

State of Maine

**SUBSURFACE WASTEWATER  
DISPOSAL RULES**

Chapter 241

DEPARTMENT OF HUMAN SERVICES  
DIVISION OF HEALTH ENGINEERING  
State House

**FILE COPY**

Station Number 10  
Augusta, Maine 04333  
Tel. (207) 289-3826  
Commissioner Michael R. Petit

**SUMMARY:** These Rules govern siting, design, construction, and inspection of subsurface wastewater disposal systems in order to protect the health, safety and welfare of the citizens of Maine. Approved procedures, design and siting criteria, materials, methods and administrative policies are described in detail.

**BASIS STATEMENT:** These Rules provide minimum State design criteria for subsurface wastewater disposal to assure environmental sanitation and safety. These Rules are intended to complement municipal planning, zoning, and land use control.

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DEPARTMENT. Abbreviation for the State of Maine Department of Human Services.

DISPOSAL AREA. That component of a system designed for the subsurface disposal of wastewater into the soil. Examples are beds, chambers, trenches and pit privies.

DISTRIBUTION BOX. A device for distributing wastewater to separate portions of a disposal area.

DISTRIBUTION SYSTEM. Piping or other devices which distribute wastewater within the disposal area.

DIVERSION BOX. A device which provides for the alternating use of portions of a disposal area.

DIVERSION DITCH. A ditch to intercept and divert surface water runoff away from a disposal area.

DOSING. The pumping or siphoning of a specific volume of wastewater to a disposal area.

DOSING CHAMBER. A receptacle for retaining wastewater until pumped or siphoned to the disposal area.

DRAINAGE DITCH. A manmade ditch receiving and diverting surface water runoff.

EFFLUENT LINE. The pipe beginning at the treatment tank and terminating at the disposal area.

ELEVATION REFERENCE POINT. A reference elevation used during construction and inspection to establish the relative elevation of the bottom of a disposal area as well as the top of the distribution pipe or chamber.

ENGINEERED SYSTEM. A system or a combination of individually or jointly owned systems which serves a single building or group of associated buildings with a total design flow in excess of 2000 GPD. Examples: condominium projects, large industrial or commercial projects, and clustered systems serving residential dwellings. Residential developments with individual systems shall not be included.

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EVALUATION. see Site Evaluation.

EVALUATOR. see Site Evaluator.

EXPERIMENTAL SYSTEM. An innovative system which differs from the conventional systems recognized by the Rules.

FILL. Soil which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

FLOOD PLAIN.

[1] Coastal and Estuary: The land area within the V-Zone indicated by Federal Insurance Rate Maps [FIRM] or below the 10-year storm surge elevation, whichever is more restrictive.

NOTE: The 10-year storm surge elevation in Maine is approximately 8 feet National Geodetic Vertical Datum [N.G.V.D]

[2] Riverine: The land area within the 10-year flood zone indicated by FIRM Maps, Soil Conservation Service or other acceptable sources of information.

NOTE: The Maine Bureau of Civil Emergency Preparedness is a repository of the above information.

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GPD. An abbreviation for gallons per day.

GRAY WASTEWATER. Wastewater excluding blackwaste.

GREASE TRAP. A watertight tank for the collection and retention of grease which is accessible for periodic removal of the contents.

GROUND WATER. See Seasonal High Ground Water Table.

H-20 WHEEL LOAD. A wheel loading configuration as defined by the American Association of State Highway Officials [AASHO].

HAZARDOUS WASTE. Any chemical substance or material, gas, solid or liquid designated as hazardous by the U.S. Environmental Protection Agency pursuant to the United States Resource Recovery and Conservation Act, Public Law 94-580.

HIGH WATERMARK. That line on the shore or bank of a water body which is apparent because of a change in character of the soil, rock or vegetation resulting from submersion or the prolonged erosion action of the water.

HOLDING TANK. A watertight receptacle, with an alarm, which receives and holds wastewater prior to disposal at a location licensed by the Department of Environmental Protection.

IMPERVIOUS LAYER. See Restrictive Layer.

INTERMITTENT WATER BODY. Standing or flowing water, resulting from surface runoff or the position of the ground water table, which occurs for a period of not more than three consecutive months during the year.

INVERT. The lowest point of a pipe's inner surface.

LIMITING FACTORS. Seasonal high ground water table, restrictive layer and bedrock.

LOCAL PLUMBING INSPECTOR. A Municipal or Department appointed official charged with implementing the Rules and carrying out the duties required by 30 MRSA § 3222.

LPI. Abbreviation for Local Plumbing Inspector.

MALFUNCTION. A system which is functioning inadequately and thereby creating a nuisance as evidenced by, but not limited to the following conditions:

[1] Failure of a system to accept wastewater discharge or the backup of wastewater into the structure served by the system.

[2] Discharge of wastewater directly or indirectly to the surface of the ground or surface waters unless licensed by the Department of Environmental Protection.

MANDATORY SHORELAND ZONING. See 12 MRSA § 4811 - 4814 [See Appendix B].

MOTTLING. Spots or blotches of different color or shades of color interspersed with the dominant soil color. Oxidation [bright colors] and reduction [dull colors] are caused by alternating aerobic and anaerobic conditions caused by a seasonally fluctuating ground water table, or the intermittent presence of a perched water table. For the purpose of these Rules, the zone of mottling is that area consisting of more than 2 percent mottles.

MUNICIPAL OFFICERS. Shall be limited to any of the following: Selectmen, Councilmen, or Aldermen, Mayor, Town Manager.

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NEW SYSTEM VARIANCE. A variance to the Rules authorized by the Department for a new system.

( NUISANCE. Shall include, but is not limited to:

[1] Any public nuisance known at common law equity jurisprudence.

[2] Whenever any work regulated by the Rules is injurious to human life or detrimental to health and property.

[3] An inadequate system.

[4] Any unsanitary condition existing in any system.

OBSERVATION HOLE. An excavation, test pit or auger boring, used to determine the Soil Profile and Conditions.

PERENNIAL. A water body lasting or continuing for more than 3 consecutive months of the year.

PERMIT. An official authorization issued by the LPI to construct a system. [See Figure A.1 in Appendix A]

( PERSON. Any person, his heirs, executor, administrator, or assigns and shall also mean a firm, corporation, association, organization, municipal or quasi-municipal corporation or governmental agency. Singular includes plural and male includes female.

PIT PRIVY. A waterless toilet placed over an excavation where blackwaste is deposited.

POTABLE WATER. Water used for human consumption.

PRESSURIZED DISTRIBUTION. A network of piping with small diameter orifices designed to evenly distribute wastewater under pressure throughout the entire disposal area.

PRIMITIVE DISPOSAL AREA . A minimal disposal area designed specifically to treat graywater originating from a single sink serviced by a non-pressurized water supply.

PUBLIC SEWER. Municipal or quasi-municipal sewer system.

PUMPING CHAMBER. See Dosing Chamber.

RECOMMENDATION. Not mandatory but strongly suggested.

REFUSAL. That point at which excavation is no longer possible due to bedrock or restrictive layer.

REPLACEMENT SYSTEM. A system intended to replace:

[1] an existing system which is either malfunctioning or being upgraded with no significant change of design flow or use of the structure.

[2] an existing overboard wastewater discharge.

REPLACEMENT SYSTEM VARIANCE. A variance to the Rules, authorized by the LPI or the Department, for a replacement system.

RESTRICTIVE LAYER. A soil layer which resists the downward movement of water and root penetration, and may result in a perched water table. The soil layer may exhibit platy or prismatic structure and is not easily penetrated with a pointed object.

RULES. Abbreviation for Subsurface Wastewater Disposal Rules adopted by the Department pursuant to 22 MRSA § 42. (Subsections 3 and 3A)

SEASONAL CONVERSION PERMIT. A permit issued by the LPI to allow the conversion of a seasonal dwelling to year-round use in an area subject to Mandatory Shoreland Zoning Controls. [See 30 MRSA § 3223 (3) in Appendix B]

SEASONAL DWELLING. See 30 MRSA § 3223 for the legal definition [Appendix B].

SEASONAL HIGH GROUND WATER TABLE. A zone of soil that is seasonally or permanently saturated by a perched or shallow ground water table. This zone may be determined by identification of soil drainage mottling or by ground water monitoring.

SETBACK DISTANCE. The horizontal distance between a system and selected site features or structures.

SEWAGE EJECTOR. A device to elevate and/or pump untreated wastewater to a public sewer, treatment tank or other means of disposal.

SEWER. See Public Sewer.

SHALL. A mandatory term.

SHOULD. Not mandatory but a recommendation .

SINGLE FAMILY DWELLING. A residence intended for single family use.

SITE EVALUATION. The practice of investigating, evaluating and reporting basic soil and site conditions which apply to subsurface wastewater disposal and system design in compliance with the Rules.

SITE EVALUATOR. A person licensed to practice Site Evaluation [ 22 MRSA §42 (3A)].

SOIL TEXTURE. The relative proportions of soil separates [sand, silt and clay] in a soil as defined by U.S.D.A. classification system.

SUBSTANTIAL COMPLIANCE. Relates to the Seasonal Conversion Variance procedure which shall require a New System Variance score of at least 65 points as determined from Table 16-1 and/or compliance with reduced setback distances listed in Table 5-1.

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**SUBSURFACE WASTEWATER DISPOSAL SYSTEM.** An approved method or device for storing or disposing of wastewater in soil including but not limited to the following components: treatment tank, disposal area, alternative toilet, holding tank, or any other fixture, mechanism or apparatus used for such purposes. The term shall not include any wastewater discharge system licensed under 38 MRSA § 414, any surface wastewater disposal system licensed under 38 MRSA § 413 Subsection 1-A, or any public sewer. The term shall not include a wastewater disposal system designed to treat wastewater which is in whole or in part hazardous waste as defined in 38 MRSA chapter 13, subchapter 1.

**SYSTEM.** Abbreviation for subsurface wastewater disposal system.

**TEST PIT.** See Observation Hole

**TREATMENT TANK.** An approved water tight receptacle that is used for pretreatment of wastewater before disposal.

**UNORGANIZED AREA.** An area other than a municipality or plantation which does not have an organized form of local government and is regulated by the Land Use Regulation Commission.

**VARIANCE.** See New or Replacement System Variance.

**VAULT PRIVY.** A toilet which retains blackwaste in a sealed vault.

**WASTE DISCHARGE LICENSE.** A wastewater discharge license issued under 38 MRSA § 414.

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WASTEWATER. The liquid and water borne wastes derived from the ordinary living processes, free from industrial wastes, and of such character as to permit satisfactory disposal, without special treatment into the public sewer or by means of a subsurface wastewater disposal system.

WATER BODY. A natural or artificial surface depression having standing or flowing water in excess of 250 square feet. The term water body includes, but is not limited to: natural and artificial lakes, ponds, rivers, streams, brooks, swamps, marshes, bogs and tidal marshes. It usually discharges into a larger water body and has a definite channel, bed, banks and high watermark.

WELL. A potable water supply used for drinking purposes including but not limited to: drilled well, dug well, or spring.

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[c] The request shall contain sufficient facts for the Department to make a ruling. The Department may require additional information from the requesting party. Failure to provide such information shall be cause for the Department to refuse to issue a ruling.

[d] The Department may refuse to issue an advisory ruling if it may harm its interest in any litigation in which it is or may become a party.

[e] Any advisory ruling by the Department shall be in writing and issued no more than sixty (60) days from the date when all necessary information for the ruling has been received by the Department.

[f] An advisory ruling shall not be binding upon the Department, provided that in any subsequent enforcement action initiated by the Department, any person's justifiable reliance upon the ruling shall be considered in mitigation of any penalty sought to be assessed.

[2] Verbal. Verbal opinions are not advisory rulings and are not binding upon the Department.

#### I. Unorganized Areas.

[1] The Department shall appoint Plumbing Inspectors in the Unorganized Areas.

[2] If a Plumbing Inspector is unavailable, the following procedure shall be utilized.

[a] The Department will issue Permits in compliance with 10-144A CMR 241.3.[A-I].

[b] Systems shall not be used until the contractor has filed a statement with the Department stating that the system was completed in compliance with the Application and Rules.

[c] The Department shall issue a Certificate of Approval if the construction, after inspection, is found to be in compliance with the Rules.

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I. Denial and Revocation of Permit.

[1] A request for a permit shall be denied, or a previously issued permit shall be revoked by the LPI when one or more of the following conditions exist:

[a] The proposed system is in noncompliance with the Rules.

[b] The Application has not been properly completed.

[c] The Application is unclear.

[d] The site fails to meet the requirements of:

[i] Minimum Lot Size Law [12 MRSA §4807]

[ii] Local Mandatory Shoreland zoning wastewater disposal requirements.

[iii] Land Use Regulation Commission building permit requirements [12 MRSA § 685], where applicable.

[2] The reasons for denial or revocation of a permit shall be indicated on the Application and forwarded to the property owner or applicant.

J. Records.

All completed Applications, Permits, Certificates of Approval, Variances and other applicable records shall be sent to the Department by the Municipality. The Municipality shall retain copies for their record and the LPI shall furnish a copy to the applicant.

K. Connection to private/public system.

[1] When a Plumbing permit has been obtained to connect an existing building or existing work to a new disposal facility, back filling of wastewater disposal facilities abandoned subsequent to such connection is included in the Permit.

