

Subsurface Sewage Disposal Systems Regulations

Minimum General Requirements

Massachusetts Department of Environmental Protection:

310 CMR 15.000 shall be considered a minimum standard to be used in the design and preparation of plans in the Town of Merrimac.

These regulations are written as a further clarification of the rules and regulations for subsurface sewage disposal in areas that are not connected to a public sewer. Whenever there are differences, the requirements of the Town of Merrimac shall take precedence.

1. Minimum General Requirements:

a) Sewage Disposal Systems and Public Sewers: All properties shall have an approved subsurface disposal system or be connected to a public sewer. Existing disposal systems shall comply with this provision only for upgrades, repairs, etc.

b) Installation of component(s) for a new disposal system is to be completed by November 30, unless, upon written request, the Board of Health approves any activity to be conducted after that date, weather permitting.

c) No individual sewage disposal system shall be located, constructed, altered, repaired or installed where a common sanitary sewer is accessible adjoining the property, and where permission to enter such sewer can be obtained from the authority having jurisdiction over it. If a common sanitary sewer is not accessible, then a properly designed sanitary sewage disposal system meeting the requirements of Title V 310CMR15.000 and Town requirements shall be approved.

d) Minimum hydraulic sizing requirements shall be based on 150 gallons per bedroom per day.

e) Minimum nitrogen loading for lots with wells will follow Title V flows, i.e. four bedrooms on one acre is permitted.

f) The minimum area of leaching fields for a three-bedroom house is to be eight hundred (800) square feet, and a minimum of one thousand (1000) square feet for a four-bedroom where applicable. In the case of upgrades to existing systems, where the above is not available, a two-foot (2') layer of coarse sand shall be placed under the leaching field.

g) All stone used in disposal field to be washed, crushed, field stone. Blue stone or quarry stone is not allowed.

h) Delivery slips are to be made available to the sanitary agent upon request.

i) There shall be a minimum of three (3) inspections during any installation, e.g. field bottom, when three-quarters of the required amount of stone and pipe is placed, and before backfilling.

j) The sanitary agent must be notified no later than the day before an installation is started, or if there is to be a delay in the start or progress of work. No disposal system for a new service shall be constructed during the months of December, January, February or March, unless prior approval is obtained from the Board of Health.

2. Licenses, Permits and Applications:

a) General requirements to install, construct or alter: No person shall install, construct or alter a subsurface sewage system without first obtaining a Disposal Works Installers License from the Board of Health. Applicants for license must obtain a satisfactory passing grade on an examination administered by the Board of Health or its agent.

b) No building permit shall be issued by the Building Inspector until the Board of Health has approved the proposed sewage disposal plan for the lot.

3. Terms of Licenses, Permit and Soil Test Data:

a) Disposal Works Installers License expires December 31 each calendar year and is not transferable. The Disposal Works Construction Permit (DWC) is issued to an owner or builder at the time the sewage disposal plans are approved by the Board of Health.

b) The DWC Permit expires two (2) years from the date of application and is not transferable. Before a septic system can be installed, an approved water supply must be available at that location. A Town supply is acceptable.

4. License to Pump and/or Clean Out Cesspools and Septic Tanks:

This license expires at the end of each calendar year and is not transferable. The Board of Health requires that all septage collected within the town of Merrimac be disposed of at an approved septage disposal site or sewage treatment facility. The septage hauler must provide the Board of Health evidence that the above is being accomplished. (Sec. 310 CMR 15.502 [3])

5. Soil Test Data:

The data shall be valid for a period two (2) years. The Board of Health reserves the right to request that new pit and percolation data be collected within the two-year period if outside circumstances deem it necessary.

6. Suspension and Revocation of License and Permits:

Disposal works construction permit may be immediately revoked or temporarily suspended if any conditions (including building, structure locations and grades) set forth on the approved plans and specification have changed prior to or during actual construction of the subsurface sewage disposal system. Any person whose application for a permit under the regulation is denied may request and shall be granted a hearing on the matter before the Board of Health within thirty (30) days after written receipt of the request. Disposal Works Installer License and Septage Handlers License may be revoked within ten days of written notice, or temporarily suspended, should the holder of the license fail to meet any of the application requirements of the Board of Health. Licenses and permits shall not be reinstated or reissued until all conditions for which they were revoked or suspended have been corrected in accordance with the specific stipulations of the Board of Health.

7. Fees:

The Board of Health shall establish fees for various services, licenses applications and permits, addressed in a separate publication of Regulations.

