

REGULATIONS FOR THE REPAIR AND UPGRADE OF SEPTIC SYSTEMS

I. INTRODUCTION

This document presents the standards and procedures to be followed in repairing or replacing a septic system in Santa Cruz County, including upgrades of existing systems to meet the septic system requirements for building additions and remodels. It is intended for use by contractors, consultants and property owners and applies to residential and commercial properties that are already developed. The requirements, procedures and guidelines contained herein are based on Chapter 7.38 of the Santa Cruz County Code and this document is specifically prepared pursuant to section 7.38.095.E. Parcels that were developed after September 16, 1983 shall be ineligible to utilize the allowances for repairs described in Section 7.38.095.B for the purposes of upgrading the system to allow bedroom additions or additions of more than 500 square feet of conditioned space.

II. TYPES OF SYSTEMS AND ALLOWABLE BUILDING IMPROVEMENTS

Six primary types of septic systems are recognized, depending-on the history of the system, the characteristics of the property, and the desires of the owner to upgrade the structures. If a parcel cannot meet the requirements for a Standard System, a proposal for a Nonstandard System must be submitted. Additional requirements are also specified for large systems and systems in sandy soils.

1. A Standard System meets all of the standard requirements as specified in Sections 7.38.095-7.38.150 and enables building additions consistent with the number of bedrooms for which the septic system is sized, and consistent with building and zoning department regulations. No construction may occur over the septic system and/or expansion area.
2. Nonstandard Systems (formally designated as “Systems with Special Operating Characteristics”) do not meet all the requirements for a standard system, but they do meet the more specialized requirements for the different types of nonstandard systems. Approval of a nonstandard system requires recordation of a Notice of Onsite Sewage Disposal System with Special Operating Characteristics” on the deed and payment of an annual inspection fee to fund ongoing oversight of the system (the fee waived for Limited Expansion Systems). Five types of nonstandard systems are recognized:
 - a. Limited Expansion System is a permitted system repair that meets all of the requirements for a standard system except for availability of expansion/replacement area. Use of a Limited Expansion system requires water conservation measures and enables only a one time addition of up to 500 sq.ft. of conditioned space with no bedroom additions, and no increase in the volume of wastewater discharge. As long as the system performs well, no annual inspection fee will be charged.
 - b. A Low-Flow System is a permitted system repair that meets all of the requirements for a standard system except for leachfield area. Use of a Low-Flow system requires water conservation measures and enables only a one time addition of up to 500 sq.ft. of conditioned space with no bedroom additions, and no increase in volume of wastewater discharge. An annual fee will be charged on the tax bill and the property will be periodically checked for signs of failure.
 - c. A Haulaway System is a system that requires that effluent be pumped out on a seasonal or full time basis to prevent failure, and/or ensure that requirements for groundwater separation are met. Use of a haulaway system enables only a one time addition of up to 500 sq.ft. of conditioned space with no bedroom additions or increase in volume of wastewater discharge. An annual fee will be charged on the tax bill, pumping reports will be monitored, and the property will be periodically checked by County EH for signs of failure or sewage discharge.
 - d. An Enhanced Treatment System is a system that utilizes special designs and/or additional technology to provide effluent treatment to a much higher level than a conventional system. This can allow reduced dispersal area, dispersal to otherwise unsuitable soils, reduced groundwater separation, or specialized shallow dispersal. The goal is to reduce BOD, Total Suspended Solids and Total Nitrogen each to less than 10 mg/l. Technologies which have satisfactorily been reviewed and approved through the County Experimental Review and meet the objective for

BOD and Suspended Solids and provide at least 50% nitrogen removal may be utilized. In fast sandy soils, special designs which promote denitrification in or under the leachfield will also be considered.) Enhanced Treatment systems may utilize higher effluent application rates in the dispersal system design if they meet the objectives for BOD and Suspended Solids removal (see Section V.D). Enhanced treatment systems are specifically required in the following circumstances:

