

Basic Subsurface Wastewater Disposal System Installation Spring 2012

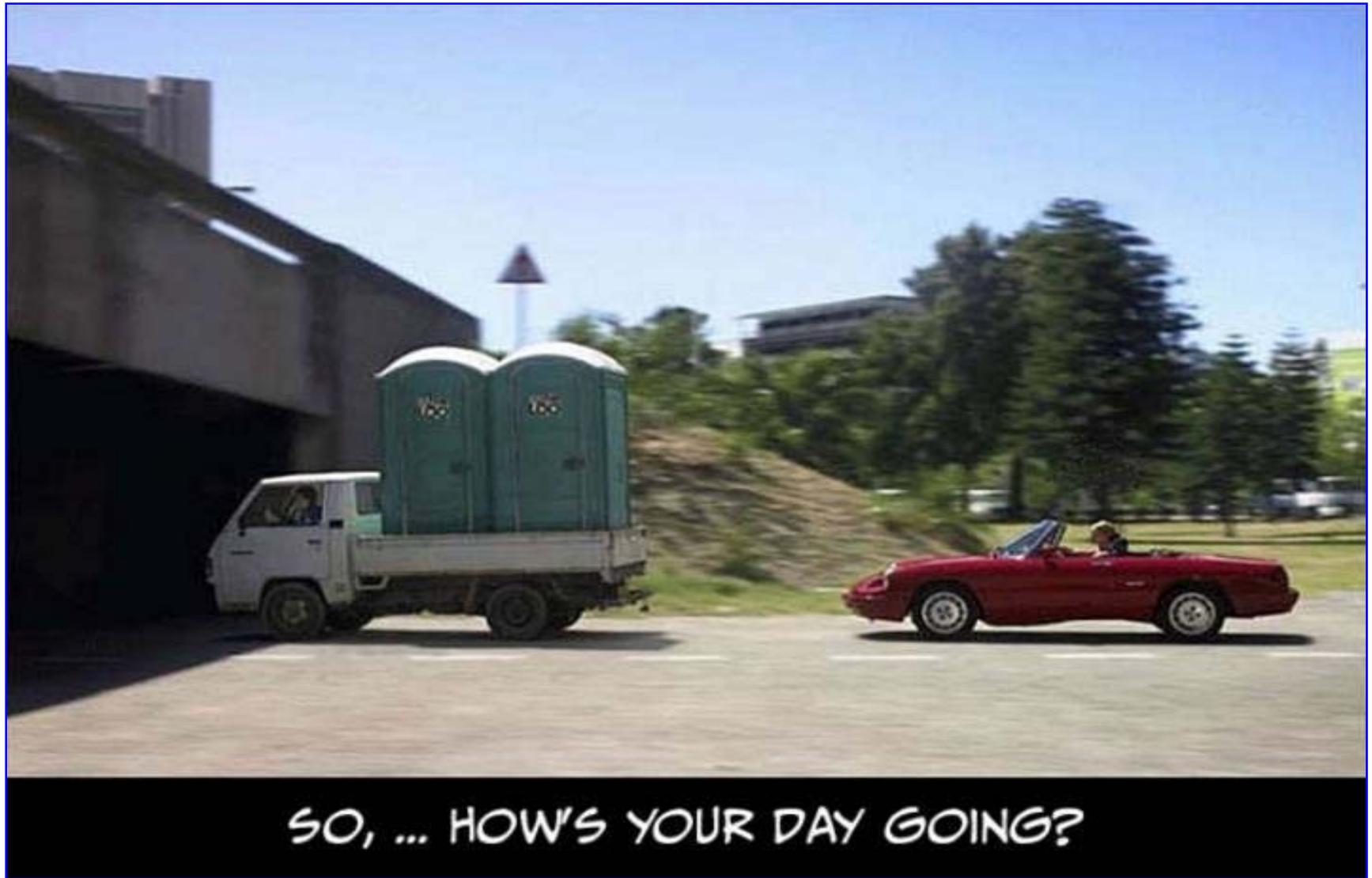


*Maine Center for Disease
Control and Prevention*

*An Office of the
Department of Health and Human Services*

Paul R. LePage, Governor

Mary C. Mayhew, Commissioner



SO, ... HOW'S YOUR DAY GOING?

Introduction - Background

- Maine is a rural state and relies on decentralized systems for drinking water and disposal of human waste
- DHHS and its predecessors have regulated on-site sewage disposal since 1926.
- Improper design or installation of a septic system can cost the homeowner tens of thousands of dollars and create disease and unsanitary conditions.

Voluntary Contractor Certification

All septic system installers are eligible for the program. Initial certification requires attendance at a basic installers training course and the submission to the Division of copies of the first pages of the designs for two systems installed.

To maintain certification a minimum of **6 hours continuing education course each five years** thereafter will be required.

A listing of Certified installers shall be maintained by the Division of Environmental Health. Copies of the list are distributed to all Local Plumbing Inspectors and Site Evaluators and to anyone from the general public requesting it. The list is also posted on the Division of Environmental Health's web site.

SITE EVALUATION PROCESS

It is important to understand the essential aspects of the site evaluation process in order to interpret installation paperwork, e.g., designs.

SITE EVALUATION PROCESS

Section 11A.2 Dig Safe Law

The “Dig Safe Law” 23 MRSA §3360-A(D) places certain notification requirements on any person doing excavations, including any operation in which earth, rock or other material on or below the ground is moved or otherwise displaced by means of **power tools, power equipment** or explosives, except tilling of the soil and gardening or agricultural purposes.



SITE EVALUATION PROCESS

Site Evaluation Process

The physical characteristics of a parcel of land must be fully evaluated in order to design a safe and effective disposal system. Each site has its own unique characteristics and limitations which must be observed and considered in the design.

Observations of the surrounding land and development are just as important as viewing the particular parcel of land under consideration.

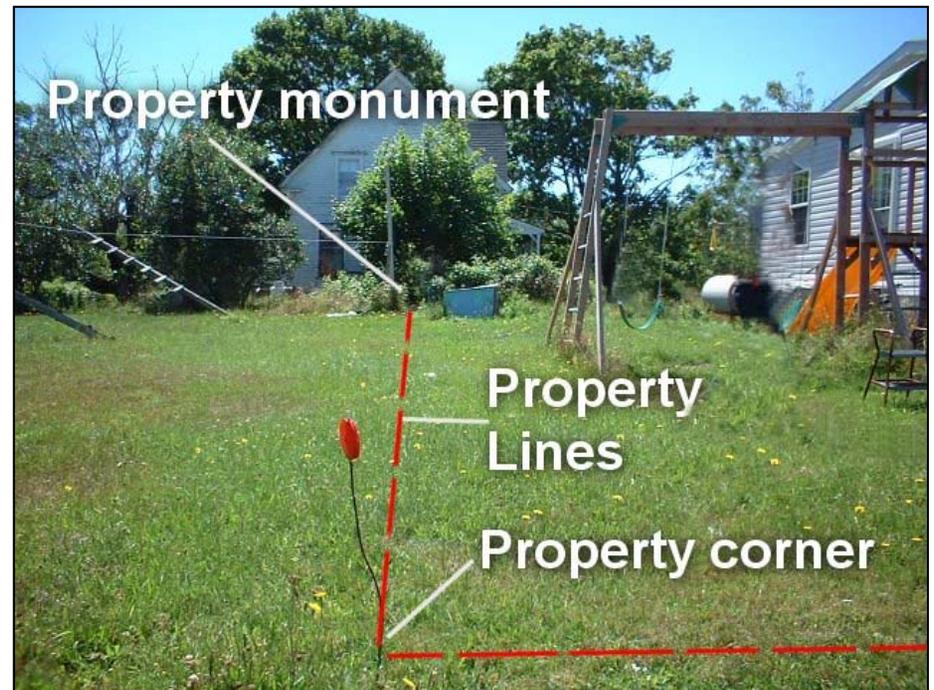


SITE EVALUATION PROCESS

Site Evaluation Process

Sometimes the applicant has a preference to where the system is to be placed if the soil conditions are accommodating. First considerations should be given to the desired locations if at all possible.

This site's potential locations for a replacement disposal area are limited by adjacent development and a small lot size.



SITE EVALUATION PROCESS

Site Evaluation Process

However, if limited soils are available or there are setback conflicts, the Site Evaluator may have to prepare a variance request, for as best a fit as possible when considering existing development.

This property abuts the site in the prior slide. Note the location of a non-potable dug well, and the drilled well casing under the oil tank.



SITE EVALUATION PROCESS

Site Evaluation Process

Existing ground slope beneath the disposal field shall not exceed 20 percent (20 feet in 100 feet). The disposal field is defined as the area under the stone bed or proprietary devices only.



SITE EVALUATION PROCESS

Setback Requirements (Less than 1000 gpd)

Waterbody setbacks

Major water body – 100 ft.

Minor water body - 50 ft.

Drainage ditch – 25 ft.

Toe of fill to wetlands - 25 ft.



SITE EVALUATION PROCESS

Setback Requirements (Less than 1000 gpd)

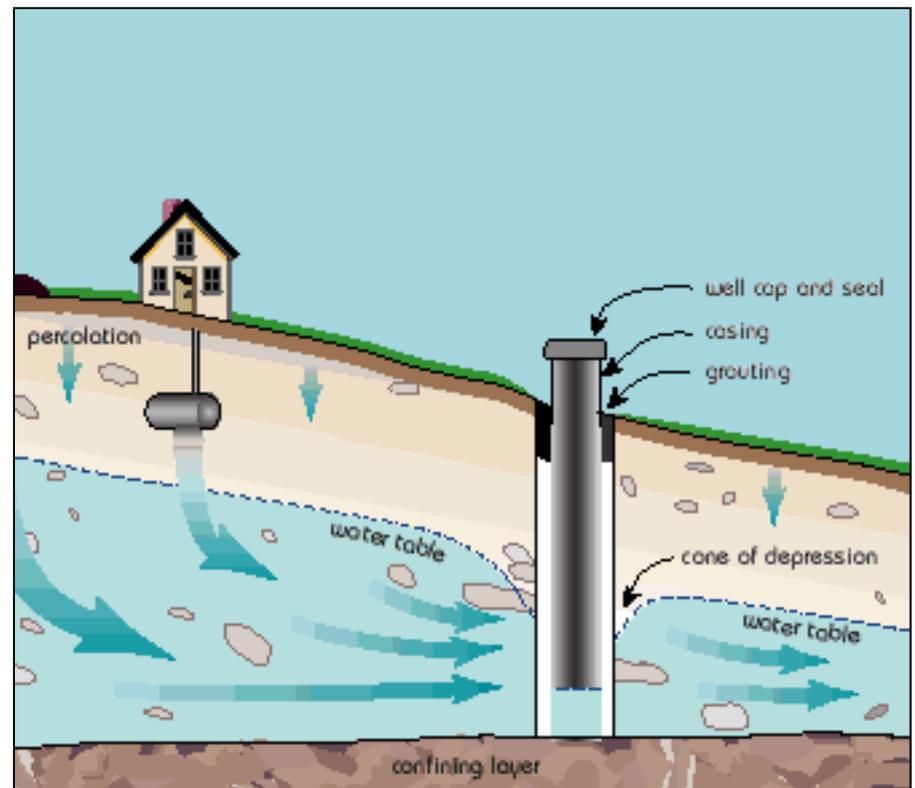
Well setbacks (without
variances)

Owner's well – 100 ft.

Abutter's well – 100 ft.

Public supply well – 300 ft.

Water line (not main) – 10
ft.



Subsurface Wastewater Disposal Rules

Setback Requirements

Structures and property lines:

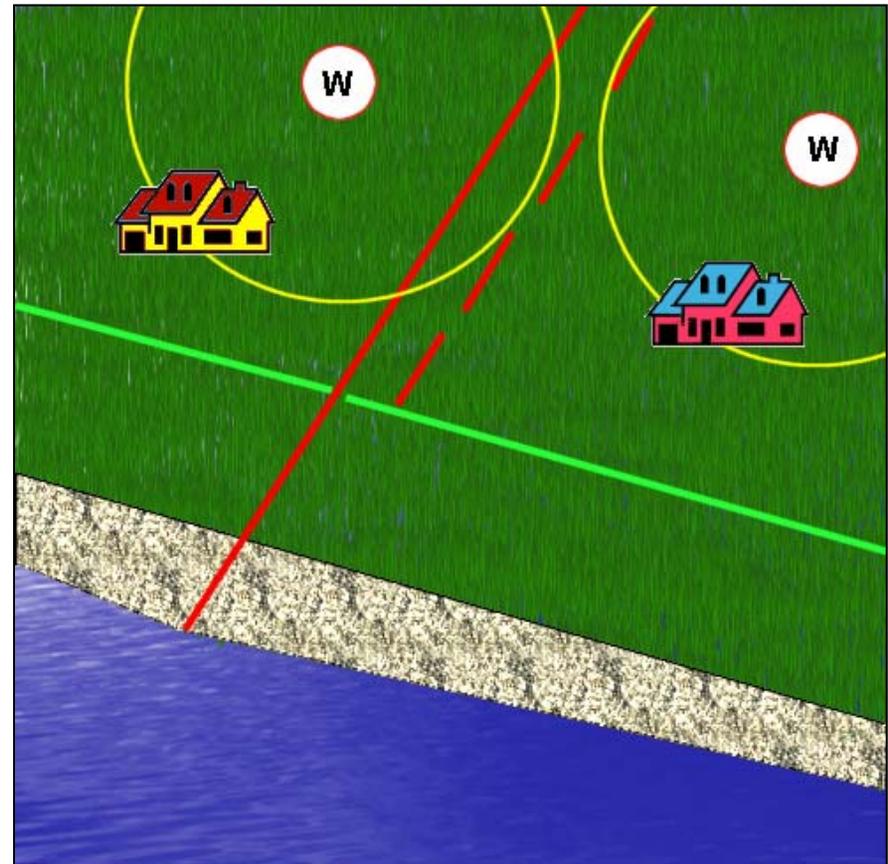
Property lines – 10 ft.

Slopes > 3:1 – 10 ft.

Slab, etc. foundation – 15 ft.

Full foundations – 20 ft.

Burial grounds – 25 ft. from toe
of fill



Subsurface Wastewater Disposal Rules

Setback Requirements

Structures and property lines:

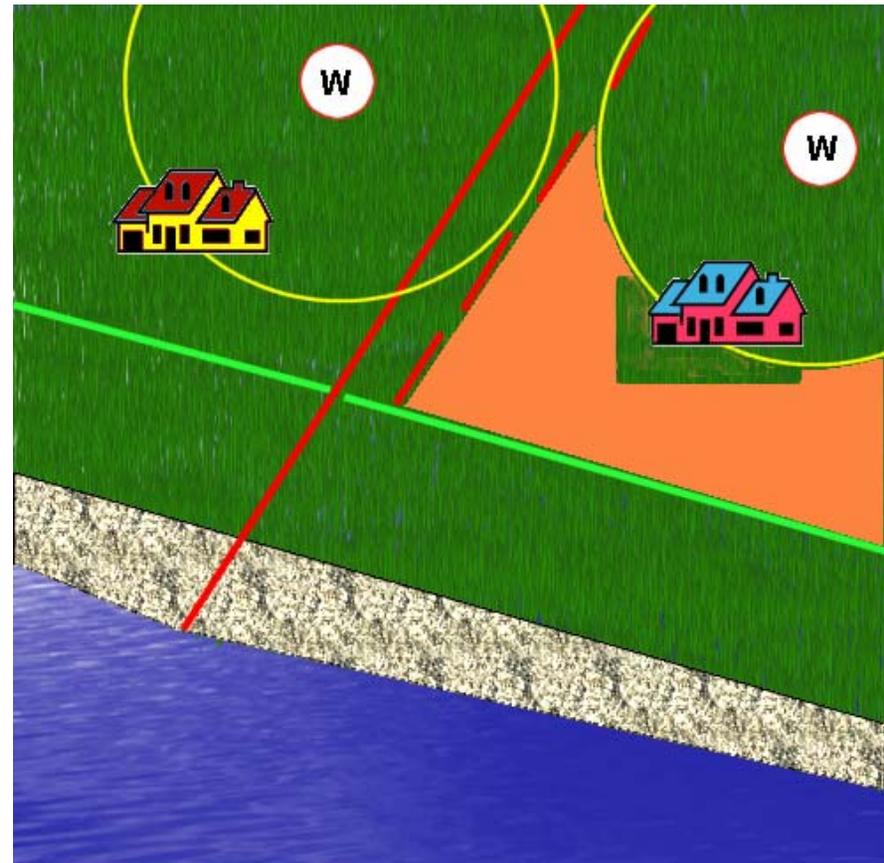
Property lines – 10 ft.

Slopes > 3:1 – 10 ft.

Slab, etc. foundation – 15 ft.

Full foundations – 20 ft.

Burial grounds – 25 ft. from toe
of fill



SITE EVALUATION PROCESS

Site Evaluation Process

Disposal of liquids into the soil from a disposal area is through soil pores, between soil aggregates and through root channels. Soil texture, soil structure, moisture content, and root penetration also affect the liquid movement through the soil.



SITE EVALUATION PROCESS

Site Evaluation Process

Site evaluation combines on-site soil evaluation with consideration of site conditions.

Licensed Site Evaluators are required to have the skill and ability to properly identify and accurately report soil textures and limiting factors so they can adequately classify soils, recognize site limitations and properly size disposal systems.



Limiting Factors

Redoximorphic Features (Drainage Mottles)

Restrictive Horizon

Bedrock

Subsurface Wastewater Disposal Application (HHE-200 Form)



**Maine Department of Health and Human Services
Division of Environmental Health
Subsurface Wastewater Unit**

HHE-200 Form

Page One

This example of Page One is clear, concise, and legible.