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[2] A Plumbing Permit shall be required to connect plumbing to a public sewer if piping is installed beyond the jurisdiction of the Local Sanitary District. Any backfilling of wastewater facilities abandoned subsequent to such connection is included in the Permit.

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4. INSPECTION, CERTIFICATE OF APPROVAL,  
CORRECTION ORDER, AND ENFORCEMENT.

A. Inspection.

[1] The contractor/installer shall notify the LPI at least twenty-four [24] hours before the system is requested to be inspected.

[2] The treatment tank, distribution box, distribution system and top of the stone or chambers shall remain uncovered until inspected and approved by the LPI. Any system covered or concealed before being inspected shall be required to be uncovered for inspection by the LPI.

B. Certificate of Approval.

[1] If the construction after inspection is found to be in compliance with the Rules, the LPI shall issue a Certificate of Approval.

[2] No system shall be used until the Certificate of Approval has been issued by the LPI.

C. Correction Order.

When a system is found to be in noncompliance with the Rules, the LPI shall issue a written Correction Order to the applicant specifying what is required to bring the system into compliance with the Rules, and specifying a reasonable date for the system's compliance.

D. Penalty For Rule Violations.

[1] Starting construction without a Permit and other violations to the Rules is punishable by a forfeiture of not less than \$100 and not more than \$1000 for each offense [22 MRSA 42 (3)]. The municipality may seek to enjoin violations of the Rules. In the prosecution of a violation

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by a municipality, the court may award reasonable attorney's fees to a municipality if that municipality is the prevailing party.

[2] Any person who installs or orders the installation of any subsurface wastewater disposal system without the Permit required commits a civil violation for which a forfeiture of not less than \$100 nor more than \$1000 may be adjudged.

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E. Right of Entry.

The LPI or an authorized employee of the Department shall have authority for Right of Entry to investigate alleged conditions which do not comply with the Rules. If requested, the LPI or Department's representative shall present proper credentials prior to entering the premises. If entry is denied, an Administrative Warrant may be sought from the District Court.

F. Enforcement.

Enforcement may be pursued pursuant to, but not limited to:

1. 22 MRSA 42 Subsection 3
2. 30 MRSA 3221 Subsection 1
3. 30 MRSA 3223 Subsection 1
4. 30 MRSA 3223 Subsection 1A
5. 30 MRSA 3223 Subsections 3 and 4
6. 30 MRSA 4359 and 4453
7. Appropriate health or nuisance laws

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An Enforcement Manual is available from the Department which outlines procedures for documenting violations and preparation for legal action if determined to be necessary.

## 5. SEASONAL CONVERSION PERMIT

### A. Permit Required.

In Mandatory Shoreland Zoned Areas, a Seasonal Conversion Permit [See Figure A.3 in Appendix A] is required to convert a seasonal dwelling to a year-round residence. The Seasonal Conversion Permit is obtained from the LPI prior to converting the dwelling [See Appendix B, 30 MRSA 3223 Subsection 3].

### B. Requirements for Permit Issuance.

A Seasonal Conversion Permit shall be issued by the LPI if one of the following requirements can be met:

[1] An Applicant demonstrates that the existing system meets the requirements of the Rules or a replacement system can be installed in substantial compliance with the Rules as defined.

[2] The applicant has a year-round Waste Discharge License issued by the Department of Environmental Protection.

[3] The dwelling is or can be feasibly connected to a public sewer. Documentation shall be obtained from the applicable Sanitary District indicating that the additional sewage can be accepted. The property owner shall connect to the public sewer in the event of a malfunction.

### C. Seasonal Conversion Variance.

[1] The LPI may grant a Variance request for setback distances but only within the limits of Table 5-1.

[2] For Variances for soil conditions less than the minimum required per Subsection 6.B.3 exceeding those limited to LPI approval, a New System Variance Application shall be completed

and forwarded to the Department for approval considerations. A minimum New System Variance point value of 65 is required for approval consideration by the Department. See Section 16 for details and requirements.

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D. Malfunction of the Existing System.

In the event of a malfunction of the existing system, the property owner shall install the replacement system approved in subsection 5.B.1.

TABLE 5-1

RANGES ALLOWED FOR SEASONAL CONVERSION TO BE APPROVED BY THE LPI

	<u>Treatment Tank</u>	<u>Disposal Area</u>
Drinking Water Supplies		
Owner's Well	60-75	80-100
Neighbor's Well	80-100 <sup>a</sup>	80-100 <sup>a</sup>
Waterbodies		
Perennial	25-100	80-100
Intermittent	40-50	40-50
Man-made drainage ditch	20-25	20-25
Buildings		
With Basements	5-8	15-20
Without Basements	5-8	10-15
Property Lines	5-10	5-10

<sup>a</sup> Written permission from neighbor with a copy available for each copy of Permit is necessary.

6. SITE EVALUATION FOR DISPOSAL SYSTEMS

A. Application for Permit.

[1] An Application for a proposed system shall be completed by a Site Evaluator, except as otherwise authorized in Subsection 6.E.

[2] The Application, signed and dated by the Site Evaluator, shall indicate the suitability of the soil and site conditions for subsurface wastewater disposal. The soil's parent material, textural classification, drainage conditions and depth to limiting factors shall be identified in accordance with Table 6-1.

[3] The type, size, location and elevation of the proposed system shall be legibly identified. The lot and immediate vicinity, property lines, buildings, wells, springs, roads, drives and water bodies shall be drawn to scale. The downhill direction and percent slope shall also be noted. Any special design, fill, or construction details necessary to assure the proposed system's compliance with the Rules shall be specified.

[4] The approximate corners of the disposal area shall be located in the field and clearly marked. The distance to at least two corners shall be referenced from established control points in the field [property pin, building corner, tree or marker, etc.].

[5] An Elevation Reference Point shall be used in order to guide the installation of the system by establishing the bottom of the disposal area and the top of the distribution pipe or the top of the chambers.

[6] An Elevation Reference Point shall be:

[a] established and clearly marked outside the proposed construction area.

[b] accurate to + 2 inches.

[c] clearly indicated on the Application.

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**TABLE 6-1**

**SOIL PROFILE and CONDITION versus DISPOSAL AREA SIZE**

PARENT MATERIAL	SOIL PROFILE	TEXTURAL CLASSIFICATION and DESCRIPTIONS	SOIL CONDITIONS							DISPOSAL AREA RATING SEC. 12
			SHALLOW to BEDROCK		DRAINAGE					
			A BEDROCK		B	C	D	E		
			I less than 10"	II +10" to 15"	WELL DRAINED Water Table greater than 40"	MODERATELY WELL DRAINED Water Table between 40" to 15"	SOMEWHAT POORLY DRAINED Water Table between 15" to 6"	VERY POORLY DRAINED Water Table less than 6"		
G L A I C L I L A	1	Silt loam soils which tend to become more compact with depth. A restrictive layer may be present. Angular coarse fragments may be present.	4	2	1	1	3	4	LARGE	
	2	Loam to sandy loam soils which do not have a restrictive layer. Angular coarse fragments may be present.	4	2	1	1	3	4	MEDIUM LARGE	
	3	Loam, sandy loam to loamy sand soils with a restrictive layer that usually occurs at depths of 15" to 30". Angular coarse fragments may be present.	4	2	1	1	3	4	MEDIUM LARGE	
	4	Sandy loam to loamy sand overlying loamy sand soils derived from ablation till. Coarse fragments [angular to rounded] may be present. No restrictive layer throughout profile.	4	2	1	1	3	4	MEDIUM	
S T R A T I F I E D	5	Loam to sandy loam soils overlying stratified fine and medium sands. Rounded coarse fragments may be present.	4	2	2	2	3	4	MEDIUM	
	6	Loamy sand soils overlying stratified coarse sands and gravel. Round coarse fragments may be present.	4	2	2	2	3	4	SMALL	

<b>MIXED ORIGIN</b>		Loamy sand to sand overlying a restrictive layer of silt to silty clay which occurs at a depth of 15 inches or greater. Coarse fragments may be present in upper horizons, but usually absent in lower horizons.		<b>4</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>MEDIUM LARGE</b>
<b>LACUSTRINE</b>		Loam to fine sand overlying firmer silt loam to silt. A restrictive layer may be present. Coarse fragments usually absent. Stratified lenses of very fine sand, silts and clays may be present in the substratum.		<b>4</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>LARGE</b>
<b>9</b>		Silt loam soils overlying firm silt loams to silty clays exhibiting a restrictive layer. Fragments are usually absent.		<b>4</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>EXTRA LARGE</b>
<b>ORGANIC</b>		Soils are composed of organic materials in various stages of decomposition.							
<b>ALLUVIAL, DUNE, BEACH</b>		Variable in texture. Exhibiting very little weathering. Deposited in flood plain, sandy dune or beach environment.			<b>5</b>	<b>5</b>			<b>SEC. 11.F 11.G</b>

**1**

Note  
See 11.C.2.a for Separation Distances.

Note **2**  
See 11.C.2.b for Separation Distances

**ALL SYSTEMS PERMITTED**

Note **3**  
See 15-A for Replacement System Variance by LPI.  
See 11.C.2.a & 11.C.2.b for Separation Distances.

**Severe Limitations REPLACEMENT SYSTEMS MAY BE PERMITTED (Sec.15)**

Note **4**  
See 15 for Replacement System Variance with Department Review.  
See 11.C.2d for Separation Distances.

**Very Severe Limitations REPLACEMENT SYSTEMS MAY BE PERMITTED if no alternative. NEW SYSTEMS NOT PERMITTED.**

Note **5**  
See 11.F for Coastal Sand Dune limitations.  
See 11.G for Flood Plain limitations.

**Extremely Severe Limitations. SYSTEMS NOT PERMITTED**

## B. Soil Evaluation

### [1] Observation Hole in Original Soils.

[a] An observation hole shall be excavated to a depth of 4 feet or refusal.

[b] Observation holes shall be of sufficient numbers and located at representative points within the proposed disposal area to assure that the disposal area can be installed entirely on soils and slopes in compliance with the Rules.

[c] The location of the observation holes shall be referenced from permanent or semi-permanent markers, such as roads, trees, telephone poles, property iron, foundation, and similar objects.

### [2] Observation Holes in Fill.

[a] Observation holes excavated in fill shall be of sufficient depth to properly classify both the fill profile and the original soil profile in accordance with Table 6-1.

[b] When the original soil profile and condition is classified as having severe or very severe limitations in Table 6-1, systems are not permitted except under the provisions of Sections 15 and 16.

### [3] Suitable Soil Conditions.

[a] A site for a proposed system shall have sufficient land area available to enable the installation of the entire disposal area on original soils having 15 inches or more of mineral soil depth free of limiting factors.

[b] Original soil profiles and conditions classified as permissible "All Systems" are shown in Table 6-1.

## C. Site Considerations.

### [1] Disposal Area Location.

[a] A system shall be located on the property occupied by the structure to be served.

[b] A system may be installed on a neighboring property provided that a legal easement has been obtained, filed and cross-referenced in the Registry of Deeds and the Municipality prior to issuance of a permit. The easement shall provide for future replacement, expansion and maintenance of the system.

[2] Minimum setback distances shall be maintained between:

[a] new systems and the features listed in Table 6-2.

[b] replacement systems and the features listed in Table 6-2 or Section 15.D if a Replacement System Variance is needed.

[c] systems for Seasonal Conversions and the features listed in Table 6-2 or Section 5.D if a Seasonal Conversion Variance is needed.

[d] Engineered Systems and the features listed in Table 14-1.

[3] Flood Plains.

[a] A new system shall not be installed on a ten [10] year flood plain [See DEFINITIONS - Flood Plain].

[b] In order for persons to qualify for the National Flood Plain Insurance many communities restrict new development on 100 year flood plains as defined by the U.S. Army Corps of Engineers.

[4] A disposal area shall be installed on a site having an original surface slope 20 percent or less.

#### D. Ground Water Monitoring.

[1] Ground water monitoring may be used to document seasonal high ground water levels in situations where:

[a] soil mottling is believed not to be a true indication of the ground water level.

[b] an attempt is being made to the lower the ground water level.

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[2] Documentation shall be furnished by the applicant in accordance with "Guidelines for Monitoring Ground Water Levels" in Appendix G.

E. Local Option to Waive the Site Evaluation.

[1] A Municipality may adopt an Ordinance which authorizes the LPI to omit the required Site Evaluation for the replacement of a system, provided that all the following requirements are met [30 MRSA § 3221 (B) and 22 MRSA § 42 (3)]:

[a] The replacement system shall serve a dwelling inhabited by not more than two families.

[b] The replacement system shall not be installed within 100 feet of a waterbody subject to Mandatory Shoreland Zoning requirements.

[c] The design and construction shall be in total compliance with the Rules and an Application along with a Local Option to Waive the Site Evaluation Form [See Figure A.9 in Appendix A] are to be completed and filed with the municipality and the Department.

[d] The applicant shall sign a statement acknowledging the awareness of the waiver.

[2] The Department shall be notified in writing of the Municipality's adoption of the Ordinance within 30 days.