8. Designer's Certification:

a) As-built Drawings and Certificate of Compliance: The designer shall perform, at a minimum, the following inspection to ensure that the sewage disposal system is constructed in strict accordance with the design plans and the rules and regulations of the Board of Health. Notification to the authorized representative must be made prior to the following :

b) An inspection shall be made when the tanks etc. and piping are in place and before backfilling to ensure that the system has been constructed at the correct elevations and also to ensure that the fill material and piping meet the specifications of Title V.

c) It will be the responsibility of the installer to notify the design engineer when to perform this final inspection.

d) The Board of Health may require an inspection of a sewage disposal system at any stage of construction, and require necessary modifications of adverse conditions that are encountered and that were not found originally.

e) None of the components of the system shall be backfilled until a passing inspection is completed by the Board of Health and the system designer.

f) Any component of a disposal system may be inspected separately by paying an additional fee.

g) The system designer shall certify in writing to the Board of Health that the system construction has been installed in strict accordance with the plans and specifications approved by the Board of Health. In the event an installation cannot be certified until alterations in the installation are made, the system designer shall immediately notify the Board of Health of the location of the system, the name of the installer or installing firm, the problem or problems encountered and the action necessary to remedy the problem or problems.

h) No person responsible for the installation or alteration of a disposal system shall cause the system to be covered or backfilled until the system is inspected and approved by the designer and the Board of Health. After a system has passed the inspections, covering shall be applied in a manner approved by the Board of Health.

i) As-built drawings shall be submitted to the Board of Health by the designer, showing as-built location and grade of all components of the sewage disposal system. A Certificate of Compliance shall be issued by the Board of Health after review and approval of these plans, as well as certification of all finished grading.

j) Designers who do not follow the procedures set forth under Section 8 are subject to revocation of the privilege to design sewage disposal systems within the Town of Merrimac.

9. Certification of Dimensions, Area Locations and Elevations of Lot, House, Foundation, Cellar and/or Disposal Works System:

At any stage during the construction of the house and/or disposal system the Board of Health may require that a disposal works construction permit holder submit certified plans and specifications showing the exact lot dimensions and area, house location and size, and cellar elevations. Should any discrepancies be found to exist between the certified plans and specifications approved by the Board of Health, for which a disposal works construction and/or disposal works permit was issued, all such permits by the Board may be immediately revoked or suspended. New permits shall not be issued or reinstated until all of the conditions for which the permits were revoked have been corrected in accordance with the specific stipulation of the Board of Health.

10. Design and Construction Criteria:

a) Plans and Specification for New Systems: Plans and specifications will not be reviewed for approval unless they are completed and include the following:

Three copies of all plans and specifications must be submitted to the Board for review. Two (2) copies will be retained by the Board and one returned to the applicant once the plans have been approved. All plans must be stamped by a Registered Sanitarian or a Registered Professional Engineer.

b) Town Map #, Town Lot #, Subdivision Name and Lot # and Street Name and Street Number (if known).

c) A Locus Plan.

d) A Site Plan at a Scale of 1"=20'.

e) Detailed Horizontal and Elevation Plans of the entire disposal works system including house, septic tank, distribution box, and leaching facility.

f) All drawings (drawn to scale not less than 1"=20') shall be capable of being folded exactly to 8 1/2 inches x 11 inches (title on outside). Profiles and sections need not be to scale, but shall have all elevations and dimensions clearly labeled. Drawings not to scale will not be approved.

g) The plans of the property shall show the locations and dimensions of house foundation, garage, and/or other structures; layout profile and cross-section of sewage disposal system; location of well (where applicable), location of driveway, cellar floor drains (where needed), and location of any ponds, streams, brooks, rivers, surface or subsurface drains, swamps, or wetlands within two hundred feet (200') of the disposal system.

h) The plan shall show sufficient elevations, reference to fixed bench mark on site using mean sea level datum, usually including elevation of road, basement floor, top of foundation, garage, including invert elevations at house foundation, entrance to distribution box, and the leaching system components.

i) Existing and proposed contours at two-foot (2') intervals of disposal field and dwelling locus shall indicate clearly existing and proposed gradings of the site, and show how the surface drainage is to be handled in case it shall be necessary to consider the effect on nearby properties. No "low spots" that allow "ponding" of rainfall runoff shall be permitted.

j) All wells or other known water supplies within two hundred feet (200') of the proposed leaching area or expansion area shall be located and shown on the plan.

k) Soil logs to bottom of test pits shall be shown.

l) Complete soil reports and percolation test results on D.E.P. approved forms with required signatures must be submitted with plans or within thirty (30) days of testing if no plans are submitted in that time. Failure to do so may result in the loss of the right to work in the Town of Merrimac.

m) Ground water elevations and studies with dates (with reference to fixed benchmark) shall be shown.

n) Relevant percolation test pits and percolation test holes including tests at expansion area shall be shown.

o) Where a pump is required, details must be included to indicate dosing tank dimension and dosing rate together with a pump details and specifications.

