ditch means a man made trench designed to receive the runoff from precipitation only. It receives little or no water from springs and no long continued supply from melting snow or other sources.
- 1.18 **FLOOD PLAIN** — Flood Plain means: the area described by the perimeter of the probable limiting flood, the portion of a river valley which has been covered with water when the river overflowed its banks at flood stage. The plain in most instances has been built up by alluvium deposited by the stream.
- 1.19 **GRAY WASTE WATER** — Gray Waste Water means all domestic liquid wastes exclusive of Black Waste Water.
- 1.20 **GPD** — GPD means gallons per day.
- 1.21 **GROUND WATER** — Ground Water means subsurface water occupying the saturation zone, from which wells and springs are fed. In a strict sense the term applies only to water below the water table.
- 1.22 **HOLDING TANK** — Holding Tank means a watertight receptacle which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of sewage at a site approved by the Department of Environmental Protection.
- 1.23 **HUMAN WASTE** — Human Waste means all excrement and urine from the human body.
- 1.24 **IMPERVIOUS LAYER** — A soil or soil layer that because of a very slow permeability, causes a downward percolating water or effluent from above to spread laterally over the top of the impervious layer rather than to continue to percolate downward. See perched water table.
- 1.25 **INDIVIDUAL SEWERAGE SYSTEM** — Individual Sewerage system means a private sewage disposal system designed to handle less than 2000 gallons per day of sewage.
- 1.26 **INDUSTRIAL WASTES** — Industrial Wastes shall mean waste liquids from manufacturing processes.

- 1.27 **INTERMITTENT STREAM** — An Intermittent Stream means a watercourse that falls into either of the following categories:
- (a) A stream that has flow as a direct result from precipitation only and not the position of the ground water table.
 - (b) A stream that flows as a result of surface runoff, which occurs for a period of not more than three months of the year.
- 1.28 **LOCAL PLUMBING INSPECTOR (LPI)** — Local Plumbing Inspector means the appointed municipal official in each incorporated municipality charged with implementing the municipal plumbing ordinance or, where no such ordinance is in force, to carry out the duties required by Title 22, Section 42 and the Maine Plumbing Code promulgated thereunder.
- MAXIMUM GROUND WATER TABLE** — Maximum Ground Water Table means the highest elevation of ground water than can be expected to occur.
- 1.29 **MOTTLING** — Mottling means a zone of chemical oxidation and reduction activity and appearing as splotchy patches of red, brown, orange and gray.
- 1.30 **NORMAL HIGH WATER MARK OF INLAND WATERS** — Normal High Water Mark of Inland Waters means that line on the shores and banks of non-tidal waters which is apparent because of the contiguous different character of the soil, rock, or the vegetation due to the prolonged action of the water.
- 1.31 **NUISANCE** — Nuisance includes, but is not limited to:
- (1) Any public nuisance known at common law or in equity jurisprudence.
 - (2) Whenever any work regulated by this code is dangerous to human life or is detrimental to health and property.
 - (3) Inadequate sewage disposal system.
 - (4) Any unsanitary condition existing in any plumbing system or private sewage disposal system.
- 1.32 **OBSERVATION HOLE** — Observation Hole means a hole excavated at the site of a proposed subsurface absorption area to observe and evaluate the soil profile.
- 1.33 **OTHER STRUCTURES** — Other structures means any building with plumbing fixtures installed that is not a single family dwelling.
- 1.34 **PERCHED GROUNDWATER** — Groundwater that is separated from the main body of groundwater by an impervious layer.
- 1.35 **PERENNIAL STREAM** — A perennial stream means a watercourse that falls into either of the following categories:
- (a) A stream that flows as a result of the position of the groundwater table, either seasonally or permanently.
 - (b) A stream that flows as a result of surface runoff and occurs more than three months a year.
- 1.36 **PERMEABILITY** — Permeability means the property of a material that permits appreciable movement of water through it when it is saturated and the movement is actuated by hydrostatic pressure normally encountered in natural subsurface water.

- 1.37 **PERMIT (FORM 200)** — Permit means a printed form furnished or approved by the Department, the issuance of which by the LPI authorizes a person to proceed with the installation of plumbing and/or a private sewage disposal system.
- 1.38 **PERSON** — Person means a natural person, his heirs, executors, administrator or assignees and shall also include a firm, corporation, municipal or quasimunicipal corporation or governmental agency. Singular includes plural and male includes female.
- 1.39 **PLUMBING FIXTURES** — Plumbing Fixtures are approved type installed receptacles, devices or appliances which are supplied with water or which receive liquid or liquid borne wastes and discharge such wastes into the drainage system to which they may be directly or indirectly connected. Industrial or commercial tanks, vats and similar processing equipment are not plumbing fixtures, but may be connected to or discharged into approved traps or plumbing fixtures when and as otherwise provided for elsewhere in this code.
- 1.40 **STATE PLUMBING CODE** — State Plumbing Code means the Maine Plumbing Code.
- 1.41 **PRIVATE SEWAGE DISPOSAL SYSTEM** — Private Sewage Disposal System means a treatment tank with the effluent discharging into a subsurface absorption area, or such other facilities as may be permitted under the procedures set forth elsewhere in this code.
- 1.42 **PRIVATE SEWER** — Private Sewer means a sewer privately owned and used by one or more properties.
- 1.43 **PRIVY** — Privy means a facility used for the direct disposal of human waste into a vault or pit.
SEALED VAULT PRIVY — Sealed Vault Privy means a privy which retains human waste in a holding tank.
OPEN PIT PRIVY — Pit Privy means a privy placed over a pit in the soil.
- 1.44 **PUBLIC SEWER** — Public Sewer means a common sewer controlled by a governmental agency or public utility.
- 1.45 **REDUCTION** — Reduction means a condition or state of the soil associated with water saturated conditions. It results from organic acids acting on iron when a lack of oxygen exists and is characterized by a gray or gray mottled appearance of the soil.
- 1.46 **SEASONAL HIGH WATER TABLE** — Seasonal high water table means that point where free or perched water persists for a long enough period so as to cause mottling or reduction.
- 1.47 **SEWAGE** — Sewage means any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution. For the purposes of this Code the term sewage shall include industrial wastes.
- 1.48 **SEWER** — A pipe or conduit that carries wastewater or drainage water.
- 1.49 **SHALL** — The word "shall" is a mandatory term.
- 1.50 **SINGLE FAMILY DWELLING** — Single Family Dwelling means a building designed to be used as a home, is the only dwelling

located on the land parcel, and is inhabited by persons of a closely related family.

- 1.51 **SUBSURFACE ABSORPTION AREA** — Subsurface Absorption Area means any system for disposing of the liquid from a treatment tank on or beneath the surface of the ground. It includes the following:
- DISPOSAL TRENCH** — Disposal Trench means a system of shallow trenches into which treatment tank effluent is discharged for seepage into the soil.
 - DISPOSAL BED** — Disposal Bed means a system of shallow beds into which treatment tank effluent is discharged for seepage into the soil.
 - LEACHING CHAMBER** — Leaching Chamber means a system of concrete receptacles into which treatment tank effluent is discharged for seepage into the soil.
 - DISPOSAL MOUND** — The Mound means an elevated disposal area into which treatment tank effluent is discharged for seepage into the soil.
 - EVAPORATION-TRANSPIRATION BED** — Evaporation-Transpiration Bed means a system of shallow beds, into which treatment tank effluent is discharged for evaporation and transpiration into the atmosphere when conditions are favorable.
- 1.52 **SUBSURFACE SOIL** — Subsurface Soil means soil at a sufficient depth below the surface to be relatively free of humus and large amounts of organic matter and usually denoted as the B and C soil horizons.
- 1.53 **TREATMENT TANK** — Treatment Tank means a watertight tank designed to retain sewage for a sufficient period of time to provide satisfactory bacterial decomposition of the solids. Such tanks include:
- SEPTIC TANK** — A septic tank is a watertight receptacle which receives the discharge of a drainage system or part thereof, designed and constructed so as to retain solids, digest organic matter through a period of detention and allow the liquids to discharge into the soil outside of the tank through a system meeting the requirements of this code.
 - AEROBIC TREATMENT TANK** — Aerobic Treatment Tank means a treatment tank incorporating a means of introducing air into the sewage so as to provide aerobic biochemical stabilization through a period of detention before allowing the liquid to be discharged to a subsurface absorption area.
- 1.54 **UNIFIED CLASSIFICATION** — The Unified Classification System is based on identification of soils according to their texture and plasticity and their performance as engineering construction material. In this system soil material is divided into 15 classes: 8 classes are for coarse grained material (GW, GP, GM, GC, SW, SP, SM, SC), 6 for fine grained material (ML, CL, OL, MH, CH, OH), and 1 for organic material (Pt).
- 1.55 **UNSANITARY** — Contrary to principles known to promote or safeguard health.

- 1.56 **WASTE WATER** — See Gray Waste Water and Black Waste Water.
- 1.57 **WATER BODY** — Water Body means a surface depression containing a pool of water. The term water body includes, but is not limited to, natural and artificial lakes and ponds.
- 1.58 **WATER COURSE** — Water Course means a channel created by action of surface water and characterized by the lack of terrestrial vegetation and by the presence of a bed, devoid of topsoil, containing water borne deposits or exposed soil parent material or bedrock, the waters of which flow or may flow either continually or intermittently. See also: Perennial Stream, Intermittent Stream, Drainage Ditch.
- 1.59 **WATER TABLE** — Water Table means the upper surface of the zone of saturation (groundwater).

CHAPTER 2
ADMINISTRATION

SEC. 2.1 SCOPE

When a public sewer is not available and the sewage disposal system is not licensed by the Department of Environmental Protection (Title 38, §413, as amended) sewage disposal shall be by an approved private sewage disposal system constructed and installed as provided in the Code.

SEC. 2.2 PERMIT REQUIRED

The installation of any private sewage disposal system constitutes either the installation of an individual sewage system or a community sewerage system and requires a permit prior to beginning the installation of the system. For purposes of this section the installation of an individual sewage system or community sewerage system shall include the initial installation, replacement, alteration, or enlargement of any private sewage disposal system unless the Department determines that a permit is not required in a particular case.

SEC. 2.3 APPLICATIONS FOR PERMITS

(a) **REQUIREMENT** — Application for a permit to install a private sewage disposal system shall be made to the LPI (and the Department, if applicable), by the owner and/or the person performing or responsible for performing all labor in connection with the installation of the system and shall be made prior to any construction.

(b) **CONTENTS** — The application form shall require such information as the Department shall deem necessary and shall contain or be accompanied by the following information and data:

- (1) Name and address of the applicant and the owner.
- (2) Description of the lot upon which the system is to be installed and which the system will serve, including lot number and street address or location.
- (3) Detailed information showing the absorptive qualities, depth and type of soils involved, depth to the maximum groundwater table, depth to bedrock, and depth to refusal within 5 feet of the original surface.
- (4) Location of private and public water supplies and water courses and bodies within 300 feet of the proposed system.
- (5) Location and distance to any public or private sewer within 500 feet of the proposed system.
- (6) Detailed plans and specifications.
- (7) Such further information as may be required by the Department to insure the proposed construction, installations, replacement, alteration or enlargement complies with the regulations promulgated by the Department.
- (8) Where the applicant seeks to install a private sewage disposal system designed to treat 2000 or more GPD, written approval from the Department prior to issuance of permit by the LPI is required.

SEC. 2.4 ISSUANCE OF PERMITS

If the LPI determines that the plans, specifications, drawings, descriptions or information furnished by the applicant is in compliance with this Code and Local Ordinances, he shall issue the permit applied for upon payment of the required fee as hereinafter fixed.

SEC. 2.5 DENIAL AND REVOCATION OF PERMITS

A permit shall be denied or revoked by the LPI at any time for any one or more of the following reasons, which shall be incorporated into the written denial.

- (1) The proposed design fails to meet the requirements of this Code.
- (2) Soil or geological conditions fail to meet the requirements of this Code.
- (3) The sewage can be feasibly and legally discharged into a public sewerage system.
- (4) Documentation shows that the proposed system fails to adequately protect the public health and minimize pollution.
- (5) Applicant has failed to properly complete the Application For A Private Sewage Disposal Permit Form.

SEC. 2.6 FEES

Applicants shall pay a fee in accordance with the following fee schedule.

Any person who shall commence any work for which a permit is required by this Code without first having obtained a permit therefore shall, if subsequently permitted to obtain a permit, pay double the permit fee fixed by this section for such work, unless the LPI is satisfied that such work was an emergency. In all such emergency cases, a permit must be obtained as soon as it is practical to do so, and if there be an unreasonable delay in obtaining such permit, a double fee as herein provided shall be charged.

TABLE 2-1

FEE SCHEDULE —

Individual Sewerage Disposal System (each)	\$ 25.00
Community Sewerage Disposal System (each)	\$100.00

The fee structure below applies if single components are replaced or altered. If all components are replaced or altered the maximum fee shall be as above.