TABLE 6-2  
 MINIMUM SETBACK DISTANCES  
 FOR SYSTEMS WITH  
 DESIGN FLOWS OF LESS THAN 2000 GPD

<u>DISTANCE IN FEET BETWEEN:</u>	<u>TREATMENT TANK</u>	<u>DISPOSAL AREA</u>
<b>POTABLE WATER SUPPLIES</b>		
+2000 GPD Wells	100	300
Owner's well	100 <sup>a</sup>	100
Neighbor's well	100	100
Water supply line	10	10
<b>WATERBODIES</b>		
Perennial (High Watermark)	100 <sup>a</sup>	100
Intermittent	50	50
Man-made drainage ditch	25	25
<b>DOWNHILL SLOPE</b>		
Slopes Greater than 3:1	5	10 <sup>c</sup>
<b>BUILDINGS</b>		
With basements	8	20
Without basements	8	15
<b>PROPERTY LINE</b>	10	10 <sup>b</sup>

<sup>a</sup> This distance may be reduced to 75 feet if a treatment tank is tested for water tightness in the LPI's presence. A property owner residing on a property may install a treatment tank 75 feet from a well used as a water supply.

<sup>b</sup> Sufficient distance shall be maintained to assure that all fill material remains on property.

<sup>c</sup> Sufficient distance shall be maintained to assure that the toe of the fill does not extend to the 3:1 slope.

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## 7. WASTEWATER DESIGN FLOW

### A. Single Family Dwelling.

[1] The design flow to be used in sizing a system for a single family dwelling shall not be less than the minimum design flows in Table 7-1, except as specified in footnote 'a' of Tables 12-1, 12-2 and 12-3.

Number of Bedrooms	Design Flow GPD <sup>a</sup>		
	Minimum <sup>b</sup>	Moderate <sup>c</sup>	Conservative <sup>d</sup>
2 or less	180	240	300
3 bdrms	270	360	450
For each additional bedroom add:	90	120	150

a Design flows assume an occupancy factor of two persons per bedroom.

b Minimum design flows assume that 40% of single family dwellings have daily flows exceeding 45 GPD per person (90 gallons/bedroom).

c Moderate design flows assume that 13% of single family dwellings have daily flows exceeding 60 GPD per person (120 gallons/bedroom).

d Conservative design flows assume that 3% of single family dwellings have daily flows exceeding 75 GPD per person (150 gallons/bedroom).

[2] Reductions in design flow are allowed for water conservation. However, there shall be suitable reserve area available to dispose of the proposed design flow without the reductions for conservation methods. The system shall be enlarged to the original required size if the conservation devices are removed, become inoperative or the system malfunctions.

[3] Maximum allowable reductions for water conservation devices are:

[a] 30 % of design flow for an alternative toilet.

[b] 10 % of design flow for a low volume water toilet [3.5 gallons per flush or less].

[c] 20 % of design flow for a single family Separated Laundry Disposal System.

[4] Flow reducers on showerheads plus low water use faucets are recommended, but, no allowances shall be made for design flow reductions.

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#### B. Design Flows for Establishments.

[1] The design flow shall be determined by one of the following means:

[a] Design flow per Table 7-2.

[b] Department approval of documented water utility meter readings for a 12 month period.

[2] When the wastewater is of a quality different from normal domestic wastewater, the design flows shall be multiplied by the following factor:

$$\sqrt[3]{\frac{(BOD5 \text{ mg/l} + SS \text{ mg/l})}{240}}$$

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

TABLE 7-2  
DESIGN FLOWS FOR FACILITIES

The design flows for facilities other than single family dwellings shall be based on the estimated maximum population and the resultant daily flows of wastewater as determined from the following table:

<u>Type of Facility</u>	<u>Design Flow</u> GPD/person unless otherwise noted
<b>MULTIPLE RESIDENTIAL</b>	
Boarding Houses [incl. meals].	50
Hotels and Motels with:	
shared baths . . . . .	60 GPD/bedroom
private baths . . . . .	100 GPD/bedroom
Mobile Home Parks . . . . .	225 GPD/site
Multiple Family Complex . . . .	See Table 7-1
Retirement Housing Complex [limited to senior citizens older than 50 yrs.]:	
2 bedroom units or less . . .	120 GPD/unit
Rooming Houses [no meals]. . . .	40
<b>COMMERCIAL ESTABLISHMENTS</b>	
Airports	
passengers-[without food] . . .	5 GPD/passenger
Beauty Salon . . . . .	10 GPD/customer
Bottle Club . . . . .	10 GPD/seat
Bowling Alley [without food] . . .	75 GPD/lane
Bus Service Areas [without food]	5
Factories and Plants	
without showers . . . . .	15
with showers . . . . .	25
Laundry, self-service. . . . .	400 GPD/washer
Restaurants	
disposable utensils . . . . .	15 GPD/seat
conventional . . . . .	30 GPD/seat
24 hour operation . . . . .	50 GPD/seat
take-out only . . . . .	50 GPD/100 ft <sup>2</sup>
along freeway -24 hr. . . . .	70 GPD/seat
Service Station . . . . .	500 GPD/island

Table 7-2 Continued

Shopping Centers & Stores [no food, laundry & public restrooms] . . . . .	1 GPD/parking sp.
Stores [public restrooms]. . .	400 GPD/toilet
Taverns . . . . .	20 GPD/seat
Tennis, Raquetball Courts [excludes food] . . . . .	300 GPD/court
Theaters [without food] Drive-In or Movie . . . . .	3 GPD/space
Visitor Center . . . . .	6
Work or Construction Camps [semi-permanent] with flush toilets. . . . .	50
graywater only . . . . .	35
Workers [Offices, Schools and Shopping Centers] . . .	15
INSTITUTIONAL	
Assembly Halls, Public Buildings [noncommercial] . . . . .	5 GPD/seat
Churches . . . . .	5
Hospitals . . . . .	150 GPD/bed
Institutions [other than Hospitals]. . .	100 GPD/bed
Nursing Homes . . . . .	100 GPD/bed
Schools [Boarding] . . . . .	75 GPD/bed
Schools [Day] no food, gyms or showers. . .	5
food, but no gym or showers	10
food, gym and showers . . .	15
COMMERCIAL SEASONAL	
Camps Day (no meals served) . . .	10
Mess Hall Only. . . . .	15
Resort [limited plumbing] . .	50
Fairgrounds, Parks, & Picnic Areas [bath, showers, & toilets].	10
Swimming Pools and Bathhouses.	10
Tourist, Trailer or Campground washroom & toilets only . .	25
[sewer hookups] . . . . .	100 GPD/site

## 8. BUILDING DRAIN AND SEWER

### A. Approved Materials.

[1] The building sewer shall be constructed of approved materials listed in Table 8-1.

[2] Joining methods and materials shall be as prescribed in 10-144A CMR 238.9 [Internal Plumbing Rules].

### B. Size.

[1] The minimum size of a gravity building sewer shall be determined by the total number of fixture units drained by that sewer. See 10-144A CMR 238.13 [Internal Plumbing Rules Table 13-5], for the required number of fixture units.

[2] The minimum size of a pressure building sewer shall be 2 inches in diameter.

### C. Grade, Support and Protection.

[1] A building sewer shall be installed in practical alignment with a uniform slope of not less than 1/4 inch/foot. Where it is not practical to obtain a slope of 1/4 inch/foot a building sewer, 4 inches or larger, may have a slope of not less than 1/8 inch/foot but only with the LPI's approval.

[2] A building sewer shall be laid on a firm bed throughout its entire length and adequately protected to prevent freezing.

### D. Building Sewer Cleanouts.

[1] No cleanout shall be required for a building sewer which is less than 10 feet provided that the building drain has a cleanout.

# TABLE 8-1

## PLUMBING MATERIAL STANDARDS FOR DISPOSAL SYSTEMS

ASTM NUMBER FOR PLASTIC PIPE MUST BE LATEST EDITION AS LISTED IN ANNUAL BOOK OF ASTM STANDARDS, PART 34

**NOTES**

- (A) Plastic Pipe must be sleeved when passing through masonry
- (B) Perforated pipe must be used within the actual disposal field
- ☒ Permissible

Pressure Sewer (or pressure line from pump chamber to disposal area)	Disposal Field (see note B)	Building Sewer (water service in same trench)	Building Sewer (separate from water service)	Building Drain (below ground see note A)	Building Drain (above ground)	
☒						ABS (ASTM D 1527) Sch. 40, 80, 120
☒						ABS (ASTM D 2882) SDR - PR
		☒	☒	☒		ABS (ASTM D 2661, F, 628) DWV Sch. 40
		☒				ABS (ASTM D 2751) Sewer Grade
			☒			Asbestos Cement (ASTM C644, C296)
						Bituminized Fiber (ASTM D 1861)
				☒		Brass
		☒	☒	☒		Cast Iron
			☒			Clay-Vitrified (ASTM C200)
			☒			Concrete (ASTM C 75, C200)
		☒	☒	☒		Copper, K, L
				☒		Copper DWV, M
	☒					Corrugated Polyethylene (ASTM F 405)
☒						PB (ASTM D 2662) Pipe SDR - PR
☒						PE (ASTM D 2239) Pipe SDR - PR
☒						PE (ASTM D 2737) Tubing
	☒					PE (ASTM D 3350) Smooth Wall Pipe
☒		☒	☒	☒		PVC (ASTM D 1785) Sch. 40, 80, 120
☒						PVC (ASTM D 2241) SDR - PR
		☒	☒	☒		PVC (ASTM D 2665) DWV Sch. 40
		☒				PVC (ASTM D 2729) Thin Walled
			☒			PVC (ASTM D 3033) Type PSP Sewer Grade
			☒			PVC (ASTM D 3034) Type PSM Sewer Grade
				☒		Steel or Wrought Iron Galvanized
	☒					Styrene Rubber (ASTM D 2852)

### C. Aerobic Tank [See Appendix C]

[1] An aerobic tank may be used in lieu of a septic tank and shall bear the endorsement of the National Sanitation Foundation's Standard 40.

[2] The size of the aerobic tank shall be based on the recommendations provided by the National Sanitation Foundation.

[3] No reduction in the disposal area shall be allowed based on the use of an aerobic tank.

### D. Installation of Treatment Tanks

[1] Two tanks may be connected in series. The volume of the first tank shall be equal to or greater than the volume of the second tank.

[2] When installing a treatment tank in soils with a high seasonal ground water table, precautions shall be taken to prevent floatation and ground water infiltration.

[3] A treatment tank shall be installed to assure it is water tight and the invert of the outlet shall be above the seasonal high groundwater level.

[4] When a treatment tank is installed under a driveway, parking lot, in a heavy saturated soil or other areas subject to heavy loads, the tank shall be capable of withstanding an H-20 wheel load.

[5] Recommendation: A riser with cover should extend above the treatment tank to within 6 inches of the finished grade. The riser can extend to the ground surface if the cover is properly sealed to prevent the escape of odor and accidental entry.

### E. Septic Tank Liquid Working Capacity.

The septic tank liquid working capacity shall be sized as follows:

[1] Single family dwelling

[a] Two bedrooms or less shall have a septic tank with a minimum liquid working capacity of 750 gallons.

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[c] Three or four bedrooms single family dwellings shall have a septic tank with a minimum liquid working capacity of 1000 gallons.

[d] Each additional bedroom over 4 shall have a minimum increase in the liquid working capacity of 250 gallons per bedroom.

[2] Other structures and multiply family dwellings

[a] For a design flow less than 1500 GPD, the liquid working capacity shall be at least 1.5 times the estimated design flow in GPD, but in no case shall the capacity be less than 750 gallons liquid working capacity (LWC).

$$\text{LWC (gals.)} = 1.5 \times \text{Design Flow (GPD)}$$

[b] For a design flow greater than 1500 GPD, the liquid working capacity (LWC) shall be at least equal to 1125 gallons plus 0.75 times the design flow in GPD.

$$\text{LWC (gals.)} = 1125 + [0.75 \times \text{Design Flow (GPD)}]$$

[c] Recommendation: For design flows greater than 2000 GPD or for systems utilizing a sewage ejector pump, the installation of a two-compartment septic tank or two septic tanks installed in series is recommended.

#### F. Abandoned Treatment Tank.

An abandoned treatment tank or holding tank shall be disconnected and filled with soil or removed.

#### G. Grease Trap.

[1] Recommendation. An external grease trap should be installed for all restaurants or other establishments involved in food preparation.

[2] Materials and Specifications.

## 11. DESIGN STANDARDS FOR DISPOSAL AREAS

### A. Minimum Disposal Area Calculations.

[1] The disposal area shall be calculated using the appropriate Soil Profile and it's disposal area rating from Table 6-1.

[2] The disposal area rating from Table 6-1 and the appropriate design flow determined from Section 7 shall be used to calculate the minimum required disposal area. For trench, bed and chamber disposal areas detailed in Section 12. See Sections 12.A.1, 12.B.1 and 12.C.1.

### B. Disposal Area Configuration.

A disposal area shall be constructed approximately parallel to ground contour to minimize fill depth variations or excessive fill.

### C. Disposal Area Elevation.

[1] The elevations of the bottom of the disposal area and the top of distribution pipe or chambers shall be referenced from the Elevation Reference Point.

[2] Minimum Separation Distances

[a] For Soil Conditions B, C and D in Table 6-1:

[i] For Soil Profiles 1, 2, 3, 4, 7, 8, and 9, a minimum twelve [12] inch separation distance shall be maintained between the most limiting factor [seasonal high ground water table or restrictive layer] and the bottom of the disposal area.