All of the appropriate boxes have been completed.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Maine Dept. Health & Human Services Div. of Environmental Health, 11 SHS (207) 287-5672 Fax: (207) 287-4172	
PROPERTY LOCATION		>> CAUTION: LPI APPROVAL REQUIRED <<	
City, Town, or Plantation	Windham	Town/City	Permit # _____
Street or Road	15 Lake Road	Date Permit Issued	Fee: \$ _____ Double Fee Charged []
Subdivision, Lot #	n/a	Local Plumbing Inspector Signature	L.P.I. # _____
OWNER/APPLICANT INFORMATION		<input type="checkbox"/> Owner <input type="checkbox"/> Town <input type="checkbox"/> State The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.	
Name (last, first, MI)	Jones, Robert A. <input type="checkbox"/> Owner <input type="checkbox"/> Applicant	Municipal Tax Map #	Lot # _____
Mailing Address of Owner/Applicant	James Smith Acme Realty Box 77 Windham ME 04092		
Daytime Tel. #	(207) 123-4567		
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED	
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. (1st) date approved _____ (2nd) date approved _____	
Signature of Owner or Applicant _____ Date _____		Local Plumbing Inspector Signature _____ (2nd) date approved _____	
PERMIT INFORMATION			
TYPE OF APPLICATION		THIS APPLICATION REQUIRES	
<input type="checkbox"/> 1. First Time System <input checked="" type="checkbox"/> 2. Replacement System Type replaced: _____ trench Year installed: < 1995 <input type="checkbox"/> 3. Expanded System <input type="checkbox"/> a. Expansion <input type="checkbox"/> b. Expansion <input type="checkbox"/> 4. Experimental System <input type="checkbox"/> 5. Seasonal Conversion		<input checked="" type="checkbox"/> 1. No Rule Variance <input type="checkbox"/> 2. First Time System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 3. Replacement System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 4. Minimum Lot Size Variance <input type="checkbox"/> 5. Seasonal Conversion Permit	
SIZE OF PROPERTY		DISPOSAL SYSTEM TO SERVE	
0.85 <input type="checkbox"/> SQ. FT. <input checked="" type="checkbox"/> ACRES		<input checked="" type="checkbox"/> 1. Single Family Dwelling Unit, No. of Bedrooms: 3 <input type="checkbox"/> 2. Multiple Family Dwelling, No. of Units: _____ <input type="checkbox"/> 3. Other: _____ (specify)	
SHORELAND ZONING		TYPE OF WATER SUPPLY	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> 1. Drilled Well <input checked="" type="checkbox"/> 2. Dug Well <input type="checkbox"/> 3. Private <input type="checkbox"/> 4. Public <input type="checkbox"/> 5. Other	
DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
TREATMENT TANK		DISPOSAL FIELD TYPE & SIZE	
<input checked="" type="checkbox"/> 1. Concrete <input type="checkbox"/> a. Regular <input type="checkbox"/> b. Low Profile <input type="checkbox"/> 2. Plastic <input type="checkbox"/> 3. Other: _____ CAPACITY: _____ GAL		<input checked="" type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench <input type="checkbox"/> 3. Proprietary Device <input type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear <input type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load SIZE: _____ sq. ft. _____ lin. ft.	
SOIL DATA & DESIGN CLASS		DISPOSAL FIELD SIZING	
PROFILE CONDITION _____ 5 _____ / C _____ at/Observation Hole # 4 _____ Depth _____" of Most Limiting Soil Factor _____		<input type="checkbox"/> 1. Medium—2.6 sq. ft. / gpd <input checked="" type="checkbox"/> 2. Medium—Large 3.3 sq. ft. / gpd <input type="checkbox"/> 3. Large—4.1 sq. ft. / gpd <input type="checkbox"/> 4. Extra Large—5.0 sq. ft. / gpd	
		GARBAGE DISPOSAL UNIT	
		<input type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe If Yes or Maybe, specify one below: <input type="checkbox"/> a. multi-compartment tank <input type="checkbox"/> b. _____ tanks in series <input type="checkbox"/> c. increase in tank capacity <input type="checkbox"/> d. Filter on Tank Outlet	
		DESIGN FLOW	
		270 _____ gallons per day BASED ON: <input type="checkbox"/> 1. Table 4A (dwelling unit(s)) <input type="checkbox"/> 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities 3 BR SFD <input type="checkbox"/> 3. Section 4G (meter readings) ATTACH WATER METER DATA	
		EFFLUENT/JECTOR PUMP	
		<input type="checkbox"/> Not Required <input type="checkbox"/> May Be Required <input checked="" type="checkbox"/> Required Specify only for engineered systems: DOSE: _____ gallons	
		LATITUDE AND LONGITUDE	
		at center of disposal area Lat. _____ d. _____ m. _____ s. Lon. _____ d. _____ m. _____ s. if g.p.s. state margin of error, _____	
SITE EVALUATOR STATEMENT			
I certify that on 05/15/11 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).			
Site Evaluator Signature		900	06/16/11
John Doe		SE #	Date
Site Evaluator Name Printed		(207) 765-4321	jdoe@isp.com
		Telephone Number	E-mail Address
Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.			

HHE-200 Form

Page One

PERMIT INFORMATION		
<p>TYPE OF APPLICATION</p> <p><input checked="" type="checkbox"/> 1. First Time System</p> <p><input type="checkbox"/> 2. Replacement System</p> <p>Type replaced: _____</p> <p>Year installed: _____</p> <p><input type="checkbox"/> 3. Expanded System</p> <p><input type="checkbox"/> a. Minor Expansion</p> <p><input type="checkbox"/> b. Major Expansion</p> <p><input type="checkbox"/> 4. Experimental System</p> <p><input type="checkbox"/> 5. Seasonal Conversion</p>	<p>THIS APPLICATION REQUIRES</p> <p><input type="checkbox"/> 1. No Rule Variance</p> <p><input checked="" type="checkbox"/> 2. First Time System Variance</p> <p><input type="checkbox"/> a. Local Plumbing Inspector Approval</p> <p><input checked="" type="checkbox"/> b. State & Local Plumbing Inspector Approval</p> <p><input type="checkbox"/> 3. Replacement System Variance</p> <p><input type="checkbox"/> a. Local Plumbing Inspector Approval</p> <p><input type="checkbox"/> b. State & Local Plumbing Inspector Approval</p> <p><input type="checkbox"/> 4. Minimum Lot Size Variance</p> <p><input type="checkbox"/> 5. Seasonal Conversion Permit</p>	<p>DISPOSAL SYSTEM COMPONENTS</p> <p><input checked="" type="checkbox"/> 1. Complete Non-engineered System</p> <p><input type="checkbox"/> 2. Primitive System (graywater & alt. toilet)</p> <p><input type="checkbox"/> 3. Alternative Toilet, specify: _____</p> <p><input type="checkbox"/> 4. Non-engineered Treatment Tank (only)</p> <p><input type="checkbox"/> 5. Holding Tank, _____ gallons</p> <p><input type="checkbox"/> 6. Non-engineered Disposal Field (only)</p> <p><input type="checkbox"/> 7. Separated Laundry System</p> <p><input type="checkbox"/> 8. Complete Engineered System (2000 gpd or more)</p> <p><input type="checkbox"/> 9. Engineered Treatment Tank (only)</p> <p><input type="checkbox"/> 10. Engineered Disposal Field (only)</p> <p><input type="checkbox"/> 11. Pre-treatment, specify: _____</p> <p><input type="checkbox"/> 12. Miscellaneous Components</p>
<p>SIZE OF PROPERTY</p> <p>± 4.5 <input type="checkbox"/> SQ. FT.</p> <p><input checked="" type="checkbox"/> ACRES</p>	<p>DISPOSAL SYSTEM TO SERVE</p> <p><input type="checkbox"/> 1. Single Family Dwelling Unit, No. of Bedrooms: _____</p> <p><input type="checkbox"/> 2. Multiple Family Dwelling, No. of Units: _____</p> <p><input checked="" type="checkbox"/> 3. Other: <u>commercial business</u></p> <p>(specify)</p>	
<p>SHORELAND ZONING</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>TYPE OF WATER SUPPLY</p> <p><input checked="" type="checkbox"/> 1. Drilled Well <input type="checkbox"/> 2. Dug Well <input type="checkbox"/> 3. Private</p> <p><input type="checkbox"/> 4. Public <input type="checkbox"/> 5. Other</p>	
<p>Current Use <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Year Round <input type="checkbox"/> Undeveloped</p>		

HHE-200 Form

Page One

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
<p>TREATMENT TANK</p> <p><input checked="" type="checkbox"/> 1. Concrete</p> <p> <input checked="" type="checkbox"/> a. Regular</p> <p> <input type="checkbox"/> b. Low Profile</p> <p><input type="checkbox"/> 2. Plastic</p> <p><input type="checkbox"/> 3. Other: _____</p> <p>CAPACITY: <u>1,500</u> GAL.</p>	<p>DISPOSAL FIELD TYPE & SIZE</p> <p><input type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench</p> <p><input checked="" type="checkbox"/> 3. Proprietary Device</p> <p> <input checked="" type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear</p> <p> <input checked="" type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load</p> <p> type: <u>Eljen In-drain</u></p> <p><input type="checkbox"/> 4. Other: _____</p> <p>SIZE: <u>66 units</u> <input type="checkbox"/> sq. ft. <input type="checkbox"/> lin. ft.</p>	<p>GARBAGE DISPOSAL UNIT</p> <p><input checked="" type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe</p> <p>If Yes or Maybe, specify one below:</p> <p><input type="checkbox"/> a. multi-compartment tank</p> <p><input type="checkbox"/> b. ___ tanks in series</p> <p><input type="checkbox"/> c. increase in tank capacity</p> <p><input type="checkbox"/> d. Filter on Tank Outlet</p>	<p>DESIGN FLOW</p> <p><u>750</u> gal lons per day</p> <p>BASED ON:</p> <p><input checked="" type="checkbox"/> 1. Table 501.1 (dwelling unit(s))</p> <p><input type="checkbox"/> 2. Table 501.2 (other facilities)</p> <p>SHOW CALCULATIONS for other facilities</p> <p><u>50 employees @ 15 gpd each</u></p>
<p>SOIL DATA & DESIGN CLASS</p> <p>PROFILE CONDITION DESIGN</p> <p><u>8</u> / <u>C</u> / <u>1</u></p> <p>at Observation Hole # <u>1</u></p> <p>Depth <u>16</u> "</p> <p>of Most Limiting Soil Factor</p>	<p>DISPOSAL FIELD SIZING</p> <p><input type="checkbox"/> 1. Small—2.0 sq. ft. / gpd</p> <p><input type="checkbox"/> 2. Medium—2.6 sq. ft. / gpd</p> <p><input type="checkbox"/> 3. Medium—Large 3.3 sq. ft. / gpd</p> <p><input checked="" type="checkbox"/> 4. Large—4.1 sq. ft. / gpd</p> <p><input type="checkbox"/> 5. Extra Large—5.0 sq. ft. / gpd</p>	<p>EFFLUENT/EJECTOR PUMP</p> <p><input type="checkbox"/> 1. Not Required</p> <p><input type="checkbox"/> 2. May Be Required</p> <p><input checked="" type="checkbox"/> 3. Required</p> <p>Specify only for engineered systems:</p> <p>DOSE: _____ gallo ns</p>	<p><input type="checkbox"/> 3. Section 503.0 (meter readings)</p> <p>ATTACH WATER METER DATA</p> <p>LATITUDE AND LONGITUDE</p> <p>at center of disposal area</p> <p>Lat. <u>044</u> d <u>24</u> m <u>01.8</u> s</p> <p>Lon. <u>069</u> d <u>33</u> m <u>25.2</u> s</p> <p>if g.p.s, state margin of error: _____</p>

HHE-200 Form

Page Two

This site plan shows all the prominent features in the vicinity of the proposed system.

Test pit logs are clear, complete, and accurate.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 Fax: (207) 287-3165	
Town, City, Plantation ***		Street, Road, Subdivision ***	
		Owner's Name ***	
SITE PLAN Scale 1" = 100 ft. or as shown			
THE SYSTEM CONSIST OF 6 ROWS OF 11 UNITS (TOTAL 66 UNITS) OF ELLEN IN-DRAIN 1' APART WITH A DISTRIBUTION BOX (THE END OF EACH ROW SHALL HAVE AN END CAP)			
DISTRIBUTION BOX WITH EQUALIZERS SET IN 4" LAYER OF COMPACTED SAND AND COVERED WITH 2" OF STYROFOAM INSULATION			
2" PRESSURE LINE (COVERED WITH 2" RIGID STYROFOAM AND SLEEVE AS NECESSARY)			
APPROXIMATE LOCATION OF EXISTING SEPTIC SYSTEM			
APPROXIMATE LOCATION OF PROPOSED BUILDING EXPANSION			
FORESTED WETLAND REF. PT. B. ±40 ERP			
PUMP STATION SET IN 4" LAYER OF COMPACT SAND OR GRAVEL			
4" SCH. 35 PIPE (1/2" DROP PER FOOT) 1500 GAL. CONCRETE SEPTIC TANK SET IN 4" LAYER OF COMPACT SAND OR GRAVEL (8' MIN. FROM BUILDING)			
APPROXIMATE LOCATION OF WELL (PUBLIC WATER SUPPLY)			
4" SCH. 40 PIPE (1/2" DROP PER FOOT)			
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)			
Observation Hole <u> </u> Test Pit <input type="checkbox"/> Boring <input type="checkbox"/> 0" Depth of Organic Horizon Above Mineral Soil		Observation Hole <u>2-5</u> Test Pit <input type="checkbox"/> Boring <input type="checkbox"/> 0" Depth of Organic Horizon Above Mineral Soil	
Texture Consistency Color Mottling 0 Fine sandy loam Frable Brown None 10 Yellowish brown 20 Silty clay Firm Olive gray Common medium distinct light olive brown 30 Bottom of Back Hoe Pit 40 50	Texture Consistency Color Mottling 0 Fine sandy loam Frable Brown None 10 Yellowish brown 20 Silty clay Firm Olive gray Common medium distinct light olive brown 30 Bottom of Back Hoe Pit 40 50	Soil Classification Slope Limiting Factor <input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth Profile C 11% 1G*	Soil Classification Slope Limiting Factor <input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth Profile C 11% 1G*
*** Site Evaluator Signature		*** SE #	
		//07 Date	
		Page 2 of 3 HHE-200 Rev. 8/01	

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Page Two

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 Fax: (207) 287-3165
Town, City, Plantation ***	Street, Road, Subdivision ***	Owner's Name ***
SITE PLAN Scale 1" = 100 ft. or as shown		
<p>THE SYSTEM CONSIST OF 6 ROWS OF 11 UNITS (TOTAL 66 UNITS) OF ELJEN IN-DRAIN 1' APART WITH A DISTRIBUTION BOX (THE END OF EACH ROW SHALL HAVE AN END CAP)</p> <p>DISTRIBUTION BOX WITH EQUALIZERS SET IN 4" LAYER OF COMPACTED SAND AND COVERED WITH 2" OF STYROFOAM INSULATION</p> <p>2" PRESSURE LINE (COVERED WITH 2" RIGID STYROFOAM AND SLEEVE AS NECESSARY)</p> <p>APPROXIMATE LOCATION OF EXISTING SEPTIC SYSTEM</p> <p>APPROXIMATE LOCATION OF PROPOSED BUILDING EXPANSION</p> <p>FORESTED WETLAND</p> <p>REF. PT. B.</p> <p>ERP</p> <p>±40'</p> <p>EXISTING BUILDING</p> <p>287'</p> <p>78'</p>		
		<p>PUMP STATION SET IN 4" LAYER OF COMPACT SAND OR GRAVEL</p> <p>4" SCH. 35 PIPE (1/8" DROP PER FOOT)</p> <p>1500 GAL. CONCRETE SEPTIC TANK SET IN 4" LAYER OF COMPACT SAND OR GRAVEL (8' MIN. FROM BUILDING)</p> <p>APPROXIMATE LOCATION OF WELL (PUBLIC WATER SUPPLY)</p> <p>4" SCH. 40 PIPE (1/8" DROP PER FOOT)</p>

HHE-200 Form

Page Two

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)					
Observation Hole <u> </u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring 0 " Depth of Organic Horizon Above Mineral Soil		Observation Hole <u>2-5</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring 0 " Depth of Organic Horizon Above Mineral Soil			
Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling	
	0	Fine sandy loam	Fenable	Brown	None
	10			Yellowish brown	
	20	Silty clay	Firm	Olive gray	Common medium distinct light olive brown
	30				
	40	Bottom of Back Hoe Pit			
50					
Soil Classification <u>B</u> <u>C</u> Profile Condition		Slope <u>11</u> %	Limiting Factor <u>16</u> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	
Soil Classification <u>B</u> <u>C</u> Profile Condition		Slope <u>11</u> %	Limiting Factor <u>16</u> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	
***		***		**/**/07	
Site Evaluator Signature		SE #		Date	
				Page 2 of 3 HHE-200 Rev. 8/01	