Replacement and/or alteration of —

Treatment tank (each)	\$ 10.00
Holding tank (each)	\$ 20.00
Privies, compost toilets (each)	\$ 10.00
Subsurface absorption system (each)	
Individual Sewerage Disposal System	\$ 20.00
Community Sewerage Disposal System	\$ 50.00

SEC. 2.7 INSPECTION AND TESTING

(a) INSPECTIONS —

- (1) **Scope** — All new plumbing work and such portions of existing systems as may be affected by new work, or any changes, shall be inspected by the LPI to insure compliance with all the requirements of this Code and to assure that the installation and construction of the private sewage disposal system is in accordance with approved plans.
- (2) **Advance notice** — It shall be the duty of the person doing the work authorized by the permit to notify the LPI orally or in writing that said work is ready for inspection. Such notification shall be given not less than two (2) working days before the work is to be inspected.
- (3) **Responsibility** — It shall be the duty of the holder of a permit to make sure that the work will stand the test prescribed before giving the notification.
- (4) **Retesting** — If the LPI finds that the work will not pass the test, necessary corrections shall be made and the work shall then be resubmitted for test or inspection.
- (5) **Test** — Water tests shall be conducted in the presence of the LPI or of his duly appointed representative where required.
- (6) **Corrections** — Notices of correction or violation shall be written by the LPI and may be posted at the site of the work or mailed or delivered to the permittee or his authorized representative. Refusal, failure or neglect to comply with any such notice or order within ten working days of receipt thereof, shall be considered a violation of this Code, and shall be subject to the penalties set forth in the statutes.
- (7) **Approval** — Upon the satisfactory completion and final test of the drainage system, a certificate of approval shall be issued by the LPI to the permittee.
- (8) **Covering or Using** — No plumbing or drainage system, building sewer, private sewage disposal system or part thereof, shall be covered, concealed or put into use until it has been tested, inspected and accepted as prescribed in this Code.
- (9) **Uncovering** — Any drainage or plumbing system, building sewer, private sewage disposal system or part thereof, which is installed, altered or repaired, covered or concealed before being inspected, tested and approved, as prescribed in this Code, shall be uncovered for inspection after notice to uncover the work has been issued to the responsible person by the LPI.

(b) TESTING

- (1) **Responsibility** — The equipment, material and labor necessary for inspection or tests shall be furnished by the person to whom the permit is issued or by whom inspection is requested.
- (2) **Test** — When required by Table 4-2 or Section 2.7, the building sewer, treatment tank, holding tank and other devices shall be water tested to the point of connection with the subsurface absorption area.

SEC. 2.8 ALL WORK TO BE INSPECTED

All plumbing and drainage systems shall be inspected by the LPI to insure compliance with all the requirements of this Code.

SEC. 2.9 SEVERABILITY

If any section, subsection, sentence, clause, phrase or portion of this Code is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Code.

SEC. 2.10 CODE ENFORCEMENT

By authority of Title 22, Sect. 42(3), "Any person who violates (the code), or who violates a municipal ordinance adopted pursuant to Title 30, Sect. 3221 shall be punished by a fine of not less than \$100 nor more than \$500 for each offense. The Department or Municipality may seek to enjoin violations of said (code) or municipal ordinances."

Malfunctioning private sewage disposal systems, including septic tanks, cesspools, cisterns, dry wells, drainage beds, holding tanks, and the like, have become a menace to the health and general welfare of the citizens of this State, and are declared to be a nuisance.

Whenever brought to the attention of any agency of state or local government that any unsanitary conditions exist in any plumbing system or private sewage disposal system or that any construction or work regulated by this code is dangerous, unsafe, unsanitary, a nuisance or a menace to life, health or property, or otherwise in violation of these rules and regulations, the said (agency) may request an investigation by the Department of Health and Welfare or by the Local Plumbing Inspector who upon determining such information to be fact, may order any person using or maintaining any such condition or performing any such construction or work or responsible for the use, maintenance or construction thereof to discontinue the use, maintenance or construction thereof or to repair, alter, change, remove, or demolish the same as the Department or its assistant may consider necessary for the proper protection of life, health or property.

Every such order shall be in writing, addressed to the person using or maintaining any such condition or performing any such construction or work or responsible for the use, maintenance, or construction thereof, or to the agent of such person, and shall specify the date or time for compliance with such order.

Refusal, failure, or neglect to comply with any such notice or order shall be considered a violation of this code. Nothing contained herein shall prevent the Department from seeking to enjoin violations of this code prior to issuance of an order under this section.

When any plumbing system or private sewage disposal system is maintained or constructed in violation of this code or in violation of any notice issued pursuant to this section or where a nuisance, as defined in this code, exists in any building or on a lot on which a building is situated, the Department may institute any appropriate action or proceeding in any court of competent jurisdiction to prevent, restrain, correct, or abate the violation or nuisance.

CHAPTER 3

GENERAL PROVISIONS

SEC. 3.1 GENERAL

All sewage disposal systems shall be installed, replaced, altered or enlarged in accordance with this Code.

SEC. 3.2 SEWER REQUIRED

(a) **EVERY BUILDING WITH FIXTURES** — Every building in which plumbing fixtures are installed and/or every premises having drainage piping thereon shall have a connection to a public or private sewer, except as provided in subsections (b) and (d) of this section.

(b) **NO PUBLIC SEWER** — 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 works shall be connected to an approved private sewage disposal system.

(c) **PUBLIC SEWER** — Within the limits prescribed by subsection (d) hereof, the rearrangement or subdivision into smaller parcels of a lot which abuts and is served by a public sewer shall not be deemed cause to permit the construction of a private sewage disposal system, and all plumbing or drainage systems on any such smaller parcel or parcels, shall connect to the public sewer.

(d) **PUBLIC SEWER NOT ACCESSIBLE** — 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.

(e) **NO PERMIT** — No permit shall be issued for the installation, alteration or repair of any private sewage disposal system or part thereof, on any lot for which a connection with a public sewer is available.

(f) **CONNECTION TO PUBLIC SEWER** — On every lot or premises hereafter connected to a public sewer, all plumbing and drainage systems or parts thereof, on such lot or premises shall be connected with such public sewer.

Exception: Single family dwellings and buildings or structures accessory thereto, existing and connected to an approved private sewage disposal system prior to the time of connecting the premises to a public sewer may, when no hazard, nuisance or insanitary condition is evidenced and written permission has been obtained from the department, remain connected to such properly maintained private sewage disposal system when there is insufficient grade or fall to permit drainage to the public sewer by gravity.

SEC. 3.3 PROHIBITED

All sewage shall be disposed of by an approved method of collection, treatment and disposal. Sewage shall not be disposed of in any manner that will create a nuisance. It shall not be discharged into any abandoned or unused well, or into any crevice, sink hole, or other opening either

natural or artificial in a rock formation. Sewage shall not be discharged into any river, stream, lake, pond, or similar watercourse or any tidal waters unless a license is first secured from the Department of Environmental Protection as provided by Title 38, R.S. 1964, Chapter 3, Section 413, as amended.

SEC. 3.4 PRIVIES, CHEMICAL TOILETS, ETC.

Human body wastes may be disposed of by depositing them in approved privies, chemical toilets, or such other installations acceptable to the Department as long as there are facilities available to handle the gray waste water.

SEC. 3.5 TREATMENT

Water borne sewage from bathrooms, kitchens, laundry fixtures and other household plumbing shall pass through a septic or other approved treatment tank prior to its discharge into the soil, except as provided in this code.

SEC. 3.6 RESPONSIBILITY

This disposal system installer is responsible for compliance with this Code.

SEC. 3.7 ABANDONED SYSTEMS

Abandoned treatment, storage and transfer facilities shall be disconnected from the building, pumped out and filled with earth.

SEC. 3.8 SOIL LOADING

The "Maine Guidelines for Septic Tank Sludge Disposal on the Land" (Miscellaneous Report 155 April 1974) published by the University of Maine shall be used as the guide in assessing a site's ability to receive and handle the nitrogen constituent of sewage.

SEC. 3.9 INSTALLATIONS

When there is insufficient lot area or improper soil condition for adequate sewage disposal for the building or land use proposed, and the LPI so finds, no permit shall be issued and no private sewage disposal system shall be installed. Where space or soil conditions are critical, no permit shall be issued until engineering data and test reports satisfactory to the LPI and the Department have been submitted and approved.

SEC. 3.10 ADDITIONAL REQUIREMENTS

Nothing contained in this Code shall be construed to prevent the Department from requiring compliance with higher requirements than those contained herein where such higher requirements are deemed essential by the Department to maintain a safe and sanitary condition.

SEC. 3.11 CESSPOOLS, DRY WELLS

No cesspools, pits or dry wells shall be used for sewage disposal unless first approved by the Department.

SEC. 3.12 SURFACE AND STORM WATER DISPOSAL

Surface and storm waters shall not be discharged into a private sewage disposal system. Surface and storm waters may be discharged separately into the soil.

SEC. 3.13 LARGE SYSTEMS

When a private sewage disposal system is proposed to handle a daily flow in excess of 2,000 gallons of sewage, as determined from Table 5-1 or when a commercial or self-service laundry is proposed, a plan prepared by a registered professional engineer shall be submitted to the Department for review and approval.

SEC. 3.14 EXISTING CONSTRUCTION

(a) No provision of this Code shall be deemed to require a change in any portion of a plumbing or drainage system or any other work regulated by this Code in or on an existing building or lot when such work was installed and is maintained in accordance with law in effect prior to the effective date of this Code, except when any such plumbing or drainage system or other work regulated by this Code is determined by the Department and/or Local Plumbing Inspector to be in fact dangerous, unsafe, unsanitary or a nuisance, and a menace to life, health or property.

(b) The Department may waive requirements of this Code if the following conditions are met: (1) the private sewage disposal system will serve either a pre-existing building whose sewage disposal system is required to be replaced or a pre-existing substandard size lot legally recorded prior to the effective date of this Code, and (2) all other alternatives are unacceptable and failure to waive the requirements would cause undue hardship.

Such waivers of requirements shall be supported by complete information as the Department may require. The Local Plumbing Inspector shall not approve such waivers without written approval of the Department.

SEC. 3.15 LOCATION

Except as otherwise provided in this code, no plumbing system, drainage system, building sewer, private sewage disposal system or parts thereof, shall be located in any lot other than the lot which is the site of the building, structure or premises served by such facilities.

CHAPTER 4

SITE CONSIDERATIONS

SEC. 4.1 SOIL CONDITIONS

Proposed sites for all private sewage disposal systems shall be explored, evaluated and reported on a form as provided for by the Department. Site investigation shall be made by a Maine State-Certified Soil Scientist or Geologist, a Registered Professional Engineer experienced in the field of soils engineering, or others recognized by the Department.

The site investigator's report, signed and sealed by him, shall indicate assessment of the suitability of the site and site's soils for sewage disposal and select the type and size of private sewage disposal system and any special design or construction details needed to assure that the proposed installations will meet the criteria of this Code. Soils shall be identified by strata and described by methods in Table 9-1. Example: a site's soils are — Deep silty (< 15% sand < 35% clay), with seasonal groundwater at 36" — identify soil as GROUP 7/CONDITION C.

The findings shall be supported with:

1. a location plan
2. log of all soil exploration
3. a description of the various soils by strata
4. slopes
5. depth to bedrock
6. depth to any dense firm sublayer (fragipan, hardpan, iron pan, etc.)
7. groundwater conditions (including indications of seasonal groundwater fluctuations)
8. the amount and type of fill if required
9. type and size of system selected or designed
10. specifications for any special equipment which might be required
11. distances to all surface waters, wells, springs, etc. within 300 feet of the proposed disposal area.

Soils Scientists shall also describe the site soils in accordance with the standards of the National Cooperative Soil Survey.

SEC. 4.2 OBSERVATION HOLES

Observation holes (pits or borings) to a depth of five (5) feet, to refusal, to impervious strata, or to the groundwater table, shall be dug at representative points within the proposed subsurface absorption area. The report of the test shall indicate the slope, soil characteristic by strata, maximum groundwater elevation, presence of bedrock or impervious strata, and the nature of bedrock if within five (5) feet of the surface of the ground. The minimum diameter of the borings shall be four (4) inches. The number of soil investigation pits or borings required shall depend upon the estimated daily sewage flow and soil conditions. Refer to Table 5-1 for sewage volume guidelines.

TABLE 4-1

Number of Soil Investigation Pits or Borings		
Daily Volume of Sewage	Less than 500 gallons	for each additional 500 gallons
Number of Pits Required	1	1
Number of Borings Required	and/or 5	and/or 2

SEC. 4.3 GROUNDWATER, BEDROCK, IMPERVIOUS STRATA

Sites where the highest seasonal groundwater table, (mottling) bedrock, or impervious layer is less than 15 inches below the bottom of the organic (O) horizon, shall not be used for subsurface absorption areas. There shall be at least 24 inches or suitable soil between the bottom of the subsurface absorption area excavation and the seasonal high water table, bedrock, and/or impervious layer (See Sections 9.6-9.13).

SEC. 4.4 SURFACE WATER

The ground surface of the disposal area and the land adjacent to the disposal area shall be sloped to prevent the accumulation of surface water and to prevent erosion. Provisions shall be made to minimize the flow of surface water over the disposal area.

SEC. 4.5 FLOOD PLAIN

Private sewage disposal systems shall not be constructed in any 10 year flood plain of any body of water and/or water course.