[ii] For Soil Profiles 5, 6 and 11, a minimum twenty-four [24] inch separation distance shall be maintained between the most limiting factor [seasonal high ground water table or restrictive layer] and the bottom of the disposal area.

[iii] No system is allowed in organic material classified as Profile 10.

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TABLE 11-1  
DISPOSAL SPECIFICATIONS

	TRENCH		BED			CHAMBERS
WIDTH OF SYSTEM [in Feet]	2	2-10	11-15	16-20	100 (max)	
NUMBER OF DISTRIBUTION PIPES, EQUALLY SPACED	1	1	2	3	N/A	
SEPARATION DISTANCES BETWEEN DISPOSAL AREAS	5 feet or 50% of the width (which ever is greater)					
MAXIMUM LENGTH	100 Feet					
MINIMUM THICKNESS OF SYSTEM	24 inches				Height Chamber plus	
MINIMUM DEPTH OF STONE ABOVE DISTRIBUTION PIPE	1 inch				N/A	
MINIMUM DEPTH OF STONE BELOW DISTRIBUTION PIPE	7 inches				N/A	
REDUCTION IN LENGTH OF TRENCH SYSTEM	STONE BELOW PIPE	12"	15"	N/A		N/A
		18%	25%			
DEPTH OF COMPACTED HAY	2 inches				N	
MAXIMUM TOLERANCE OF BOTTOM OF SYSTEM	1 inch per 100 feet					
STONE SIZE	3/4" - 3" Clean, Free of Fines and Organic Matter				as requir manuf	
DEPTH OF FILL ABOVE SYSTEM	8" to 12"					
MAXIMUM SLOPE OF FILL	3%					
MINIMUM WIDTH OF FILL BEYOND SYSTEM	3' at 3%					
MAXIMUM SLOPE OF FILL, EXTENSION	25%					

[b] For Soil Condition A in Table 6-1, a minimum twenty-four [24] inch separation distance shall be maintained between the bedrock and the bottom of the disposal area. 6-1-82

[c] For Soil Condition E in Table 6-1 a minimum twenty-four [24] inch separation distance shall be maintained between the most limiting factor [seasonal high ground water table or restrictive layer] and the bottom of the replacement disposal area, if approved by the Department.

#### D. Construction Details.

[1] The vegetation in the proposed disposal area and fill extensions shall be removed and the ground surface scarified to minimize glazing of the original soil.

[2] The bottom of the disposal area and distribution line shall be level with a maximum grade tolerance of 1 inch per 100 ft.

[3] Fill shall be free of foreign material, placed in 8 inch lifts and compacted as placed. Fill shall be sandy loam or coarser and specified on Application. 6-1-82

[4] The finish grade of the backfill over the disposal area shall be crowned from the center of the disposal area at a 3% slope and extend 3 ft. beyond the edge of the disposal area. At that point the fill shall be sloped at a uniform grade of no greater than 25% [4:1] to the original ground.

[5] The land adjacent to the disposal area shall be graded to prevent both the accumulation of surface water on the disposal area, and the flow of surface water across the disposal area.

[6] The finished disposal area and fill extensions shall be seeded to prevent erosion.

[a] Grass, clover, trefoil, vetch, perennial wildflowers, or other herbaceous perennials may be utilized for disposal area surfaces. Woody shrubs are unacceptable.

[b] Woody shrubs in conjunction with a hardy perennial ground cover may be used on fill extensions only.

#### E. Systems on Fill Land.

If permitted, a disposal area on fill shall be no less than the square footage requirements in Tables 12-1, 12-2, and 12-3 for the texture of the original Soil Profile requirements per Table 6-1.

#### F. Systems on Coastal Sand Dune.

Systems located on coastal dune sand shall be designed and constructed in a manner to minimize impact on ground water, surface water and the coastal mud flats. Acceptable system designs are listed below:

[1] Sand or peat filter followed by a conventionally sized and constructed disposal area.

[2] Pressure distribution of wastewater in a conventionally sized and constructed disposal area. Reference Appendix H.

[3] A medium-large size disposal area with a minimum of twelve [12"] inches of sandy loam to loamy sand soil be placed at the bottom plus sides of the disposal area. Reference Appendix H.

Note: A Coastal Sand Dune Permit from the Department of Environmental Protection [DEP] is required to bulldoze, move, add or replace sand, or build any permanent structure in, on or over any coastal sand dune [38 MRSA § 471].

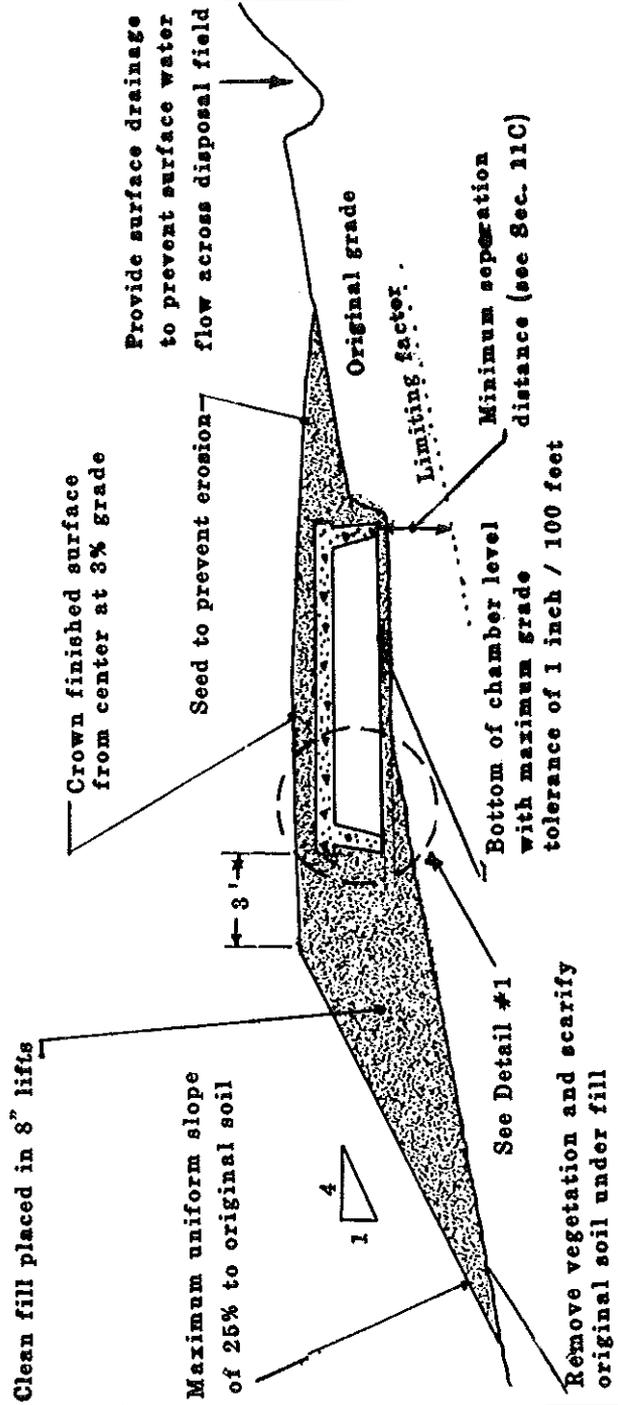
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#### G. Systems on Flood Plain Soils.

[1] A new system shall not be installed in a 10 year flood plain. For other flood plain restrictions see Section 6.C.3.b.

[2] Since Soil Profile 11 [Table 6-1, Alluvial Soils] are variable in texture and other soil characteristics, the disposal area rating for the Soil Profile in Table 6-1, which best describes the existing soil conditions shall be used.

**Cross-section A-A**



**FIGURE 12-3 CHAMBER DISPOSAL AREA**

TABLE 12-3  
 Multiplying Factor for  
 Determining Chamber Bottom Area

Disposal Area Rating From Table 6-1	Minimum Chamber Area <sup>b</sup> [square feet]
Small <sup>a</sup>	0.7 x Design Flow GPD
Medium	1.3 x Design Flow GPD
Medium Large	1.7 x Design Flow GPD
Large	2.0 x Design Flow GPD
Extra Large	2.5 x Design Flow GPD

<sup>a</sup> Conservative design flows in Table 7-1 shall be used for small size rated chamber disposal areas serving single family dwellings.

<sup>b</sup> Since the square foot bottom area of chambers vary from one manufacturer to another, the required number of chambers is calculated by dividing the minimum chamber bottom area by the area of each specific chamber and rounding off to the nearest whole chamber [See Appendix D].

[2] Only those chambers listed in Appendix D or having the Department's written approval shall be installed.

[3] Only H-20 rated chambers shall be installed under driveways or parking areas.

[4] Chambers shall be vented per manufacturer's specifications.

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15. REPLACEMENT SYSTEM VARIANCE

A. LPI Approval.

[1] A replacement system which cannot be installed in compliance with the Rules requires LPI approval.

[2] The criteria used by the LPI in reviewing and approving Replacement System Variances shall be based on Sections 15.C and 15.D.

B. Department Approval.

[1] The LPI shall forward to the Department for review any Replacement System Variance Request that does not meet all of the conditions of Section 15.C and 15.D.

[2] The criteria used by the Department in reviewing Replacement System Variances shall be based on the most feasible alternative, sound engineering practice and best available technology for subsurface wastewater disposal.

C. Criteria Used by the LPI for Approval.

The LPI may approve a Replacement System Variance if all of the following criteria are met:

[1] An Application and a Replacement System Variance Request have been submitted to the LPI for review and approval.

[2] The replacement system will correct a malfunctioning system.

[3] The replacement system cannot be designed and installed in total compliance with the Rules

[4] The design flow is less than 500 GPD.

[5] There will be no change in use of the structure.

[6] The replacement system does not conflict with Seasonal Conversion Permit [30 MRSA § 3223] or with Mandatory Shoreland Zoning [12 MRSA § 4811].

[7] The replacement system is determined by the Site Evaluator and LPI to be the most practical method to treat and dispose of the wastewater.

[8] The reduction in setback distances for the proposed replacement system do not exceed those permitted in Section 15.D.

[9] There is a minimum of 10 inches of original mineral soil over bedrock and/or 6 inches of original mineral soil over a restrictive layer or seasonal high ground water table.

[10] The property owner and Site Evaluator have signed the Replacement Variance Form indicating an awareness of the variance and the fact that the proposed replacement system is not in total compliance with the Rules.

#### D. Allowable Setback Reductions by LPI.

For properties that can not meet the setback distance in Table 6-2, the LPI may allow, with Replacement System Variance, the setback distance reductions set forth in this section. The maximum allowable variance to be approved by the LPI is indicated in Table 15-1. An attempt should be made to maintain maximum separation distance to reduce the impact of any variance.

6-1-82

#### E. Permit Issuance.

The LPI shall not issue a permit for a Replacement System Variance requiring Department review and approval without first receiving:

- [1] a letter of approval from the Department.
- [2] a copy of approved plans and Application furnished by the applicant.
- [3] the appropriate permit fee.

#### F. Inspections.

The LPI is responsible for the final inspection and approval of the system.

TABLE 15-1  
 MINIMUM SETBACK DISTANCES  
 FOR SYSTEMS WITH  
 DESIGN FLOWS OF LESS THAN 2000 GPD  
 REPLACEMENT SYSTEM VARIANCE

<u>DISTANCE IN FEET BETWEEN:</u>	<u>TREATMENT TANK</u>	<u>DISPOSAL AREA</u>
<b>POTABLE WATER SUPPLIES</b>		
+ 2000 GPD Wells	100	300
Owner's Well	50	60
Neighbor's Well	80 <sup>a</sup>	80 <sup>a</sup>
Water Supply Line	10	10
<b>WATERBODIES</b>		
Perennial [High Watermark]	60	60
Intermittent	25	25
Man-made drainage ditch	15	15
<b>DOWNHILL SLOPE</b>		
Slopes Greater than 3:1	5	10 <sup>b</sup>
<b>BUILDINGS</b>		
With Basements	8	15
Without Basements	8	10
<b>PROPERTY LINE</b>	10	5 <sup>b</sup>

<sup>a</sup> Written permission of the neighbor with a copy available for each copy of the Permit is necessary.

<sup>b</sup> Sufficient distance shall be maintained to assure that all fill material remains on property.



Table 16-1 Continued

TYPE OF STRUCTURE AND VOLUME OF  
WASTEWATER TO BE TREATED.

Commer. up to 150 GPD	High	10 pts.
Single Family Dwelling	Moderate	5 pts.
Commer. 150+ to 300 GPD	Moderate	5 pts.
Commer. 300+ to 1000 GPD	Low	0 pts.
Commer. 1000+ GPD	Not Recom.	

SYSTEM DESIGN CRITERIA USED\*\*

Conserv. design flow	High	10 pts.
Moderate design flow	Moderate	5 pts.
Minimum design flow	Low	0 pts.

WATER SUPPLY

Public Water	High	10 Pts.
Drilled Well [Upslope]	High	10 Pts.
Drilled Well [Downslope]	Moderate	5 Pts.
Shallow Well [Upslope]	Moderate	5 Pts.
Shallow Well [Downslope]	Low	0 Pts.