11. **Distances:**

a) No subsurface sewage leaching system shall be constructed within four hundred feet (400') of any known source of public surface water supply or two hundred feet (200') to a tributary thereto.

b) No septic tank shall be constructed within twenty-five feet (25') of any surface waters, and no soil absorption system shall be located within fifty feet (50') of any surface waters.

12. **Changes in Design/Relocation of Proposed Design:**

a) Any proposed change in location or design of any component of a new system from that originally approved by the Board of Health must be reengineered and again submitted to the Board of Health for review and approval prior to the installation of a system.

b) Relocation of leaching area to another area of a lot for which properly witnessed percolation test data and water table levels have not been established will require that tests be made of that area and that any plans are to be submitted to the Board for review must be based upon the test data of the new area.

c) Plans and specification of changes of design of a leaching area to be installed in the original location can be submitted for review and approval without developing new percolation test data, i.e. changing from beds to trench or trench to pits, etc. Plans and specifications of relocation of all other components of a system can be submitted for review and approval without developing new percolation test data.

13. Groundwater Determinations:

- a) Groundwater determination shall not be valid after two (2) years. The maximum ground- water table recorded over successive years shall be used on the design of the system. Soil Mottling may be considered as an indicator of water table elevations. These determinations shall be subject to review after one (1) year if surrounding conditions have changed.
- b) In the event of a dispute over the depth of the estimated seasonal high water table, the representative of the Board of Health shall prevail.

14. Subdivisions:

Requirements on Filing for Approval for Board of Health: The owner or developer of a proposed subdivision submit to the Board plans technical data as required in the following regulations for discussion and tentative approval, modification or disapproval by both the Board and Planning Board. The submission of such plans and technical data shall be filed as a part of the General Laws. It will enable the applicant, the Board of Health, the Planning Board, other municipal agencies and owners of property abutting the subdivision to review and possibly modify the plan before the definitive plan shall be filed simultaneously.

15. Procedure for Review of Preliminary Plans of Subdivision by the Board of Health:

The Board of Health shall review preliminary plans submitted to it by any person. It shall make such inspections that are necessary to evaluate such plans properly. Within 60 days after submission of a preliminary plan, with or without modifications suggested by it or agreed upon the person submitting the plan it shall approve or disapprove such preliminary plan. In case of disapproval it shall state its reason therefore. The Board of Health will require a site suitable study as part of the necessary pertinent information required. This study will include:

- a) A preliminary subdivision plan drawn to scale, properly dated and titled, shall be submitted by the applicant. This plan shall include location key, layout of street, approximate dimensions and areas of each lot, location of proposed drains as well as drain easements both surface and subsurface.
- b) Sources of private water supply.
- c) Location relative to public water supply sheds.
- d) Location and elevation of percolation tests pits and deep observation pits, along with data collected from tests.
- e) The Board of Health shall require a plan of existing and proposed topography of the subdivision with five-foot (5') contours or closer, as required and extending two hundred feet (200') feet beyond the subdivision boundary, and five hundred feet (500') where any waterways, and drainage coursed exit. It shall show the location of streams, ponds, swamps, existing or proposed open subsurface land drains, outcroppings of ledge and other topographical land features needed to evaluate the site.
- f) A profile of the street shall be submitted showing existing and proposed profiles, catch basins, manholes, slopes of all storm drains and sanitary sewers.
- g) The owner or developer or a proposed subdivision shall submit the results of percolation tests performed in accordance with the provisions of Title V of the Environmental Code. The number and location of percolation and deep tests pits shall be sufficient for the design engineer to evaluate the suitable of the site for subsurface sewage disposal system. As a recommended guide, the minimum number of tests for preliminary approval should be approximately one test per every 3 to 5 acres. If poor soil conditions prevail (over 15 min./inch) a test on each proposed lots strongly recommended. The number and location of test may be varied at the discretion of the Board of Health due to peculiar soil conditions present on a certain tract of land.
- h) The design engineer shall submit an overlay showing various zones of soil and indicate the approximate percolation rate, depth to ground water, etc. in each zone. The design engineer shall state his

opinion of the suitability of the site for subsurface sewage disposal with any conditions or exceptions stated.

i) The submission of a preliminary plan is strongly recommended. Such submission affords the applicant the opportunity to have the Board review his proposed subdivision before expenditure of time and money for more detailed engineering plans. Also, submission of preliminary plans will enable the applicant to ascertain requirements and specifications for subdivision approval.

j) The Board may require for approval of preliminary plan, the same technical data required for approval of definitive plan.

16. **Definitive Plan:**

The applicant shall give written notice to the Town Clerk, by delivery or by registered mail, postage prepaid, that he has submitted the definitive plan to the Board of Health. Such notice shall be accompanied by a copy of the application and shall describe the land to which the plan relates sufficiently for identification and shall state the name and address of the owner(s) and subdivider and the date such plan was submitted.