SEC. 4.6 GROUND SLOPE

Subsurface absorption areas shall not be installed in ground having an original surface slope greater than 15 percent (15 foot vertical to 100 feet horizontal). The bottom of the subsurface absorption area shall be constructed level within the tolerance of 0.5 percent.

SEC. 4.7 LOCATION OF DISPOSAL FACILITIES — The location of the disposal facilities shall be such as to provide between it and the components listed in the following table not less than the distance stated:

TABLE 4-2

COMPONENTS	Daily sewage flow less than 2,000 gallons.		Daily sewage flow in excess of 2,000 gallons.		Building sewer
	Treatment Tank	Subsurface Absorption Area	Treatment Tank	Subsurface Absorption Area	
	FEET	FEET	FEET	FEET	
Property line	10	10	20	20	—
Buildings	8	20	20	40	—
Normal high water mark of any swamp, marsh, bog, lake, pond, river, stream or similar perennial watercourse	100*	100	100*	300	100**
Intermittent stream	50*	50	50*	150	50**
Drainage ditch	25	25	25	75	25
Tidal water (mean hightide)	100*	100	100	100	60**
Well or spring used as a domestic water supply	100	100	100	300	100**
Well or spring used as a domestic water supply with a daily water use in excess of 2,000 gallons	100	300	100	300	100**
Water supplyline	10	10	10	25	10***
Downhill slope steeper than: one vertical to three horizontal (33%)	—	50	—	50	—

FOOTNOTE: *One and two family dwelling septic tank, or any other treatment tank or similar receptacle directly receiving sewage for the purpose of pumping or transporting it to an approved disposal area shall be at least 25 feet from the normal high water mark of any lake, pond, river, stream, similar intermittent watercourse or tidal water and the system shall be tested after installation and found water tight in the presence of a Local Plumbing Inspector.

**May be 25 feet providing the Building sewer is constructed of cast-iron, cement-asbestos, Schedule 40 PVC or ABS of standards listed under Chapter 6, Section 6.2 and the system shall be tested after installation and found water tight in the presence of the Local Plumbing Inspector.

***See Section 6.7.

CHAPTER 5

VOLUME OF SANITARY SEWAGE

SEC. 5.1 SINGLE FAMILY DWELLINGS

The estimated volume of sewage for single family dwellings is incorporated into the designs for the private sewage disposal systems permitted in Chapter 9.

SEC. 5.2 OTHER STRUCTURES

Each private sewage disposal system shall be designed to treat adequately the estimated volume of sewage to be discharged from the premises to be served. The estimated volume of sewage flow shall be determined using Table 5-1. If adequate documented data is supplied, the Department may approve a reduction in the flows from Table 5-1.

TABLE 5-1

VOLUME OF SEWAGE FLOW

The volume of sewage flow shall be based on the estimated maximum contributory population and the resultant expected daily quantities of sewage, as determined from the following table:

	Gallons per person per day unless otherwise noted
Airports (per passenger)	5
Apartments-multiple unit housing (per bedroom)	120
Bath houses and swimming pools	10
Bowling Alleys (no food service)—per lane	75
Camps —	
Construction (at semi-permanent camps)	50
Recreational-washrooms and toilets only	25
Recreational-mess hall only	15
Resort camps (night and day)	50
Country clubs (per resident member)	100
Country clubs (per non-resident member present)	25
Dwellings: Minimum volume 300 gallons per unit	
Boarding houses	50
Luxury residences and estates	150
Multiple unit housing (per bedroom)	120
Rooming houses	40
Mobile Home (per unit)	300
Factories — no showers per employee	25
Factories — with showers per employee	35
Hospitals (per bed space)	200
Hotels (per unit)	100
Institutions other than hospital (per bed space)	100
Laundries, self-service (per machine)	400
Mobile Home parks (per space)	300
Motels (per unit)	100
Nursing and Rest Home	100

Public Park—toilet wastes only	5
Public Park with bathhouse, showers, and flush toilets	10
Restaurant:	
Ordinary restaurant—per seat	35
24 hour restaurant—per seat	50
Restaurant along freeway (24 hour) per seat	70
Tavern (very little food service) per seat	20
Curb service (drive-in) per car space	50
Schools:	
Boarding and Colleges	90
Day, toilet and lavatory only	10
Day, with cafeterias	15
Day, with cafeterias and showers	20
Service stations (excluding throughways) per island	500
Shopping Centers and retail stores (without food service or laundries) per 1,000 sq. ft.	100
Theaters:	
Movie (per auditorium seat)	5
Drive-in (per car space)	5
Travel trailer and Tenting area (per space)	100
Workers:	
Construction (at semi-permanent camps)	50
Day, at schools and offices (per shift)	15
Shopping Centers, (per shift)	15

OTHER FACILITIES NOT IN TABLE — CONTACT THE DIVISION OF HEALTH ENGINEERING

CHAPTER 6

BUILDING SEWER

SEC. 6.1 GENERAL

The building sewer shall consist of watertight piping and joints. Joints between this piping and other appurtenances of the disposal system shall be semiflexible and watertight. The use of perforated pipe or its equivalent as a building sewer is prohibited. Solid, watertight piping shall be used up to the point where the subsurface absorption area begins.

SEC. 6.2 MATERIAL

(a) **PIPE** — The building sewer, beginning eight (8) feet from any building or structure, shall be of such materials as listed below, and said material shall be in compliance with the minimum standards listed.

cast iron pressure pipe	ASTM A377
cast iron soil pipe	ASTM A74
hubless cast iron soil pipe	ASTM C564
weld wrought iron pipe	ASTM C72
asbestos cement	ASTM C644, C296
bituminized fiber	ASTM D1861
vitriified clay	ASTM C200
concrete	ASTM C75, C14
PVC (Schedule 40)	ASTM D2665
ABS (Schedule 40)	ASTM D2661

(b) **FITTINGS** — Drainage fittings for the building sewer shall be of approved materials having a smooth interior waterway of the same diameter as the piping served and all such fittings shall conform to the type of pipe used.

SEC. 6.3 SIZE OF BUILDING SEWER

(a) **SINGLE FAMILY DWELLINGS** — The minimum size of the building sewer shall be four (4) inches leading to the treatment tank, unless otherwise approved elsewhere in this Code.

(b) **OTHER STRUCTURES** — The size of the building sewer shall be determined on the basis of the total number of fixture units drained by them in accordance with Tables 4-3, or B-3 of the State Plumbing Code, but in no case shall be less than four (4) inches unless otherwise approved elsewhere in this Code.

SEC. 6.4 GRADE OF THE BUILDING SEWER

The building sewer shall be run in practical alignment and at a uniform slope of not less than 1/8 inch per foot to the treatment tank, unless otherwise approved by the LPI.

SEC. 6.5 SUPPORT AND PROTECTION OF THE BUILDING SEWER

(a) **SUPPORT** — Building sewer piping shall be laid on a firm bed throughout its entire length, and any such piping laid in made or filled in ground shall be laid on a bed of approved materials and shall be adequately supported to the satisfaction of the LPI.

(b) **PASSING THROUGH WALLS** — All piping passing under or through walls shall be protected from breakage. All piping passing through or under cinders or other corrosive materials, shall be protected from external corrosion in an approved manner. Voids around piping passing through masonry floors on the ground shall be appropriately sealed.

(c) **PROTECTION** — All piping in connection with the drainage system shall be so installed that piping or connections will not be subject to undue strains or stresses, and provisions shall be made for expansion, contraction and structural settlement. No piping shall be directly embedded in concrete or masonry walls or footings.

(d) **UNDER BUILDINGS** — No building sewer or other drainage piping or part thereof, which is constructed of materials other than those approved for use under or within a building, shall be installed under or within two (2) feet of any building, or structure or part thereof, nor less than one (1) foot below the surface of the ground. The provisions of this subsection include structures such as porches and steps, whether covered or uncovered, breezeways, roofed portecocheres, roofed patios, covered walks, covered driveways and similar structures or appurtenances.

(e) **CORROSION** — Exposed piping subject to undue corrosion, erosion or mechanical damage shall be protected in an approved manner.

(f) **FREEZING** — No soil or waste pipe shall be installed unless adequate provision is made to protect such pipe from freezing.

SEC. 6.6 TRENCHING, EXCAVATION AND BACKFILL

(a) **PROHIBITED** — Use of mechanical excavating equipment is prohibited within two (2) feet of existing piping or appurtenances.

(b) **TUNNELING AND DRIVING** — Tunneling and driving may be done in yards, courts, or driveways of any building site. Where sufficient depth is available to permit, tunnels may be used between open cut trenches. Tunnels shall have a clear height of two (2) feet above the pipe and shall be limited in length to one-half ($\frac{1}{2}$) the depth of the trench, with a maximum length of eight (8) feet. When pipes are driven, the drive pipe shall be at least one (1) size larger than the pipe to be laid.

(c) **OPEN TRENCHES** — All excavations required to be made for the installation of a building-drainage system or any part thereof, within the walls of a building, shall be open trench work and shall be kept open until the piping has been inspected, tested and accepted.

(d) **BACKFILL** — All excavations shall be completely backfilled as soon after inspection as practicable. Adequate precaution shall be taken to insure proper compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to twelve (12) inches above the top of the piping with clean earth which shall not contain stones, boulders, cinderfill or other materials which would damage or break the piping or cause corrosive action. Mechanical devices such as bulldozers, graders, etc., may then be used to complete backfill to grade. Fill shall be properly compacted. Suitable precautions shall be taken to insure permanent stability for pipe laid in filled or made ground.

SEC. 6.7 WATER SERVICE PIPES

Water services pipes or any underground water pipes shall not be run or laid in the same trench with building drain or sewer, except as provided in this section.

The water service pipe may be placed in the same trench with such building drain and building sewer, provided both of the following conditions are met:

- (a) The bottom of the water service pipe, at all points, shall be at least twelve (12) inches above the top of the sewer line. The water service pipe shall not run through the subsurface absorption area.
- (b) The water service pipe shall be placed on a solid shelf excavated at one side of the common trench.

SEC. 6.8 CLEANOUTS

(a) **CHANGE IN DIRECTION** — Every change in alignment or grade in excess of twenty-two and one-half (22½) degrees in a building sewer shall be served by a cleanout, except that no cleanout shall be required for not to exceed one (1) forty-five (45) degree change of direction or one (1) forty-five (45) degree offset. The extension of buildings sewer cleanouts to grade is optional. When building sewers are located under buildings the cleanout requirements of Section 406, State Plumbing Code, shall apply.

(b) **INSTALLATION** — Each cleanout shall be installed so that it opens in a direction opposite to the flow of the soil or waste or at right angles thereto, and except in the case of "wye" branch and end-of-line cleanouts, vertically above the flow of the pipe.

(c) **UNDER CONCRETE OR ASPHALT** — Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes, or extending flush with paving with approved materials and be adequately protected.

(d) **MANHOLES** — Approved manholes may be installed in lieu of cleanouts when first approved by the Department. The maximum distance between manholes shall not exceed 300 feet.

CHAPTER 7

TREATMENT AND HOLDING TANKS

SEC. 7.1 SEPTIC TANKS

(a) **CONSTRUCTION** — Septic tanks shall be constructed of corrosion-resistant materials and be of permanent construction. The cover of the tank shall be designed for a dead load of not less than 150 pounds per square foot and, if of concrete, should be reinforced and not less than 4 inches thick.

(b) **INLET INVERT** — The invert of the inlet pipe shall be located at least 3 inches above the invert of the outlet.

(c) **PIPE INLET AND OUTLET** — In lieu of baffles, submerged pipe inlets and outlets may be installed consisting of a cast-iron sanitary T with a short section of pipe to the required depth as indicated in Section below.

(d) **BAFFLES** — Where inlet and outlet baffles are used, they shall extend the full width of the tank and be located 6 to 8 inches from the walls. Such baffles shall extend at least 6 inches above the flow line, and have a 1-inch minimum vent space above. Inlet baffles shall extend at least 6-inches below the flow line and outlet baffles should extend 40 percent of the liquid depth below the flow line.

(e) **MANHOLES** — The inlet and outlet of the septic tank shall be provided with access holes. All compartments in multiple compartmented tanks shall be provided with a manhole. Manholes shall be at least 18 inch diameter and provided with covers which can be sealed watertight. Where removable slab covers are provided, manholes are not required.

(f) **MULTIPLE COMPARTMENTS** — In tanks having two compartments, the inlet compartment shall have a capacity of not less than one-half and not more than two-thirds of the total tank capacity. Tanks built with three or four equal compartments shall have total liquid capacity required for a single compartment tank.

(g) **GROUND WATER** — The invert of the outlet of a septic tank shall be above maximum ground water elevation.

SEC. 7.2 CAPACITIES OF SEPTIC TANKS

Septic tanks shall have the following minimum capacities:

(a) **SINGLE FAMILY DWELLING** — When serving single family dwelling units, septic tanks shall have capacities as shown below. Expansion attics shall be considered as additional bedrooms.