ZONING AND LAND USE

Zoned for proposed use	High	10 Pts.
Property not Zoned	Moderate	5 Pts.
Nonconform. Use Proposed	Low	0 Pts.
Subdivisions	Not Recom.	
Resource Protection Zone	Not Permitted	

\* For profile 11 soils, use the relative point values for the soil profile which best describes the existing soil conditions.

\*\* The Department may allow up to 5 additional points for advanced treatment techniques.

[2] The review fee does not include a site visit by the Department staff.

[3] A check or money order shall be made out to the 'Treasurer of State'.

#### C. Criteria Used by the Department for Approval.

An Application, a New System Variance Form and Review Fee shall be submitted to the Department demonstrating:

[1] LPI approval;

[2] The Municipal Officers or Land Use Regulation Commission indicate that the Application is in compliance with their regulations or ordinances relating to disposal systems.

6-1-82

[3] there is no reasonable alternative for wastewater disposal, such as access to public sewer or the potential for an easement;

[4] no conflict with Seasonal Conversion [Section 5.B.2.a] and/or Shoreland Zoning;

[5] the site offers potential for a system using the relative point values obtained from Table 16-1.

[6] the property owner is aware of the variance, it's limitations and costs.

#### D. Permit Issuance.

The LPI shall not issue a permit for the installation of a system requiring a New System Variance without first receiving:

[1] a letter of approval from the Department.

[2] a copy of approved plans and Application furnished by the applicant.

[3] the appropriate permit fee.

#### E. Inspection.

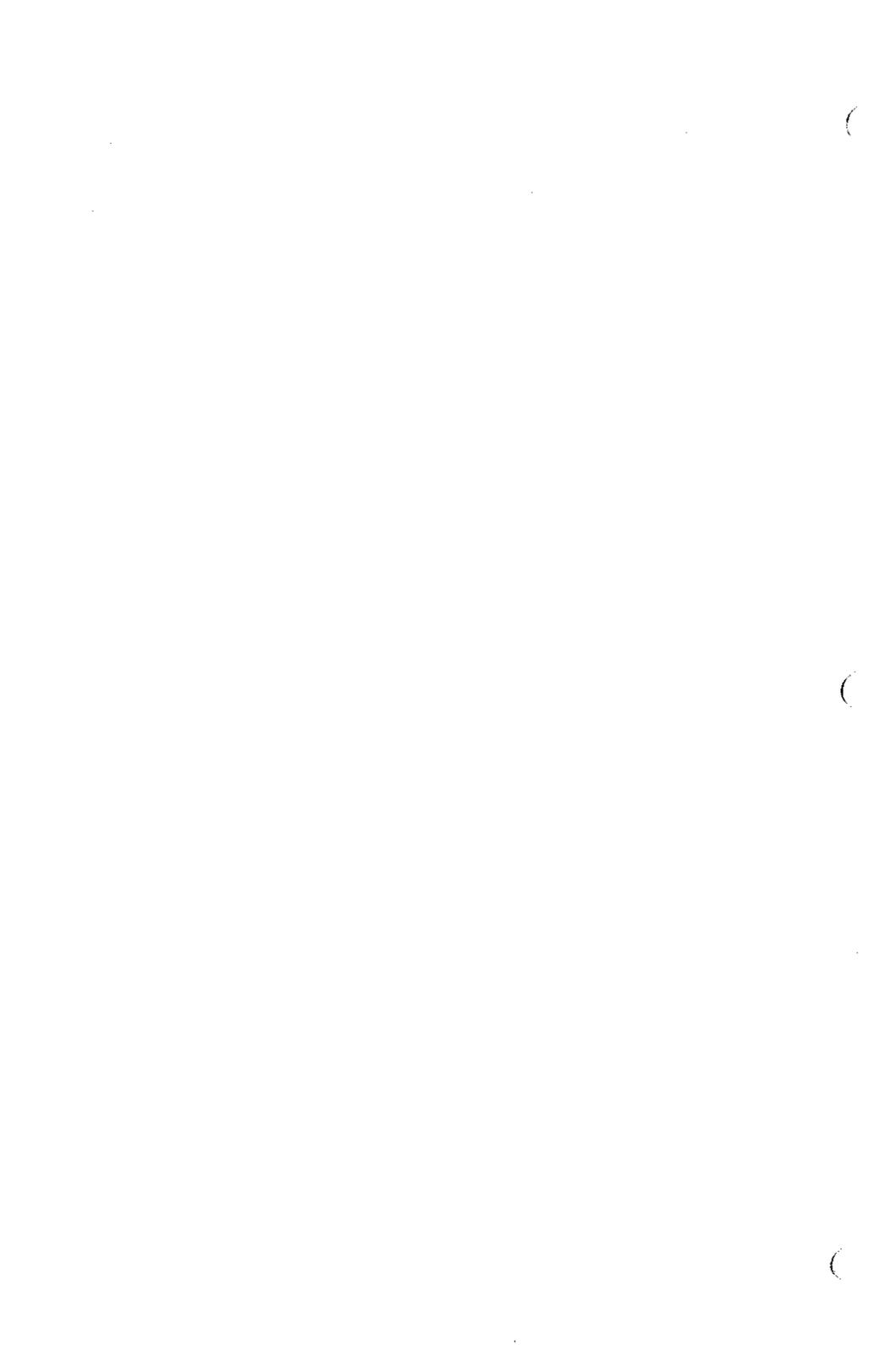
[1] The property owner shall retain the designing Site Evaluator to stake out the location of the system, fill limits and establish field elevations at the time of construction.

[2] The LPI shall be responsible for the final inspection and approval of the system.

[3] The Department or its authorized representative shall have authority to enter onto a property at any reasonable time for the purpose of performing an inspection to determine compliance with the requirements for a "New System Variance" request, or to verify the accuracy of the information provided by the request.

[4] By signing the "New System Variance" form, the owner acknowledges permission for the Department to enter onto his premises to perform such duties necessary to evaluate the variance request.

18-1-5



17. HOLDING TANK

A. Department Approval.

[1] A holding tank application shall be considered as a variance request to the Rules and requires Departmental approval.

[2] The LPI shall not issue a permit until written notification of Departmental approval is received.

B. When Permitted.

[1] For replacement systems or for new construction of commercial or industrial structures when no other reasonable disposal alternative is available.

C. When Not Permitted.

[1] For new construction of a residential dwelling, whether seasonal or year-round.

[2] To satisfy the requirements for a Seasonal Conversion Permit.

D. Application.

A completed application shall consist of the following information:

[1] A completed HHE-200 Form;

[2] A completed Holding Tank Pumper Agreement/Property Owner's Statement Form;

[3] Written endorsement by the Municipal Officers;

[4] The appropriate Variance Form completed with appropriate information and signatures.

E. Criteria for Approval.

[1] A completed application.

[2] Documentation that there is no other reasonable disposal alternative such as, but not limited to:

[a] Connection to a public sewer;

[b] Approval for licensed overboard discharge;

[c] An easement to a suitable disposal area on neighboring property which meets the minimum criteria of the Rules or the criteria for a New System Variance.

#### F. Holding Tank Specifications

[1] CONSTRUCTION - Holding tanks shall be constructed of the same materials and to the same structural specifications as specified in Section 9.B.1. They shall be constructed to assure water tightness and shall have a minimum of an 18" diameter cleanout cover and a 13"x17" inspection cover.

[2] INSTALLATION - The holding tank shall be water tight and vented through the vent stack of the building served unless deemed impractical by the LPI; then the tank shall be separately vented. The invert of the inlet to a holding tank shall be above the maximum high groundwater table.

[3] ALARM PROVISIONS - An alarm device shall be provided on a holding tank. This device shall be located and adjusted to assure the tank is pumped before full.

[4] NUMBER AND SIZE - A holding tank shall have a minimum capacity of 1500 gallons. If more than one holding tank is installed, they shall be installed in series.

201-9

APPENDIX B

MAINE PLUMBING  
AND  
RELATED LAWS

INFORMATIONAL  
NOT INTENDED FOR  
LEGAL REFERENCE

Containing excerpts from Titles 12, 22, 30, & 38 of  
Maine Revised Statutes Annotated

DEPARTMENT OF HUMAN SERVICES

PLUMBING LAW TITLE 22

§ 9 Fees for Services

1. Reasonable fees authorized. The Department of Human Services is authorized to charge reasonable fees for any services provided under this Title if, in the opinion of the commissioner, the recipient of such services has sufficient resources to pay for these services. Any fees thus received shall constitute a permanent fund for use by the Department as special revenue income and shall be used to defray the expenses of the services charged for and shall not become part of the General Fund.

§ 42 Rules and Regulations.

3. Plumbing and subsurface sewage disposal. The Department shall adopt rules and regulations relating to plumbing and subsurface sewage disposal systems and the installation and inspection thereof consistent with Title 30, sections 3221 to 3225 and Title 32, sections 3301 to 3507; and shall hold hearings on the first Tuesday of February of each year for the purpose of considering changes in the rules and regulations pertaining to plumbing and subsurface sewage disposal systems and the installation and inspection thereof. These rules may regulate the location of water supply wells to provide minimum separation distances from subsurface sewage disposal systems. The department may require a deed covenant or deed restriction when determined necessary.

Any person who violates the rules and regulations adopted under this subsection, or who violates a municipal ordinance adopted pursuant to Title 30, section 3221 or uses a subsurface sewage disposal system not in compliance with rules applicable at the time of installation or modification commits a civil violation for which a forfeiture of not less

than \$100 nor more than \$1,000 may be adjudged. The Department or a municipality may seek to enjoin violations of the rules and regulations or municipal ordinances. In the prosecution of a violation by a municipality, the court may award reasonable attorney's fees to a municipality is the prevailing party.

The rules and regulations adopted by the Department shall provide with respect to the repair and replacement of any part or parts of existing subsurface sewage disposal systems serving family dwellings inhabited by no more than 2 individual families that the local plumbing inspector may waive the site evaluation requirements, provided that the waiver will not result in violations of other regulations or ordinances adopted pursuant to the Plumbing Code. He may not waive the site evaluation requirement for disposal systems within 100 feet of any pond or river subject to shoreland zoning laws.

3-A. Licensing of persons to evaluate subsurface sewage disposal systems. The Department shall adopt rules and regulations providing for qualification, licensing and relicensing of persons to evaluate soils for subsurface sewage disposal. The hearings provided for in subsection 3 shall include consideration of the adoption or change of such rules and regulations.

This Department shall investigate or cause to be investigated all cases or complaints of noncompliance with or violations of this section and the rules and regulations adopted pursuant to this section. The Department has the authority to grant or amend, modify or refuse to issue or renew a license in accordance with the Maine Administrative Procedure Act, Title 5, chapter 375, subchapter V. The Administrative court shall have the exclusive jurisdiction to suspend or revoke the license of any person who is found guilty of noncompliance with or violation of the rules and regulations adopted pursuant to this subsection or subsection 3.

The Department may charge applicants no more than \$60 for examination to become a licensed site evaluator. The Department shall charge a biennial site evaluator license fee of \$40. A licensed site evaluator who is employed by the department to administer this section and does not practice for the public is exempt from the license fee requirement. Appropriate rules shall be adopted by the Department defining the appropriate financial procedure. The fees shall be paid to the Treasurer of State to be maintained as a permanent fund and used by the Department for carrying out its plumbing rules and site evaluation program.

3-B. Inspection of plumbing. The Department shall adopt rules and regulations providing for the inspection of plumbing facilities. In municipalities, the municipal officers shall provide for the appointment of one or more plumbing inspectors. In plantations, the assessors shall appoint plumbing inspectors. In the unorganized areas of the State, the Department shall appoint plumbing inspectors.

The Department may reimburse plumbing inspectors in the unorganized areas for expenses incurred in the performance of their duties.

## MUNICIPALITIES'

### PLUMBING LAWS TITLE 30

#### § 3221. Plumbing Regulations.

1. Municipal ordinances. Municipalities may by ordinance, prescribe regulations for the materials, construction, alteration and inspection of all pipes, tanks, faucets, valves and other fixtures by and through which water, waste or sewage is used or carried, and for the materials and sizes of pipe which carry water to all plumbing fixtures; provided that all permit fees established shall be the same as those fees established by the Department of Human Services.

A. Any regulation, which exceeds the minimum requirements of the rules and regulations of the Department of Human Services relating to plumbing as promulgated pursuant to Title 22, enacted by a municipality shall not become effective until approved by the Department of Human Services. The municipality shall submit the proposed regulation to the Department of Human Services within 30 days following its adoption. The Department of Human Services shall approve or disapprove the proposed regulation within 30 days of the receipt thereof. If the Department of Human Services fails to approve or disapprove the proposed municipal regulation within 30 days thereof, the proposed regulation shall be deemed to be approved. If the Department disapproves of any proposed municipal regulation, the municipality may request a hearing in conformity with the Maine Administrative Procedure Act.

B. Any municipality may provide, by an ordinance enacted after notice and hearing by its municipal officers, that the plumbing inspector may waive the site evaluation requirement as provided in Title 22, section 42, subsection 3.

2. State Regulations. No ordinance enacted by a municipality may provide less than the minimum requirements of the rules and regulations of the Department of Human Services relating to plumbing as promulgated pursuant to Title 22; provided that all permit fees shall be determined by regulations of the Department of Human Services. The rules and regulations of the Department of Human Services in relation to all plumbing shall have full force and effect; provided however, to the extent that a municipality has enacted ordinances, the provisions of said ordinances shall prevail.