HHE-200 Form

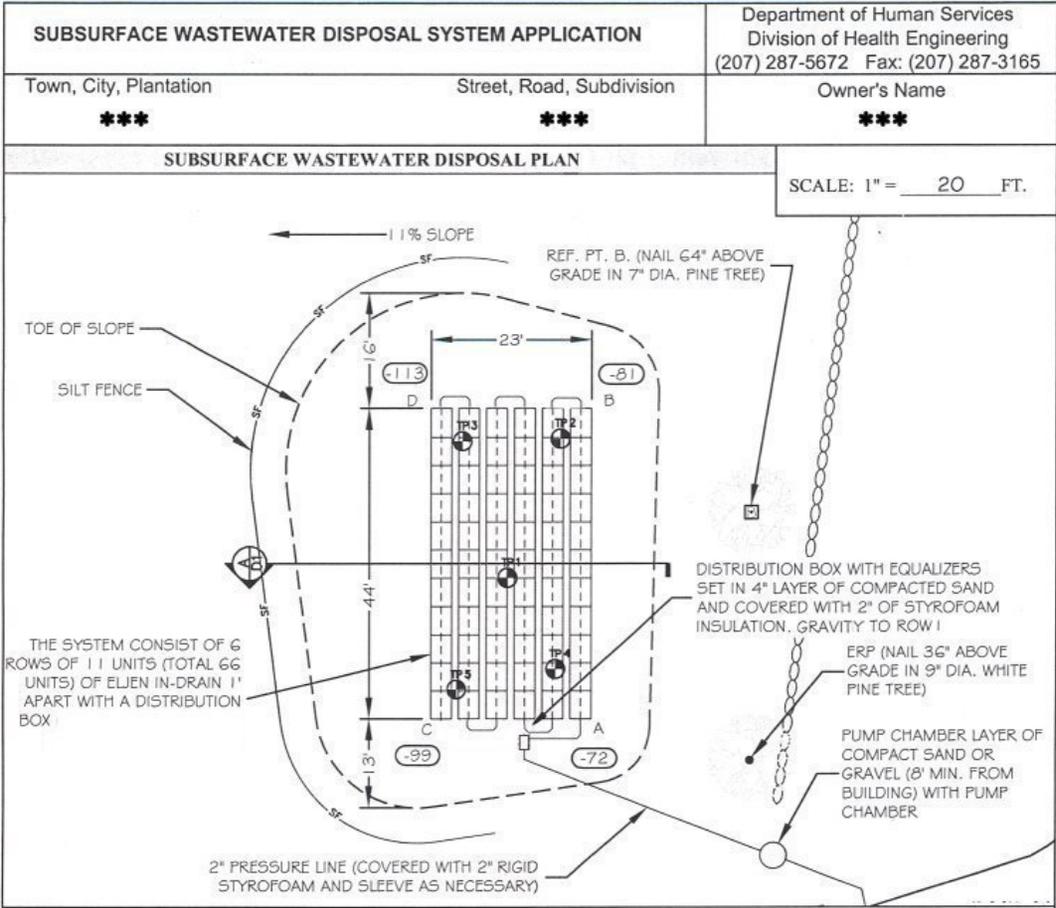
Page Three

Page three of this example contains all the necessary construction data for installation of the disposal area.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 Fax: (207) 287-3165																																					
Town, City, Plantation ***	Street, Road, Subdivision ***	Owner's Name ***																																					
SUBSURFACE WASTEWATER DISPOSAL PLAN		SCALE: 1" = 20' FT.																																					
FILL REQUIREMENTS Depth of Fill (Upslope) 20'-29" Depth of Fill (Downslope) 20'-34"	CONSTRUCTION ELEVATIONS Finished Grade Elevation SEE D-1 Top of Distribution Pipe or Proprietary Device SEE D-1 Bottom of Disposal Area SEE D-1	ELEVATION REFERENCE POINT Location & Description: NAIL 36" ABOVE GRADE IN 9" DIA. WHITE PINE TREE Reference Elevation: 0'																																					
DISPOSAL AREA CROSS SECTION																																							
		Scale Horizontal 1" = N/A ft. Vertical 1" = N/A ft.																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">ELEVATIONS</th> </tr> <tr> <th style="text-align: center;">ELEV. REF. PT. (ERP)</th> <th style="text-align: center;">0'</th> <th colspan="5" style="text-align: center;">6 ROWS OF 11 TYPE B IN-DRAINS</th> </tr> <tr> <th style="text-align: center;">ROW 1</th> <th style="text-align: center;">ROW 2</th> <th style="text-align: center;">ROW 3</th> <th style="text-align: center;">ROW 4</th> <th style="text-align: center;">ROW 5</th> <th style="text-align: center;">ROW 6</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">FINISHED GRADE</td> <td style="text-align: center;">-51"</td> <td style="text-align: center;">-56.5"</td> <td style="text-align: center;">-62"</td> <td style="text-align: center;">-67.5"</td> <td style="text-align: center;">-73"</td> </tr> <tr> <td style="text-align: center;">TOP OF IN-DRAIN UNIT</td> <td style="text-align: center;">-68"</td> <td style="text-align: center;">-73.5"</td> <td style="text-align: center;">-79"</td> <td style="text-align: center;">-84.5"</td> <td style="text-align: center;">-90"</td> </tr> <tr> <td style="text-align: center;">BOTTOM OF SAND LAYER</td> <td style="text-align: center;">-76"</td> <td style="text-align: center;">-81.5"</td> <td style="text-align: center;">-87"</td> <td style="text-align: center;">-92.5"</td> <td style="text-align: center;">-98"</td> </tr> </tbody> </table>			ELEVATIONS						ELEV. REF. PT. (ERP)	0'	6 ROWS OF 11 TYPE B IN-DRAINS					ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	FINISHED GRADE	-51"	-56.5"	-62"	-67.5"	-73"	TOP OF IN-DRAIN UNIT	-68"	-73.5"	-79"	-84.5"	-90"	BOTTOM OF SAND LAYER	-76"	-81.5"	-87"	-92.5"	-98"
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		Page 3 of 3 HHE-200 Rev. 8/01																																					

HHE-200 Form

Page Three



HHE-200 Form

Page Three

<p>FILL REQUIREMENTS</p> <p>Depth of Fill (Upslope) <u>20"-29"</u></p> <p>Depth of Fill (Downslope) <u>20"-34"</u></p>	<p>CONSTRUCTION ELEVATIONS</p> <p>Finished Grade Elevation <u>SEE D-1</u></p> <p>Top of Distribution Pipe or Proprietary Device <u>SEE D-1</u></p> <p>Bottom of Disposal Area <u>SEE D-1</u></p>	<p>ELEVATION REFERENCE POINT</p> <p>Location & Description: NAIL 36" ABOVE GRADE IN 9" DIA. WHITE PINE TREE</p> <p>Reference Elevation: <u>0"</u></p>																																										
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		<p>Page 3 of 3</p> <p>HHE-200 Rev. 8/01</p>																																										

SYSTEM TYPES

Subsurface Wastewater Disposal Rules

SYSTEM TYPES

Cesspools, Clay Agricultural Drainage Tiles and Vee-Notched Plank trenches – still legal to operate as long as they are not malfunctioning. New ones have not been allowed since July of 1974.

Primitive systems --consist of an alternate toilet such as a pit privy and a small greywater disposal area to accommodate a hand carried or hand pumped water supply

A Combined System -- typically comprised of a septic tank and/or an Advanced Treatment unit, and a disposal area sized to accommodate a pressurized water supply with full plumbing fixture loads.

Not a Primitive System

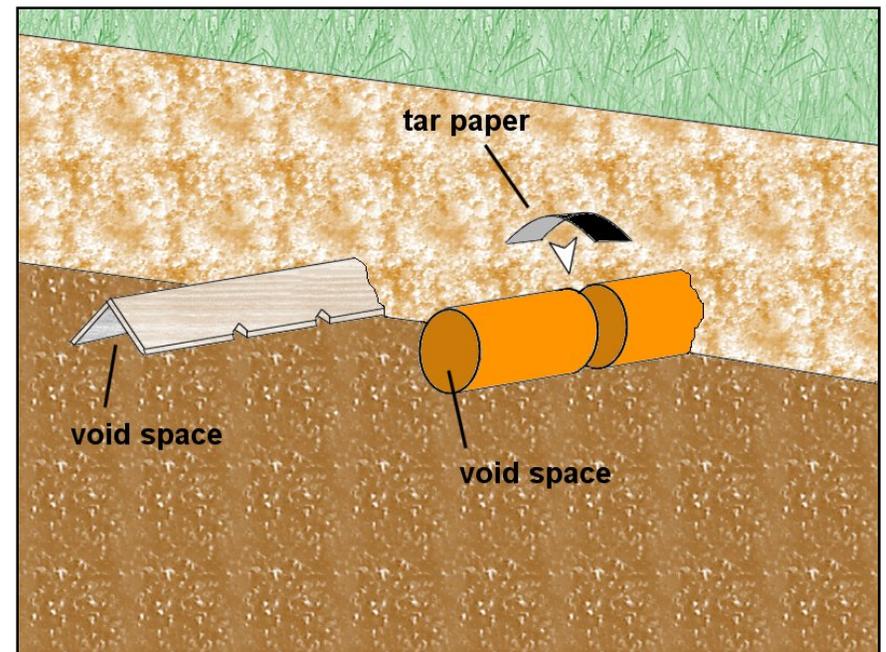


Subsurface Wastewater Disposal Rules

Disposal Areas

By the late 1940's clay agricultural drainage tiles and vee-notched plank trenches were in common use.

These systems provided a void space in the soils into which effluent could be introduced, and then absorbed by the soil. These were the forebears of most modern proprietary disposal devices.



Subsurface Wastewater Disposal Rules

System Types: Primitive

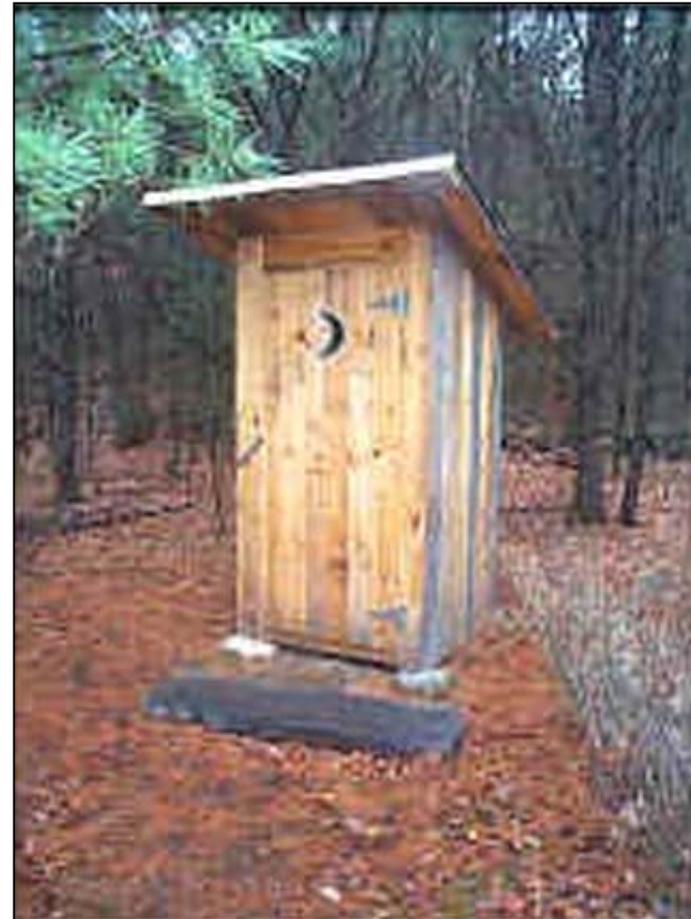
To install a primitive system, a completed HHE-200 Form is required which includes a test pit for both the pit privy (if used) and the gray wastewater disposal area.

The primitive gray water disposal area would be sized at 25 gpd supplied by hand carried or pumped wastewater.

Limited Systems (1000 gallon storage tank) require 50 gpd and portable pump.

A maximum of 3 greywater fixtures allowed.

Any type of disposal area can be used for the greywater disposal area.



Subsurface Wastewater Disposal Rules

System Types: Primitive

The greywater disposal area would be sized at 25 gpd, with a maximum of 3 fixtures (sink, shower, bathtub) allowed.

Any type of disposal area can be used for the greywater disposal area.

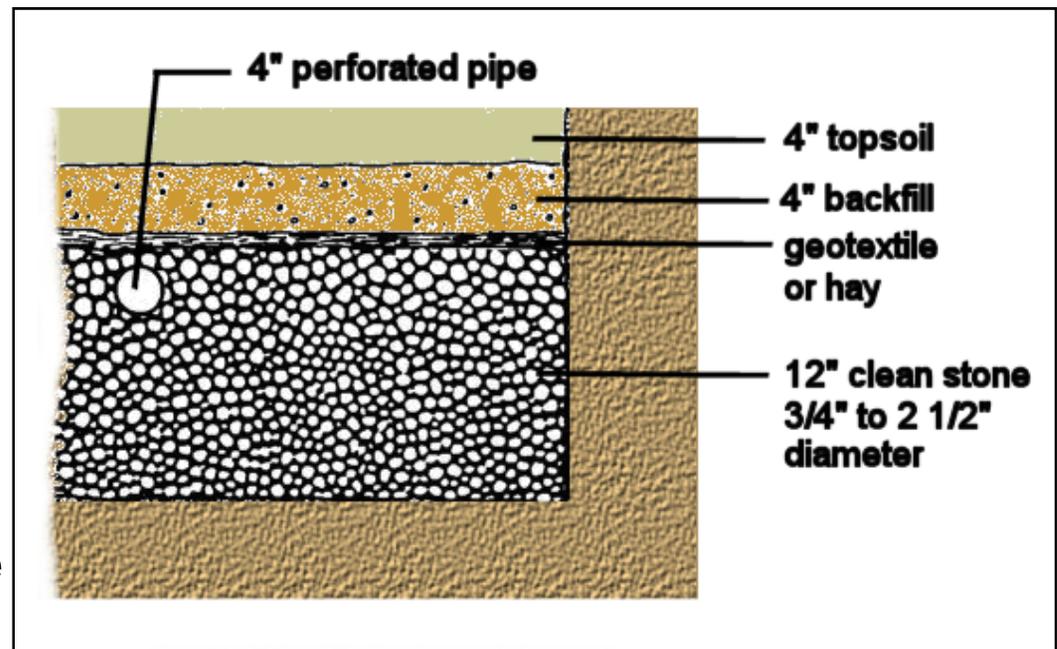
No septic tank is required for a primitive system.

Subsurface Wastewater Disposal Rules

System Types: Combined

A disposal bed acts as an underground retention area. Stone (3/4 or 1 1/2 inches in diameter) is used in the construction of a bed to provide void space for the storage of effluent and to allow it to drain slowly through the soil.

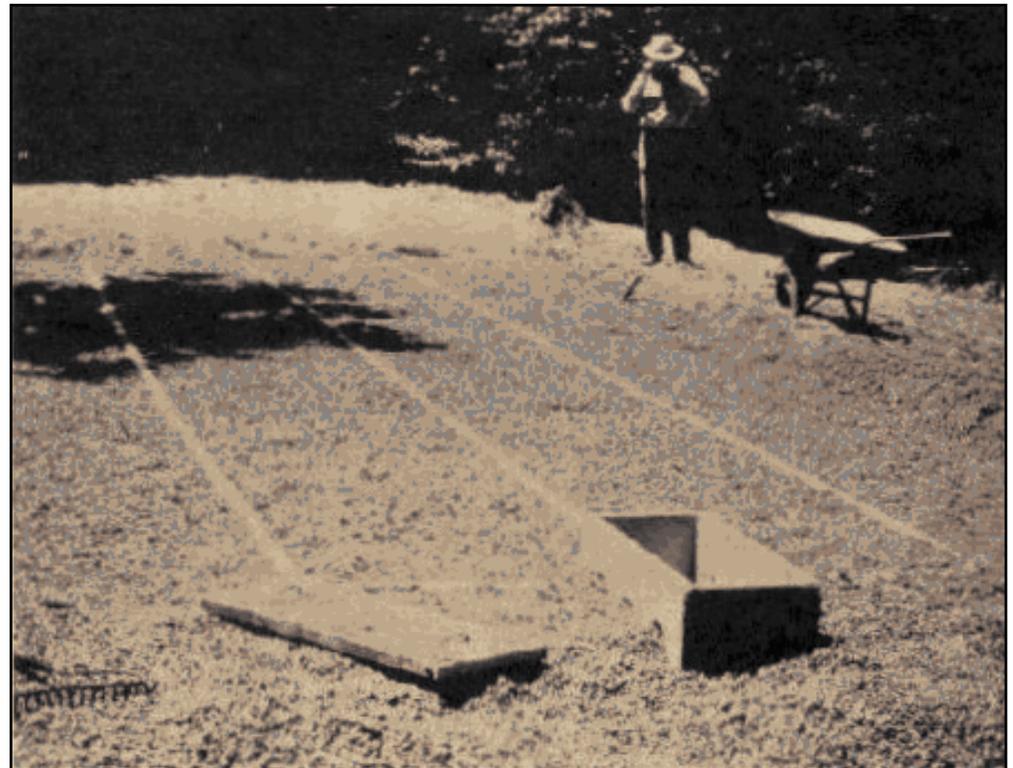
The disposal bed size is calculated by multiplying the expected volume of wastewater by the size rating of the original soil.



Subsurface Wastewater Disposal Rules

System Types: Combined

Bed widths usually vary from 3 feet to 20 feet. Narrow beds are more advantageous than wide beds because they increase the sidewall area relative to the bottom area which promotes longevity of the disposal area. The advantages of wide beds are that they are more easily installed with mechanical equipment and require less over-all area for installation than narrow beds.



Subsurface Wastewater Disposal Rules

Disposal Areas

Concrete chambers are available in H-20 load ratings, and in 4' x 8' and 8' x 8' sizes.

Chambers are sized upon their footprints in cluster configurations.

Sidewall allowances are included for chamber sizing, when installed in trench configuration with one foot of stone along the long sides.



Subsurface Wastewater Disposal Rules

Disposal Areas

Plastic chambers are sized upon their footprints in cluster configurations and are available in a variety of heights and widths.

Sidewall allowances are included for sizing when installed in trench configuration.

Some designers include stone along the sides and beneath plastic chambers. In such cases, separations are measured from the stone, not the chambers.



Subsurface Wastewater Disposal Rules

Disposal Areas

Fabric wrapped tubes consist of perforated corrugated plastic pipe, wrapped in non-woven filter fabric. The fabric is separated from the pipe by a layer of random weave plastic fibers or a layer of expanded plastic mesh.



Subsurface Wastewater Disposal Rules

Disposal Areas

Fabric wrapped tubes are sized at the equivalent of 5 square feet per linear foot, due to their increased surface area and unobstructed void space.

Fabric wrapped tubes are most often installed in serial distribution for non-engineered systems (e.g., they zigzag along the slope of the site).



Subsurface Wastewater Disposal Rules

Disposal Areas

Cuspedated plate systems are presently available only in the form of the Eljen GSF (formerly, In-Drain) and the Eljen Mini-Max.

The devices consist of egg crate shaped plastic plates through which non-woven filter fabric is interwoven, resulting in increased surface area for biological growth.



Subsurface Wastewater Disposal Rules

Disposal Areas

The Eljen GSF system requires a specific grade of coarse sand to function properly, specifically meeting ASTM C-33 standards.

Flow for flow, the Eljen GSF system would have the smallest footprint of any device disposing of septic tank effluent, due to the high ratio of surface area to footprint.



Subsurface Wastewater Disposal Rules

Disposal Areas

Geo-synthetic aggregate pipe systems consist of a perforated pipe, surrounded by textured polystyrene cubes, within a netting tube.

They are available with and without surrounding nonwoven geotextile fabric.

They can be installed in either trench or cluster configuration.



Subsurface Wastewater Disposal Rules

Disposal Areas

Drip irrigation systems have been used in Maine for several years. The major differences between conventional systems and drip irrigation systems are uniform distribution of effluent and shallow placement of trenches.

Drip irrigation systems must be preceded by pretreatment to avoid or minimize clogging of the disposal lines.



Subsurface Wastewater Disposal Rules

Disposal Areas

The drip emitter system uses small diameter piping with integral drip emitters, installed in a grid. A series of valves are used to regulate flow and flush the system for prevention of solids accumulation.



Subsurface Wastewater Disposal Rules

Disposal Areas

Installation of porous hose drip irrigation is minimally invasive, and can include covering at-grade installations with bark mulch, as is about to take place in this picture. This is best suited for seasonal use due to lack of frost protection.