No. of Bedrooms	Gallons Capacity (Working)
2 or less	750
3	900
4	1000
each additional bedroom added	250

(b) **OTHER STRUCTURES** — When serving other than single family dwellings, septic tank liquid working capacity shall be 1½ times the daily estimated flow from Table 5.1 up to flows of 1,500 gallons per day, but in no case shall the capacity be less than 750 gallons liquid working

capacity. Septic tank working capacity for flows over 1,500 gallons per day shall equal to $1,125 + 0.75Q$, where Q is equal to the flow in gallons per day.

SEC. 7.3 AEROBIC TANKS

(a) Aerobic treatment tanks bearing the endorsement of the National Sanitation Foundation's Standard 40 may be used in lieu of a septic tank. The size of the aerobic tank to be used shall be based on the National Sanitation Foundation's recommendations.

(b) **GROUND WATER** — The inverts of the inlet and outlet of an aerobic treatment tank shall be above maximum ground water elevation.

SEC. 7.4 VEHICULAR TRAFFIC

(a) **PRIVATE DRIVES** — For installations under driveways or otherwise subject to heavy loads, the treatment tank shall be capable of withstanding a H-20 wheel load of 20,000 pounds.

(b) **PARKING LOTS** — For installations under parking lots, highways, or saturated soils, the treatment tank shall be capable of withstanding a H-20 wheel load of 20,000 pounds.

SEC. 7.5 SATURATED CONDITIONS

In soils where the water table may rise above the half-way point on the treatment or holding tank, suitable means shall be provided to counteract buoyancy. Such means may be to place an additional concrete slab over the top of the tank, allowing for the access holes, or to provide suitable anchoring to pads placed under the tank.

SEC. 7.6 HOLDING TANKS

(a) **CONSTRUCTION** — Holding tanks shall be constructed of the same materials and to the same structural specifications as septic tanks. Access to holding tanks shall be the same as septic tanks. Refer to Section 7.1 (a & e).

(b) **INSTALLATION** — The holding tank, building sewer and building drain shall be water tight. The holding tank facilities shall be vented through the vent stack of the building the facilities serve unless deemed impractical by the LPI. When deemed impractical, the tank must be separately vented. Inverts of inlets to holding tanks shall be above maximum high groundwater table.

(c) **ALARM PROVISIONS** — An alarm device shall be provided on holding tanks. This device shall be located and adjusted to assure the tank is pumped before full.

(d) **NUMBER AND SIZE** — One holding tank of the working size indicated in Section 9.11, shall be installed. If more than one holding tank is installed, they shall be installed in series.

CHAPTER 8

DETAILS AND SPECIAL DESIGNS

SEC. 8.1 DOSING FACILITIES [SIPHONS OR PUMPS]

When a private sewage disposal system is designed to handle more than 2000 gallons of sewage per day, dosing shall be provided. An emergency overflow of the dosing chamber should not be permitted unless an indicator is provided. The indicator should show when the dosing chamber has flooded to the overflow level. Dosing facilities shall have sufficient capacity to distribute sewage equally to all parts of the disposal system. Sufficient capacity shall be considered as equivalent to 75% of the interior capacity of all subsurface pipes, solid and perforated, downstream from the dosing facility. For a 4 inch diameter pipe this is equal to $\frac{1}{2}$ gallon per linear foot of pipe. When leaching chambers are proposed an additional 10 gallons per chamber shall be considered an adequate dose.

SEC. 8.2 VENTING OF DISPOSAL FIELDS

Disposal fields shall be vented when dosing or pumping facilities exist in any part of the private sewage disposal system. Where required, vents shall be placed at the downstream ends of percolation pipes or leaching chambers and shall be at least two (2) inches in diameter. Provisions shall be made to vent all percolation lines; a common manifold may be used for this purpose. When a manifold is used, at least two (2) vents shall be provided on the disposal area. Vents shall extend at least three (3) feet above finished grade of the highest point in the disposal field.

Vents shall be screened to prevent entry of foreign objects greater than $\frac{1}{4}$ inch in diameter. Screens shall be adequately secured. Vents shall be rigidly held in place.

SEC. 8.3 VEHICULAR TRAFFIC AND PAVED AREAS

Disposal areas consisting of trenches, beds, or mounds shall not be paved over or placed in locations where vehicles will drive over them or park on them. Leaching chambers may be paved over or located in situations described above if designed for an H-20 load of 20,000 pounds.

SEC. 8.4 PERCOLATION LINES

(a) PERFORATED DISPOSAL PIPE

- (1) **SIZE** — Perforated disposal pipe shall have a minimum diameter of four inches, unless otherwise approved by the Department.
- (2) **GRADE** — Perforated disposal pipe shall be laid true to line and grade not to exceed a slope of two (2) inches in one hundred (100) feet.
- (3) **MATERIALS** — Perforated disposal pipe shall be of such material and shall be in compliance with the specifications listed below, unless otherwise prohibited by this Code.

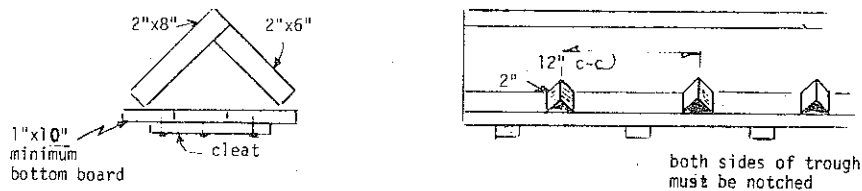
Material	Minimum Wall Thickness		Standards
	4"	6"	
Corrugated Polyethylene	.075	.10	ASTM D 2852-72 or CS 228-61
Styrene	.075	.10	
PVC	.075	.10	

If perforations have a diameter of 1/2 inch; pairs of holes must be spaced not more than 4 1/2 inches on centers. Smaller perforations are not approved. If perforations are 5/8 inch in diameter, pairs of holes shall be spaced not more than 7 inches on centers. Pairs of holes shall span the bottom 90 degrees to 120 degrees of arc.

(b) **INVERTED WOODEN VEE PLANK** - Inverted wooden vee plank trough shall consist of one 2 inch by 8 inch, one 2 inch by 6 inch, and one 1 inch by 10 (minimum) inch boards. The planks shall have notches two (2) inches wide and two (2) inches deep and spaced twelve (12) inches apart. The wood shall be treated with tar or creosote. The bottom boards shall provide a smooth waterway the full length of the trough. Transverse cleats nailed to the planks shall be under the bottom boards. Refer to figure 8-1 for construction details.

Figure 8-1

Inverted Wooden Vee Plank Construction Details



(c) **AGRICULTURAL TILE** - Agricultural tile shall be laid on grade boards securely nailed to stakes driven into the undisturbed earth forming the trench bottom. Openings between agricultural tile joints shall be 1/4 to 1/2 inches with the upper half of the joint covered with asphalt treated paper not less than three inches wide or by other acceptable methods.

SEC. 8.5 DIVERSION BOXES

(a) **DESIGN** - Diversion boxes shall have one or more influent lines and at least two effluent lines. Diversion boxes shall be designed so that only one-half the effluent lines can be used at any one time.

(b) **CONSTRUCTION AND MATERIAL** - Diversion boxes shall be constructed of the same materials as permitted for treatment tanks, and the cover shall be of concrete, metal or stone.

(c) **INVERT ELEVATIONS** - The inverts of outlets of the diversion box shall be rigidly set at the same level and approximately two (2) inches lower than the inverts of the inlets. The inverts of the outlets shall be above the seasonal high groundwater level.

(d) **ACCESS** - Diversion boxes shall have at least one access hole in their tops. The access hole shall be at least one hundred (100) square inches, with one dimension at least 8 inches and shall be sealed in a manner that will prevent the entrance of surface water.

SEC 8.6 DISTRIBUTION BOXES

(a) **DESIGN** - Distribution boxes shall have one or more influent lines and at least two effluent lines. Distribution boxes shall be installed so that two or more disposal lines are used simultaneously.

(b) **CONSTRUCTION AND MATERIALS** - Distribution boxes shall be constructed of the same materials as permitted for treatment tanks and the cover shall be concrete, metal or stone.

(c) **INVERT ELEVATIONS** - The inverts of outlets of the distribution boxes shall be rigidly set at the same level and approximately two (2) inches lower than the invert of the inlet. The inverts of the outlets shall be above the seasonal high groundwater table.

(d) **ACCESS** - Distribution boxes shall have at least one access hole in their tops. The access hole shall be at least one hundred (100) square inches, with one dimension at least 8 inches and be sealed in a manner that will prevent the entrance of surface water.

SEC. 8.7 MAN-MADE AREAS

(a) **SIZING OF SYSTEM TO BE INSTALLED IN FILL** - A system installed in fill shall be sized on the basis of the permeability and other characteristics of the original ground upon which the fill is placed.

(b) **SIZE OF AREA TO BE FILLED** - The size of filled area shall conform to either of the following requirements.

(1) The fill shall extend out level in all directions for five (5) feet from the edge of the subsurface absorption area and then slope off at 10 percent or less to the original surface.

or

(2) The fill shall extend out level in all directions for twenty-five (25) feet from the edge of the subsurface absorption area and then slope off at not more than 33 percent to the original surface.

(c) **HIGH GROUND WATER** - Subsurface absorption areas shall not be placed in filled land where the seasonal high water table is less than 15 inches below the organic (O) horizon.

(d) **BEDROCK and/or IMPERVIOUS LAYER** - Subsurface absorption areas shall not be placed in filled land where the bedrock and/or impervious layer is less than 15 inches below the organic (O) horizon of the original surface.

(e) The surface of the fill area shall be sloped to divert precipitation and surface run-off. See Sec 4.4.

SEC. 8.8 SUBSURFACE ABSORPTION AREA MATERIAL

The material used in the construction of subsurface disposal trenches, beds, leaching chambers, or mound systems shall consist of:

(a) **STONE** - The stones shall be free of fines, dust, ashes, or clay.

(b) **SAND** - Clean coarse sand, containing no clays or organic materials, and ranging in size from 0.42 mm to 4.78 mm (approximately 1/64 inch to 3/16 inch).

(c) **HAY** - Hay shall be placed above the stone to prevent sand infiltration and clogging. The hay layer shall not exceed one (1) inch in thickness.

(d) **TOP SOIL COVER** - Three (3) inches to six (6) inches of loamy soil shall be placed over the disposal system and seeded with grass.

SEC. 8.9 RESERVE AREA

Additional area with suitable soil conditions should be reserved for possible expansion or replacement.

CHAPTER 9

APPROVED PRIVATE SEWAGE DISPOSAL SYSTEMS

SEC. 9.1 An approved private sewage disposal system shall consist of one of the three systems listed. Approval of any of the three systems for a particular site shall be dependent on: The soils and groundwater characteristics of the site, and the particulars of facilities to be served.

SEC. 9.2 COMBINED SYSTEM

Under suitable soil conditions as specified in Table 9-1, a combined human waste and gray water waste, on-site treatment and disposal facility shall consist of the following minimum components.

- (1) **A BUILDING SEWER** -- Refer to Chapter 6.
- (2) **A TREATMENT TANK** -- Refer to chapter 7.
- (3) **SUBSURFACE ABSORPTION AREA** -- Refer to Sections 9.5, and 9.6 through 9.9.

SEC. 9.3 SEPARATED SYSTEM

Under suitable soil conditions as specified in Table 9-1, an owner may handle human wastes by the methods and devices specified in Sections 9.12 - 9.15 and handle gray waste water separately by a modified on-site treatment and disposal facility. The modified treatment and disposal facility shall consist of the following minimum components.

- (1) **BUILDING SEWER** -- Refer to Chapter 6.
- (2) **TREATMENT TANK** -- Refer to Chapter 7.
- (3) **SUBSURFACE ABSORPTION AREA** -- Refer to Sections 9.5, and 9.6 through 9.10.

SEC. 9.4 NON-DISCHARGE SYSTEMS

Under unsuitable soil conditions as specified in Table 9-1 but not a flood plain, an owner shall handle wastes by the methods and devices specified in Sections 9.5 and 9.11.

SEC. 9.5 PERMITTED PRIVATE SEWAGE DISPOSAL SYSTEM

The entries in Table 9-1 designate the type and size system permitted to be installed, for the various soils.

Systems Designated in Table 9-1

SYSTEM DESIGNATION		SECTION OF CODE
TRENCHES	Combined and Separated	Sec. 9.6
BEDS	Combined and Separated	Sec. 9.7
CHAMBERS	Combined and Separated	Sec. 9.8
MOUNDS	Combined and Separated	Sec. 9.9
SPECIAL	Separated Only	Sec. 9.10
NON DISCHARGE	Combined and Separated	Sec. 9.11

Each of the Sections referred to above will indicate requirements for a Combined and Separated System if those systems are permitted and approvable.

