General Installation Notes:

- Septic System must be installed in accordance with Maine Subsurface Wastewater Rules: 144A CMR241.
- All sedimentation and erosion control measures shall be in accordance with the current edition of the MDEP Maine Erosion and Sediment Control BMPS.
- The system must maintain appropriate setbacks to various site features in accordance with Table 7B unless a Variance (HHE 204) is authorized. A few include:

	Septic Tank	Disposal Field
Private Well	50 ft	100 ft
Property Line	10 ft	10 ft
Major Water Body	100 ft*	100 ft
Minor Water Body	50 ft	50 ft
Foundation	8 ft	20 ft
Slab-on-grade	8 ft	15 ft
Slopes greater than 3:1	-	10 ft
Drainage ditch	25 ft	25 ft

*Septic Tank may be reduced to 50' if it is sealed/water tight.

- Installation should be done during suitable weather and moisture conditions. Do not install during wet weather, saturated ground conditions, or below freezing temperatures.
- Remove trees and woody vegetation within 15 to 20 feet of the system.
- Bed septic tank in at least 6" of clean gravel. Seal holes and pipe openings to create watertight tank.
- Septic tank risers are recommended to assist in maintenance/inspection.
- If needed, contractor to size pump according to lift and run. Install check valve and high-water alarms in accordance with manufacturer's recommended installation.
- Distribution boxes (D-Box) to be set level and placed on firm surface. Protect D-Box from freezing with 2 inches of high-density rigid polystyrene insulation on the sides and top.
- D-Box fed from Pressure Line must be bottom feed. Do not allow effluent to surge towards cover or directly into distribution line. Either use one or two 90° fittings to direct inflow towards back corner or downward.
- Disposal field should be constructed either by hand, or with tracked equipment reaching from outside disposal field area (including fill extensions.) Do not operate wheeled equipment on disposal area or fill extension.
- Remove all vegetation and organic matter within system and fill extension area, leaving as much original topsoil as possible.
- Scarify disposal area bottom and fill extension along contour, avoid smearing or compacting soil. Add Gravelly Coarse Sand to provide a minimum transitional horizon of 6 inches to improve percolation.
- Disposal bed distribution lines are to be level within 1 inch in 100 feet.
- Finished grade of disposal field and 3-foot-wide shoulders to be 2-3%, fill extension to be max of 25% slope.
- Divert any surface water from disposal area. Do not connect floor or roof drains to a septic system.
- Establish grass over the top of the disposal fields as soon as possible. If installation takes place in the late fall and it is too late for grass to grow, provide a thick layer of hay mulch to protect the field.
- Avoid traffic over any part of the disposal system. If traffic is expected over the Septic Tank, an H-20 rated tank must be used.

The more diligently these recommendations are adhered to, the better the system will work, and the longer the system will last.

Septic Soils:

Gravelly Coarse Sand:

Sieve Size	Percent Passing by Weight
3”	100
#4	75-100
#10	50-100
#60	10-50
#100	2-20
#200	2-8
Clay Fraction	0-2

Crushed Stone:

	Percent Passing by Weight	
Sieve Size	1 ½” Stone	¾” Stone
2”	100	100
1 ½”	95-100	100
¾”	0-40	90-100
½”	0-20	0-55
3/8”	0-8	0-25
#4	0-5	0-10
#200	0-2	0-2

Specified Sand (Eljen System) -ASTM C33 sand specification:

Sieve	Sieve Square Opening Size	Specification Percent Passing (Dry Sieve)
0.375”	9.5 mm	100.0 –100.0
#4	4.75 mm	95.0 – 100.0
#8	2.36 mm	80.0 – 100.0
#16	1.18 mm	50.0 – 85.0
#30	600 µm	25.0 – 60.0
#50	300 µm	10.0 – 30.0
#100	150 µm	< 10.0
#200	75 µm	< 5.0

While the above gradation for Specified Sand is preferred, if it is unavailable, the following material may be substituted:

Gravelly Coarse Sand with the following additional specifications:

Sieve	Percent Passing
1”	100%
#4	75%
#100	<10%
#200	<5%

6. TEMPORARY HOLDING TANKS

(a) Temporary use: As a temporary means of wastewater disposal during alteration or repair of an existing system, the LPI may approve the use of a wastewater holding tank or a septic tank temporarily modified to serve as a holding tank for up to 2,000 gpd. This use may not exceed 90 days. Temporary holding tanks do not require a holding tank application.