Receiving the HHE-200 Form

- IS IT PERMITTED?
- ESTABLISH THE ERP
- SITE LOCATION

3A.1 PERMIT REQUIRED

- WORK MUST NOT BE STARTED UNTIL THE PLUMBING INSPECTOR HAS ISSUED A DISPOSAL SYSTEM PERMIT FOR THE WORK

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Maine Dept. Health & Human Services Div of Environmental Health, 11 SHS (207) 287-5672 Fax: (207) 287-4172	
PROPERTY LOCATION		>> CAUTION: LPI APPROVAL REQUIRED <<	
City, Town, or Plantation	Windham	Town/City _____	Permit # _____
Street or Road	15 Lake Road	Date Permit Issued ___/___/___	Fee: \$ _____ Double Fee Charged []
Subdivision, Lot #	n/a	Local Plumbing Inspector Signature _____	L.P.I. # _____
OWNER/APPLICANT INFORMATION		<input type="checkbox"/> Owner <input type="checkbox"/> Town <input type="checkbox"/> State The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.	
Name (last, first, MI)	Jones, Robert A.	Municipal Tax Map # _____ Lot # _____	
Mailing Address of Owner/Applicant	James Smith Acme Realty Box 77 Windham ME 04092	OWNER OR APPLICANT STATEMENT I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.	
Daytime Tel. #	(207) 123-4567	CAUTION: INSPECTION REQUIRED I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. (1st) date approved _____ Local Plumbing Inspector Signature _____ (2nd) date approved _____	
PERMIT INFORMATION			
TYPE OF APPLICATION <input type="checkbox"/> 1. First Time System <input checked="" type="checkbox"/> 2. Replacement System Type replaced: trench Year installed: +/- 1965 <input type="checkbox"/> 3. Expanded System <input type="checkbox"/> a. <25% Expansion <input type="checkbox"/> b. >25% Expansion <input type="checkbox"/> 4. Experimental System <input type="checkbox"/> 5. Seasonal Conversion	THIS APPLICATION REQUIRES <input checked="" type="checkbox"/> 1. No Rule Variance <input type="checkbox"/> 2. First Time System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 3. Replacement System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 4. Minimum Lot Size Variance <input type="checkbox"/> 5. Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS <input checked="" type="checkbox"/> 1. Complete Non-engineered System <input type="checkbox"/> 2. Primitive System (graywater & alt. toilet) <input type="checkbox"/> 3. Alternative Toilet, specify: _____ <input type="checkbox"/> 4. Non-engineered Treatment Tank (only) <input type="checkbox"/> 5. Holding Tank _____ gallons <input type="checkbox"/> 6. Non-engineered Disposal Field (only) <input type="checkbox"/> 7. Separated Laundry System <input type="checkbox"/> 8. Complete Engineered System (2000 gpd or more) <input type="checkbox"/> 9. Engineered Treatment Tank (only) <input type="checkbox"/> 10. Engineered Disposal Field (only) <input type="checkbox"/> 11. Pre-treatment, specify: _____ <input type="checkbox"/> 12. Miscellaneous Components	
SIZE OF PROPERTY 0.85 <input type="checkbox"/> SQ. FT. <input checked="" type="checkbox"/> ACRES	DISPOSAL SYSTEM TO SERVE <input checked="" type="checkbox"/> 1. Single Family Dwelling Unit, No. of Bedrooms: 3 <input type="checkbox"/> 2. Multiple Family Dwelling, No. of Units: _____ <input type="checkbox"/> 3. Other: _____ (specify) Current Use <input type="checkbox"/> Seasonal <input type="checkbox"/> Year Round <input type="checkbox"/> Undeveloped	TYPE OF WATER SUPPLY <input type="checkbox"/> 1. Drilled Well <input checked="" type="checkbox"/> 2. Dug Well <input type="checkbox"/> 3. Private <input type="checkbox"/> 4. Public <input type="checkbox"/> 5. Other	
SHORELAND ZONING <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)		
TREATMENT TANK <input checked="" type="checkbox"/> 1. Concrete <input type="checkbox"/> a. Regular <input type="checkbox"/> b. Low Profile <input type="checkbox"/> 2. Plastic <input type="checkbox"/> 3. Other: _____ CAPACITY: 1000 _____ GAL.	DISPOSAL FIELD TYPE & SIZE <input checked="" type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench <input type="checkbox"/> 3. Proprietary Device <input type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear <input type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load <input type="checkbox"/> 4. Other: _____ SIZE: _____ sq. ft. _____ lin. ft.	GARBAGE DISPOSAL UNIT <input checked="" type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe If Yes or Maybe, specify one below: <input type="checkbox"/> a. multi-compartment tank <input type="checkbox"/> b. _____ tanks in series <input type="checkbox"/> c. increase in tank capacity <input type="checkbox"/> d. Filter on Tank Outlet	DESIGN FLOW 270 _____ gallons per day BASED ON: <input checked="" type="checkbox"/> 1. Table 4A (dwelling unit(s)) <input type="checkbox"/> 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities 3 BR SFD <input type="checkbox"/> 3. Section 4G (meter readings) ATTACH WATER METER DATA
SOIL DATA & DESIGN CLASS PROFILE CONDITION 5 / C at Observation Hole # 4 Depth _____" of Most Limiting Soil Factor	DISPOSAL FIELD SIZING <input type="checkbox"/> 1. Medium---2.6 sq. ft. / gpd <input checked="" type="checkbox"/> 2. Medium---Large 3.3 sq. ft. / gpd <input type="checkbox"/> 3. Large---4.1 sq. ft. / gpd <input type="checkbox"/> 4. Extra Large---5.0 sq. ft. / gpd	EFFLUENT/EJECTOR PUMP <input type="checkbox"/> Not Required <input type="checkbox"/> May Be Required <input checked="" type="checkbox"/> Required Specify only for engineered systems: DOSE: _____ gallons	LATITUDE AND LONGITUDE at center of disposal area Lat. _____ d _____ m _____ s Lon. _____ d _____ m _____ s if g.p.s. state margin of error: _____
SITE EVALUATOR STATEMENT			
I certify that on 06/15/11 _____ (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).			
Site Evaluator Signature		SE #	Date
John Doe		(207) 765-4321	06/16/11
Site Evaluator Name Printed		Telephone Number	E-mail Address
			jdoe@isp.com
Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.			



DIVISION OF ENVIRONMENTAL HEALTH
SUBSURFACE WASTEWATER PROGRAM

AFFIDAVIT OF SITE PREPARATION

This affidavit is to be completed by a certified system installer and submitted to the Local Plumbing Inspector to document compliance with **Section 111.5.1** of the Maine Subsurface Wastewater Disposal Rules, **144 CMR 241**. *Permission to utilize this document in lieu of a site preparation inspection by the Local Plumbing Inspector must be verified when the permit is issued.* This affidavit is *not* to be utilized in place of the system inspection described in **Section 111.5.2** of the Rules.

INSTALLER NAME: _____
(Please Print)
CERTIFICATION NUMBER: _____
SSWD PERMIT NUMBER: _____
PERMIT ISSUE DATE: _____
PROPERTY OWNER NAME: _____
PROPERTY ADDRESS: _____
MUNICIPALITY: _____

By signing and submitting this document to the Local Plumbing Inspector, I certify that all construction activities noted in **Section 111.5.1** including removal of all vegetation from the disposal field area and fill extensions as specified in **Section 801.3**; roughening of the ground surface as specified in **Section 801.4**; establishment of a transitional horizon as specified in **Section 801.5**; and placement of erosion control devices as specified in **Section 801.2** have been completed in full compliance with the Maine Subsurface Wastewater Disposal Rules, **144 CMR 241** for the referenced SSWD permit.

INSTALLER SIGNATURE: _____
DATE SUBMITTED: _____

By signing and accepting this document from the Certified Installer, I acknowledge that a site preparation inspection was not conducted for the referenced SSWD permit.

LPI SIGNATURE: _____
ACCEPTANCE DATE: _____

**THIS FORM
ONLY TO
BE USED
AFTER THE
LPI'S
APPROVAL**

Construction Related Rules

Section 11A.2 Dig Safe Law

The “Dig Safe Law” 23 MRSA §3360-A(D) places certain notification requirements on any person doing excavations, including any operation in which earth, rock or other material on or below the ground is moved or otherwise displaced by means of power tools, power equipment or explosives, except tilling of the soil and gardening or agricultural purposes.



11D.1 CONSTRUCTION

THE INSTALLER OF THE SYSTEM SHALL MAKE CERTAIN THAT THE SYSTEM AND ALL ITS COMPONENT PARTS ARE INSTALLED IN CONFORMANCE WITH THE REQUIREMENTS OF THIS CODE, THE HHE-200 FORM AND ANY OTHER SPECIAL ENGINEERING REQUIREMENTS.

11D.2
SOIL AND BACKFILL
MATERIAL

**THE INSTALLER OF THE SYSTEM
SHALL MAKE CERTAIN THAT THE
CONSTRUCTION AND INSTALLATION
ARE PERFORMED WITHOUT EFFECTING
THE SOIL AND BACKFILL MATERIAL.**

CONSTRUCTION TECHNIQUES

SOIL EROSION & SEDIMENT CONTROL

CLEARING OF THE SITE

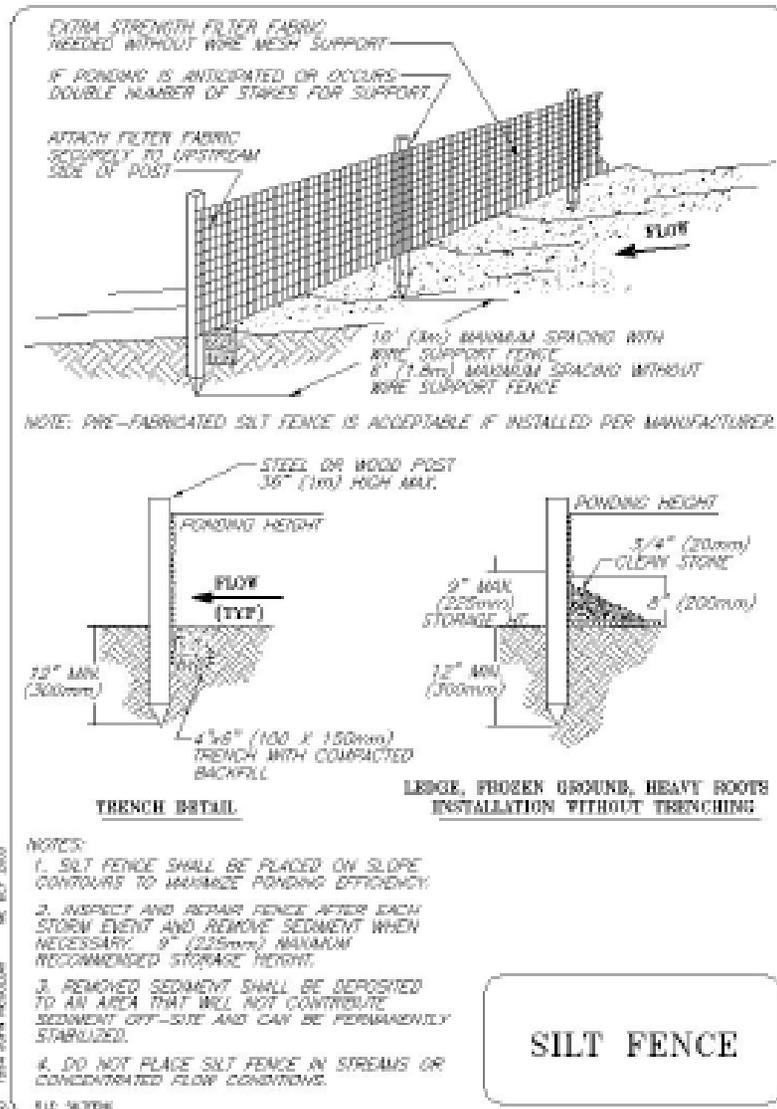
SCARIFICATION

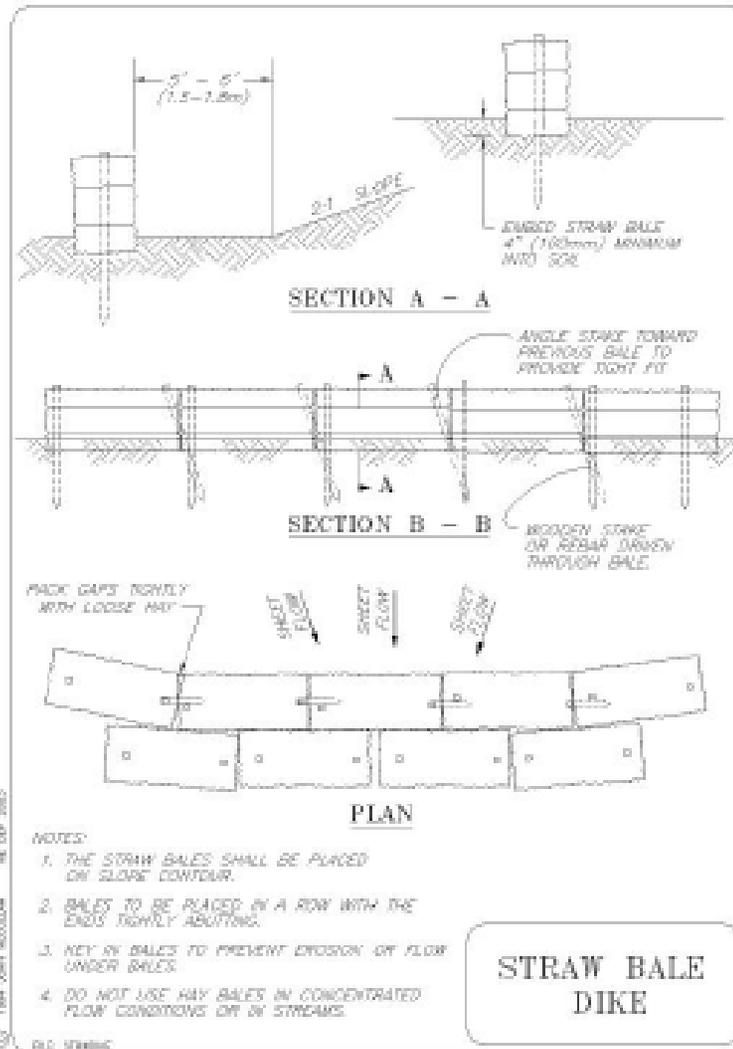
TRANSITION HORIZON

Site Preparation

- 11B.1a Soil Erosion And Sediment Control

IN AREAS ADJACENT TO A WATER BODY OR WETLANDS, PREVENTATIVE EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE EMPLOYED CONSISTANT WITH SECTION 11M.

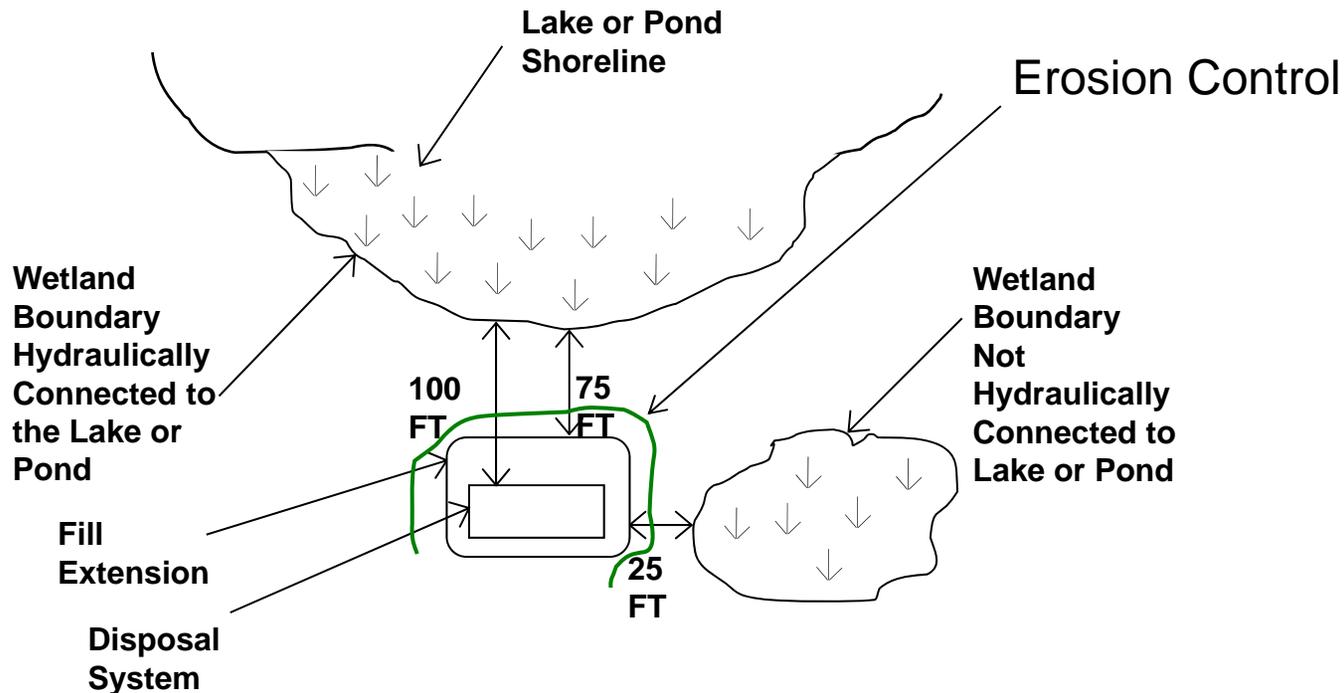




Site Preparation

Chapter 11 - Disposal Field Construction Techniques

Section 11B.1a & 11M Placement of Erosion Control Devices



11B.2 CLEARING OF THE SITE

VEGETATION MUST BE CUT
AND REMOVED FROM THE
AREA WHERE BACKFILL IS
PLACED

DOES THIS INCLUDE
THE FILL EXTENSIONS?

SCARIFICATION

11B.3 SCARIFY THE SITE:

THE AREA UNDER THE DISPOSAL FIELD AND BACKFILL EXTENSIONS MUST BE PLOWED OR DISKED TO PRODUCE A THOROUGHLY ROUGHENED SURFACE. PLOWING MUST BE DONE PARALLEL TO THE TOPOGRAPHIC CONTOUR IN SUCH A DIRECTION THAT EACH PLOW FURROW WILL BE THROWN UPSLOPE.

THE SOIL SHOULD BE BROKEN UP TO A DEPTH OF 6-8 INCHES.

ALTERNATIVELY, A ROTO-TILLER OR THE TEETH OF A BACKHOE MAY BE USED.