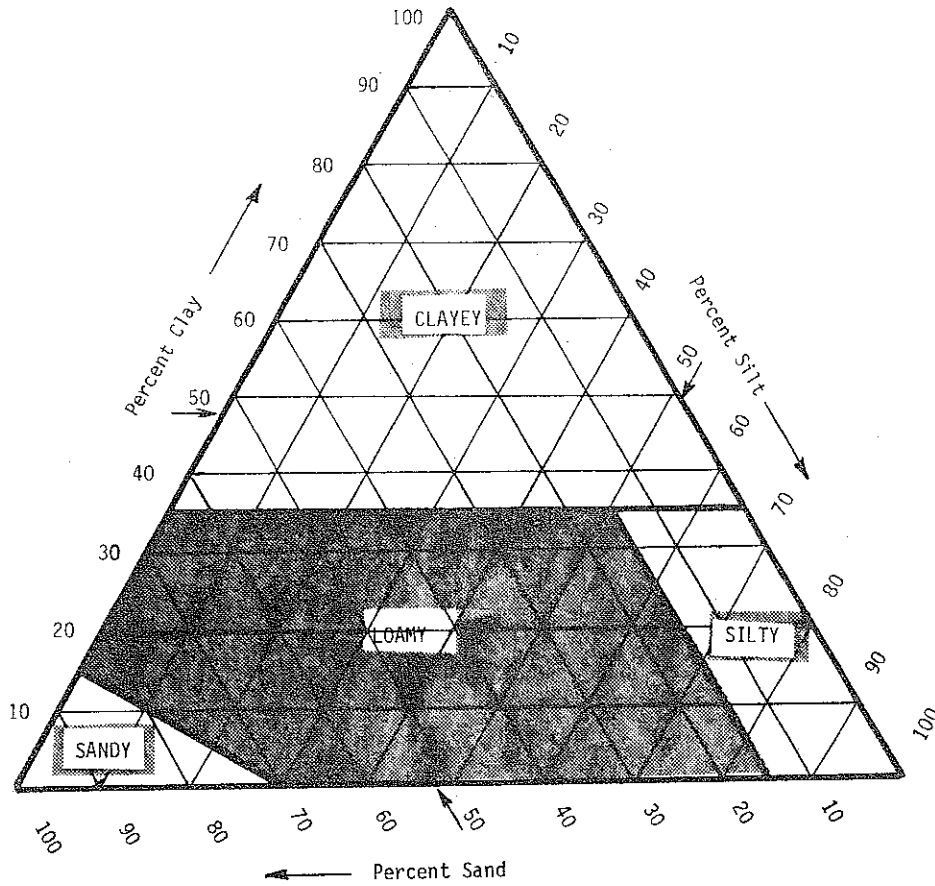
TABLE 9-1 Soil conditions → Type and size of systems permitted

SOIL GROUPS	BEDROCK AND GROUNDWATER CONDITIONS				
	A	B	C	D	E
1 Deep **loamy (≥15% sand ≤ 35% clay)	Shallow to Bedrock (15" to 40" Deep) NOTE: If depth to bedrock is less than 15" below the bottom of the organic horizon a N.D. System is required.	Seasonal groundwater at greater than 40" below the bottom of the organic horizon.	Seasonal groundwater at 15" to 40" below the bottom of the organic horizon.	Seasonal groundwater at 0" to 15" below the bottom of the organic horizon.	Seasonal ground water ponding on the surface
2 Deep **loose loamy (≥15% sand ≤ 35% clay)	MEDIUM LARGE Trench, *Thorncliffe bed, *Mapleton Chamber or *Benson Special System	MEDIUM LARGE Trench, Bangor Cartbou Chamber or Lynneus Special System	LARGE Bed, *Brimont Conant Surton Special System	Non-discharge System *Monarda Easton Leicester	Non-discharge System Burham Mashburn McIntosh
3 loamy, 40" deep over Imperious strata e.g. Clay, Dan.	MEDIUM Trench, *Lymon Hillis Chamber or Special System	MEDIUM Trench, *Charton Bed, *Paxton Chamber or Special System	MEDIUM LARGE Trench, Chamber or Special System	Non-discharge System *Monarda Ridgely Swanton	Non-discharge System Burham McIntosh Kinnally
4 loamy (>15% sand ≤ 35% clay) over Sandv and/or gravelly		LARGE *Perham *Platsted *Potsdam *Harlow *Paxton Beckes Helrose	EXTRA LARGE *Idafie *Hou and *Cary *Hoodbridge *Sterry *Elmwood	Non-discharge System	Non-discharge System
5 Deep **sandy and/or gravelly (>70% sand ≤ 15% clay ≤ 30% silt)	SMALL Trench, Chamber or Special System	SMALL Trench, Chamber or Special System	SMALL Trench, Chamber or Special System	Non-discharge System	Non-discharge System

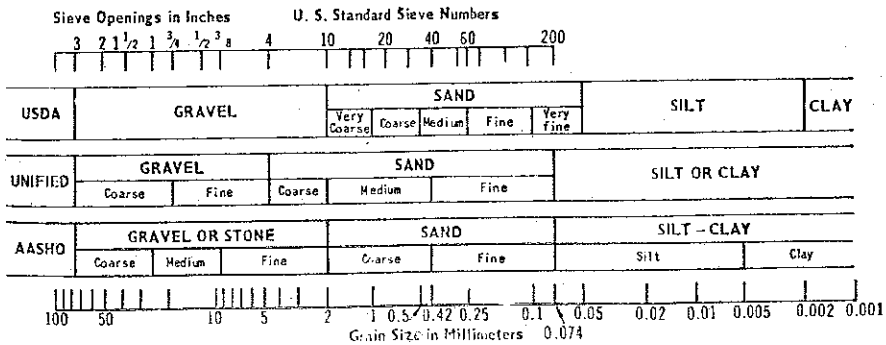
<p>Deep **loose sandy and/or gravelly > 85% sand < 10% clay < 15% silt</p>		<p>VERY SLOTTED French Bed, Chamber or Special System</p>	<p>CO-ten Hickley Adams Windsor Merrimac Agawan Stetson Allagash</p>	<p>VERY SLOTTED French Bed, Chamber or Special System</p>	<p>Duane Crogram Deerfield Sudbury Ninyret Machias Madawaska Skowhegan</p>	<p>Non discharge System</p>	<p>Auques Saugatec Red Hook Madpole</p>	<p>Non discharge System</p>	<p>Scarboro Halroy Atherton</p>	
<p>Deep **stilly (< 15% sand < 35% clay)</p>		<p>LARGE Bed, Round or Special System</p>	<p>Salmon Harland</p>	<p>LARGE Bed, Round or Special System</p>	<p>Inchoville Belgrade</p>	<p>Non discharge System</p>	<p>Rayham Canandaigua</p>	<p>Non discharge System</p>		
<p>Deep** SILLY and CLAYEY (>35% clay)</p>		<p>EXTRA LARGE Round or Special System</p>	<p>Surfield</p>	<p>EXTRA LARGE Round or Special System</p>	<p>Iuxton</p>	<p>Non discharge System</p>	<p>Scentic</p>	<p>Non discharge System</p>	<p>Bilderford</p>	
<p>ACCENT FLOOD PLAINS Alluvial Soils</p>	<p>NONE</p>	<p>Suncook</p>	<p>Hadley Ondawa</p>	<p>NONE</p>	<p>Minooski Podunk</p>	<p>NONIC</p>	<p>Limerick Rimey</p>	<p>NONE</p>	<p>Jaco</p>	
<p>Organic Soils: Muck, Peat, Swamp, Bog, Marsh (Fresh & Tidal Water)</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	
<p>Made Land - Cut and Fill</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	<p>NONE</p>	
<p>Notes:</p>	<p>1. *Fractured or limestome bedrock - No trenches allowed. 2. ** Deep soils are those soils where the texture is similar for at least 40 inches or until bedrock is encountered. This is in contrast to soils which are not marked deep, e.g., loamy. Where distinct textural changes are present within a 40 inch depth. 3. > means greater than; < means less than. 4. The soil groups are identified primarily through the various particle size percentages as depicted in Table 9-2, Guide for Textural Classification in Soil Families. 5. The water table, impervious layer, and bedrock conditions as described in A through S above, are further defined in Section 4.3 and 8.7.</p>									

TABLE 9-2

GUIDE FOR TEXTURAL CLASSIFICATION IN SOIL FAMILIES

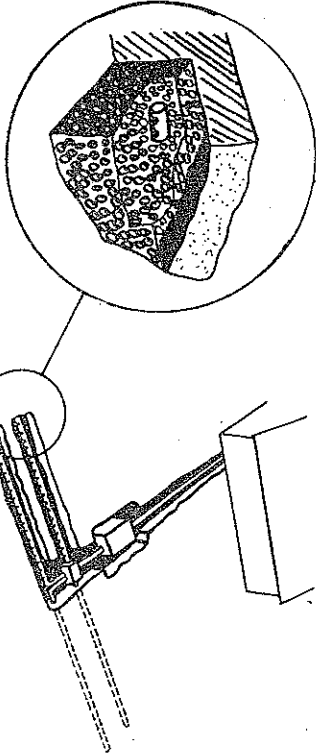


COMPARISON OF PARTICLE SIZE SCALES



TRENCHES

Sec. 9.6

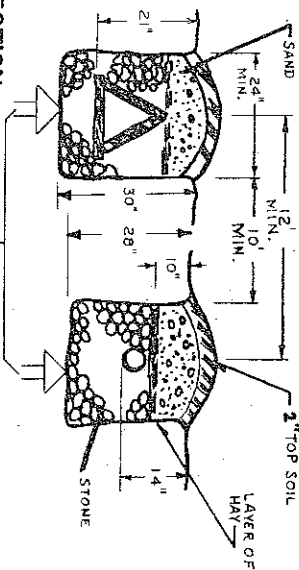


Sec. 9.6a

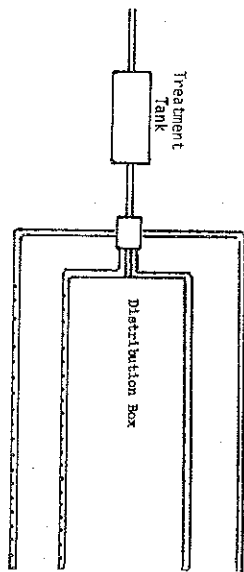
SHALLOW ABSORPTION TRENCHES - DETAILS - Disposal trenches shall be constructed in accordance with the following table:

Maximum length of line	100 feet
Minimum diameter of distribution line	4 inches
Maximum slope of percolation line	2 inches in 100 feet
Minimum width of trench bottom	2 feet
Minimum distance of undisturbed earth between trenches	10 feet
Maximum depth of invert of percolation line	14 (4" pipe) to 21 (trough) inches
Minimum depth of top of percolation line	7 (trough) to 10 (4" pipe) inches
Minimum depth of stones below the invert of percolation line	9 (trough) to 14 (4" pipe) inches

CROSS SECTION



The bottom of the trenches shall be at 2 to 2.5 feet above the seasonal high groundwater, bed-rock, and impervious layer. Refer to tables below for exact minimum dimensions.



PLAN VIEW

SINGLE FAMILY DWELLINGS

sec. 9.6b COMBINED SYSTEMS

All waste water: human waste & gray waste water

The length of disposal trench required for 1 to 5 bedroom single family dwellings for each system size rating.

SYSTEM SIZE RATING	RANGE OF TRENCH LENGTHS REQUIRED IN FEET	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK AND IMPERVIOUS LAYER
Very Small	84 lin. Ft.	2 Feet
Small	100-133 lin. Ft.	2 Feet
Medium	166-200 lin. Ft.	2 Feet
Medium Large	233-300 lin. Ft.	2.5 Feet
Large	Not Permitted	_____
Extra Large	Not Permitted	_____

EXAMPLE: A 3 bedroom single family dwelling located on a site requiring a medium size system (Table 9-1) requires 166-200 linear feet of sewage disposal trench.

sec. 9.6c SEPARATED SYSTEM

Human waste handled by methods permitted in sec. 9.3 This system to handle gray waste water only.

The length of disposal trench required for 1 to 5 bedroom single family dwellings for each system size rating.