(b) Future public sewer connection: As a temporary means of wastewater collection, LPI may permit use of a holding tank by a facility for up to 365 days when physical connection to a public sewer is anticipated, as stated in writing by the sanitary district. A holding tank application is not required for this instance. This permit may be extended once for an additional 365 days, if necessary.

7. DISCONTINUANCE OF HOLDING TANK

Any structure which utilizes a first-time system holding tank permitted after July 1, 1974, is required to meet first-time criteria for alternate means of subsurface wastewater disposal.

E. WORK ADJACENT TO OR WITHIN WETLANDS AND WATER BODIES

First-Time Subsurface Wastewater Disposal Systems: First-time systems for previously undeveloped lots and other lots that do not qualify for replacement system criteria, installed in accordance with these Rules, pertaining to work adjacent to, or within, wetlands and water bodies do not require additional permits from the DEP (NRPA) or LUPC and are in accordance with Guidelines for Municipal Shoreland Zoning Ordinances. First-time systems that do not meet the minimum requirements of these Rules pertaining to work adjacent to, or within, wetlands and water bodies, may need a permit from DEP, LUPC and/or ACOE.

TABLE 7B
Setback distances for first-time systems

Site features vs. disposal system components of various sizes	Disposal Fields (total design flow)			Treatment Tanks (total design flow)		
	Less than 1,000 gpd	**1,000 to less than 2,000 gpd**	**2,000 gpd or more**	**Less than 1,000 gpd**	**1,000 to less than 2,000 gpd**	**2,000 gpd or more**
Wells with water usage of 2000 or more gpd or public water system wells	300 feet	300 feet	300 feet	150 feet	150 feet	150 feet
Potable Water Supply	100 feet [a]	200 feet	300 feet	50 feet	100 feet	100 feet
Water supply line	10 feet	20 feet	25 feet	10 feet	10 feet	10 feet
Water body/course, major [f] [h]	100 feet [c]	200 feet [c]	300 feet [c]	100 feet [d]	100 feet [d]	100 feet [d]
Water body/course, minor [e]	50 feet [e]	100 feet [e]	150 feet	50 feet	50 feet	50 feet
Drainage ditches	25 feet	50 feet	75 feet	25 feet	25 feet	25 feet
Slopes greater than 3:1	10 feet [f]	18 feet [f]	25 feet [f]	N/A	N/A	N/A
No full basement [e.g. slab, columns, posts]	15 feet	28 feet	40 feet	8 feet	14 feet	20 feet
Full basement [below grade foundation, frost walls]	20 feet [g]	30 feet	40 feet	8 feet	14 feet	20 feet

Property lines	10 feet [b]	18 feet [b]	20 feet [b]	10 feet	15 feet	20 feet
Burial sites or graveyard boundaries, measured from the toe of the fill extension	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Stormwater infiltration systems	100 feet	200 feet	300 feet	100 feet	100 feet	100 feet
Wetponds, retention ponds, and detention basins (excavated below grade); Soil filters, underdrained swales, underdrained outlets, and similar structures	50 feet [i]	100 feet [i]	150 feet [i]	50 feet [i]	50 feet [i]	50 feet [i]
Stormwater detention basins (basin bottom at or above predevelopment grade)	25 feet	50 feet [i]	75 feet [i]	25 feet	25 feet	25 feet

Notes: If the disposal system application meets the requirements of the following note(s) a First-Time System Variance is not required.

[a.] Potable water supply setbacks may be reduced, as prescribed in Section 7(A)(2).

[b.] Additional setbacks may be needed to prevent fill material extensions from encroaching onto abutting property.

[c.] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a major water body/course must maintain a minimum setback of 75 feet from the normal high water mark of the major water body/course and also must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (for more details see Section 12).

[d.] May be reduced by Site Evaluator to 50 feet, pursuant to water tightness standards found in Section 6(H)(8) or tanks of monolithic construction.