- (1) For systems in Sandy Soils in the San Lorenzo Watershed and Water Supply Watersheds in Bonny Doon and the North Coast Planning Areas. These areas are identified on the County Geographic Information System (GIS). Sandy soils are those soils identified by the US Soil Conservation Service as Zayante or Baywood Series, or other soils found in the field to have percolation rates faster than 6 MPI). Enhanced treatment shall be required for any new system and any system which will serve a bedroom addition, a remodel adding more than 500 square feet, or other expansion of use which will result in an increase in volume or strength of wastewater flow. Enhanced treatment is required for all repairs in sandy soils where the dispersal system depth is more than 4 feet below the natural ground surface or soils percolate faster than 1 MPI.
- (2) For Large Systems which serve more than 5 residential units or which have peak daily flows greater than 2500 gallons per day and are located in the San Lorenzo Watershed, or a designated Water Supply Watershed, or an area subject to nitrate contamination of groundwater. For all new or replacement systems in the designated areas, enhanced treatment shall be required.
3. A Prestandard System is an existing septic system installed prior to 1993 which shows no indication of failure, but which does not meet all requirements for a standard system. Without any further upgrade (but with a satisfactory septic pumpers inspection report), such a system enables only a one time addition of up to 500 sq.ft. of conditioned space with no bedroom additions or increase in volume of wastewater discharge. Additions will not be approved if they will encroach on the septic system or any area of the property needed to install a replacement system which meets the requirements for a standard system to the greatest extent possible.

III. REPAIR PROCEDURES

The process for repairing, replacing, or upgrading a septic system involves:

1. Septic system replacements or upgrades must be designed by a qualified professional, including a Professional Engineer, Registered Geologist, Registered Environmental Health Specialist, or other persons qualified in OWTS design, as approved by Environmental Health (EH).
2. The permit application and design are submitted for review by the County EH Specialist. Significant changes may be required in order to meet the requirements specifically applicable to the property. Soils, percolation and winter water table observations may be required to receive approval of the permit. Modification of the original design may be required if site conditions warrant changes. Systems with pumps or other electrical components require an electrical permit prior to approval.
3. Construction of the system may only begin after approval of the permit is given by the EH Specialist. A minimum of 24 hours notice must be given to the Specialist prior to commencing work. Failure to comply may result in issuance of a stop work order. The approved permit must be in the possession of the installer at the project site. Construction or major repair of an onsite sewage disposal system shall be made by a contractor with a C-42 contracting license, or an equivalent certificate issued by the California Department of Consumer Affairs; provided, however, that a property owner may repair a system on their own property.
4. Installation of the septic system must be done with inspections by an EH Specialist including a final inspection and permit sign-off. **Systems with pumps or other electrical components require an electrical permit with inspection and permit sign-off by the Building Department.**

Since the septic system design initially proposed by an owner or contractor may differ from the design ultimately approved by EH, it is recommended that any contract between a property owner and a contractor reflect that possibility. When getting bids, property owners should make sure that contractors

are bidding on the same septic system design (getting bids **based** on an approved septic permit will ensure this).

IV. STANDARD SYSTEM

The requirements for new individual onsite wastewater disposal systems as set forth in Chapter 7.38 of the County Code shall be met to the greatest extent possible for all system repairs and upgrades. At a minimum, the following requirements shall be met.

A. SEPTIC TANK REQUIREMENTS

1. Tank Size - For residences with 1 to 4 bedrooms, tank size shall be 1500 gallons, with at least an additional 250 gallons per bedroom for each bedroom in excess of 4.

Existing, two chambered fiberglass or concrete septic tanks that at least meet the standards for size for one bedroom less than proposed use and are in good condition do not require replacement at the time of septic system repair and will be recognized as passing an inspection for loan review purposes. Older tanks that require repairs to the sides or bottom must be replaced.

For commercial or institutional sewage disposal systems, the septic tank volume (independent of any grease traps required) shall be three times (3x) the peak daily flow. When repairing or upgrading commercial or institutional septic systems, the applicant must present at least two years of past water use records and/or a plausible projection of future peak daily wastewater flows.

Exterior grease traps, sized and installed to conform to EH policy, shall be required on commercial/institutional facilities discharging grease laden waste. The pumping of grease traps as often as necessary to prevent grease entering the leachfield(s) shall be a condition of any food facility Health Permit.

2. Tank Type - Concrete, fiberglass and polyethylene septic tanks from approved manufacturers are the only septic tanks permitted for tank replacements. Other tank types may be allowed provided adequate documentation of satisfactory performance is provided.
3. Access to Tank - Septic tanks should be installed within 12 inches of the ground surface when possible. If it is demonstrated that the building sewer pipe cannot be modified and the top of a septic tank must be deeper than 12 inches from the ground surface, the tank shall be modified so as to extend all manholes and covers to a maximum of 6 inches from the ground surface. Material used to extend the manholes and covers shall be of the same material as the septic tank. Septic tanks placed in paved driveways shall be provided with "traffic grade" concrete access manholes with cast iron lids. A cleanout to finished grade shall be provided between the building and the septic tank. 3" or 4" Schedule 40 ABS pipe shall be used to connect the building drains to the septic tank. Plumbing from the house to the tank must meet the Uniform Plumbing Code requirements and is subject to the jurisdiction of the Building Department.
4. Setbacks for Tank Installation - Septic tanks shall be installed to conform to the following minimum setback distances:

From Septic Tank To:	Minimum Distance in Feet:
Leaching Device	3
Property Line, Easement or Right-of-Way	5
Foundations, Structures, Decks	5
Water Line	10
Stream, Well, Spring, Watercourse	100 - EH may allow a closer separation where it is not possible to locate the replacement leachfield 100 ft from the well, the existing leachfield is closer, and there are other mitigating circumstances

5. Watertight Tanks - For all repairs in areas of suspected high groundwater, reduced stream setback, areas where enhanced treatment may be needed, and/or utilizing pumps, water tight tanks and risers shall be required. Water tightness shall be ensured by filling the tank and riser with water and observing that the level does not drop by more than 1/4 inch in 12 hours. Plastic tanks will not be allowed in suspected high groundwater areas unless provisions approved by the manufacturer are made to prevent the tank from floating or collapsing when pumped during conditions of high groundwater.
6. Effluent Filter – Replacement tanks shall be designed and installed to prevent solids in excess of 3/16 of an inch in diameter from passing into the dispersal system. This requirement may be satisfied by installation of an approved effluent filter.

B. LEACHFIELD REQUIREMENTS

1. GENERAL - The function of the leachfield is to dispose of the clarified wastewater from the septic tank into the ground. The relevant factors in designing a leachfield are: The depth from the surface of the ground to the water table (especially during the rainy season), the ability of the soil to soak up the water from the leachfield (percolation rate) and, the amount of land available on the subject parcel to install the leachfield. The following subsections list the requirements and procedures to be followed in designing a leachfield.
2. AMOUNT OF LEACHFIELD REQUIRED - Residential
 The following table presents the minimum amount of leachfield required for residences. For the purposes of sizing an onsite sewage disposal system, any room that could be utilized as a bedroom shall be counted as a bedroom as determined by the Health Officer, including a room adjacent to a full bathroom, with an exterior wall, a closet, and a door off a hallway or a separate exterior access.

LEACHING AREA REQUIREMENTS - SQ. FT. per dwelling unit.

	<u>PERCOLATION RATE - MPI*:</u>				<u>MAXIMUM PEAK WATER USE (APPROX. GAL/DAY)</u>
	<u>1-5</u>	<u>6-30</u>	<u>31-60</u>	<u>61-120</u>	
Absorbtion Rate (g/sf/day)	0.43	0.36	0.24	0.10	
1 Bedroom	500	600	900	2150	215
2 Bedrooms	625	750	1125	2700	270
3 Bedrooms	750	900	1350	3250	325
4 Bedrooms	875	1050	1575	3750	375
Additional Bedrooms	125 ea.	150 ea.	225 ea	550ea.	55 ea.

*To the nearest whole MPI (Minutes Per Inch)

- a. Determination of Soil Percolation Rate - The percolation rate range of the soil shall be estimated (if not already established by percolation tests) by the applicant on the application form for the purposes of estimating the proposed leachfield area required for the number of bedrooms desired. After the application is made, the parcel’s soil types taken from the Soil Survey of Santa Cruz County will be noted by EH staff on the application check sheet. A field visit to the parcel will be made by the EH Specialist. A test hole excavation to observe soil texture characteristics (as well as a check for water table level) may be required. A percolation rate range will be assigned to the soils by the EH specialist based on the Soil Survey and soil textures observed at the site. If there is inadequate information, or concurrence on the estimated percolation rate range of the soil cannot be achieved among the inspector and the designer, a percolation test will be performed by a qualified professional who is familiar with the Santa Cruz County percolation test requirements. The results of the percolation test shall then be the basis for determining the leachfield area required.

- b. Effective Leaching Area - The size of the leachfield is determined by the total of the areas of the trench bottom and sidewalls beneath the leach pipe. Example: A trench that is four feet deep, 1 ½ feet wide and 50 feet long with the leach pipe on top of 2 ½ feet of drain rock, has an effective leaching area of 325 sq. ft. There are 6 ½ sq. ft. (2 ½ + 1 ½ + 2 ½) of leaching area per lineal feet of trench:
6.5 sq. ft. per lineal ft. X 50 ft. = 325 sq. ft.
- c. Replacement Area - In order to meet the requirements for a Standard System, a reserve replacement area for future leachfield repairs on the parcel must be designated on the approved plot plan for the septic system design. This replacement area must be capable of accommodating a replacement system which fully meets standards using a conventional or Enhanced Treatment system. No construction of buildings, permanent swimming pools or other permanent structures shall be permitted over the designated replacement area.