SYSTEM SIZE RATING	RANGE OF TRENCH LENGTHS REQUIRED IN FEET	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK AND IMPERVIOUS LAYER
Very Small	55 lin. Ft.	2 Feet
Small	65-87 lin. Ft.	2 Feet
Medium	108-130 lin. Ft.	2 Feet
Medium Large	151-195 lin. Ft.	2.5 Feet
Large	Not Permitted	_____
Extra Large	Not Permitted	_____

EXAMPLE: A 3 bedroom single family dwelling using a vault privy located on a site requiring a medium size system (Table 9-1) requires 108-130 linear feet of sewage disposal trench to take care of the gray water.

sec. 9.6d SERVING OTHER FACILITIES

SYSTEM SIZE RATING	RANGE OF TRENCH LENGTH REQUIRED FOR DOMESTIC WASTE ONLY IN LINEAR FEET	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK, AND IMPERVIOUS LAYER
Very Small	0.28 lin. ft./gpd	2 Feet
Small	0.33-0.44 lin. ft./gpd	2 Feet
Medium	0.55-0.67 lin. ft./gpd	2 Feet
Medium Large	0.78-1.00 lin. ft./gpd	2.5 Feet
Large	Not Permitted	_____
Extra Large	Not Permitted	_____

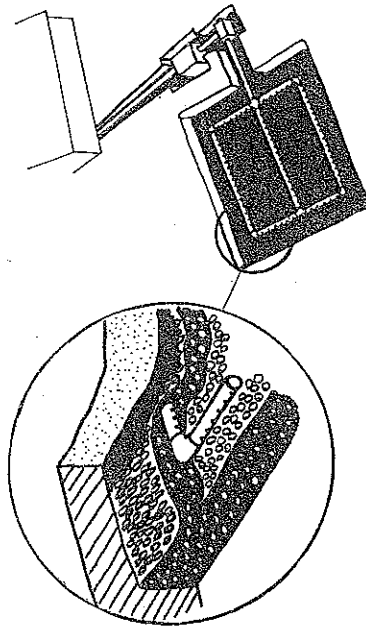
When the waste is of a quality different from normal domestic waste, the values in the adjoining table shall be multiplied by the following factor $\frac{1000 \pm \text{RSS}}{1000}$

240

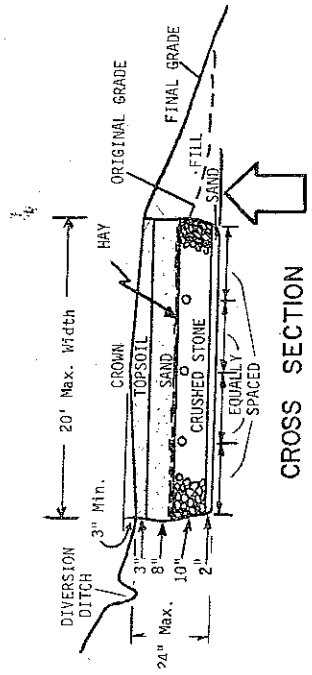
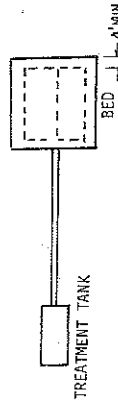
This factor shall not be used if its value is less than one.

BEDS

Sec.9.7



PLAN VIEW



CROSS SECTION

SHALLOW BEDS - DETAILS - Beds shall be constructed in accordance with the following table:

Minimum diameter of percolation line	4 inches
Maximum slope of percolation line	2 inches in 100 feet
Minimum width of bed bottom	15 feet
Minimum distance of undisturbed earth between beds (if more than one is used)	40 feet
Maximum depth of invert of percolation line from top of sand layer	12 inches
Minimum depth of stones below the invert of percolation line	6 inches
Minimum depth of sand above the percolation line	8 inches
Minimum depth of sand below the stone layer	2 inches

Sec. 9.7d

SINGLE FAMILY DWELLINGS

sec. 97b COMBINED SYSTEMS

All waste water: human waste & gray waste water

The minimum area in square feet of approved shallow absorption bed for 1 to 5 bedroom single family dwellings for each system size rating shall be as follows:

SYSTEM SIZE RATING	RANGE OF BED SIZES REQUIRED IN SQUARE FEET	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK AND IMPERVIOUS LAYER
Very Small	250 Sq. Ft.	2 Feet
Small	300-400 Sq. Ft.	2 Feet
Medium	500-600 Sq. Ft.	2 Feet
Medium Large	700-900 Sq. Ft.	2.5 Feet
Large	1200-1600 Sq. Ft.	3.5 Feet
Extra Large	Not Permitted	

EXAMPLE: A 4 bedroom single family dwelling located on a site requiring a medium size system (Table 9-1) requires a sewage disposal bed of 500 to 600 square feet.

sec. 97c SEPARATED SYSTEM

Human waste handled by methods permitted in sec. 93 This system to handle gray waste water only.

The minimum area in square feet of approved shallow absorption bed for 1 to 5 bedroom single family dwellings for each system size rating shall be as follows:

SYSTEM SIZE RATING	RANGE OF BED SIZES REQUIRED IN SQUARE FEET	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK AND IMPERVIOUS LAYER
Very Small	165 Sq. Ft.	2 Feet
Small	195-260 Sq. Ft.	2 Feet
Medium	325-390 Sq. Ft.	2 Feet
Medium Large	455-585 Sq. Ft.	2.5 Feet
Large	780-1040 Sq. Ft.	3.5 Feet
Extra Large	Not Permitted	

EXAMPLE: A 4 bedroom single family dwelling using a vault privy located on a site requiring a medium size system (Table 9-1) requires a sewage disposal bed of 325 to 390 square feet to take care of the gray water.

sec. 97d SERVING OTHER FACILITIES

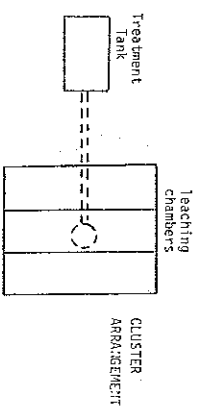
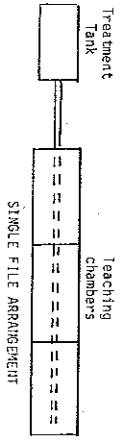
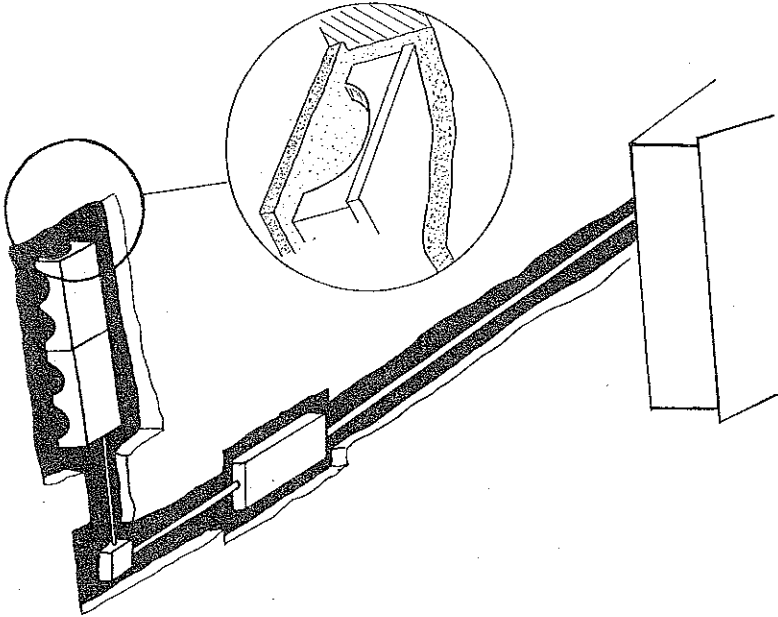
SYSTEM SIZE RATING	RANGE OF SQUARE FEET OF BED FOR DOMESTIC WASTE ONLY	MINIMUM DISTANCE BELOW THE BOTTOM OF BEDS OR TRENCHES TO HIGHEST SEASONAL GROUNDWATER, BEDROCK, AND IMPERVIOUS LAYER
Very Small	0.83 sq. ft./gpd	2 Feet
Small	1.0-1.33 sq. ft./gpd	2 Feet
Medium	1.67-2.00 sq. ft./gpd	2.5 Feet
Medium Large	2.33-3.00 sq. ft./gpd	3.5 Feet
Large	4.00-5.33 sq. ft./gpd	
Extra Large	Not Permitted	

When the waste is of a quality different from normal domestic waste, the values in the adjoining table shall be multiplied by the following factor $\frac{240}{1000 \times S}$

This factor shall not be used if its value is less than one.

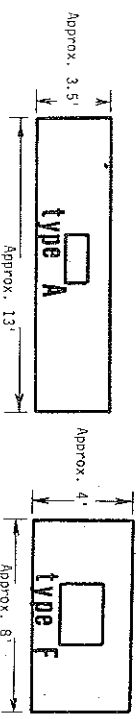
CHAMBERS

Sec. 9.8

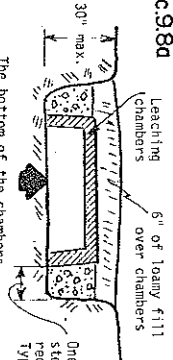


Plan View

Plan View



sec. 9.8d



The bottom of the chambers shall be at 2 to 3.5 feet above the seasonal high ground-water, bedrock, and impervious layer. Refer to tables below for exact minimum dimensions.

One foot of stone is required for Type F chambers

CROSS SECTION

SINGLE FAMILY DWELLINGS

sec.98b COMBINED SYSTEMS

All waste water: human waste
& gray waste water

sec.98c SEPARATED SYSTEM

Human waste handled by methods permitted in sec. 93 This system to handle gray waste water only.

Number of teaching chambers required for 1 to 5 bedroom single family dwelling for each system size rating.

System Size Rating	Arrangement of chamber permitted Single file Cluster	Teaching chambers required		Minimum distance below the bottom of the chambers to highest seasonal groundwater, bed-rock and impervious layer
		Type A (45) (sq. ft.)	Type F (32) (sq. ft.)	
Very Small	Yes	4	5	2 Feet
Small	Yes	5	6	2 Feet
Medium	Yes	8	10	2 Feet
Large	Not Permitted	11	15	2.5 Feet
Extra Large	Not Permitted			

Example: A 3 bedroom dwelling located on a soil requiring a medium size system (Table 9-1) requires 8 of Type A teaching chambers or 10 of Type F teaching chambers.

Number of teaching chambers required for 1 to 5 bedroom single family dwelling for each system size rating.

System Size Rating	Arrangement of chamber permitted Single file Cluster	Teaching chambers required		Minimum distance below the bottom of the chambers to highest seasonal groundwater, bed-rock and impervious layer
		Type A (45) (sq. ft.)	Type F (32) (sq. ft.)	
Very Small	Yes	2	3	2 Feet
Small	Yes	3	4	2 Feet
Medium	Yes	6	7	2 Feet
Large	Yes	8	10	2.5 Feet
Extra Large	Not Permitted			

Example: A 3 bedroom dwelling using a vault privy located on a soil requiring a medium size system (Table 9-1) requires 6 of Type A teaching chambers or 7 of Type F teaching chambers.

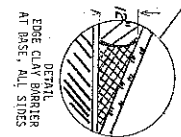
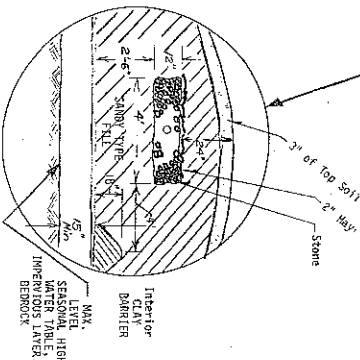
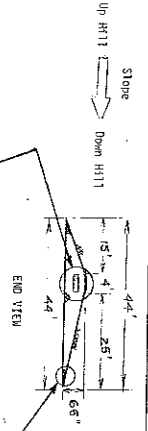
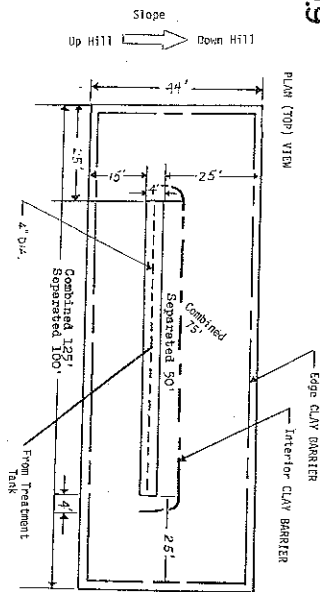
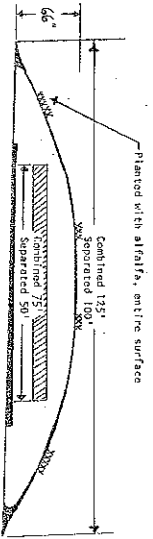
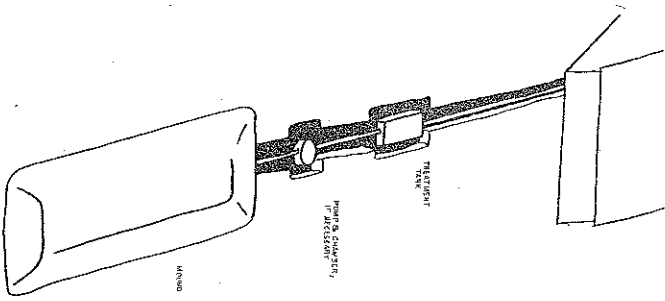
sec.98d SERVING OTHER FACILITIES

Not permitted without review and written approval by the department.

Proposals to install teaching chambers to serve facilities other than single family dwellings shall be first reviewed by the Department. Designers of such proposals should contact the Department for guidelines before submitting proposals. (Pl's shall not permit teaching chamber installations to serve other facilities without written approval of the Department.)

MOUNDS

Sec. 99



SINGLE FAMILY DWELLINGS

For System Size Ratings Large and Extra Large

sec. 9.9a COMBINED SYSTEMS

All waste water: human waste
& gray waste water

The size mound and bed within the mound required to serve 1 to 5 bedroom single family dwellings shall be: mound - 125 feet by 44 feet at the base, and bed - 75 feet by 4 feet.

sec. 9.9b SEPARATED SYSTEM

Human waste handled by methods permitted in sec. 9.3. This system to handle gray waste water only.