[e.] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a minor water body/course must maintain a minimum setback of 25 feet from the normal high water mark of the minor water body/course, except minor water courses located inside the Shoreland Zone which require a minimum setback for disturbance of 75 feet, and also must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (for more details see Section 12).

[f.] For sites with sustained slopes steeper than 3 feet horizontal to 1 foot vertical (33%) within 25 feet from a protected natural resource. If a sustained slope of 33% or greater exists less than 25 feet from a protected natural resource, it does not count toward the 25 foot setback. Sustained slopes greater than 3:1 may be part of the 75 foot setback but cannot be counted as part of the 25 foot setback (for more details see Section 12).

[g] May be reduced to 15 feet, if the disposal area would be located down slope from the lowest point of the foundation footings.

[h] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a perennial stream must maintain a minimum setback of 25 feet from the normal high water mark of the perennial stream except those perennial streams which have a Shoreland Zone or those located inside the Shoreland Zone of another major waterbody/course which require a minimum setback for disturbance of 75 feet, and also must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (for more details see Section 12).

[i] The setback may be reduced to 25 feet if the stormwater structure has an impervious liner and the fill extensions do not encroach onto the stormwater structure.

TABLES 7C - 7M
FACTORS USED IN ASSESSING THE POTENTIAL FOR A FIRST-TIME SYSTEM FOR SOIL CONDITIONS INSIDE THE SHORELAND ZONE

TABLE 7C SOILS

Soil Profile from Table 4D	Points
Profiles 2, 3, & 7	15
Profiles 1, 8, & 9	10
Profile 4	7
Profiles 5, 6, & 11	5
Profile 10	Not permitted
AI & AII bedrock classes	Not permitted

Septic System User Notes

1. The septic system has been designed to meet the requirements of the State of Maine Subsurface Wastewater Disposal Rules, 10-144A CMR241. Site evaluators are not notified when local ordinances are enacted which exceed state requirements, therefore it is the septic system owner's responsibility to ensure that this septic system design (HHE-200 form) is in compliance with applicable local ordinances. This can be done by contacting your Local Plumbing Inspector and asking about local ordinances which differ from those required in the Rules.

It is the septic system owner's responsibility to obtain any local, state, or federal permit(s) that may be required for the installation of this septic system (work within or adjacent to a wetland may require a state and/or federal permit.) Contact the Maine Department of Environmental Protection at 287-2111 and the Army Corps of Engineers at 623-8367 if you have any questions.

The design was created based on existing site conditions as well as information provided by the homeowner relative to planned development and use. Significant cutting of trees, site filling, and change in use (primary residence to rental unit), for example, will affect the performance of the system and therefore these changes must be communicated to the site evaluator.

2. It is the homeowner's responsibility to assure the proper soil stabilization of all areas disturbed during the septic system installation. Once disturbed areas have been seeded, limed, fertilized, and mulched, make sure they are watered so that the seeds may germinate and establish vegetation. Once stabilized, light limited activity is acceptable. Avoid uses which will kill vegetation and create bare soils.

3. Divert all surface water away from the septic tank and disposal area. Roof areas which contribute runoff water to the septic system site should have gutters installed to divert that water to another location.

4. Do not connect floor, roof or perimeter drains to a septic system. Your septic system is not designed to handle this water and it will likely cause premature failure.

5. For new construction, it is recommended that the septic system owner install low volume toilets (1 ½ gallons per flush or less) and other flow reducing fixtures such as low volume shower heads and faucets to minimize water consumption. A reduction in water usage will generally result in extended life of your septic system.

6. It is the septic system owner's responsibility to limit water consumption and wastewater generation so that the septic system design capacity (design flow on the HHE-200 form) is not exceeded on any day. Activities which generate large amounts of wastewater should be spread out over several days where possible. Excessive use of a septic system on any day can cause the system to fail even though your use, averaged over a week or month is below design volume. Systems are designed so that it takes about 48 to 72 hours for water to pass through a septic tank from the time it enters the tank. The faster the water moves through your tank, the

less settling time there is as higher velocities of water can carry larger particles of solid matter. Larger particulates will clog soil pores faster, thereby decreasing the life span of your disposal field.