3. AMOUNT OF LEACHFIELD REQUIRED - COMMERCIAL/INSTITUTIONAL

The requirements for existing commercial/institutional establishments shall be determined based on an analysis of peak daily loading rates, using an absorption rate of 0.43, 0.36, 0.24 and 0.10 gallons per square feet of leaching area per day for soils percolating in the ranges 1-5, 6-30, 31-60 and 61-120 MPI, respectively. The applicant shall present at least two years of past water use records and a plausible projection of future peak daily wastewater flows if a change in property use which could result in increased wastewater loading is proposed.

Note: For all large systems serving more than 5 residential units or having peak daily flows greater than 2500 gallons per day that are located within the San Lorenzo Watershed or a water supply watershed, enhanced treatment systems will be required. These systems will be considered Enhanced Treatment Systems and can utilize increased application rates in the leachfield design. Design of a system with flow greater than 2500 gallons per day can only be proposed by a California registered civil engineer or registered geologist.

4. LEACHFIELD CONSTRUCTION REQUIREMENTS FOR STANDARD SYSTEMS

Following are the requirements for a Standard Septic System. Owners of parcels that cannot accommodate all of the requirements of this section should refer to the Nonstandard System sections below.

a. Allowable Soil Percolation Rates

Soils in which the leachfield is constructed must percolate in the range of 1-120 MPI. Please see section B.2.a above for a description of the process to determine percolation rate range.

Note: For systems in sandy soils (those identified by the Soil Conservation Service as Zayante or Baywood Series, or any other soil with fast percolation rates between 1 and 5 MPI) enhanced treatment will be required within the San Lorenzo Watershed and designated Water Supply Watersheds for any new system or any system serving a bedroom addition, a remodel adding more than 500 square feet, or other expansion of use which will result in an increase in volume or strength of wastewater flow. Such systems will be Enhanced Treatment Systems and can utilize increased application rates in the leachfield design. Where there is no bedroom addition or remodel adding more than 500 square feet, the maximum trench depth in sandy soils shall be no more than 4 feet from the ground surface.

b. Groundwater Separation Below Leachfield

The minimum separation between the bottom of any leaching device and seasonally high groundwater shall be:

5 feet where the leaching device is between 50 and 100 feet from a stream, spring, or other waterbody.

3 feet where the device is greater than 100 feet from a waterbody.

(At distances greater than 250 feet from a waterbody, a system with groundwater separation below the leachfield between 2 and 3 ft. may be approved as a Limited Expansion System. This will be considered a Limited Expansion System for the purposes of building additions, but will not be subject to annual inspections and an annual fee.)

The definitive determination of depth to groundwater in the area where a leaching device is proposed shall be through observation of depth to groundwater by the EH Specialist in a test hole excavation (or monitoring well) during the wet weather testing period as described in Section 7.38.120.B. During the rest of the year, the depth to groundwater may be estimated based on observation of test hole excavations and groundwater records maintained by the EH, if information is adequate.

c. Trench Depth

The standard trench depth shall be a maximum of 4 feet from the ground surface (2 ½ feet maximum effective depth). Parcels with soils that percolate in the range 6-60 MPI may use a deeper trench if space on the parcel prevents the use of a standard trench depth. Site constraints limiting leaching area must be shown on the site plan and verified by field evaluation. Parcels that have surface soils that percolate slower than 60 MPI and deeper soils that percolate faster than 60 MPI may use a deeper trench but shall only receive credit for the area of the trench in the acceptable percolation rate range. However, in all instances where a trench deeper than 4 feet is utilized, standards for separation from groundwater and impermeable layers must be met and the trench shall be as shallow as possible using the maximum lineal feet that can fit on the parcel while still reserving the required replacement area.

d. Credit for Existing Trenches

When upgrading a septic system, credit shall be given for any functioning existing trenches, as verified by a licensed septic pumper's report, that meet all of the requirements herein, with the possible exception of trench depth. Deeper trenches may be allowed where the soils percolate in the range 6-60 MPI. Where the soils percolate in the range 1-5 MPI, no exception to the 2 1/2 feet effective trench depth for existing trenches shall be given unless treatment for nitrogen removal is provided. This must be done through the procedures for a Nonstandard System, as described in Section V. Existing trenches which meet standards shall not be required to be expanded if the total absorption area is not deficient by more than that required for one bedroom (i.e. an existing 750 square foot trench in medium perc soil and in good operating condition would be acceptable for a 1 bedroom addition to a 2 bedroom house (proposed total of three bedrooms)).