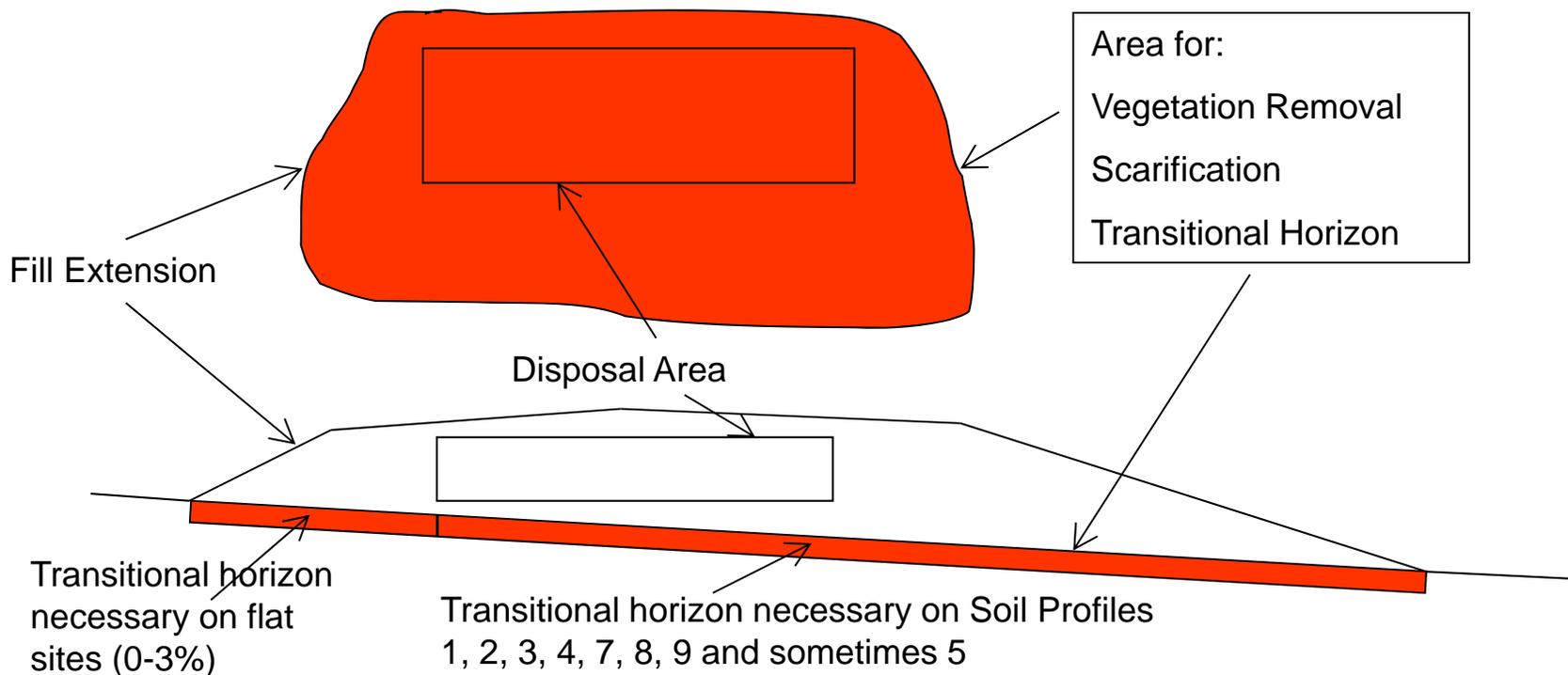
11B.4 TRANSITIONAL HORIZON

ON SITES WHERE THE BACKFILL MATERIAL IS COARSER THAN THE ORIGINAL SOIL, A MINIMUM OF 4 INCHES OF BACKFILL MATERIALS MUST BE MIXED (BY PLOWING, DISCING OR ROTO-TILLING) INTO THE ORIGINAL SOIL TO FORM A TRANSITIONAL HORIZON BENEATH THE DISPOSAL AREA FOOTPRINT AND ALL SIDE AND DOWNHILL FILL EXTENSIONS.

Site Preparation

Chapter 11 - Disposal Field Construction Techniques

Section 11B.1b Clearing Section 11B.3 Scarify the site Section 11B.4 Transitional horizon



**DEEP SCARIFICATION
MAYBE REQUIRED
BY A FROST TOOTH OR
OTHER ATTACHMENT**















11B.5 FILL LARGE HOLES

- LEFT AS A RESULT OF STUMP AND STONE REMOVAL, MUST BE FILLED WITH BACKFILL MATERIAL THAT MEETS THE REQUIREMENTS OF 11E

11G.3 SURFACE WATER DIVERSION

SURFACE WATER MUST BE DIVERTED AWAY FROM THE DISPOSAL FIELD SITE



EXCAVATION

11C.2

BOTTOM OF DISPOSAL FIELD

- THIS SERVES AS THE FINAL STAGE OF THE DISTRIBUTION NETWORK
- MUST BE INSTALLED AT THE ELEVATION SPECIFIED ON THE PERMIT.
- MUST MAINTAIN A LEVEL GRADE.
(2" WITHIN 100')

11C.3

AVOID UNNECESSARY COMPACTION

- RUBBER TIRED VEHICLES SHOULD NOT BE DRIVEN OVER THE EXPOSED BOTTOM OF THE DISPOSAL FIELD
- SHOULD BE CARRIED OUT BY A BACKHOE OPERATING OUTSIDE THE PERIMETER OF THE DISPOSAL AREA

Which looks like.....



**And if not corrected could look
like.....**



Which would result in.....



11C.4 REOPEN SMEARED OR COMPACTED BOTTOM OR SIDEWALL SURFACES

- THIS PORTION MUST BE SCARIFIED TO RE-OPEN SOIL PORES.
- ROTO-TILLING MAY BE NECESSARY TO REACH THE LIMIT OF COMPACTED SOIL DEPTH.

11C.5 WEATHER CONDITIONS

**WORK SHOULD BE SCHEDULED SO THAT
EXCAVATED AREAS ARE NOT EXPOSED TO
RAINFALL OR WIND BLOWN SILT**

**DEBRIS MUST BE REMOVED BEFORE
BACKFILLING**

**DISPOSAL FIELDS SHOULD NOT BE INSTALLED IN
FROZEN GROUND OR WHEN THE AMBIENT AIR TEMP.
IS BELOW FREEZING**

111 INSPECTIONS

REQUIRED:

**IT SHALL BE THE DUTY OF THE
PLUMBING INSPECTOR TO ENFORCE
THE PROVISIONS OF THIS CODE AND TO
MAKE SUCH INSPECTIONS AS MAY BE
REQUIRED BY THIS CODE**

11I.5 INSPECTION REQUIRED :

**THE LPI SHALL MAKE TWO
INSPECTIONS, FIRST INSPECTION AT
THIS TIME.**

AFTER SITE PREPARATION:

**TO MAKE SURE VEGETATION HAS BEEN CUT &
REMOVED IN THE DISPOSAL FIELD AREA.**

TO MAKE SURE THE AREA HAS BEEN SCARIFIED.

**TO MAKE SURE A TRANSITIONAL HORIZON HAS BEEN
ESTABLISHED**

**TO MAKE SURE EROSION CONTROL MEASURES
HAVE BEEN ESTABLISHED**

11E Backfill standards: The backfill material must be gravelly coarse sand which meets the following requirements:

Table 11A – Backfill Textural Gradation

Sieve Size	Percent Passing by Weight
3"	100
1.5"	95-100
0.75"	90-100
#4	75-100
#10	55-85
#20	30-65
#40	15-45
#60	10-25
#100	5-15
#200	2-8
Clay Fraction	0-2

Construction Related Rules

How to Check Sand Spec:



0 10 20 mm 30 40 50

	v. coarse sand 1.0-2.0mm	granules 2-4mm pebbles 4-64mm cobbles 64-256mm boulders > 256mm
	coarse sand 1/2-1.0mm	very thickly bedded 1m thickly bedded 30-100cm medium bedded 10-30cm thinly bedded 3-10cm very thinly bedded 1-3cm thickly laminated 3-10mm thinly laminated 3mm
	medium sand 1/4-1/2mm	
	fine sand 1/8-1/4mm	well-rounded sub-rounded sub-angular
	v. fine sand 1/16-1/8mm	
	silt < 1/16mm	

FIELD CHECKLIST
 location, Formation name
 Composition
 Texture (shape, sorting, color)
 Structure (on and within bed)
 Form (geometry of the bed)
 Sequence (trends, cycles, repetitions)
 Fossils

Sand-gauge
 © 1984 by W.F. McCollough

Construction Related Rules

Table 1. Soil Separates

<u>Name of Separate</u>	<u>Diameter (range) mm.</u>
Very coarse sand	2.00 - 1.00
Coarse sand	1.00 - 0.50
Medium sand	0.50 - 0.25
Fine sand	0.25 - 0.10
Very fine sand	0.10 - 0.05
Silt	0.05 - 0.002
Clay	less than 0.002

Gravel / Sand / Fines

- Gravels are between # 4 sieve and 3”
- Sands are between # 200 sieve and # 4 sieve
- Fines are smaller than # 200 sieve

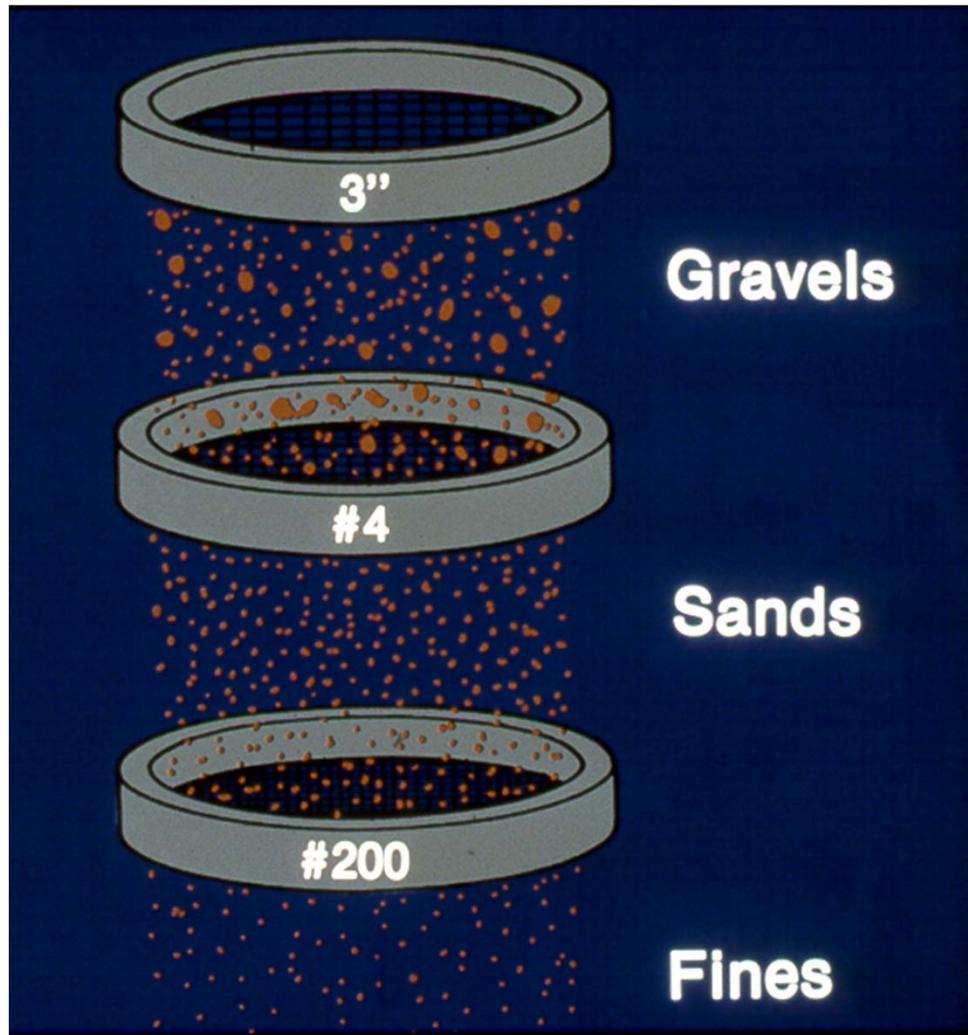
- Particle Sizes
 - Gradation or Mechanical Analyses
 - Sieves for larger particles
 - Hydrometer for fine particles



Sieve Analyses



Sieve Analyses



Sieve Designation - Large

Sieves larger than the #4 sieve are designated by the size of the openings in the sieve

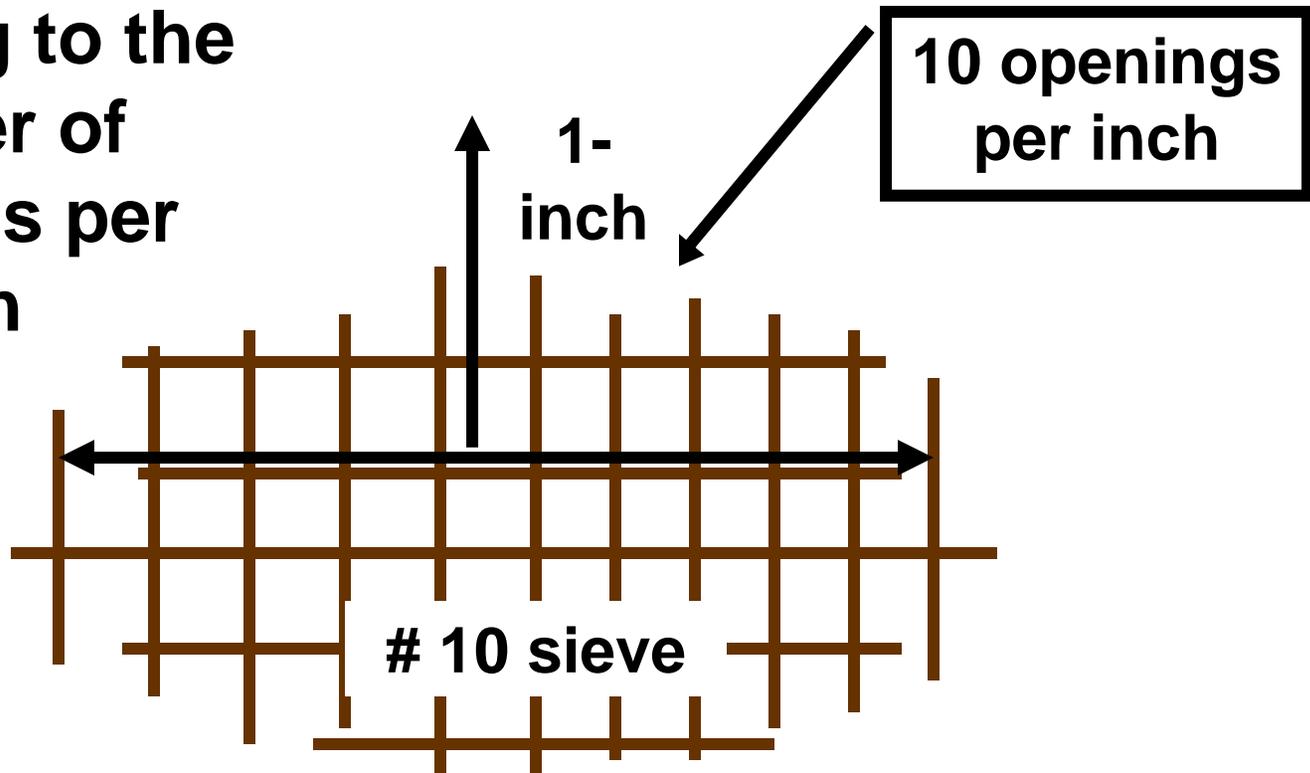


Review Activity 2

- Commonly used larger size sieves
 - 3 inch
 - 2 inch
 - 1-1/2 inch
 - 1 inch
 - 3/4 inch
 - 1/2 inch
 - 3/8 inch

Sieve Designation - Smaller

**Smaller sieves
are numbered
according to the
number of
openings per
inch**



Review Activity 3

- Commonly used smaller size sieves
 - # 4
 - # 10
 - # 20
 - # 40
 - # 60
 - # 140
 - # 200



Construction Related Rules



Report of Gradation

ASTM C-117 & C-136

Test Name TUPPER PIT TESTING
 Client CONSTRUCTION CONSULTANTS
 Material Type IN DRAIN SAND
 Material Source

Project Number 04-0426
 Lab ID 1664G
 Date Received 5/6/2004
 Date Completed 5/7/2004
 Tested By CRAIG TURCOTTE

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	<u>SPECIFICATIONS (%)</u>
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	94	100
4.75 mm	No. 4	89	95 - 100
2.36 mm	No. 8	82	80 - 100
1.18 mm	No. 16	71	50 - 85
600 μm	No. 30	51	25 - 60
300 μm	No. 50	26	5 - 30
150 μm	No. 100	10	0 - 10
75 μm	No. 200	3.9	

Construction Related Rules

Washed concrete sand meeting the ASTM C-33 specification.

Sieve Designation		Percentage by Weight Passing Square Mesh Sieves
Metric	English	
9.5 mm	3/8 inch	100
4.75 mm	No. 4	95-100
2.36 mm	No. 8	80-100
1.18 mm	No. 16	50-85
600 μ m	No. 30	25-60
300 μ m	No. 50	10-30
150 μ m	No. 100	2-10
75 μ m	No. 200	0-5.0 maximum

COARSE SAND

MEDIUM SAND

WET SITES on 9 INCH SOILS

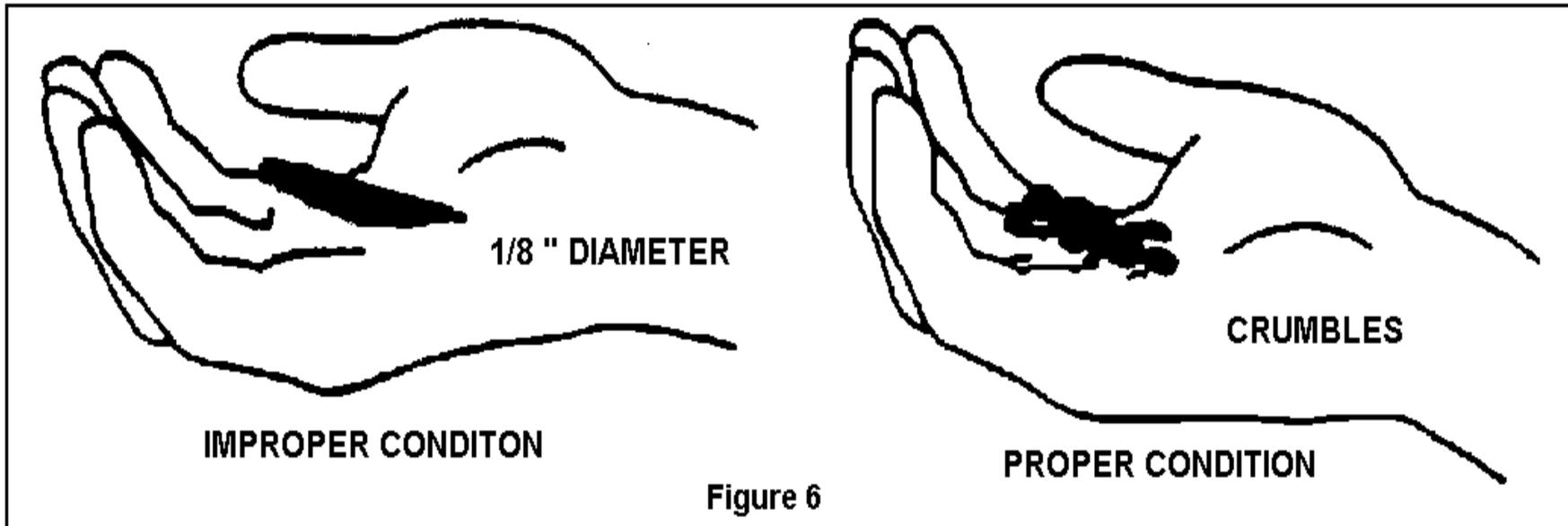
PLASTIC LIMIT

11A.1 General: On sites with fine soil textures, excavations that expose the bottom and sidewall area of the disposal field must not be carried out when the soil moisture content is above the plastic limit except when correcting a nuisance, there is no practical alternative, the plumbing inspector agrees and special construction techniques are used. The absolute plastic limit can be estimated by rolling the soil with the fingers. If the soil forms a wire or rod 1/8th of an inch in diameter and does not crumble when handled, the soil moisture content is too high to proceed with the excavation.