17. **Submission:**

Any person who submits a definitive plan of a subdivision to the Planning Board for approval shall, at the same time, file with the Board of Health the following: Two white prints of the proposed definitive subdivision plan, prepared as prescribed under the Merrimac Planning Board's Subdivision Rules and Regulations. These shall also show the dates, elevations and locations of all percolation and observation test pits.

18. **Technical Data:**

Results of percolation tests on each lot performed in accordance with all the provisions of Title V of the Massachusetts Environmental Code. In addition, the Board of Health will require that percolation tests performed in the presence of its Agent.

a) Detailed log of soil to depth of four feet (4') below the bottom of the proposed leaching facilities, and in no instances less than ten feet (10') below the ground surface.

b) Location of subsurface drainage and lot grading as required in the Town of Merrimac Planning Board Regulations to be submitted by the design engineer.

c) An evaluation by the sanitarian or professional engineer as to suitability of each lot within the subdivision for subsurface disposal sewage.

d) Plan of existing and proposed topography of the subdivision with five-foot (5') contours or closer, as required, and extending one hundred feet (100') beyond the subdivision boundary, and five hundred feet (500') where any waterways and drainage courses exist. It shall show the location of streams, ponds, swamps, existing or proposed, open or subsurface land drains, outcroppings of ledge, and other topographical features needed to evaluate the site. Areas that will be cut below the topsoil strata must show proposed finish grade and be shaded to be clearly identified.

e) Location of all buildings and street drains and appurtenances.

f) Location of proposed area for sewage shall be shown on the plan. The definitive plan shall not be deemed to have been submitted to the Board of Health until the application, prints, and technical data listed above have been delivered to the Board of Health office and are fully completed in accordance with the rules and regulations and other pertinent statutes.

g) The definitive plan will be studied and the land shown thereon examined to determine which, if any, of the lots or the areas of land shown on the plan cannot be used. After the plan is filed with the Board of Health, it shall report to the Planning Board in writing, approval or disapproval of said plan; and in the event of disapproval shall make specific findings as to which, if any, of the lots cannot be used for building sites without injury to the public health, and include in such report specific findings and reasons therefore. Failure to report shall be deemed approval by the Board of Health. A copy of such report shall be sent to the person who submitted said plan. It is strongly recommended by the Board of Health that percolation and deep test pits be conducted on each lot at the time of definitive plan submission. No lot

can be approved by the Board of Health without suitable percolation and deep test pits. If the applicant elects not to conduct percolation and deep test pits on each lot, it will result in either conditional approval or disapproval of the lot due to lack of sufficient information. Any applicant electing not to test each lot at definitive submission does so at his own peril. If the lot is found unsuitable at a future date as a result of additional percolation test and deep test pit, no exceptions will be considered. It behooves the applicant to determine the lot suitability at the preliminary and definitive stage of development.

19. **Recommended Percolation and Deep Test Pits for Proposed Subdivision:**

Subdivision will be reviewed in two (2) stages: preliminary, and definitive or final design.

a) All test holes and percolation tests for definitive subdivision plan approval or design of system to be witnessed by a representative of the Board of Health.

b) Results of tests may be used in the design of sewage disposal system provided the test results are accurately located within the proposed leaching area and observed by the Board of Health.

20. **Preliminary Stage:**

Preliminary test pits and percolation tests, if not conforming to Title V, 310CMR15.000 through 107 and are not properly witnessed, are not to be considered for definitive subdivision plan approval stage or final design stage. The preliminary subdivision plan will be reviewed in the field in a general manner by a representative of the Board of Health. This should not be construed to mean that the Board of Health will witness every test hole. If the test holes or percolation tests are to be reviewed, then the guidelines of definitive stage will be followed.

21. **Definitive Stage:**

Review for subdivision approval requires that at least two percolation tests and deep test pits are recommended on each lot in the area to be considered reserved for subsurface sewage disposal system. If at a later date it is found that the test hole or percolation test is not located within the bed area, then it will not be considered as one of the required tests under the design phase. All tests must be witnessed by a representative of the Board of Health. The Board of Health reserves the right to request additional tests on each lot during the definitive stage.

22. **Specifications for Fill Material and Installation:**

a) All fill material, topsoil, subsoil, existing leaching bed stone and sealed soil within the proposed leaching areas to be removed down to the suitable material. All fill material replacing removed soil shall conform to 310CMR15.255.

b) In excavating any leaching area, the excavation must be done with a suitable piece of equipment so as to prevent smearing and possible compaction of existing soil.

c) There shall be no blue stone used in any leaching facility. Only washed, crushed field stone shall be used.

d) There shall be at least six inches (6") of washed, crushed, field stone set beneath any seepage pit (dry well) liner.