e. Trench Width - Trenches shall be 18" to 36" in width. The trench bottom area plus the areas of the two sidewalls beneath the leach pipe is the effective leaching area (see section B.2.a above).

f. Maximum Slope - The maximum slope where leachfields may be approved is 30%, except that leachfields may be approved on slopes up to 50% under the following conditions: the leach pipe must be buried at least 2 feet, there must be at least 5 feet of soil percolating in the range of 1-120 MPI below the leachfield, and conditions must otherwise be suitable to prevent lateral surfacing of effluent, excessive erosion, or slope instability. A slope stability report that indicates that installation on the slope is acceptable must be prepared by a qualified professional and approved by EH.

g. Minimum Trench Spacing - The minimum spacing between trenches (edge to edge) shall be twice the effective depth to a maximum of 10 feet.

h. Leaching Device Setbacks - The minimum setback requirements between a leaching device and the following are:

Septic tank	3 feet
Property line	5 feet

Foundations/decks	5 feet
Potable water pipe	10 feet
Well	100 feet. EH may allow a closer separation where it is not possible to locate the replacement leachfield 100 ft from the well, the existing leachfield is closer, and there are other mitigating circumstances.
Embankment greater than 67%	2 times the embankment height up to 25 feet; if an impermeable layer is encountered, setback shall be 4 times the embankment height, up to 50 ft.
Stream, spring, waterbody	100 feet - EH may allow a closer separation where it is not possible to locate the replacement leachfield 100 ft from the waterbody, the existing leachfield is closer, and there are other mitigating circumstances.
Seasonal drainageway (flows no more than one week after significant rainfall)	25 feet
Swimming pool	10 feet

i. Trench Construction Details

General installation guidelines: The leach trench shall be excavated to the appropriate depth perpendicular to any slope, following the contour of the land so as to maintain the same trench depth for the length of the trench. Any smeared trench sidewalls shall be raked to roughen the surface to enhance percolation. The trench inspection riser pipes shall be placed vertically at each end of the trench and held in place vertically while the clean drain rock is placed in the trench. The top of the bed of rock and the leach pipe shall be leveled using a builder's level or transit.

The leach pipe shall be placed on the level rock bed with the holes pointed down and a cap placed over the end of the pipe. When the pipe is level, drain rock shall be brought up to 2" in depth over the drain pipe. The perforated inspection riser pipe shall be cut to the rock level and a section of solid pipe attached to extend through the ground surface. Untreated building paper or straw shall be placed over all of the rock surface of the leachfield. Earth backfill shall be placed over the leachfield 8" - 12" deep, and shall be mounded to ensure drainage away from the trench. If settlement occurs after installation, additional backfill must be added. The inspection riser pipe shall be capped. Any disturbed soils shall be protected from erosion by mulching with straw and seeding with erosion control seed mix.

Additional Construction specifications are as follows:

Maximum length of trench	100 feet
Slope of leach pipe	should be level, but 3" in 100 ft maximum
Rock over pipe	2" thick
Size of Rock	¾-2 " washed drain rock- dirty loads will be rejected
Type of leach pipe	3" or 4" coextruded styrene pipe

- j. Trench Bottom Setback to Impermeable Rock or Soil Layer - There shall be at least 5 feet of soil that percolates in the range 1-120 MPI beneath the leachfield if a stream, spring, or cutbank is located within 50 feet, or 3 feet of permeable soil if the horizontal separation is more than 50 feet.