7. Do not dispose of backwash from water softeners or water treatment devices in your septic system. Large amounts of water can be generated from these devices which can overload a septic system. In addition, chemicals used in these devices may be harmful to the biologic organisms which are important to the proper function of your system.

8. The use of a garbage grinder/disposal with a septic system is not recommended. Depending on use patterns, they can contribute a significant amount of particulate matter and grease to the system. Excessive use may result in premature failure. If a garbage disposal is to be used, additional tank capacity or a multi-compartment septic tank is required, and more frequent septic tank pumping is recommended. Composting is the preferred option for disposing of your organic garbage type wastes.

9. Do not dispose of any hazardous or toxic substances in a septic system such as paint thinner, paints, varnishes, photographic solutions, pesticides, insecticides, organic solvents or degreasers, and drain openers. Septic systems depend on living organisms to function properly. Toxic or hazardous material can, in effect, kill the system and are a threat to pollute subsurface or groundwater resources. Instead of using a commercial degreaser or drain opener, which can be toxic, use one of the following:

A - A plunger or mechanical snake,

B - Pour one handful of baking soda and ½ cup of white vinegar down the drain pipe and cover tightly for one minute. Repeat as necessary, or

C - Pour ½ cup of salt and ½ cup baking soda down the drain followed by 6 cups of boiling water. Let sit for several hours or overnight, then flush with water.

10. Do not dispose of any inert or non-biodegradable materials in your septic system such as disposable diapers, cat box litter, coffee grounds, cigarette filters, sanitary napkins, tampons, “flushable wipes”, facial tissues, or paper towels. They will not decompose and will therefore build up in your septic tank quickly. Some may pass through to your leachfield and result in plugging it up. Also, minimize the use of toilet paper (which is a solid material) and use National Sanitation Foundation recommended paper which breaks down quickly.

11. Do not dispose of fats or grease in your septic system (except for normal dish washing) unless your system has been specifically designed to handle them (an external grease trap.) It is also recommended that greasy dishes be wiped before being washed to cut down on the amount of grease and fat entering the septic system (i.e. bacon grease, frying oil). Generally, an internal grease trap is inadequate to handle any large amounts of grease or fats.

12. Do not add any septic tank cleaner or additive to your septic system to improve its function or prolong its useful operating life (this includes yeast, horse manure or commercial products such as Rid-X.) No effective product or material is recognized by State or National authorities, and in fact, some of these products can actually cause your septic system to fail prematurely. They add large amounts of organisms to your septic tank,

which causes accelerated breakdown of solids, turning the sludge into a slurry which can then leave the tank and enter the disposal field, plugging it up. Chemical additives are prohibited for use in Maine.

13. Maintain your septic system by regularly having the septic tank pumped. Some biological breakdown of solids and grease occurs in septic tanks but the rate of accumulation virtually always exceeds the rate of biological breakdown. If your septic tank is not pumped often enough, solids and grease may build up to the point where there is insufficient storage and retention time for wastewater in the tank. When that happens, more solids leave the tank than are supposed to, resulting in the clogging of your disposal field and premature failure.

I recommend having your septic tank pumped or inspected after one year of use. The pumper/inspector can advise you of how often you need to have the tank pumped based on what they find at this initial inspection. Typically, a septic tank will need to be pumped every two to five years. Keep in mind that you will need to adjust pumping frequency to coincide with changes in the way you use your system. The more your system is used, the more frequently the tank should be pumped. When having your septic tank pumped or inspected, have the baffles inspected. It is particularly important to have the outlet baffle inspected as it is responsible for keeping grease and fats from moving into the disposal field. Baffles that are missing or in need of repair should be tended to immediately.

14. Avoid traffic and snow removal over any part of the disposal system. Do not drive (including ATV's) over, or store heavy materials on any part of your septic system unless it is specifically designed to handle heavy loads (H-20 components.) Otherwise, crushed components and system failure may be the result.

15. – PLEASE – If you have any questions about your septic system or how to use it, call me (231-4349) and ask for advice. You can also call the State Agency responsible for regulating septic systems. The plumbing program in the Division of Health and Human Services, at 287-2070.

The more diligently these recommendations are adhered to, the better the system will work, and the longer the system will last.

May 2023