3. Plumbing Defined. For the purposes of this subchapter, "plumbing" means the installation, removal, alteration or repair of pipes, fixtures and other apparatus for bringing in the water supply and removing and disposing of liquid and water-carried wastes, including the necessary piping and water connections to all types of domestic heating apparatus using water and subsurface sewage disposal systems. Except for the initial connection to a potable water supply and the final connection that discharges indirectly into a public or private disposal system, the following are excluded from this definition: All piping, equipment or material used exclusively for incorporation of liquids or gases into any product or process for use in the manufacturing or storage of any product, including product development, or for the installation, alteration, repair or removal of automatic sprinkler systems installed for fire protection only or their related appurtenances or stand-pipes connected to automatic sprinkler systems or overhead.

4. Subsurface sewage disposal system. "Subsurface sewage disposal system" shall mean any system for disposing of wastes or waste waters on or beneath the surface of the earth including, but not limited to, septic tanks, drainage fields, cesspools, holding tanks, surface ditches or any other fixture, mechanism or apparatus used for such purposes, but shall not include any discharge system licensed under Title 38, section 414, surface waste water disposal system or any municipal or quasi-municipal sewer or sewage treatment system.

No person may erect a structure that requires a subsurface sewage disposal system until documentation has been provided to the municipal officers that the disposal system can be constructed in compliance with regulations promulgated under Title 22, section 42, and this section.

For purposes of this section, "expansion" is the enlargement or change in use of a structure using an existing subsurface sewage disposal system that brings the total structure into a classification that requires larger subsurface sewage disposal system components under regulations promulgated by Title 22, section 42, and this section.

No person may expand a structure using a subsurface sewage disposal system until documentation has been provided to the municipal officers that, in the event of future malfunction of the system, the disposal system can be replaced and enlarged to comply with the regulations promulgated under Title 22, section 42, and this section. No requirements of these regulations may be waived for an expanded structure.

### § 3222. Plumbing Inspectors

1. Appointment, compensation, removal. In every municipality, the municipal officers shall appoint one or more inspectors of plumbing, who may or may not be residents of the municipality for which they are appointed, and who shall hold office for one year. An individual properly appointed as plumbing inspector and satisfactorily performing the duties may continue in that capacity after the term has expired until replaced.

Compensation of plumbing inspectors shall be determined by the municipal officers and shall be paid by their respective municipalities.

A plumbing inspector may be removed for cause by the municipal officers, after notice and hearing.

2. Certification. No person may hold the office of plumbing inspector unless he is currently certified as qualified by the Commissioner of Human Services. Certification of plumbing inspectors shall be in accordance with the standards set by the commissioner, and shall be for a period of 3 years, unless sooner revoked or suspended by the Administrative Court upon complaint by the commissioner on grounds of fraud, negligence, misconduct or incompetence in the performance of his duties. The Commissioner may grant temporary certification for a period not to exceed 6 months. The Department shall publish semiannually a list of certified plumbing inspectors.

3. Duties. Plumbing inspectors shall perform the following duties.

A. Inspect all plumbing for which permits are granted, within their respective municipalities, to assure compliance with the state and municipal regulations and investigate all construction or work covered by those regulations;

B. Condemn and reject all work done or being done or material used or being used which does not comply with the provisions of state and municipal regulations, and order changes necessary to obtain compliance;

C. Issue a certificate of approval for any work approved by him;

D. Keep an accurate account of all fees collected by him, and transfer such fees to the municipal treasurer;

E. Keep a complete record of all essential transactions of his office;

F. Perform other duties as provided by municipal ordinance.

## § 3223. Plumbing Permits

1. Permits required. No pipes, tanks, faucets, valves or other fixtures not related to a manufacturing or industrial operation or the waste from such operation located on or about such operation shall be placed in any building, nor shall any septic tank or other system of subsurface sewage disposal be installed to receive the drainage from such plumbing, except to repair leaks or to replace an existing fixture, except a water heater, to be used for the same purpose, unless a permit for installation of such work has been issued by the municipal plumbing inspector. If such work does not begin within 6 months after the date of issuing its permit, the permit shall be invalid; otherwise, the permit shall be valid until the completion of such work.

1-A. Penalties. Any person who installs or orders the installation of any subsurface sewage disposal system without the permit required under this section commits a civil violation for which a forfeiture of not less than \$100 nor more than \$1,000 may be adjudged.

2. Fees. The permit required by this section shall be issued upon receipt by the plumbing inspector of a completed application form as prescribed by the Commissioner of Human Services, and payment by the applicant of the fee determined by the regulations of the Department of Human Services. One-quarter of the amount of such fee shall be paid through the Department of Human Services to the Treasurer of State to be maintained as a permanent fund and used by the Department for the carrying out of its plumbing rules and regulations and the training and certification of plumbing inspectors.

The remainder shall be paid to the treasurer of the municipality and used exclusively for carrying out the plumbing laws in such municipality.

3. Conversion permit. Any person, prior to converting a seasonal dwelling to a year-round dwelling, which dwelling is located in an area zoned under Title 12, section 4811, et seq., mandatory shoreland zoning, shall obtain from the local plumbing inspector a conversion permit. For the purposes of this subsection, a seasonal dwelling is a dwelling which has not been utilized as a principal or year-round dwelling during the 5 calendar year period from 1977 to 1981 inclusive. This subsection shall not be construed to require a permit for any dwelling which will not be occupied on a year-round basis or is not the principal dwelling place of the occupant. For the purposes of this subsection, conversion of a seasonal dwelling to a year-round dwelling means a change of occupancy from seasonal to year-round or principal dwelling.

No permit for conversion of a seasonal dwelling to a year-round dwelling shall be issued unless one of the following conditions is met:

A. Records of the municipality, applicant, installer of sewage disposal systems or the State show that the dwelling's sewage disposal system meets the standards of the Maine State Plumbing Code, if such system is a subsurface system, or the requirements of Title 38 if such system is a surface discharge;

B. Based upon a site evaluation performed by a licensed evaluator, licensed under Title 22, section 42, subsection 3-A, the applicant can demonstrate that site conditions will permit the installation of a sewage disposal system meeting the requirements of the Maine State Plumbing Code or the requirements of Title 38 in the event of future malfunction of the system; or

C. The dwelling unit's sewage disposal system is connected to an approved sanitary sewer system.

4. Variances. The owner of a seasonal dwelling who applies for a conversion permit under subsection 3 may be granted a variance from the requirements of subsection 3 if, based upon the site evaluation, the plumbing inspector finds that in the event of a malfunction of the existing system a new sewage system can be installed which will be in substantial compliance with the Maine State Plumbing Code and that the new system will not be likely to endanger the quality of the adjacent water bodies or of adjacent private water supplies. In the event of a malfunction, the owner of the converted seasonal dwelling shall repair or replace the existing sewage system so as to bring the system into substantial compliance with the Maine State Plumbing Code and insure that the system will not endanger the quality of adjacent water bodies or of adjacent private water supplies. No variance for a new expanded or replacement subsurface disposal system shall be approved within the shoreland zoning area which is less restrictive than the requirements of this subsection or rules promulgated based on the subsection. A seasonal conversion permit shall not be approved if a holding tank is utilized as a means of wastewater disposal or storage.

§ 3224. Approving own work forbidden

No inspector of plumbing may inspect or approve any plumbing work or installation of a subsurface disposal system, done by himself, or by any person by whom he is employed, or who is employed by or with him. Any inspector of plumbing who inspects or approves his own work commits a civil violation for which a forfeiture of not less than \$100 nor more than \$500 may be adjudged.

§ 3225. Annual Reports

Inspectors of plumbing shall annually, before the first day of February, make a full report in detail to their respective municipalities and to the Department of Human Services of all their proceedings during the previous calendar year under this subchapter.

§ 4257. Sewer connections

On or after the placing in operation of a sewage disposal system the owner, tenant or occupant of each lot or parcel of land within the municipality which abuts upon a street or other public way containing a sewer which is connected with such sewage disposal system and upon which lot or parcel a building shall have been constructed for residential, commercial or industrial use, shall, as may be so required by the rules and regulations of the municipal officers or by resolution, connect such building with such sewer, and shall cease to use any other method for the disposal of sewage, sewage waste or other polluting matter. All such connections shall be made in accordance with rules and regulations which shall be adopted from time to time by the municipal officers, which rules and regulations may provide for a charge for making any such connection in such reasonable amount as the municipal officers may fix and establish.

§ 4359. Malfunctioning domestic sewage disposal units; abatement of nuisance

Malfunctioning domestic sewage disposal units, including septic tanks, cesspools, cisterns, dry wells, drainage beds, drains, sewer lines and pipes 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.

1. Abatement Procedure The municipal officers upon complaint of any person or on their own information shall serve upon the owner or occupant of any premises within that municipality upon which there is a malfunctioning domestic sewage disposal unit, as described in this section, an order to remedy such condition within 10 days of service of the order.

2. Content of Order and Service. Such order shall be addressed to the owner of the premises, setting forth the date, the fact of the malfunctioning domestic sewage disposal unit and shall contain a notice to remedy the nuisance within 10 days. It shall be signed by the municipal officers and personal service shall be made by one of them or may be served by a law enforcement officer. The municipal officer or law enforcement officer may likewise serve a tenant or occupant in possession.

3. Return of Service. A return of service indicating the method used and the person served shall be made and filed. When service is to be made upon a tenant or occupant, the order shall name such person in addition to the name of the true owner.

4. Abatement In the event that the nuisance is not abated within the 10-day period, the municipal officers, or their agents, may enter the premises and cause the malfunction to be adequately remedied. Any actual and direct expenses to include reasonable attorney's fees if a municipality is the prevailing party, incurred by a municipality in the abatement of such nuisances may be recovered from the owner by a civil complaint. In the alternative to collect such expenses, a special tax may be assessed by the assessors against the land on which the disposal unit is located for the amount of such expenses, and such amount shall be included in the next annual warrant to the tax collector of said town for collection, and shall be collected in the same manner as other state, county and municipal taxes are collected.

## § 4453. Collection of Assessments

Except for service charges established under section 4355 which shall be collected as therein provided, all assessments and charges made under this chapter shall be certified by the municipal officers and filed with the tax collector for collection.

A municipality may by ordinance provide for the collection of such assessments and charges, including expenses involved in the abatement by the municipality of malfunctioning domestic sewage disposal units, as provided for in section 4359, subsection 4, over a period of time not to exceed 10 years, and may implement such collection methods if the person assessed has agreed to that method in writing and notice of that fact has been recorded in the appropriate registry of deeds.

The municipal officers shall annually file with the collector a list of installment payments due the municipality which shall be collected with interest at a rate determined by the municipal officers. If the person assessed within 30 days after written notice of the total amount of such assessments and charges, or annual installment payment and interest fails, neglects or refuses to pay said municipality the expense thereby incurred, a special tax in the amount of the total unpaid assessment and charges may be assessed by the municipal assessors upon each and every lot or parcel of land so assessed and buildings upon the same, and such assessment shall be included in the next annual warrant to the tax collector for collection, and shall be collected in the same manner as state, county and municipal taxes are collected. Interest at the rate of 12 % per year on the unpaid portion of assessments and charges due the municipality shall accrue from the 30th day after written notice to the person assessed, and shall be added to and become part of the special tax when committed to the tax collector.

## TITLE 38

### § 1602 Chemical septic tank cleaners.

No person may sell, offer to sell or commercially promote the use of any chemical solvent containing halogenated hydrocarbon compounds as septic tank cleaners or degreasers.

## PLUMBING LAW TITLE 38

### § 1160. Connection of private sewers

Every building in a sanitary district formed under this chapter intended for human habitation or occupancy or with facilities for discharge or disposal of sewage or commercial or industrial waste which is accessible to a sewer or drain of such district, shall have a sanitary sewer or drainage system which shall be caused to be connected with such sewer or drain of the district by the owner or person against whom taxes on the premises are assessed, in the most direct manner possible, within 90 days after receiving request therefor from the district, or within such further time as the trustees of the district may grant, and, if feasible, with a separate connection for each such building. Existing buildings which are already served by a private sewer or drainage system shall not be required to connect with any such sewer or drain of the district so long as, in the judgment of the trustees, such private sewer or drainage system functions in a satisfactory and sanitary manner, and does not violate any law or ordinance applicable thereto or any applicable requirement of the State Plumbing Code. A building shall be deemed to be accessible to a sewer or drain of the district for the purposes of this section if such building, or any private sewer or drain directly or indirectly connected thereto or carrying sewage or commercial or industrial waste therefrom, shall at any point be or come within 100 feet of a sewer or drain of the district; provided that nothing in this section shall require the owner of any such building to acquire any real property or easement therein for the sole purpose of making such connection.

## TITLE 12

### §4811 SHORELAND AREAS

To aid in the fulfillment of the state's role as trustee of its waters and to promote public health, safety, and the general welfare, it is declared to be in the public interest that shoreland areas defined as land within 250 feet of the normal high water mark of any pond, river or salt water body be subjected to zoning and subdivision controls. The purposes of such controls shall be to further the maintenance of safe and healthful conditions; prevent and control water pollution; protect spawning grounds, fish, aquatic life, bird and other wildlife habitat; control building sites, placement of structures and land uses; and conserve shore cover, visual as well as actual points of access to inland and coastal waters and natural beauty.