PLASTIC LIMIT

The soil must be dry and friable when site prep is started.

Smearing and compaction due to construction in a wet soil decrease the soil's ability to absorb wastewater. If a sample of the soil at the trench bottom depth forms a ribbon (e.g. 1/8-inch diameter) when rolled between the palms of the hands, the soil is too wet to excavate. If the soil crumbles into its natural structure, excavation may proceed. This pre-scarification examination is essential to help ensure proper operation of the system.



INSTALLATIONS

TANK INSTALLATIONS

**FILL MUST BE FREE OF LARGE STONES,
ROOTS OR FOREIGN OBJECTS**

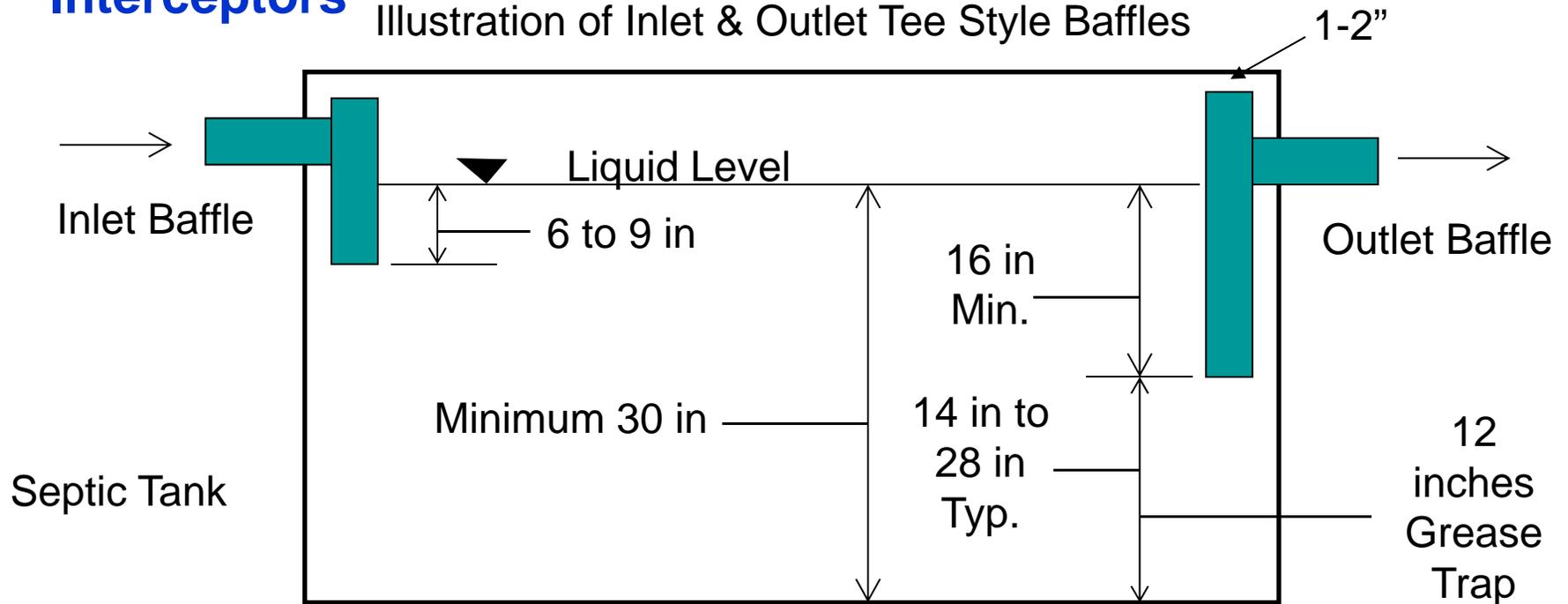
**MUST BE PLACED IN LAYERS AND EXTEND 4
INCHES BEYOND THE BASE AND FULLY
TAMPED**

LEVEL

Construction Related Rules

Chapter 6 – Septic Tanks, Dosing Tanks & Grease Interceptors

Illustration of Inlet & Outlet Tee Style Baffles



Construction Related Rules

Chapter 6 – Septic Tanks, Dosing Tanks & Grease Interceptors

Section 6E Inlet & Outlet Connections

Sets the following requirements for the septic tank baffles:

Inlet Baffle: 4" if PVC

Extends 6" to 9" below liquid level

Watertight seal with tank wall

Outlet Baffle: 4" if PVC

Extends 16" below liquid level

Extends to within 1-2" of tank top

Watertight seal with tank wall

Construction Related Rules

Chapter 6 – Septic Tanks, Dosing Tanks & Grease Interceptors

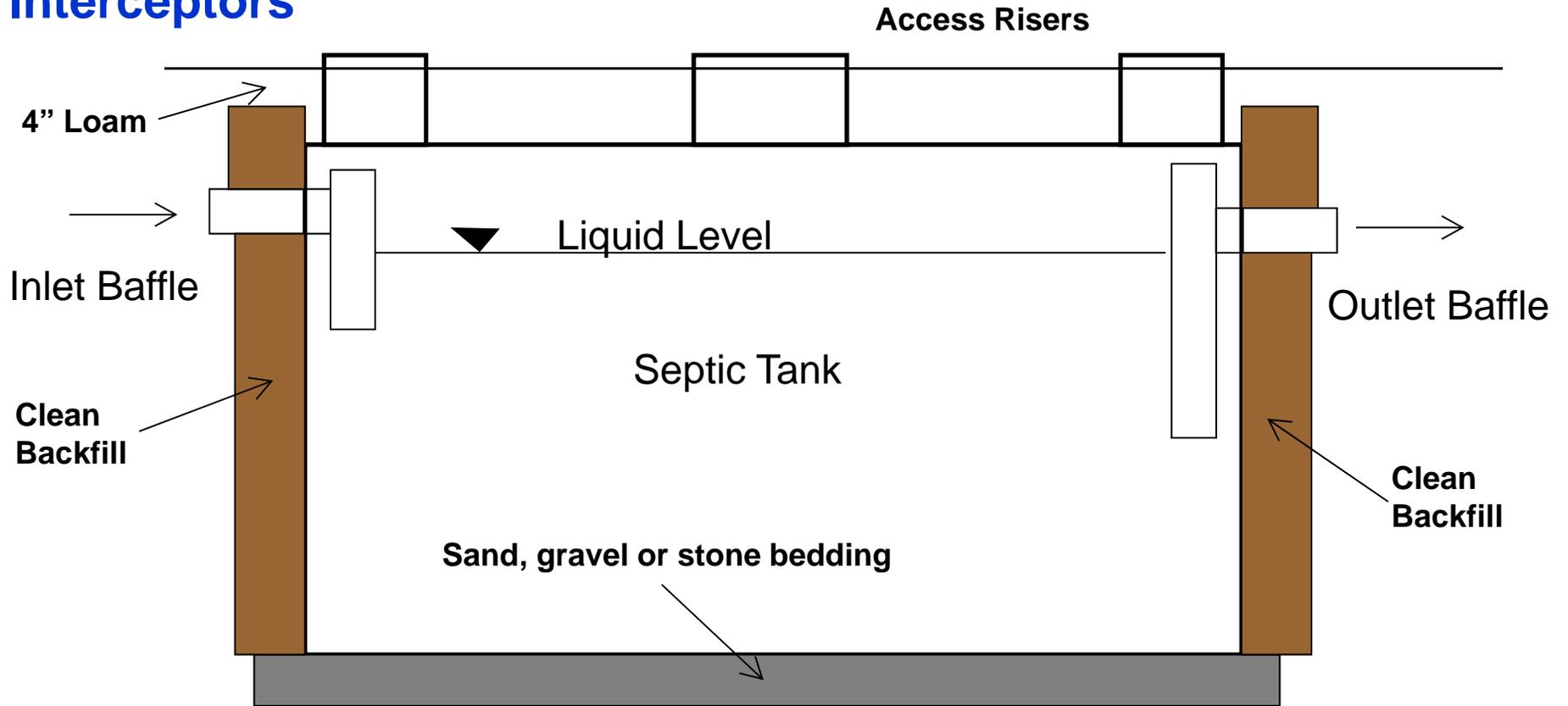


Illustration of Tank Installation

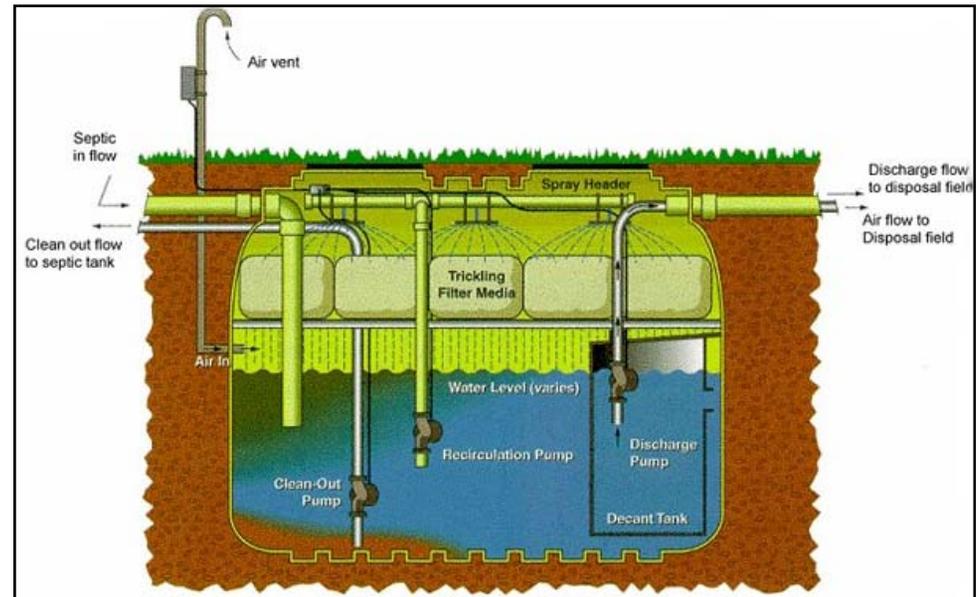
Subsurface Wastewater Disposal Rules

Advanced Treatment

The bacteria in aerobic treatment tanks, although more active, are also more fragile and sensitive to fluctuating conditions than anaerobic bacteria in septic tanks.

Aerobic treatment tanks are relatively more expensive, require maintenance, and need an energy source.

At right is a recirculating extended treatment tank.



RISERS, RESIDENTIAL

IF BURIED, WATER TIGHT RISERS TO WITHIN 6" OF ORIGINAL GRADE ARE REQUIRED.

RISER OPENING MUST BE 18" IN DIAMETER OVER THE TANK COVER

IF THERE IS A PUMP STATION WITHIN THE TANK, THE RISER DIAMETER MUST BE 24" TO THE GROUND SURFACE

OUTLET BAFFLES THAT UTILIZE AN EFFLUENT FILTER MUST HAVE A RISER OF AT LEAST 18" IN DIAMETER AND TO THE GROUND SURFACE

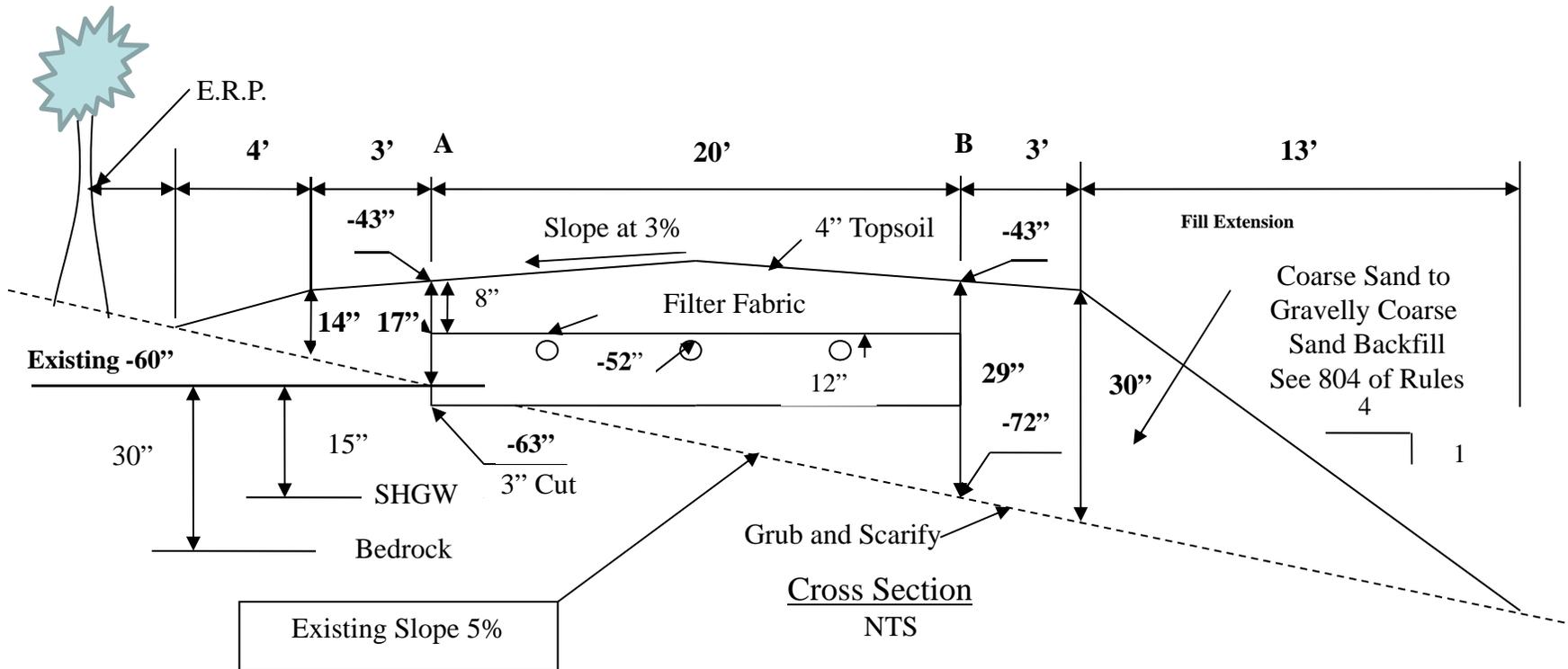
RISERS, OTHER FACILITIES

**ALL RISERS MUST BE LOCATED AT
GRADE. GRADE MUST SLOPE AWAY
FROM THE OPENINGS**

Not a legal pump station



Elevations



Length of Fill Extensions

Quick Field Review - Up Slope

Upslope thickness of fill in feet at edge of disposal field
12 inches / 12 = (1.00')

1.00

Divide By ----- = 2.5 feet

0.40

(Proposed finish grade slope in feet per foot + existing ground grade in feet per foot)
(4 to 1 = 25 % = 0.25 feet per foot) + (rise over run, difference in elevation / distance)

0.25 feet per foot (25%) + 4 feet / 20 feet (15%)

0.25 + 0.15

(0.40)

Note: When existing ground up slope is three (3) percent or less the existing ground slope should be calculated to be level.

Length of Fill Extensions

Quick Field Review Up Slope

Up Slope Shoulder Reductions

Level Disposal Field Shoulder Slope = 3' x 0.03 (3%) = 0.09 Feet

5 % Existing ground slope = 3' x 0.05 = 0.15 – 0.09 = 0.06 / (0.25 + 0.05) = **0.20 feet less**

10% Existing ground slope = 3' x 0.10 = 0.30 – 0.09 = 0.21 / (0.25 + 0.10) = **0.60 feet less**

15% Existing ground slope = 3' x 0.15 = 0.45 – 0.09 = 0.36 / (0.25 + 0.15) = **0.90 feet less**

20% Existing ground slope = 3' x 0.20 = 0.60 – 0.09 = 0.51 / (0.25 + 0.20) = **1.13 feet less**

Example = 2.5 feet required – 0.90 feet at 15% = Round to 2 feet Total Fill Extension

**Total Distance From Disposal Field Corner to Edge of Fill Extension Including
3 Foot shoulder = 5 Feet**

Length of Fill Extensions

Quick Field Review – Down Slope

Down slope thickness of fill in feet at edge of disposal field

$$48 \text{ inches} / 12 = (4.00')$$

4.00

Divide By ----- = **40 feet**

0.10

(Proposed finish grade slope in feet per foot - existing ground grade in feet per foot)

(4 to 1 = 25 % = 0.25 feet per foot)-(rise over run, difference in elevation / distance)

$$0.25 \text{ feet per foot (25\%)} - 4 \text{ feet} / 20 \text{ feet (15\%)}$$

$$0.25 \quad - \quad 0.15$$

(0.10)

Length of Fill Extensions

Quick Field Review – Down Slope

Down Slope Shoulder Additions

Level Disposal Field Shoulder Slope = 3' x 0.03 (3%) = 0.09 feet

5 % Existing ground slope = 3' x 0.05 = 0.15 – 0.09 = 0.06 / (0.25 – 0.05) = **0.3 feet more**

10% Existing ground slope = 3' x 0.10 = 0.30 – 0.09 = 0.21 / (0.25 - 0.10) = **1.4 feet more**

15% Existing ground slope = 3' x 0.15 = 0.45 – 0.09 = 0.36 / (0.25 – 0.15) = **3.6 feet more**

20% Existing ground slope = 3' x 0.20 = 0.60 – 0.09 = 0.51 / (0.25 - .20) = **10.2 feet more**

Example = 40 feet required + 3.6 feet at 15% = Round to 44 feet Total Fill Extension

**Total Distance From Disposal Field Corner to Edge of Fill Extension Including
3 Foot shoulder = 47 Feet**

Construction Related Rules

TABLE 11B
Maximum Percent passing by weight

		Nominal Stone Size	
		1 1/2"	3/4"
Sieve Size	2"	100	100
	1 1/2"	95 - 100	100
	3/4"	0 - 40	90 - 100
	1/2"	0 - 20	0 - 55
	3/8"	0 - 8	0 - 25
	#4	0 - 5	0 - 10
	#200	0 - 2	0 - 2

Construction Related Rules

Chapter 11 – Quality Assurance and Control

Section 11.F.2.d Placement

Stone may be placed in the disposal field site using a backhoe, front-end loader, or dump truck, from the sides of the disposal field rather than by driving onto the prepared area of the disposal field.