- k. Trench Inspection Riser Pipes - Each distinct leach trench shall have a pipe placed vertically in the beginning and end of each trench to provide a means of monitoring the water level in the leachfield. The pipe shall be a perforated pipe that transitions to solid pipe at the top of the rock before exiting the ground. The pipe shall be extended to the bottom of the trench and held in place vertically while the rock is placed in the trench. A cap or female adapter with a threaded plug shall be provided at the end of the pipe. Concrete boxes with lids shall be provided around the pipe end where a flush to grade pipe end is desired.
 - l. Distribution of Effluent to Multiple Trenches - When there is more than one leach trench, an approved effluent distribution device shall be used to distribute effluent to each trench. A riser to the ground surface shall be provided to allow inspection and adjustment of the distribution device. "Pop-over" distribution is not permitted.
 - m. Geological Hazards - On slopes over 30% or where there is evidence of landslide activity, the EH Specialist will require a geologic hazards assessment to ensure that any proposed leachfield will not contribute to a slope failure. The Planning Department technical review staff shall review and provide comment on all such required technical reports which address potential impacts on slope stability from proposed septic systems to serve new or existing development. The applicant shall pay a fee for such review as established by the Board of Supervisors.
 - n. Sewage Easements - Locations on nearby properties or right-of-ways may be used for sewage disposal for system repairs only, if a recorded easement is obtained according to specifications in Section 7.38.060. If a repair is proposed in a right-of-way, written permission shall be obtained from the entity having jurisdiction over that right-of-way or from all owners of property with legal rights to use of that right-of-way.
 - o. Leachfield Repairs and Upgrades in Floodplains - Leaching areas shall not be located in low lying areas receiving storm water drainage, or within 100 year flood zones, except for the repair of an existing septic system, which cannot be located outside the floodplain. If the septic system is located within the floodplain, no added bedrooms or building additions greater than 500 square feet are allowed.
 - p. Drainage Improvements - Roof drains and surface runoff shall be directed away from the disposal area so as to reduce soil saturation. Backfill over leachfields shall be compacted to prevent settling and ponding of water over the leachfield. Stormwater infiltration devices or unlined swales shall be located at least 25 ft from the leachfield.
 - q. Site Restoration and Erosion Control - At the completion of the job, the site must be restored, with proper **and** stable disposition of excavated material and measures taken to prevent any significant erosion of surfaces disturbed during installation of the system. Any bare soil or fill that results from the installation of a septic system shall be seeded and mulched or otherwise treated to prevent erosion between October 15 and April 15.
5. EFFLUENT PUMPING
When effluent pumping is necessary to deliver the effluent to the leachfield, a 1000 gallon effluent pumping station tank shall be provided. The pump control switches shall be set so that 750 gallons of emergency storage is available during power outages. Pump controls shall also be installed to limit the amount of effluent that can be pumped to the leachfield in one day to 100% of the daily design flow so as to prevent overloading the leachfield after an extended power outage. The size of the pump chamber may be reduced only if site conditions prevent the installation of a 1000 gallon chamber. A handout is available from EH that describes the detailed effluent pumping requirements.

6. SEEPAGE PITS

The use of seepage pits to repair or upgrade a septic system for the purposes of bedroom additions shall only be permitted where there is a previously installed seepage pit and all of the soil, groundwater and other setback requirements above are met. However, if there is room and suitable soil to accommodate a standard leachfield, that shall be the preferred leaching device. Seepage pits must have a 10 foot separation to groundwater below the bottom of the pit. On parcels where a seepage pit has not been installed in the past, and standard leachfields cannot be installed, seepage pits may be installed provided they meet the 10 foot groundwater separation and other required setback from watercourses and water sources. In this instance, no bedroom increases or additions greater than 500 feet shall be approved.

7. GRAVELLESS LEACHFIELDS

The use of gravelless (chamber) leachfields may be permitted as provided in the chamber leaching regulations promulgated by the Health Officer. However, all standards regarding the location and placement of leaching devices shall apply to the gravelless method of effluent disposal.

C. WATER CONSERVATION

Water conservation devices are recommended to be installed in any home or building served by an onsite wastewater disposal system. All Limited Expansion, Low-Flow, and Haulaway Systems are required to install water conservation devices as a condition of any permit issued. See section V.A.1 below for recommendations.

D. GREYWATER DISPOSAL

1. Greywater is defined as any wastewater from washing machines, bathroom lavatory sinks, and/or showers. Greywater may contain pathogens and nuisance substances and shall not be discharged directly onto the ground surface.
2. Greywater shall be discharged to the septic tank system, to an approved disposal device, or to a greywater reuse system that meets the requirements of the plumbing code.
3. If the septic system is inadequately sized or performs unsatisfactorily due to surcharge of greywater, or gravity flow to the septic tank is not feasible, the greywater may be discharged to a separate disposal device approved by EH. The greywater disposal device shall be constructed according to the following minimum requirements:
 - setback from leachfield - 10 feet
 - setback from stream – minimum 25 feet, but over 50 ft if possible
 - tank size - 3 times expected daily flow
 - leaching device size - 200 sq. ft. sidewall area or as calculated based on loading rate of 1 gal./sq.ft./day; for clothes washers only, a minimum size of 104 sq. ft. sidewall area (96 cubic foot volume) is allowed.
 - minimum cover - 8 inches
 - maximum depth - 5 feet
 - groundwater separation - 2 feet if stream setback is greater than 100 ft.; 3 ft. if stream setback is between 25 and 100 ft.
4. A minor sewage disposal permit, at a reduced fee, is required for installation of a greywater sump.