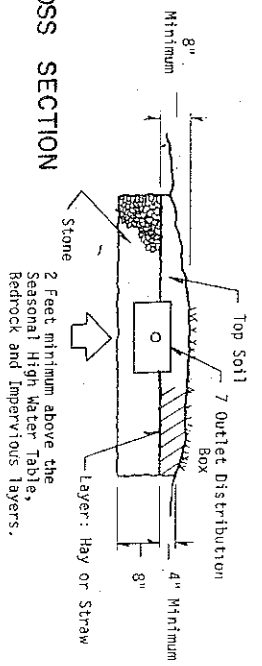
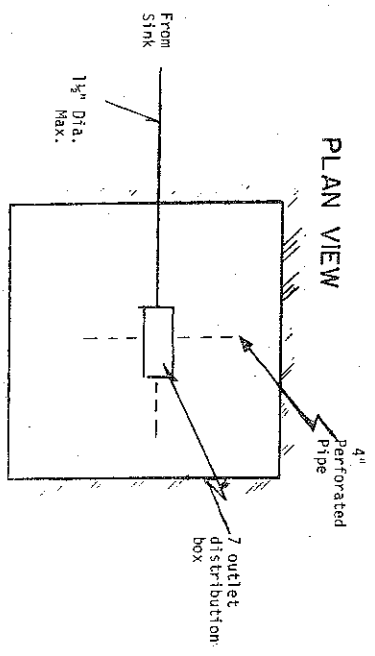
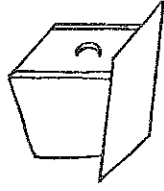
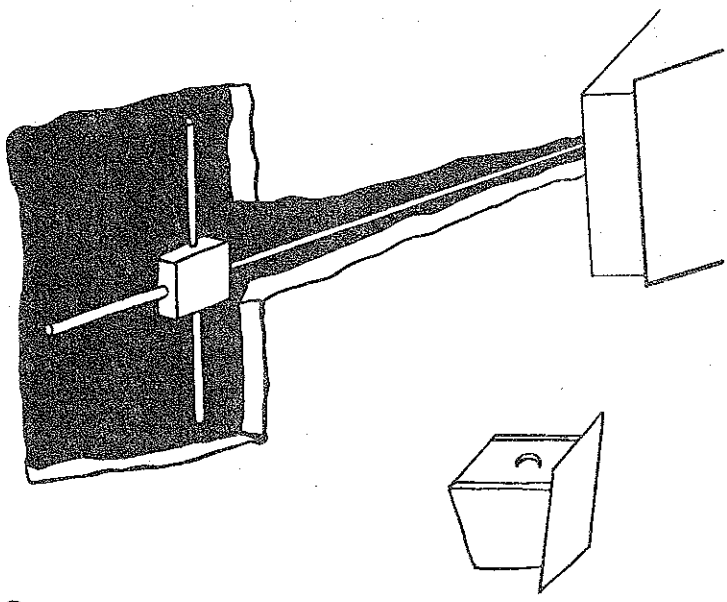
The size mound and bed within the mound required to serve 1 to 5 bedroom single family dwellings shall be: mound - 100 feet by 44 feet at the base, and bed - 50 feet by 4 feet.

sec. 9.9c SERVING OTHER FACILITIES

Not permitted

SPECIAL

Sec.9.10



CROSS SECTION

SINGLE FAMILY DWELLINGS

sec.9.10a

These separated facilities shall only be approved when the building they serve has no running water supplied to it through a service supply line or if running water is supplied to the building, the movement of water is generated by gravity flow or a pump powered by the human hand. A gravity flow situation shall not include the circumstances where water is first lifted by a means other than by natural artesian flow or by a pump powered by the human hand.

Refer to Chapter 9, Table 9-1 to determine when site conditions permit installations of these facilities. THE APPROVABLE GRAY WASTE WATER SYSTEM SHOWN BELOW IS DESIGNED TO HANDLE SINK WASTES ONLY. OTHER PLUMBING FIXTURES SHALL NOT BE CONNECTED TO IT.

sec.9.10b HUMAN WASTE FACILITIES

APPROVABLE HUMAN WASTE FACILITY

Approvable human waste facilities shall be one of the following
 Privies - Vault or pit depending on soil conditions
 Compost toilets
 Chemical toilets
 Incinerator toilets

sec.9.10c GRAY WASTE WATER FACILITIES

APPROVABLE SINK GRAY WASTE WATER FACILITY

Human Waste Facilities shall NOT be connected to the Gray Waste Water System. The Building Sewer shall be 1/4 inches maximum diameter.

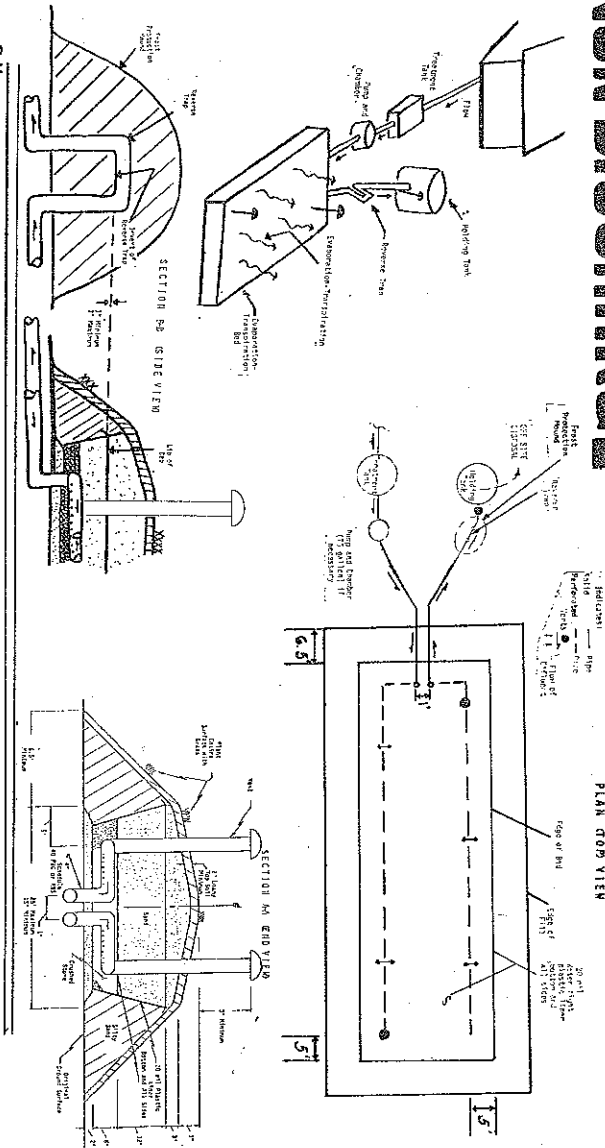
SINGLE FAMILY DWELLINGS

SYSTEM SIZE RATING	SINK DRAIN DISPOSAL BEDS	MINIMUM DEPTH TO HIGHEST WATER TABLE, BEDROCK AND IMPERVIOUS LAYER
Very Small	5 feet x 5 feet	2 feet
Small	6 feet x 6 feet	2 feet
Medium	8 feet x 8 feet	2 feet
Medium Large	9 feet x 9 feet	2 feet
Large	11 feet x 11 feet	2 feet
Extra Large	13 feet x 13 feet	2 feet

sec.9.10d SERVING OTHER FACILITIES

Not permitted without review and written approval by the department.

NONDISCHARGE Sec. 9.11



Sec. 9.11a DETAILS:

SYSTEM ARRANGEMENT - The non-discharge system shall consist of a series arrangement of holding tanks. The order of arrangement shall be as listed above; serial flow from the bed to the holding tank shall be provided.

LOCATION - The evaporation-transpiration bed shall be considered a treatment tank for purposes of location; see Table 4.2.

WATER REDUCTION - When a non-discharge system is used for disposal, plumbing connected with the system shall be designed to reduce water consumption. (1) The system shall have flow reducing valves (maximum flow rate 2 gallons per minute), (2) water services to sinks and lavatories shall have aerators, (3) garbage disposals shall not be connected, (4) It is recommended that automatic washers not be installed.

SERIAL FLOW - If a pump and chamber are not needed to lift sewage from the treatment tank to the bed, the invert of the outlet of the treatment tank shall be at least 4 inches above the top of the sand layer in the evaporation-transpiration bed. The invert of the inlet to the holding tank shall be below the invert of the reverse trap.

ALARM - A low level sensing device shall be provided on the holding tank. The sensing device shall be set and installed as required in section 7.6.

HOLDING TANK - Holding tanks shall be protected to prevent their contents from freezing, and to prevent flotation by weighting down or other adequate measures (concrete) to the department and/or its agent if installed fully or partially below grade.

PLANTINGS - The surface of the bed and a 6 and 1/2 foot border around it shall be planted with grass.

BED LINING - The evaporation-transpiration bed shall be totally sealed to prevent infiltration of effluent into the soil under and around it. Sealing shall be accomplished by an impervious plastic sheet (20 mil, minimum thickness). The top edge of the plastic sheet shall be sealed to the concrete curb and the plastic sheet shall be 4 inches above the surface of any water which ponds.

BED POSITION - The bed shall be constructed and placed fully above the existing existing surface (grass).

SINGLE FAMILY DWELLINGS

sec. 9.11b **COMBINED SYSTEMS**
All waste water: human waste
& gray waste water

sec. 9.11c **SEPARATED SYSTEM**
Human waste handled by methods
permitted in sec. 9.13 thru 9.15
This system to handle gray waste
water only.

COMBINED SYSTEM

This system is for the disposal of all wastewater, both black water and gray waste water, from single family dwellings with 1-5 bedrooms.

SYSTEM ARRANGEMENT

The combined, non-discharge system shall consist of a treatment tank followed by an evapo-transpiration bed, 1,250 square feet. The treatment tank shall be sized per sections 9.2 and 9.3.

If the property configuration prohibits installation of one 25 x 100 bed, several smaller beds, equal to 1,250 square feet may be approved, if these beds are at different levels, series serial distribution shall be provided, and the lowest bed shall be connected to the holding tank.

HOLDING TANK

A holding tank shall follow the evapo-transpiration bed. The capacity of the holding tank shall be 2000 gallons minimum; recommended size is 4000 gallons.

When this combined non-discharge system is installed, flush toilets may be installed but the toilets used shall be low flush models (maximum flush volume shall be 3 gallons).

SEPARATED SYSTEM

This system is for the disposal of only gray wastewater from single family dwellings with 1-5 bedrooms. The human wastes shall be handled by sealed toilets, privy, compost toilet, chemical toilet, incinerator, or vacuum toilet. The waste, once processed, may be discharged into the treatment tank or holding tank.

SYSTEM ARRANGEMENT

The separated, non-discharge system shall consist of a treatment tank followed by an evapo-transpiration bed, 1,275 square feet. The treatment tank shall be 750 gallon minimum.

If the property configuration prohibits installation of one 25 x 75 bed, several smaller beds equal to 1,275 square feet may be approved, if these beds are at different levels, series serial distribution shall be provided, and the lowest bed shall be connected to the holding tank.

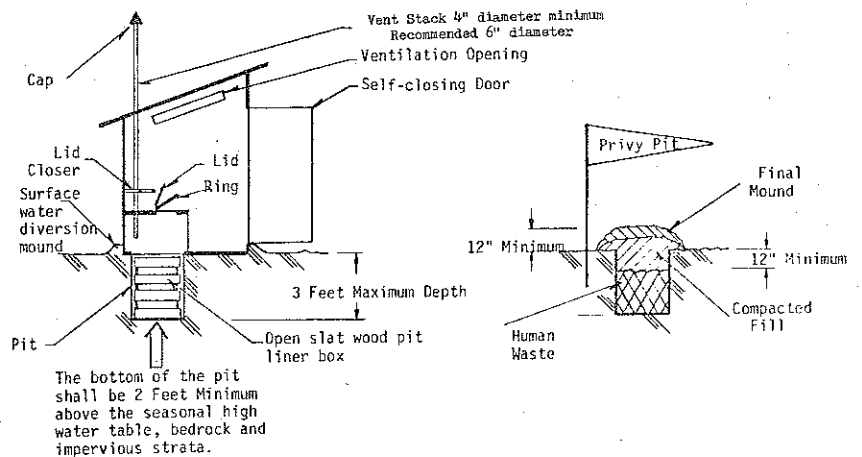
HOLDING TANK

A holding tank shall follow the evapo-transpiration bed. The capacity of the holding tank shall be 1500 gallons minimum; recommended size is 3000 gallons.

sec. 9.11d **SERVING OTHER FACILITIES**

Not permitted

SEC. 9.12 OPEN PIT PRIVY



REQUIREMENTS:

Open pit privies shall not be installed on flood plains nor on sites where the seasonal high water table, bedrock or impervious layer is less than 15" below the bottom of the organic horizon (O). On sites where the seasonal high water table, bedrock, or impervious layer is more than 15" but less than 60" below the bottom of the organic horizon (O), the privy pit shall be made in suitable fill. Open pit privies shall not be installed to serve structures other than single family dwellings without written approval by the Department.

(a) Open pit privy shall be classified as disposal areas for purposes of location except as noted below. Refer to Table 4-2 to determine where disposal areas may be located. Pits shall not be located less than 20 feet from a dwelling or property line.