In the case of large disposal fields, tracked equipment may be operated within the disposal field.



Inspections

Second Inspection

A common installation error is use of poor quality or poorly sized stone, which results in reduced void space and occasional sealing off by very fine particles.

Stone must be $\frac{3}{4}$ " OR $1 \frac{1}{2}$ " in size, clean, and evenly sized to provide sufficient void space.

Some installers wrongly interpret the size range as allowing a mix of sizes.



PIPING BETWEEN COMPONENTS

Section 6M - Piping

**6M.4a GRAVITY FLOW – NO LESS THAN 3” IN DIAMETER,
PRIMITIVE 1.5” IN DIAMETER**

**6M.4b PUMP DISCHARGE-NO LESS THAN MANUFACTURER
SPEC.**

6M.6 JOINTS-MADE WATERTIGHT

**6M.7 LAID IN A FIRM FOUNDATION AND
PROTECTED FROM FREEZING**

**6M.9a BUILDING SEWER PITCH – PIPES UNDER 4” = 1/4 “ PER FOOT,
PIPES 4” & LARGER = 1/8” PER FOOT MAY BE AUTHORIZED BY THE
LPI**

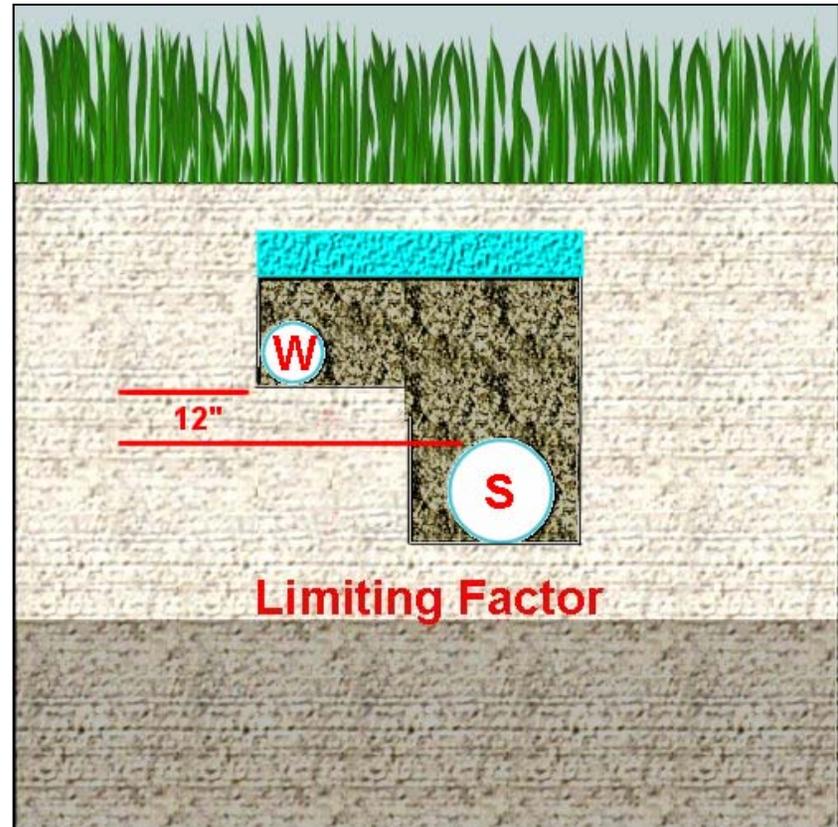
6M.9b EFFLUENT LINE PITCH – 1/8” PER FOOT

Construction Related Rules

Section 6M.12 Water Service & Building Sewer

A structure's water service pipe and the building sewer shall be separated by undisturbed or compacted earth when possible.

The water service pipe may only be placed in the same trench as the building drain and building sewer when the bottom of the water service pipe at all points shall be a minimum of 12 inches above the top of the sewer at its highest point, and the water service pipe shall be placed on a solid shelf excavated at one side of the common trench.



The disposal field stone shall be covered with a layer of non-woven fabric or two (2) inches of compressed hay.

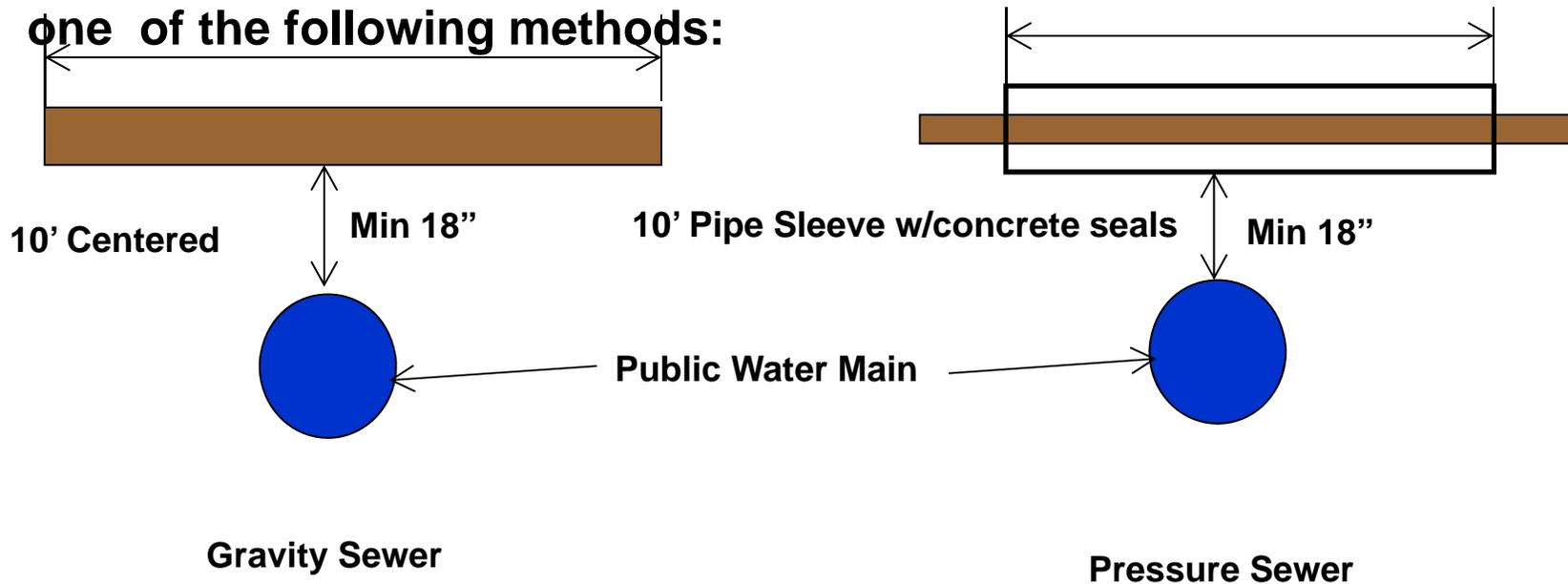
Non-woven fabric may be used, provided the edges of adjacent sheets of fabric overlap by a minimum of 6 inches; and the for the fabric shall be 4.0 ounces/square yard (per ASTM D-3776).



Construction Related Rules

Section 6M.14 Public Water Main & Building Sewer Crossing

A building sewer crossing above a public water main shall utilize one of the following methods:



SECOND INSPECTION ELEVATIONS, BACKFILL, SLOPE, PITCH...

PRIOR TO COVERING THE SYSTEM

SYSTEM COMPONENTS

STONE, PIPES OR PROPRIETARY DEVICES

TANKS, HAY, FILTER FABRIC

**FILL BENEATH AND BESIDE THE DISPOSAL FIELD
INCLUDING FILL EXTENSIONS**

CURTAIN DRAINS, DIVERSION DITCHES, BERMS

ELEVATIONS OF SYSTEM COMPONENTS

SHOULDER, FILL EXTENSIONS

Permitting

Certificates of Approval

The LPI must sign the inspection block on the HHE-200 Form or Plumbing Application, just below the permit label area, which comprises a Certificate of Approval.

The LPI should simultaneously sign the permittee's copy and the Town's copy. This will provide the Town and the permittee with a permanent record that the inspection took place.

>> CAUTION: LPI APPROVAL REQUIRED <<	
Town/City _____	Permit # _____
Date Permit Issued ___/___/___	Fee: \$ _____ Double Fee Charged []
Local Plumbing Inspector Signature _____	L.P.I. # _____
	<input type="checkbox"/> Owner <input type="checkbox"/> Town <input type="checkbox"/> State
The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.	
Municipal Tax Map # _____	Lot # _____
CAUTION: INSPECTION REQUIRED	
I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved	
Local Plumbing Inspector Signature _____	(2nd) date approved _____

Section 11E.2c
FILL MATERIAL PLACEMENT ABOVE
DISPOSAL FIELD

**IMMEDIATELY ABOVE THE
FILTER FABRIC OR HAY, FILL IS
REQUIRED AS SPECIFIED ON
THE PLANS.**

**A MINIMUM OF 8 INCHES INCLUDING
COVER MATERIAL**

COVER MATERIAL

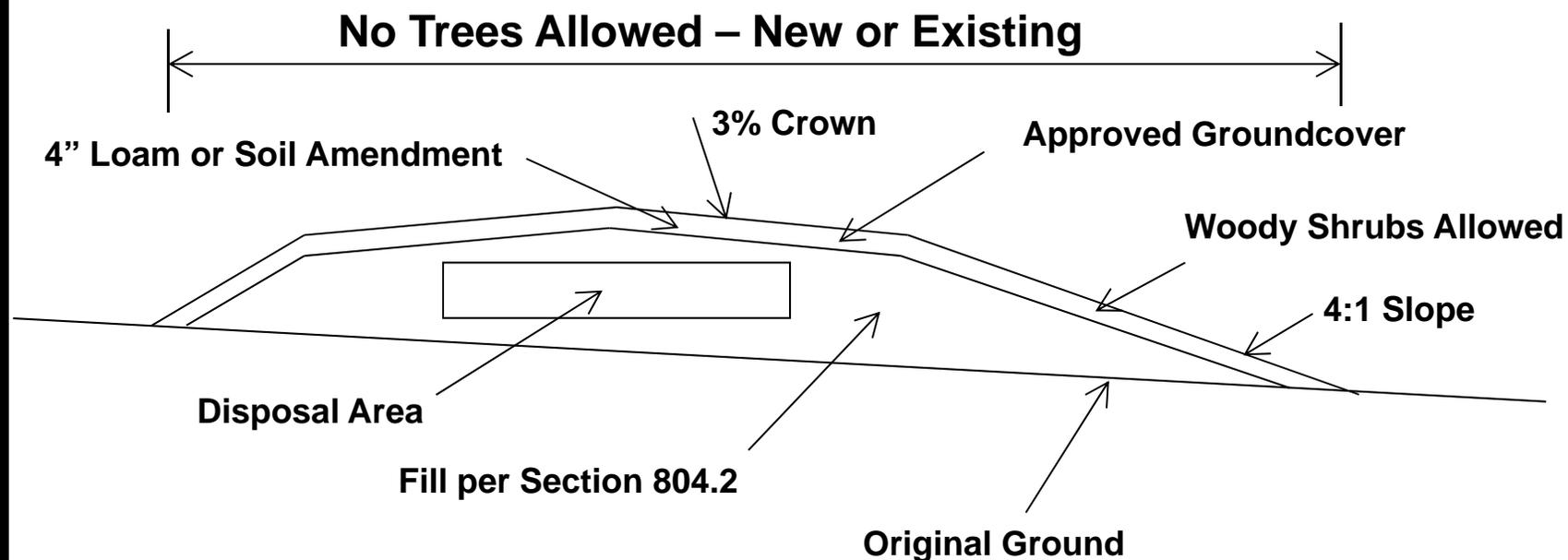
11E.2 COVER MATERIAL

IMMEDIATELY ABOVE THE BACKFILL OR FILL MATERIAL, A MINIMUM OF 4" OF SOIL OR SOIL AMENDMENT MIX, SUITABLE FOR ESTABLISHMENT OF A GOOD VEGETATIVE COVER MUST BE PLACED OVER THE ENTIRE DISTURBED SOIL AREA, INCLUDING FILL EXTENSIONS

3% CROWN, 3' SHOULDER AND 4:1 FILL EXTENSIONS

Construction Related Rules

Chapter 11 – Quality Assurance and Quality Control



11G.5,6,7 EROSION CONTROL

11G.5 VEGETATIVE COVERS

**GRASS, CLOVER, TREFOIL, VETCH, WILD FLOWERS,
ETC..**

11G.6 OTHER COVERS

BARK CHIPS, WOOD CHIPS

11G.7 WOODY SHRUBS AND TREES

**WOODY SHRUBS AND TREES ARE UNACCEPTABLE (woody
shrubs on fill extension only)**



Section 3A - PERMIT REQUIRED-WORK
MUST NOT BE STARTED UNTIL THE LPI HAS
ISSUED A PERMIT

3B TIME LIMIT- COMMENCED WITHIN 24
MONTHS OF PERMITTING

3B.7 DEPARTURES FROM DESIGN- MUST BE
APPROVED BY THE SITE EVALUATOR

11I.6 NOTIFICATION REQUIRED- THE LPI SHALL
BE NOTIFIED 24 HOURS BEFORE THE SYSTEM IS
READY FOR INSPECTION

HHE-200 Form

Page One

Page one of the HHE-200 Form must be signed by both the owner/applicant and the Site Evaluator before a permit can be issued.

It is important to check that each block on the form is properly completed. If any information is lacking, the LPI should not issue the permit.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		<small>Maine Dept Health & Human Services Division of Health Engineering, 10-5115 (207) 287-5622 Fax (207) 287-3105</small>
PROPERTY LOCATION City, Town, or Plantation: [REDACTED] Street or Road: [REDACTED] Subdivision, Lot #: [REDACTED]		>> CAUTION: PERMIT REQUIRED - ATTACH IN SPACE BELOW <<
OWNER/APPLICANT INFORMATION Name (last, first, MI): [REDACTED] <input type="checkbox"/> Owner <input type="checkbox"/> Applicant Mailing Address of Owner/Applicant: [REDACTED] Daytime Tel. #: [REDACTED]		The Subsurface Wastewater Disposal System <i>shall not</i> be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.
OWNER OR APPLICANT STATEMENT <small>I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.</small> Signature of Owner or Applicant: [REDACTED] Date: [REDACTED]		CAUTION: INSPECTION REQUIRED <small>I have inspected the installation authorized above and found it to be in conformance with the Subsurface Wastewater Disposal Rules Application. (1st) date approved: [REDACTED]</small> Local Plumbing Inspector Signature: [REDACTED] (2nd) date approved: [REDACTED]
PERMIT INFORMATION		
TYPE OF APPLICATION <input type="checkbox"/> 1. First Time System <input checked="" type="checkbox"/> 2. Replacement System Type replaced: <i>Bed</i> Year installed: <i>Not Used By Other</i> <input type="checkbox"/> 3. First Time System <input type="checkbox"/> a. Minor Expansion <input type="checkbox"/> b. Major Expansion <input type="checkbox"/> 4. Experimental System <input type="checkbox"/> 5. Seasonal Conversion	THIS APPLICATION REQUIRES <input type="checkbox"/> 1. No Rule Variance <input type="checkbox"/> 2. First Time System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 3. Replacement System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 4. Minimum Lot Size Variance <input type="checkbox"/> 5. Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS <input checked="" type="checkbox"/> 1. Complete Non-engineered System <input type="checkbox"/> 2. Primitive System (graywater & all toilet) <input type="checkbox"/> 3. Alternative Toilet, specify: _____ <input type="checkbox"/> 4. Non-engineered Treatment Tank (only) <input type="checkbox"/> 5. Holding Tank, _____ gallons <input type="checkbox"/> 6. Non-engineered Disposal Field (only) <input type="checkbox"/> 7. Separated Laundry System <input type="checkbox"/> 8. Complete Engineered System (2000 gpd or more) <input type="checkbox"/> 9. Engineered Treatment Tank (only) <input type="checkbox"/> 10. Engineered Disposal Field (only) <input type="checkbox"/> 11. Pre-treatment, specify: _____ <input type="checkbox"/> 12. Miscellaneous Components
SIZE OF PROPERTY 0.392 ACRES	DISPOSAL SYSTEM TO SERVE <input type="checkbox"/> 1. Single Family Dwelling Unit, No. of Bedrooms: 3 <input type="checkbox"/> 2. Multiple Family Dwelling, No. of Units: _____ <input type="checkbox"/> 3. Other: _____ (specify)	TYPE OF WATER SUPPLY <input checked="" type="checkbox"/> 1. Drilled Well <input type="checkbox"/> 2. Dug Well <input type="checkbox"/> 3. Private <input type="checkbox"/> 4. Public <input type="checkbox"/> 5. Other
SHORELAND ZONING <input type="checkbox"/> 1. Yes <input checked="" type="checkbox"/> 2. No		
DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)		
TREATMENT TANK <input checked="" type="checkbox"/> 1. Concrete <input type="checkbox"/> a. Regular <input type="checkbox"/> b. Low Profile <input type="checkbox"/> 2. Plastic <input type="checkbox"/> 3. Other: _____ CAPACITY: 1000 GAL	DISPOSAL FIELD TYPE & SIZE <input type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench <input type="checkbox"/> 3. Percolation Device <input type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear <input type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load <input type="checkbox"/> 4. Other: _____ SIZE: _____ sq. ft. <input type="checkbox"/> lin. ft.	GARBAGE DISPOSAL UNIT <input checked="" type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe If Yes or Maybe, specify one below: <input type="checkbox"/> a. multi-compartment tank <input type="checkbox"/> b. _____ tanks in series <input type="checkbox"/> c. increase in tank capacity <input type="checkbox"/> d. Filter on Tank Outlet
SOIL DATA & DESIGN CLASS PROFILE: 4.1C CONDITION: 1.1 of Observation Hole # _____ Depth: _____ of Most Limiting Soil Factor: _____	DISPOSAL FIELD SIZING <input type="checkbox"/> 1. Small--2.0 sq. ft./gpd <input type="checkbox"/> 2. Medium--2.6 sq. ft./gpd <input type="checkbox"/> 3. Medium-Large 3.3 sq. ft./gpd <input type="checkbox"/> 4. Large--4.1 sq. ft./gpd <input type="checkbox"/> 5. Extra Large--5.0 sq. ft./gpd	EFFLUENT/EJECTOR PUMP <input checked="" type="checkbox"/> 1. Not Required <input type="checkbox"/> 2. May Be Required <input type="checkbox"/> 3. Required Specify only for engineered systems: DOSE: _____ gallons
DESIGN FLOW _____ gallons per day BASED ON: <input type="checkbox"/> 1. Table 501.1 (dwelling unit(s)) <input type="checkbox"/> 2. Table 501.2 (other facilities) SHOW CALCULATIONS for other facilities		
SITE EVALUATOR STATEMENT I certify that on Dec 18, 2006 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241). Site Evaluator Signature: [REDACTED] SE #: [REDACTED] Date: [REDACTED] Site Evaluator Name Printed: [REDACTED] Telephone Number: [REDACTED] E-mail Address: [REDACTED]		
Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.		