### §4807-A MINIMUM LOT SIZE REQUIRED

In all areas of the State, notwithstanding any other provision of state or local law or regulation, no person shall:

1. Dispose of waste from any single family residential unit by means of subsurface waste disposal unless such lot of land on which such single family residential unit is located contains at least 20,000 square feet; and if the lot abuts a lake, pond, stream, river or tidal area, it shall further have a minimum frontage of 100 feet on such body of water;

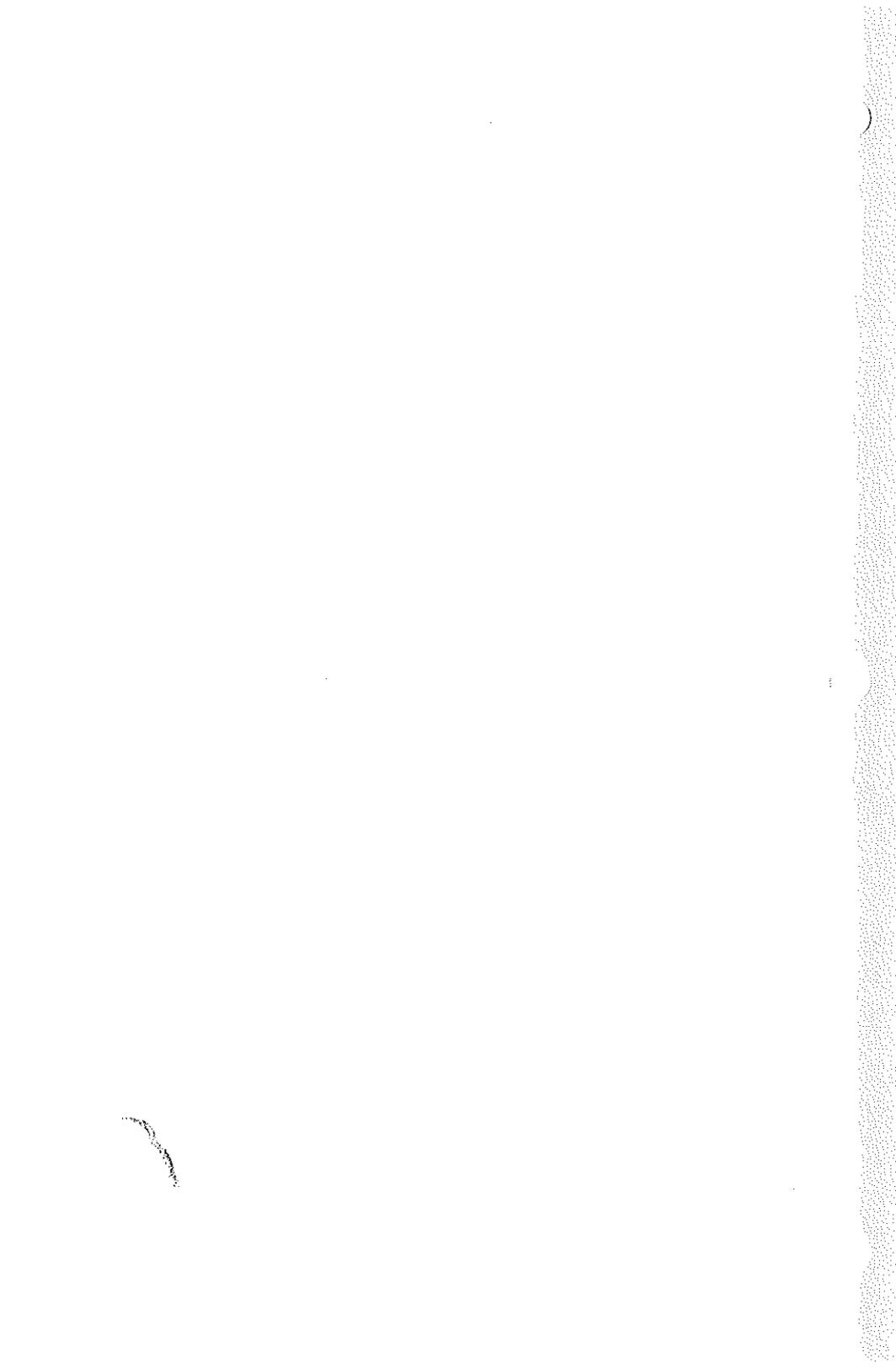
2. Dispose of wastes by means of subsurface waste disposal from any multiple unit housing or any other land use activity which may generate wastes in excess of the waste disposal requirements of normal single family residential units, unless such multiple unit housing or other land use activity is located on a lot of a size and minimum frontage which is greater than the requirements stated in

subsection 1 in the same proportion as the actual waste disposal requirements of the multiple unit housing or other land use activities is greater than that of a single family residential unit. For purposes of computing such proportions, the amount of sewage generated by and the waste disposal requirement of such activities or land uses shall be deemed to be:

A. Single family residential unit, 300 gallons per day;

B. Multiple unit housing, 120 gallons per bedroom;

C. Other land use activity, actual measurement or computation of waste generated or likely to be generated.



## APPENDIX D

### CHAMBERS

Approved chambers may be used to construct a subsurface wastewater disposal field. A potential purchaser is advised to obtain information pertaining to the relative cost, availability, installation procedures, method of wastewater distribution and specific design considerations.

Since the square foot bottom area of chambers vary from one manufacturer to another, the required number of chambers from a specific manufacturer must be calculated by dividing the square footage chamber area required by the Rules by the area of each chamber from a specific manufacturer and rounding off to nearest whole chamber.

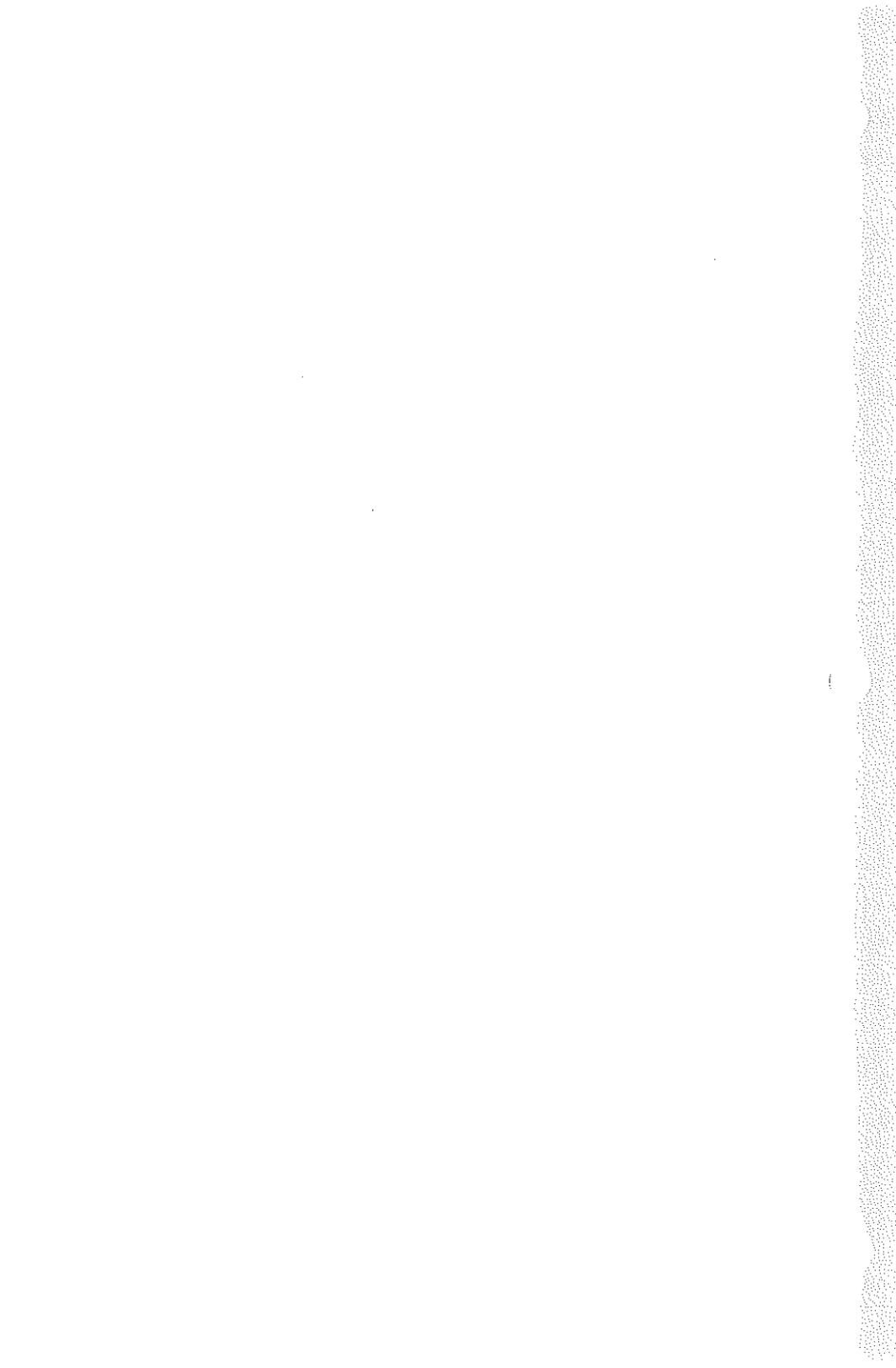
American Concrete Industries, Inc., RFD #1,  
Box 461, Bangor, Maine 04401 [32 sq.  
ft./chamber]

Genest Bros., Inc., Sanford, Maine 04073  
[40 sq. ft./chamber]

George R. Roberts Inc., Box 179, Alfred,  
Maine 04002 [32 sq. ft./chamber]

Pre-Cast Concrete Products of Maine, Inc.,  
P.O. Box 307, Topsham, Maine 04086 [32 sq.  
ft./chamber]

Superior Concrete Co., Inc., Minot Avenue,  
Auburn, Maine 04210 [32 sq. ft./chamber]



## APPENDIX E

### ALTERNATIVE TOILETS

Alternative toilets to the conventional water closet are acceptable if installed and maintained in accordance with these Rules, Internal Plumbing Rules, and the manufacturers recommendations.

A potential purchaser is advised that the use of an alternate toilet is acceptable for blackwaste disposal, however, an adequate disposal system for gray water is also required and shall be installed in accordance with the Rules.

The recognition of an alternative toilet shall not be construed to be a recommendation by the Department. A potential purchaser is advised to obtain information pertaining to initial and operating costs, operating efficiency, other technical data, and recommended maintenance procedures.

For a complete list of dealers/distributor's names and addresses, please contact the Department.

#### CHEMICAL TOILETS

Mansfield Sanitary Inc., [Sani-Pottie], 201 Wayne Street, Big Prairie, Ohio 44611

#### RECIRCULATING TOILETS

Thetford Corporation, [Cycle-Let], Waste Treatment Products Division, P.O. Box 1285, Ann Arbor, Michigan 48106

## RECIRCULATING AND CHEMICAL TOILETS

Monogram Industries Inc., [Jet-O-Matic & Magic Flush], Sanitation Group, 4030 Freeman Boulevard, P.O. Box 5002, Renondo Beach, California 90278

Thetford Corporation, [Porta-Potti], Consumer Products Division, P.O. Box 1285, Ann Arbor, Michigan 48106

Vapor Corporation, [New-Matic], 6420 West Howard Street, Chicago, Illinois 60648

## COMPOST TOILETS

The New Mullbank Inc., [Mullbank or Ecolet], RFD 1, Thornton Gore Road, Campton, New Hampshire 03223

Enviroscope Corporation, [Carousel], P.O. Box 2933, Newport Beach, California 92663

Clivus Multrum USA Inc., [Clivus Multrum], 14A Eliot Street, Cambridge, Massachusetts 02138

ECOS, Inc., [Humus], Damonmill Square, Concord, Massachusetts 01742

## INCINERATING TOILETS

Research Products/Blankenship, [Incinolet], 2639 Andjon Drive, Dallas, Texas 75220