E. CURTAIN DRAINS

A permit shall be required for any curtain drain installed within 100 ft. of a leachfield. Curtain drains located down gradient from a leachfield must be at least 25 feet from the leachfield. If an impermeable layer is present or soils percolate faster than 1 minute per inch, curtain drains must

be located at least 50 feet away. Curtain drains located upgradient of a leachfield must be installed with the bottom of the drain higher in elevation than the top of the leachfield, or must be located at least 25 feet away. Curtain drains shall not be placed in a location that will render any necessary expansion area unusable on the site or an adjacent parcel.

Curtain drains shall not be permitted for the purposes of attempting to lower groundwater levels to meet the required setback to groundwater from leaching devices for new development or expansion of existing development.

F. MINOR REPAIRS

Minor repairs are those repairs to an OWTS that do not require replacement of the tank or dispersal system. This may include replacement of damaged or clogged dispersal pipe, installation or replacement of a distribution device, diversion valve, or other work authorized by the Health Officer. A minor repair permit must be obtained prior to performing the work.

V. NONSTANDARD SYSTEMS

If a parcel cannot meet all of the requirements for a Standard System described in Section IV above, septic system repairs or upgrades must be made using a Limited Expansion System, a Low-Flow System, Haulaway System, or Enhanced Treatment System. All of these are considered Nonstandard Systems. Parcels with Limited Expansion, Low-Flow, or Haulaway Systems cannot receive approval for building permits to add more than a one time addition of up to 500 sq. ft. of conditioned floor area that does not increase bedrooms or sewage discharge. Under many circumstances, the conditions which prevent a parcel from meeting requirements may be overcome using an Enhanced Treatment System and in that case bedroom additions may be allowed. Systems for parcels with soils that percolate faster than 1 MPI or slower than 120 MPI can only be approved if an acceptable proposal is submitted that complies with the requirements in the Enhanced Treatment Systems section.

Parcels served by nonstandard systems are subject to recordation of a "Notice of Onsite Sewage Disposal System with Special Operating Characteristics" and payment of an annual charge to cover the cost of inspection and monitoring of system performance, as discussed below under Section V.E.

A. LIMITED EXPANSION SYSTEMS (Annual Fee Level 5)

Limited Expansion Systems are conventional systems which meet all requirements except for any one of the following:

- Groundwater separation below the leachfield is less than 3 feet and the system is over 250 ft. from a waterbody.
- Less than 100% expansion area is available.

Water conservation measures must be installed, as specified below under Low-Flow Systems. All other Nonstandard system requirements must be met, except that the annual inspection fee will be waived if there is no indication of system problems.

B. LOW-FLOW SYSTEMS (Level 4)

Low-Flow Systems are conventional systems which meet all requirements except that only 50-99% of the required amount of dispersal area can be installed.

Owners of parcels that elect to apply for a permit to install a Low-Flow System shall submit a proposal to install as much leachfield as possible that meets the requirements in section IV.B.4 above. A permit for a Low-Flow system can only be approved if at least 50% of the leachfield required for a Standard system can be installed. A proposal for an Enhanced Treatment system or

Haulaway System must be submitted if less than 50% of the required leachfield can fit on the parcel.

The following water conservation measures and provision for seasonal haulaway shall be made part of all Low-Flow System proposals.

1. Water Conservation Measures Required - All proposals for Limited Expansion and Low-Flow Systems shall include a requirement to install the water conservation devices described below if they are not already installed. These devices must be installed and inspected prior to permit final sign off.
 - a. All toilets shall be 1.6 gallon, or less, flush toilets.
 - b. Low flow shower heads of 2.5 gallons per minute, or less, shall be installed in all showers.
 - c. Water conservation aerators shall be installed on all lavatory, kitchen sink, and other household faucets.
 - d. Garbage grinders shall be removed.
2. Seasonal Haulaway Required as Necessary to Prevent System Failure - All proposals for Low-Flow systems shall include a requirement that the septic tank will be pumped as necessary to prevent any failure or overflow of the septic system. A gate valve on the septic tank effluent pipe is required to be installed prior to final inspection. This valve will prevent wastewater from escaping from the tank and will also prevent groundwater from entering the tank. If the existing septic tank allows groundwater to leak into the tank, a watertight septic tank shall be installed. A violation reinspection fee will be assessed if the system is observed to fail.