HHE-200 Form

Page One

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
TREATMENT TANK <input checked="" type="checkbox"/> 1. Concrete <input type="checkbox"/> a. Regular <input type="checkbox"/> b. Low Profile <input type="checkbox"/> 2. Plastic <input type="checkbox"/> 3. Other: _____ CAPACITY: <u>1,000</u> GAL.	DISPOSAL FIELD TYPE & SIZE <input type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench <input type="checkbox"/> 3. Proprietary Device <input type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear <input type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load <input type="checkbox"/> 4. Other: _____ SIZE: _____ <input type="checkbox"/> sq. ft. <input type="checkbox"/> lin. ft.	GARBAGE DISPOSAL UNIT <input checked="" type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe If Yes or Maybe, specify one below: <input type="checkbox"/> a. multi-compartment tank <input type="checkbox"/> b. _____ tanks in series <input type="checkbox"/> c. increase in tank capacity <input type="checkbox"/> d. Filter on Tank Outlet	DESIGN FLOW <u>270</u> gallons per day BASED ON: <input type="checkbox"/> 1. Table 501.1 (dwelling unit(s)) <input type="checkbox"/> 2. Table 501.2 (other facilities) SHOW CALCULATIONS for other facilities <input type="checkbox"/> 3. Section 503.0 (meter readings) AT EACH WATER METER DATA
SOIL DATA & DESIGN CLASS PROFILE CONDITION DESIGN <u>41C</u> <u>1</u> <u>1</u> at Observation Hole # _____ Depth <u>—</u> " of Most Limiting Soil Factor	DISPOSAL FIELD SIZING <input type="checkbox"/> 1. Small--2.0 sq. ft. / gpd <input type="checkbox"/> 2. Medium--2.6 sq. ft. / gpd <input type="checkbox"/> 3. Medium-Large 3.3 sq. ft. / gpd <input type="checkbox"/> 4. Large--4.1 sq. ft. / gpd <input type="checkbox"/> 5. Extra Large--5.0 sq. ft. / gpd	EFFLUENT/EJECTOR PUMP <input checked="" type="checkbox"/> 1. Not Required <input type="checkbox"/> 2. May Be Required <input type="checkbox"/> 3. Required Specify only for engineered systems: DOSE: _____ gallons	LATITUDE AND LONGITUDE at center of disposal area Lat. _____ d _____ m _____ s Lon. _____ d _____ m _____ s If g.p.s, state margin of error: _____
SITE EVALUATOR STATEMENT			

HHE-200 Form

Page Two

The site plan should show all prominent features in the vicinity of the proposed system.

Test pit logs should be complete and accurate.

Department of Human Services
Division of Health Engineering
12071 287-5872 FAX: 12071 287-4172

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Town, City, Plantation: _____ Street, Road, Subdivision: _____ Owner's Name: _____

SITE PLAN

Scale 1" = 50 Ft.
or as shown

SITE LOCATION PLAN
(Map from Maine Atlas recommended)

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole: _____ Test Pit Boring
Depth of Organic Horizon Above Mineral Soil: _____

Texture	Consistency	Color	Mottling
Loom	Loose	Dark Brown	
		Dark	
Gravelly	Knobby	Brown	
Sand			

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Soil Classification: 4 Profile, C Condition, Slope: 3, Limiting Factor: 3

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole: _____ Test Pit Boring
Depth of Organic Horizon Above Mineral Soil: _____

Texture	Consistency	Color	Mottling

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Soil Classification: _____ Profile, _____ Condition, Slope: _____, Limiting Factor: _____

Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Site Evaluator Signature: _____ SE • Date: _____

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HHE-200 Form

Page Two

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 FAX (207) 287-4172
Town, City, Plantation	Street, Road, Subdivision	Owner's Name
[Redacted]	[Redacted]	[Redacted]
SITE PLAN Scale 1" = 50 Ft. or as shown		SITE LOCATION PLAN (Map from Maine Atlas recommended)
<p><i>Corners Drainage Bed Staked out & Flagged</i></p> <p><i>20' x 35' Drainage Basin</i></p> <p>NHWM of Brook</p> <p>Storage Building And E.R.P.</p> <p><i>Trailer</i></p> <p>Abutter's Well, Not Owner's</p> <p><i>Well</i></p> <p>NHWM of Sandy Stream</p> <p>No Property Lines Shown</p>		<p><i>Lot</i></p> <p><i>Brook</i></p> <p><i>Blue Trailer</i></p>

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Page Two

SOIL DESCRIPTION AND CLASSIFICATION					(Location of Observation Holes Shown Above)				
Observation Hole _____ <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring _____ " Depth of Organic Horizon Above Mineral Soil					Observation Hole _____ <input type="checkbox"/> Test Pit <input type="checkbox"/> Boring _____ " Depth of Organic Horizon Above Mineral Soil				
0	Texture	Consistency	Color	Mottling	0	Texture	Consistency	Color	Mottling
	Loam	Loose	Dark Brown						
10			Dark		10				
	Gravelly	Friable	Brown						
20					20				
	Sand								
30					30				
40					40				
50					50				
Soil Classification: Profile <u>4</u> Condition <u>C</u> Slope <u>3</u> % Limiting Factor <u>3</u>					Soil Classification: Profile _____ Condition _____ Slope _____ % Limiting Factor _____				
<input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth					<input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth				
Site Evaluator Signature _____ SE					Date _____				

HHE-200 Form

Page Two



HHE-200 Form

Page Three

Page three should contain all necessary construction data for installation of the disposal area.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 FAX (207) 287-4172																								
Town, City, Plantation	Street, Road, Subdivision	Owner's Name																								
SUBSURFACE WASTEWATER DISPOSAL PLAN		SCALE 1" = 20 FT.																								
<table border="0"> <tr> <td colspan="2">FILL REQUIREMENTS</td> <td colspan="2">CONSTRUCTION ELEVATIONS</td> <td colspan="2">ELEVATION REFERENCE POINT</td> </tr> <tr> <td>Depth of Fill (Upslope)</td> <td>9"</td> <td>Finished Grade Elevation</td> <td>101'-3"</td> <td>Location & Description</td> <td>Hor. Spike</td> </tr> <tr> <td>Depth of Fill (Downslope)</td> <td>18"</td> <td>Top of Distribution Pipe or Proprietary Device</td> <td>100'-2"</td> <td>4' High - Bur. Alarm</td> <td>Doorway</td> </tr> <tr> <td></td> <td></td> <td>Bottom of Disposal Area</td> <td>99'-3"</td> <td>Reference Elevation</td> <td>164.0</td> </tr> </table>			FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT		Depth of Fill (Upslope)	9"	Finished Grade Elevation	101'-3"	Location & Description	Hor. Spike	Depth of Fill (Downslope)	18"	Top of Distribution Pipe or Proprietary Device	100'-2"	4' High - Bur. Alarm	Doorway			Bottom of Disposal Area	99'-3"	Reference Elevation	164.0
FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT																						
Depth of Fill (Upslope)	9"	Finished Grade Elevation	101'-3"	Location & Description	Hor. Spike																					
Depth of Fill (Downslope)	18"	Top of Distribution Pipe or Proprietary Device	100'-2"	4' High - Bur. Alarm	Doorway																					
		Bottom of Disposal Area	99'-3"	Reference Elevation	164.0																					
DISPOSAL AREA CROSS SECTION																										
Site Evaluator Signature		Date																								
SE		Date																								

HHE-200 Form

Page Three

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Department of Human Services Division of Health Engineering (207) 287-5672 FAX (207) 287-4172
Town, City, Plantation	Street, Road, Subdivision	Owner's Name
SUBSURFACE WASTEWATER DISPOSAL PLAN		SCALE 1" = 20 FT.
<p>* No Swing Ties Shown * E.R.P. Not Shown * Cross Section on Wrong Axis</p>		

HHE-200 Form

Page Three

FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT	
Depth of Fill (Upslope)	9"	Finished Grade Elevation	101'-3"	Location & Description	Hor Sp, Ke
Depth of Fill (Downslope)	18"	Top of Distribution Pipe or Proprietary Device	100'-2"	Reference Elevation	4' High - Bu. King Doorway
		Bottom of Disposal Area	99'-3"		164.0

DISPOSAL AREA CROSS SECTION		SCALE:	
<p>* No Transition Zone Shown</p> <p>* Stone Size is Not Specific</p> <p>* No Fill Specs Provided</p>		VERTICAL:	1" = 5'
		HORIZONTAL:	1" = 10'

 Site Evaluator Signature	 SE	 Date
---	---	---

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ISSUES

The Wrong Question??

- What is the number one question asked of site evaluators by septic system installers and homeowners?

Yep, you guessed it.

- Can I lower the elevations on the bed, chambers, proprietary device? It's too high out of the ground.
- Don't do it!
- The system won't work if it's installed in saturated soils.
- The unsaturated soils under the system is where all the treatment takes place.

Replacement system? KNOW WHERE THE TANK IS



Steuben man killed in accident during wood delivery

By Sharon Kiley Mack

BDN Staff

CHERRYFIELD, Maine — Forest Dale, Sr., 46, of Steuben was killed Saturday morning when he was crushed between the cab and the dump body of his delivery truck.

Dale was delivering a load of firewood to a home in Cherryfield about 11 a.m. when the accident occurred, according to Sgt. Timothy Tabbutt of the Washington County Sheriff's Department. In the process of attempting to raise the dump body on his 1-ton flatbed, Dale's truck broke through an abandoned underground tank, Tabbutt said. The truck fell through all the way to its frame. Dale, who had climbed under his truck to release the piston to dump the load of firewood, was caught between the cab and dump body when the truck fell and he was crushed.

Tabbutt said the tank was located behind a local home and was likely an abandoned septic tank.

Tabbutt was assisted at the scene by the Cherryfield Fire Department and Ambulance service.

But I want to use my Septic
System...







Campgrounds







**Maine Department of Health & Human Services
Maine Center for Disease Control & Prevention
Division of Environmental Health – Subsurface Wastewater Unit**

Voluntary Certification Program

Subsurface Wastewater Disposal System Installer

In association with the Maine Department of Environmental Protection, Nonpoint Source Training and Resource Center the Division of Environmental Health is pleased to offer a voluntary certification program for individuals who install subsurface wastewater disposal systems. The Maine Subsurface Wastewater Disposal Rules, CMR 241, do not require certification as a condition of obtaining a permit for the purpose of installing a subsurface wastewater disposal system; however possession of this certification may allow the installer to sign an affidavit (HHE-238B) to cover the first system inspection noted in Section 111.5.1 of the Rules if the local plumbing inspector is in agreement.

Once issued the certification is good for five (5) years. The following criteria must be met for initial certification by the Department:

1. Attendance at one (1) Basic System Installation Training Session conducted by the Subsurface Wastewater Program; and
2. Submission of page one from two (2) HHE-200 Forms which were permitted and installed by the applicant and inspected and found in compliance with the Rules by the Local Plumbing Inspector. **PLEASE MAKE SURE THAT THE 1ST AND 2ND INSPECTIONS ARE DONE ON THESE HHE FORMS.**

The certification will be automatically renewed after five (5) years if the certified individual submits proof of attendance at subsurface waster related training session(s) providing a minimum of 6 contact hours within the past certification period. Individuals attending JETCC sponsored sessions will be credited automatically. It is the responsibility of the certified individual to insure that proof of attendance is provided to the Division of Environmental Health.

**Mail to: Maine Department of Health & Human Services
Division of Environmental Health
Attn: Wendy Austin
11 State House Station
Augusta, Maine 04333-0011**

Name: _____

Company: _____

Address: _____

Municipality: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Training Session Attended: _____ Date: _____

Revised 12/10/09



DIVISION OF ENVIRONMENTAL HEALTH
SUBSURFACE WASTEWATER PROGRAM

AFFIDAVIT OF SITE PREPARATION

This affidavit is to be completed by a certified system installer and submitted to the Local Plumbing Inspector to document compliance with Section 111.5.1 of the Maine Subsurface Wastewater Disposal Rules, 144 CMR 241. *Permission to utilize this document in lieu of a site preparation inspection by the Local Plumbing Inspector must be verified when the permit is issued.* This affidavit is *not* to be utilized in place of the system inspection described in Section 111.5.2 of the Rules.

INSTALLER NAME: _____
(Please Print)

CERTIFICATION NUMBER: _____

SSWD PERMIT NUMBER: _____

PERMIT ISSUE DATE: _____

PROPERTY OWNER NAME: _____

PROPERTY ADDRESS: _____

MUNICIPALITY: _____

By signing and submitting this document to the Local Plumbing Inspector, I certify that all construction activities noted in Section 111.5.1 including removal of all vegetation from the disposal field area and fill extensions as specified in Section 801.3; roughening of the ground surface as specified in Section 801.4; establishment of a transitional horizon as specified in Section 801.5; and placement of erosion control devices as specified in Section 801.2 have been completed in full compliance with the Maine Subsurface Wastewater Disposal Rules, 144 CMR 241 for the referenced SSWD permit.

INSTALLER SIGNATURE: _____

DATE SUBMITTED: _____

By signing and accepting this document from the Certified Installer, I acknowledge that a site preparation inspection was not conducted for the referenced SSWD permit.

LPI SIGNATURE: _____

ACCEPTANCE DATE: _____

**THIS FORM
ONLY TO
BE USED
AFTER THE
LPI'S
APPROVAL**

Contact Information

Program Staff

- **Vacant, State Site Evaluator**
- **James Jacobsen, Project Reviews, Webmaster 287-5695**
- **Brent Lawson, State Plumbing Inspector 592-7376**
- **Wendy Austin, Plumbing Permits & Data Entry 287-5672**
- **Lorraine Martin, Plumbing Permits and Program Support 287-5689**

The End



www.mainepublichealth.gov/septic-systems

The screenshot shows a Mozilla Firefox browser window displaying the website for the Maine Subsurface Wastewater Unit. The browser's address bar shows the URL www.maine.gov/dhhs/mecdc/environmental-health/plumb/index.htm. The website header includes the Maine.gov logo, navigation links for Agencies, Online Services, and Help, and a search bar. The main navigation menu includes links for Maine CDC Home, Health Topics A-Z, Data/Reports, For Health Care Providers, For Businesses, For Homeowners/Renters, and Divisions/Programs. The page title is "Maine Subsurface Wastewater Unit". The main content area features a section titled "Maine Subsurface Wastewater Unit" with a description of the state's reliance on decentralized sewage disposal facilities and the role of the MeCDC. A "What's New at the Subsurface Wastewater Unit" section lists several updates, including "Family Burying Grounds", "Fillable Online HHE-200 Page One Available", "Elimination of Permit Labels", "Health Inspection Program Holding Tank Policy", and "Recently Approved Products". A "Featured Links" sidebar on the right lists various resources such as "Online Rules", "Variances", "Site Evaluator Licensing", "Frequently Asked Questions", "Ten Tips for Systems", "Cemeteries and Crematoria", "Certifications", "Public Swimming Pools", "2001 DHS & DEP Programs Review", and "Online Services". The browser's taskbar at the bottom shows the Start button, several open applications including Microsoft Outlook, and the system clock indicating 8:21 AM on Tuesday, January 3, 2012.

Subsurface Wastewater Unit, Division of Environmental Health, Maine CDC - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Subsurface Wastewater Unit, Division of En... +

www.maine.gov/dhhs/mecdc/environmental-health/plumb/index.htm

Maine.gov Agencies | Online Services | Help | Search Maine.gov

Page Tools GO

Division of Environmental Health

Contact Us | News | Online services | Publications | Subject index

Maine Center for Disease Control & Prevention
A Division of the Maine Department of Health and Human Services

Maine CDC Home Health Topics A-Z Data/Reports For Health Care Providers For Businesses For Homeowners/Renters Divisions/Programs

DHHS → MeCDC → Environmental Health → Maine Subsurface Wastewater Unit → Home

+A | -A | Tues 3 Jan 2012

Maine Subsurface Wastewater Unit

Maine is a predominantly rural state, and relies heavily on decentralized sewage disposal facilities for disposal of human waste, i.e., septic systems. The State of Maine has regulated septic systems since 1926, to varying degrees. Over the years, the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules) in their various versions have been administered by the Maine Center for Disease Control and Prevention (MeCDC) and its predecessors.

The MeCDC has been and continues to be responsible for the Rules because they have historically been viewed as a public health code, rather than an environmental regulation.

The Subsurface Wastewater Unit, within the MeCDC's Division of Environmental Health, promulgates and administers the Rules. Our mission is to minimize health and safety hazards associated with improperly installed subsurface waste water disposal systems.

What's New at the Subsurface Wastewater Unit

On this page:

- [Family Burying Grounds](#)
- [Fillable Online HHE-200 Page One Available](#)
- [Elimination of Permit Labels](#)
- [Health Inspection Program Holding Tank Policy](#)
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- [Cemeteries and Crematoria](#)
- [Certifications](#)
- [Public Swimming Pools](#)
- [2001 DHS & DEP Programs Review](#)

Online Services

- [Publications Order Form](#)
- [Record Search Form](#)
- [Water Records](#)

2-11
Get Connected. Get Ahead.
Social Services Help

start

Inbox - Microsoft Out... Subsurface Wastewa...

8:21 AM