Incinomode Sales Company, [Incinomode], P.O. Box 879, Sherman, Texas 75090

Storburn, [Storburn], P.O. Box 667 Falls Station, Niagara Falls, New York 14303

### FLUSH UP TOILETS

McPherson Inc., P.O. Box 15133, Tampa, Florida  
33684

Kohler Company, [Waterguard], Kohler, Wisconsin  
53044

### LOW VOLUME FLUSH TOILETS

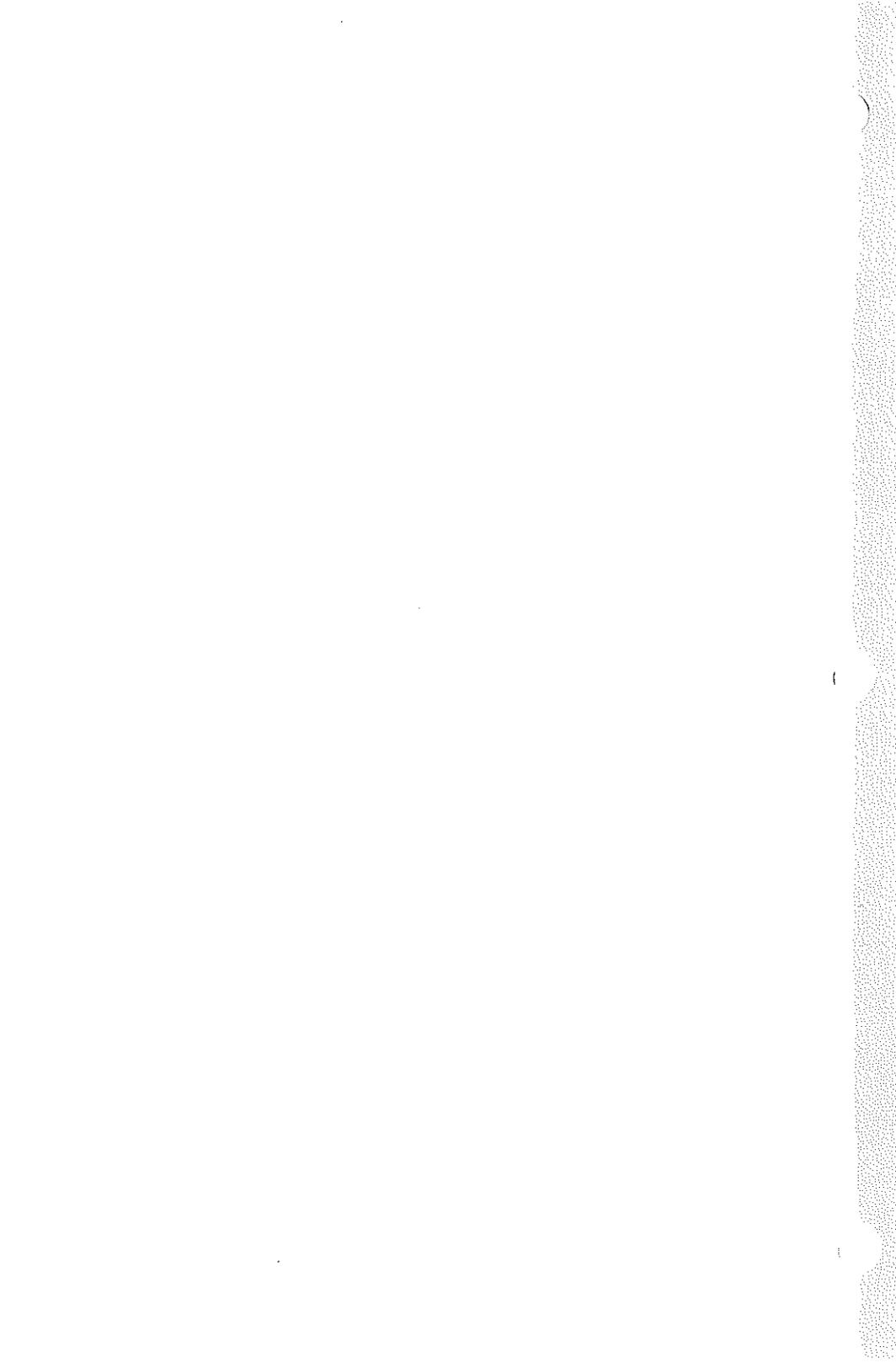
Delta Faucet Company, [Azurelite], Division of  
Masco Corporation of Indiana, P.O. Box 40980,  
Indianapolis, Indiana 46280

Microphor, [Microphor], 452 East Hill Road, P.O.  
Box 490, Willits, California 95490

### VACUUM TOILETS

Airvac, [Airvac], P.O. Box 508, Old 31 North,  
Division of Burton Mechanical Contractors Inc.,  
Rochester, Indiana 46975

Envirovac Inc., [Envirovac], 1260 Turret Drive,  
Rockford, Illinois 61111



## ADDITIONAL WASTEWATER PRETREATMENT SYSTEMS

These primary systems rely on pretreatment of the wastewater to produce an effluent whose quality exceeds that of conventional septic tanks. Complex operation procedures, mechanical and electrical requirements, and cost have discouraged their widespread acceptance. Sand filters are generally more acceptable because of less complexity.

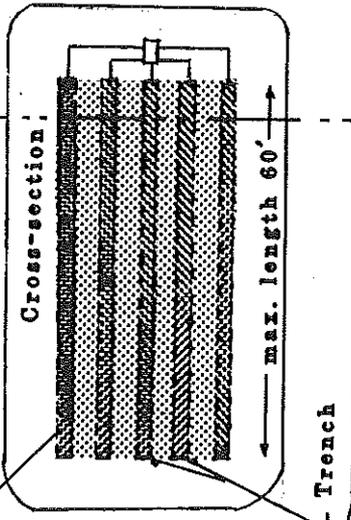
### PRESSURE DISTRIBUTION

To assure complete and uniform distribution of wastewater within the entire disposal area pressure distribution systems are recommended. This type of system requires a pressure pump. A siphon may be used in place of the pump if the dosing chamber is located at a higher elevation than the disposal field. The dosing volume should be 10 times the total volume of all the piping. In order to achieve uniform and equal distribution, the volume of wastewater discharging thru each hole in the piping network must be nearly equal. This is accomplished by balancing the friction losses in the network by proper sizing of the pipe diameters and discharge hole diameters and spacing. The piping networks usually consist of 1" to 3" diameter laterals connected to a manifold of a larger diameter. The laterals are drilled at their inverts with 1/4" to 1/2" diameter holes. The spacing between the discharge holes vary from 2' to 10'.

A more detailed guide to the design of pressure distribution networks, EPA DESIGN MANUAL, Onsite Wastewater Treatment and Disposal Systems (1980) is available from the Office of Research and Development Cincinnati OH 45268 (ref. pages 278 - 296).

# PLAN VIEW

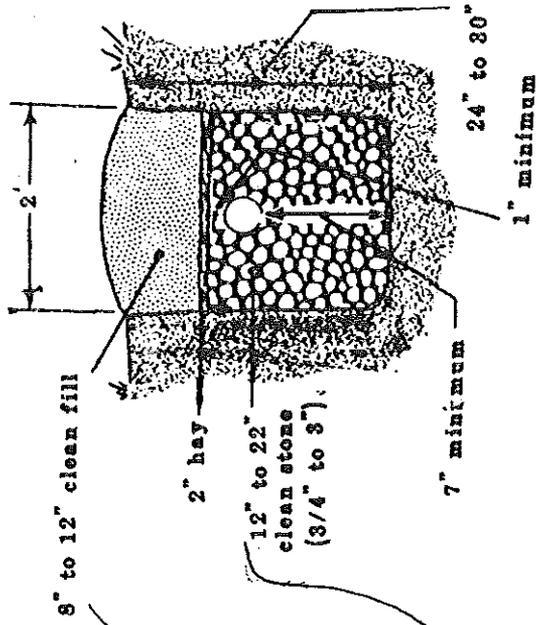
Slope gradient  
Absorption bed sized in accordance with Table H.1



Trench

Edge of fill

## Detail #1



# CROSS-SECTION

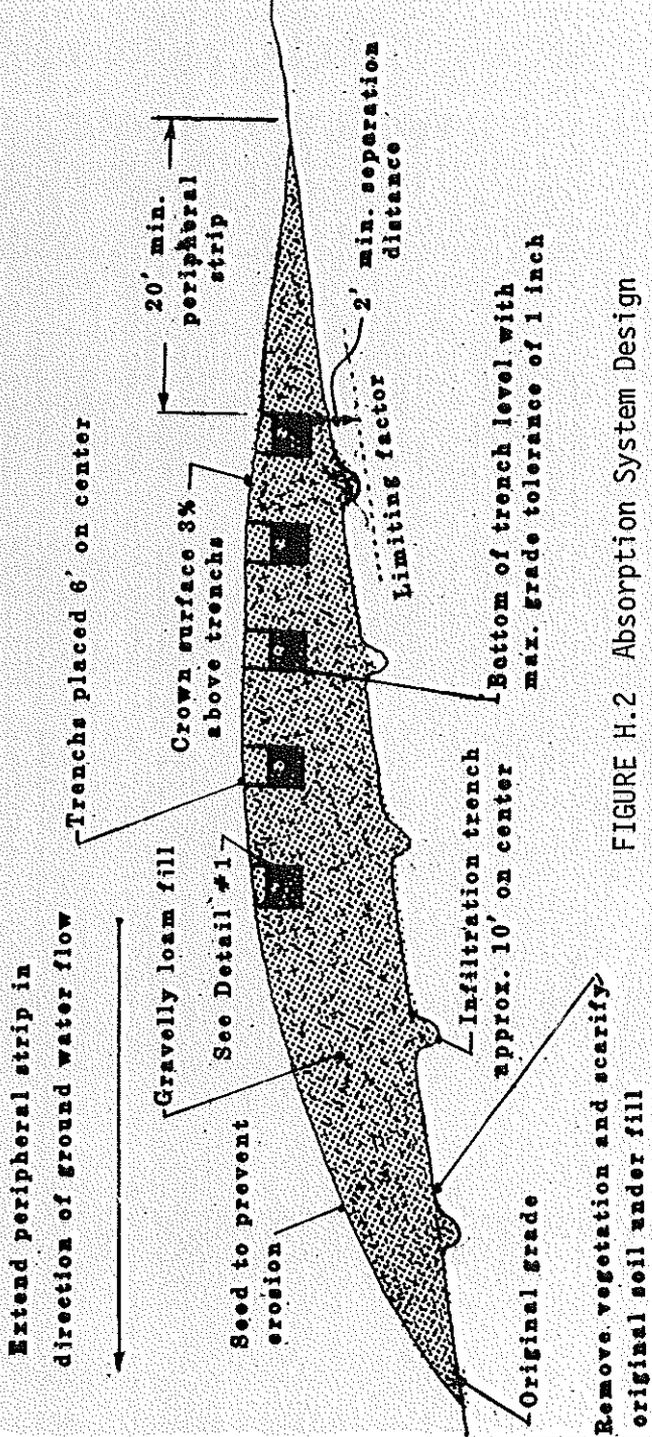


FIGURE H.2 Absorption System Design

# DISPOSAL AREA ON COASTAL SAND DUNE AREAS

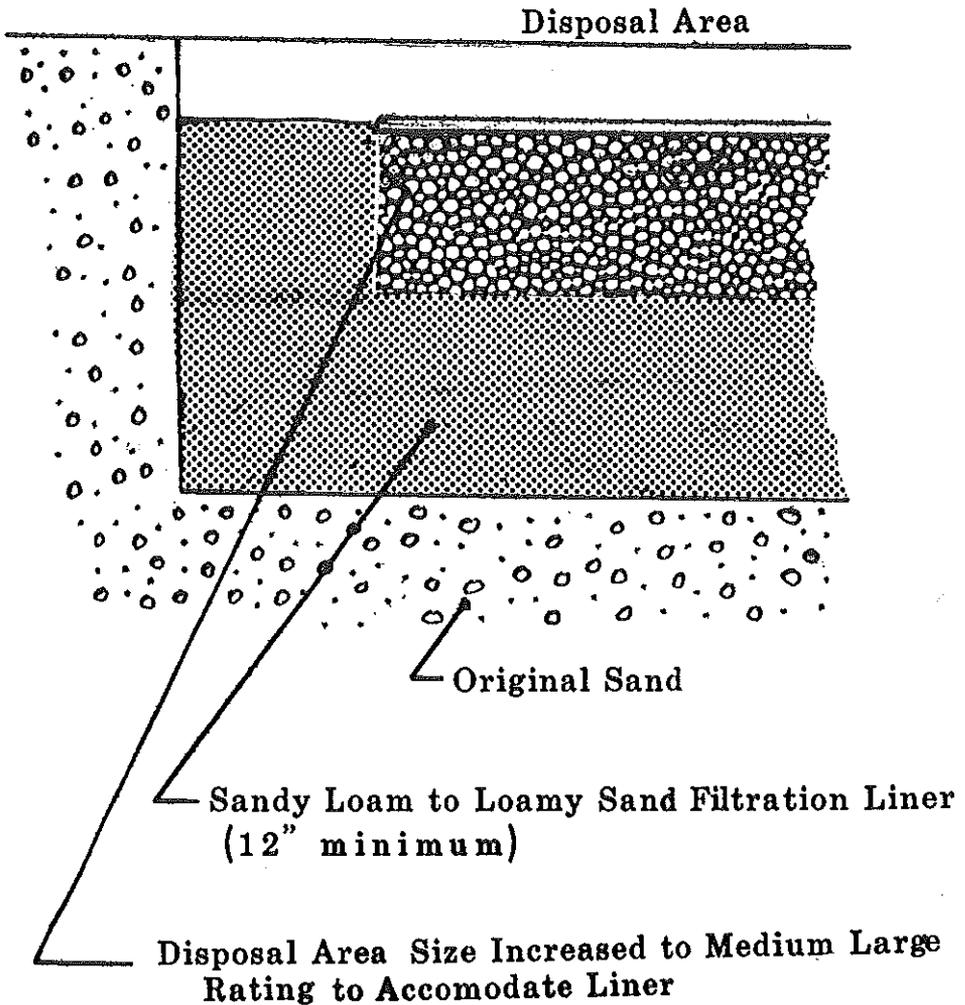


Figure H-3