C. HAULAWAY SYSTEMS (Level 4)

Where less than 50% of the leachfield required in section IV.B.2 can be installed on a parcel where the existing wastewater disposal system is failing or intermittently failing, a Haulaway System shall be utilized. Extreme water conservation measures should be utilized by the resident. Ultra low-flow toilets (0.5 gallons or less per flush) will be required. A watertight holding tank shall be installed if the existing septic tank cannot be made watertight. A holding tank high water warning alarm shall be installed. Any available leaching area may be used for greywater disposal if greywater disposal requirements are met. All blackwater effluent must drain to the holding tank. Blackwater may be discharged to the leachfield during periods when groundwater separation requirements are met. Risers must be installed in the leachfield and in the vicinity of the leachfield to monitor groundwater level. Records of septic tank pumpings must be made available to EH for inspection purposes.

D. ENHANCED TREATMENT SYSTEMS (Level 3; or Level 6 with an ongoing service contract)

The owner of a parcel that cannot meet the requirements for a Standard System has the option described above to utilize a Limited Expansion, Low-Flow, or Haulaway System. However, if those options are selected, building additions are quite limited due to the limited sewage disposal capacity of the parcel. The resident may incur considerable cost and inconvenience due to the substandard system and the requirement for seasonal haulaway. The Enhanced Treatment system program permits the use of various wastewater treatment and disposal technologies that are not specifically described in Chapter 7.38 of the County Code. The design, installation and use of enhanced treatment and disposal technologies may result in superior wastewater treatment and disposal for that parcel and may, depending on site specific conditions, permit building additions beyond that permitted for other Nonstandard Systems. For more information on use on Enhanced Treatment Systems, refer to the Enhanced Treatment System Regulations.

E. NONSTANDARD SYSTEM REQUIREMENTS

The approval and use of a nonstandard system is subject to the procedures summarized below:

1. Acknowledgment of Requirements for Use of an Onsite Sewage Disposal System with Special Operating Characteristics - Prior to approval of the permit application for a nonstandard system, the property owner must sign an Acknowledgment of Requirements for Use of An Onsite Sewage Disposal System with Special Operating Characteristics prepared by EH staff, in which the owner acknowledges and agrees to comply with all requirements for use of the nonstandard system, including: limitations on property use and water use, operation and maintenance requirements, recordation of a Notice of Onsite Sewage Disposal System with Special Operating Characteristics on the property deed, annual compliance inspections by the County, and payment of an annual service charge on the property tax bill to cover the costs of inspections. The executed Acknowledgment and Requirements are attached as conditions of approval of the permit and continuing use of the system.
2. Notice of Onsite Sewage Disposal System with Special Operating Characteristics - Once the nonstandard system is installed, the County shall record on the deed for the affected parcel **either** a Notice of **Onsite Sewage Disposal** System with Special Operating Conditions and Limitations (for Limited Expansion and Low Flow Systems) or a Notice of Onsite Sewage Disposal System with Enhanced Treatment Technology and Special Operating Conditions (for enhanced treatment systems). The Notice will describe the type of system and its limitations (if any) and specify operating conditions, including annual reinspections by EH of the system.
3. Annual Inspection Fee - Property owners of Nonstandard systems that require annual reinspections by EH personnel to ensure correct system operation will be subject to an additional CSA 12 service charge on their property tax bill to pay for the cost of the inspections.

F. NONSTANDARD SYSTEM MAINTENANCE, MONITORING AND REPORTING REQUIREMENTS

The Health Officer has established specifications and requirements for the ongoing maintenance and monitoring to ensure proper functioning of nonstandard sewage disposal systems that have been installed pursuant to this section. These specifications and requirements include, but are not limited to: requirement for regular monitoring, maintenance and service by an Onsite System Service Provider (OSSP) approved by the Health Officer; site specific monitoring and maintenance requirements; effluent testing; and, new technology upgrade necessary to meet the requirements of Sections 7.38.152, 7.38.182 and 7.38.184. An executed service contract with an OSSP must be obtained prior to permit approval for an Enhanced Treatment technology system.

VI. ENFORCEMENT

If any of the terms or conditions of an approved sewage disposal permit are not observed during the installation or operation of any septic system, and the owner fails to correct the problem after reasonable notice, the following enforcement action(s) may be exercised.

A. VIOLATION REINSPECTION FEE

When a violation of requirements has been duly noticed to the owner of the parcel, any subsequent enforcement visits to the parcel shall cause a violation reinspection fee to be imposed for each visit to the parcel as authorized by Section 7.38.290 of the County Code.

B. NOTICE OF VIOLATION

A notice of violation describing the violation of the standard(s) contained in this document or in Chapter 7.38 of the County Code may be recorded against the parcel until the violation is abated.

C. REVOKING OF CONTRACTOR PERMIT PRIVILEGES

If an individual contractor violates the requirements of this document or Chapter 7.38 of the County Code, a complaint will be filed with the State Contractor's Licensing Board.