

10-19-12 Home Buying Can Be Complicated part II

You are in love with the cottage on the pond but the septic system is in failure. You've done the smart thing by visiting the board of health to talk to the health agent about it. Here's "Septic System Repairs 101 for this complicated property:

Are there suitable or "pervious" soils for the leaching area? Leaching areas need to leach and, therefore, clay or silt just won't do. It does not have to be sand; loamy soils will do but the slower the perc rate (minutes per inch), the more square footage needed for the leaching area. (The high school teachers told me I'd use geometry and algebra someday!)

A disadvantage of clean sand is that it allows water to seep or leach through it so quickly, our State Department of Environmental Protection (DEP), requires a five foot vertical separation between high groundwater and the bottom of the leaching system. It is four feet of separation for slower loamier soils.

This charming property on the pond has a very small yard, with most of it being already filled with two cottages and the existing septic system.

These existing conditions will make it difficult to even find a place to dig a deep hole for evaluating the soils and, hopefully, conduct a perc test. Although two deep holes are required, we'll do the best we can, which might be only one deep hole to look at those soils.

Even if there are pervious soils and we are able to conduct a perc test (or take a sample for testing, called a "sieve sample"), the land here is low and flat, close in elevation to the level of the pond water. High groundwater results in a "raised" or "mounded" system.

This is where "vertical separation between high groundwater and the bottom of the leaching system" comes into play. If evidence of high groundwater is, for instance, only twelve inches below the surface, the bottom of the leaching area has to start at 3 to four feet above the ground! Add the sand and pipes or sand and chambers on top of that, with at least 9 inches of cover, and now the top of the leaching area is about five feet out of the ground!

In a small yard, with no room for grading around that mounded system, it has to be contained within a wall; typically concrete blocks or a poured, reinforced concrete wall. In the case of this particular location, that could (and probably) means looking out your front window to a walled in front yard, where the wall is higher than the windows. Ugh!

Wondering about prices and choices? First let's address choices. DEP requires that we prove we can't fit a whole traditional septic system before we are allowed a tight tank. So, we still have to begin with a perc test and observation hole.

If a system (tank & pump chamber & mounded leaching area, in this case) does fit, it will have to be what DEP calls an I/A system because it is so close to the East Monponsett Pond, a tributary to a surface water supply (Silver Lake for the City of Brockton). I/A stands for Innovative/Alternative. There are many to choose from. They have all been tested and approved by DEP and they provide additional treatment of the effluent so that it is safe to join the groundwater. They cost extra to purchase and most have some yearly monitoring requirements and a small amount of electricity to run. One of these I/A systems will be needed at this location, if a system can fit at all.

In order to make room for a whole system, the second cottage could be removed. (It might even be required some day, as it overlaps with town land.) There goes that hope of rental income!

If a system cannot go there because we do not find pervious soils or there isn't enough room for one, the only other choice is a tight tank. No, that is not a special kind of tank that does something special. The name "holding tank" is really more appropriate. Whatever goes in, is held there until it is pumped out. Most owners of tight tanks use Laundromats rather than washing their clothes at home. They conserve water in any way they can. Some purchase a composting toilet, which does not require the use of water. You learn to brush your teeth without letting the water run. They are not good choices for families with young children or for tenants, unless the tenants have their own tight tank and, according to the lease, is responsible for getting it pumped out. An alternative to separate tight tanks would be to meter the water from the rental cottage and base the pumping price accordingly, as X dollars per gallon.

Finally, after all the septic system options have been pursued and decided, you might have ideas for the house(s). You'll have to request permission of the Zoning Board of Appeals if you want to change that little cottage to a larger home. Even if you are approved for, say a second story, you probably will not be allowed to increase the number of bedrooms. That is because most likely, variances will be needed to deal with the septic system and when that happens, you are not allowed to increase the flow from the house. DEP defines the flow by the bedroom count. If you are allowed to add a second floor, or to tear down and rebuild, it is easy enough to have an open floor plan allowing a larger house but same number of

bedrooms as before. That will be the easiest choice of all for this property with a lovely water view!

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