(b) Pits shall not be deeper than 3 feet below original grade. The bottom of the pit shall be at least two feet above highest seasonal groundwater level, impervious strata and bedrock.

(c) Pits shall be air tight except for the vent stack and the waste entry hole.

(d) The area around the privy building and pit shall be banked to divert surface waters away. The drip line of the privy's roof shall extend outside the diversion bank.

(e) The waste entry hole shall have a self-closing lid and a ring seat.

(f) A vent stack of at least 4" diameter shall be: provided, extend into the seat box and at least 2 feet above the roof's highest point. The vent stack shall be capped to prevent entry of precipitation and effectively supported and rigid.

(g) The privy building shall have: ventilating and a self-closing door, and be effectively sealed against entry of vermin.

(h) Open pit privies shall be maintained in a sanitary condition.

(e) Vaults shall be classed as septic tanks for structural requirements. Refer to Section 7.1 if commercial septic tanks or holding tanks are used as vaults, influent and/or effluent ports shall be sealed watertight.

PRIVY BUILDING AND APPURTENANCES:

(f) The waste entry hole shall have: a self-closing lid and ring seat, and smooth cylindrical chute extending from the seat into the vault two (2) inches. The chute should have a baffle at its bottom which effectively prevents splash-back.

(g) The privy building shall have: ventilation, a self-closing door, a vault vent and be effectively sealed against entry of vermin. The vault vent shall: be a four (4) inch minimum diameter, extend two (2) inches below the bottom of chute and two (2) feet above the highest point of the roof, be capped against entry of precipitation and be effectively supported and rigid.

MAINTENANCE:

(h) Sealed vault privies shall be maintained in a sanitary and operable condition.

(i) Wastes, other than human -- feces and urine, and toilet paper, shall not be disposed of in privy vaults.

(j) When waste fills the vault to a height not less than one (1) foot below the vault top, the vault shall be emptied. The person who empties the vault, the methods employed, and the destination of the waste shall be as required by the Department of Environmental Protection.

SEC. 9.14 COMPOST TOILET UNITS

(a) **REQUIREMENTS** -- Compost units shall be approvable for the disposal of only human wastes, urine and feces; toilet paper; and putricable kitchen wastes. They may be used in systems referred to in Sections 9.6-9.11. Compost toilets may be located in buildings.

(b) **DESCRIPTION** -- Compost units are prefabricated versions of modified vault privies utilizing aerobic composting for waste treatment.

(c) **APPROVED UNITS** -- The LPI's have lists of these units.

SEC. 9.15 INCINERATING, CHEMICAL, RECIRCULATING, AND VACUUM TOILETS

(a) **REQUIREMENTS** -- Incinerating, chemical, recirculating, and vacuum toilets shall be approvable for the disposal of only human wastes, urine and feces, and toilet paper. They may be used in systems referred to in Sections 9.6 - 9.11.

(b) **DESCRIPTION** --

(1) Incinerating toilets are totally independent units which dispose of wastes by heating them to combustion. They are generally electric or gas powered.

(2) Chemical and recirculating toilets treat wastes with chemicals and water. After a period of recycling, the treated wastes, water and chemicals must be discharged to a suitable destination. The destination shall be a holding tank, or other approved

disposal system. After discharge they have to be recharged with water and chemicals.

- (3) Vacuum toilets handle wastes in a manner similar to standard toilets. However, they use very little water because the flush cycle is vacuum assisted. Vacuum toilets shall be connected to holding tanks or other approved disposal systems.
- (c) **APPROVED UNITS** — The LPI's have lists of these units.

CHAPTER 10

OTHER SYSTEMS

SEC. 10.1 LAGOON TREATMENT AND SPRAY DISPOSAL SYSTEMS

The use of lagoons for sewage treatment and spray techniques for disposal may be permitted by the Department upon submission of adequate information for review. Adequate information shall include sufficient information to indicate site suitability and the system's adequacy. Site suitability shall be determined by an on-site soils investigation and supported by a report from a certified Soils Scientist, Geologist or Registered Professional Engineer. Plans and specifications for lagoons and/or spray disposal systems shall be designed by a Registered Professional Engineer. Requirements for these systems can be obtained by contacting the Department.

Lagoon treatment and spray disposal systems are to be considered community systems for permit fee purposes. Local Plumbing Inspectors shall not issue permits, or approve these systems until written approval is given by the Department.

SEC. 10.2 INDUSTRIAL WASTES

The use of private sewage disposal systems for the treatment and disposal of industrial wastes may be permitted by the Department upon submission of adequate information for review. Adequate information shall include sufficient information to indicate—the manufacturing process involved, the character of the waste, the volume of the waste, the treatment proposed (including its efficiency), and the site's suitability for disposal. Site suitability shall be determined by an on-site soils investigation and supported by a report from a Certified Soils Scientist or Geologist, or Registered Professional Engineer with soils training. Complete plans and specifications for private disposal systems handling industrial wastes shall be designed by a Registered Professional Engineer. Consultation with the Department is recommended before submission of plans and specifications.

Private sewage disposal systems handling industrial wastes are to be considered community systems for permit fee purposes. Local Plumbing Inspectors shall not issue permits, or approve such systems until written approval is given by the Department.

SEC. 10.3 OTHER SYSTEMS, DEVICES, AND TECHNIQUES

Other sewage treatment and disposal systems, devices and techniques may be approved and employed when permitted in writing by the Department. Approval of such methods shall be based upon complete plans, specifications, and/or data as may be required by the Department. Local Plumbing Inspectors shall not issue permits for systems other than those detailed and described in this Code without first having received written approval of the Department regarding such systems.

APPENDIX I

A GUIDE FOR MINIMUM LOT SIZE DETERMINATION FOR SINGLE FAMILY DWELLINGS WHEN ON-SITE WASTE DISPOSAL IS REQUIRED

NOTES FOR USER:

This guide has been prepared to provide assistance to planners, planning boards, and others involved in land use. The information is intended to be useful in general land use planning only.

The lot size recommendations are based on soil characteristics relative to on-site sewage disposal systems and to environmental considerations.

NOT FEASIBLE is a term used to indicate that extreme site conditions exist which warrant additional investigation and engineering design criteria for use. Corrective measures may not be economically feasible.

NOT PERMITTED is a term used on certain soils to indicate that those soils should not be used for urban development or for waste disposal.

The lot sizes recommended in this appendix should be considered as minimums. In cases where large parcels of land are totally covered with residential lots, such as large subdivisions, larger minimum lot sizes may be necessary and desirable. The reason for this is, that on-site sewage disposal systems in large scale subdivisions may so saturate the ground water with effluent that if on-site well supplies are used, the wells may be affected.

**A GUIDE FOR
MINIMUM LOT SIZE DETERMINATION FOR SINGLE FAMILY
DWELLINGS WHEN ON-SITE WASTE DISPOSAL IS REQUIRED**

Soils and Land Types	Slope Groups	Lot Size in Square Feet
Adams ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Agawam ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Allagash ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Alluvial soil		Not Permitted
Atherton		Not Feasible
AuGres		Not Feasible
Bangor	0 - 15%	25,000
"	15 - 25%	30,000*
"	25%	Not Feasible
Bangor moderately deep	0 - 15%	30,000
" " "	15 - 25%	35,000*
" " "	25%	Not Feasible
Bangor heavy substratum	0 - 15%	25,000
" " "	15 - 25%	30,000*
" " "	25%	Not Feasible
Beaches, All		On-site Investigation Required
Becket	0 - 15%	30,000
"	15 - 25%	35,000*
"	25%	Not Feasible
Belgrade	0 - 15%	30,000
Benson ²	0 - 15%	40,000
"	15 - 25%	40,000*
Berkshire	0 - 15%	25,000
"	15 - 25%	30,000*
"	25%	Not Feasible
Biddeford		Not Feasible
Burnham	0 - 15%	Not Feasible
Buxton	0 - 15%	35,000
Canaan	0 - 15%	25,000
"	15 - 25%	30,000*
"	25%	Not Feasible
Canandaigua		Not Feasible

Soils and Land Types	Slope Groups	Lot Size in Square Feet
Canton	0 - 15%	20,000
"	15 - 25%	25,000*
Caribou	0 - 15%	25,000
"	15 - 25%	30,000*
"	25%	Not Feasible
Charlton	0 - 15%	20,000
"	15 - 25%	25,000*
"	25%	Not Feasible
Colton ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Conant	0 - 15%	30,000
Crary	0 - 15%	30,000
Croghan ³	0 - 15%	80,000
Cut & fill land	On-site Investigation Required	
Daigle		35,000
Deerfield ³	0 - 15%	80,000
Dixmont	0 - 15%	30,000
"	15 - 25%	35,000*
Duane ³	0 - 15%	80,000
Dune land, All	On-site Investigation Required	
Easton		Not Feasible
Elmwood	0 - 15%	35,000
Fibrists and Hemists soils		Not Permitted
Fibrists and Saprists soils		Not Permitted
Fredon		Not Feasible
Fresh Water Marsh		Not Permitted
Gloucester	0 - 15%	20,000
"	15 - 25%	25,000*
Gravel pits	On-site Investigation Required	
Hadley		Not Permitted
Halsey		Not Feasible
Hartland	0 - 15%	30,000
"	15 - 25%	35,000*
Hermon	0 - 15%	20,000
"	15 - 25%	25,000*
"	25%	Not Feasible
Hinckley ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible

Soils and Land Types	Slope Groups	Lot Size in Square Feet
Hiram mucky peat		Not Permitted
Hollis, All	0 - 15%	30,000
" "	15 - 25%	35,000*
" "	25%	Not Feasible
Howland	0 - 15%	35,000
"	15 - 25%	40,000*
Leicester		Not Feasible
Limerick		Not Permitted
Linneus ²	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Lyman, All	0 - 15%	30,000
"	15 - 25%	35,000*
" "	25%	Not Feasible
Machias ³	0 - 15%	80,000
Madawaska ³	0 - 15%	80,000
Made land, All		On-site Investigation Required
Mapleton ²	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Marlow	0 - 15%	30,000
"	15 - 25%	35,000*
"	25%	Not Feasible
Melrose	0 - 15%	35,000
"	15 - 25%	40,000*
Merrimac ¹	0 - 15%	40,000
"	15 - 25%	40,000*
Monarda		Not Feasible
Muck & peat, All		Not Permitted
Nichoville	0 - 15%	30,000
Ninigret ³	0 - 15%	80,000
Ondawa		Not Permitted
Paxton	0 - 15%	30,000
"	15 - 25%	35,000*
"	25%	Not Feasible
Peat, All		Not Permitted
Peat & muck, All		Not Permitted
Perham	0 - 15%	30,000
"	15 - 25%	35,000*
Peru	0 - 15%	35,000

Soils and Land Types	Slope Groups	Lot Size in Square Feet
Plaisted	0 - 15%	30,000
"	15 - 25%	35,000*
"	25%	Not Feasible
Podunk		Not Permitted
Potsdam	0 - 15%	30,000
Raynham		Not Feasible
Red Hook		Not Feasible
Ridgebury		Not Feasible
Rifle mucky peat		Not Permitted
River wash	On-site Investigation Required	
Rock land, All		Not Feasible
Rock outcrop		Not Permitted
Rubble land		Not Feasible
Rumney		Not Permitted
Saco		Not Permitted
Salmon	0 - 15%	30,000
Saprists and Hemists soils		Not Permitted
Saugatuck		Not Feasible
Scantic		Not Feasible
Scarboro		Not Feasible
Sebago mucky peat		Not Permitted
Skerry	0 - 15%	35,000
Skowhegan ³	0 - 15%	80,000
Stetson ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Stony land, All	On-site Investigation Required	
Sudbury ³	0 - 15%	80,000
Suffield	0 - 15%	35,000
Suncook		Not Permitted
Sutton	0 - 15%	30,000
Swanton		Not Feasible
Terric Borochemists soils		Not Permitted
Terric Borasaprists soils		Not Permitted
Thorndike, All ²	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Tidal marsh		Not Permitted

Soils and Land Types	Slope Groups	Lot Size in Square Feet
Togus fibrous peat		Not Permitted
Typic Sphagnofibrists soils		Not Permitted
Typic Sulphemists soils		Not Permitted
Walpole		Not Feasible
Washburn		Not Feasible
Waumbek	0 - 15%	25,000
Whately		Not Feasible
Whitman		Not Feasible
Windsor ¹	0 - 15%	40,000
"	15 - 25%	40,000*
"	25%	Not Feasible
Winooski		Not Permitted
Woodbridge	0 - 15%	35,000

* Special engineering and design of facilities are required due to excessive slope conditions.

1 These soils are very rapidly permeable and offer the potential for ground water contamination when wastes are placed on or in them. They are also recognized as areas of ground water recharge, and consideration should be given to their protection.

2 These soils commonly overlie vertically fractured and limestone-seamed bedrock which may be rapidly permeable and subject to piping. Such conditions offer potential for ground water contamination from waste disposal systems.

3 These soils are similar to those in footnote 1 above, except that a water table normally exists within the upper 30 inches of the soil. Use of such soils for waste disposal may be undesirable due to the likelihood of ground water contamination.