

3701-29-16 Site drainage.

- (A) When siting a STS, existing drain tile, or other artificial subsurface drainage present on the lot shall comply with the following:
 - (1) Shall be avoided whenever possible and shall maintain at least eight feet of horizontal separation from the soil absorption component of a STS;
 - (2) Existing drainage tile that intersects the soil absorption area shall be rerouted where possible. When tile is re-routed, the abandoned section of tile shall either be plugged with bentonite, cement or concrete, or removed to at least ten feet from the soil absorption component of the sewage treatment system, or broken up in place to prevent movement of water;
 - (3) Where existing sites may have close drain spacing and removal of the drainage is not practical, the design shall prevent migration of effluent to the drain; and
 - (4) Existing drainage on the lot may be used if necessary to facilitate drainage as long as isolation distances and VSDs are met.
- (B) When surface water runoff will infiltrate or cause ponding in, on or around STS components, diversion swales or other grading shall be designed to intercept and divert surface water with specifications indicated in the design plan. STS components shall not be sited in depressions or concave topographic features where surface water runoff cannot be properly managed through diversion. Diversion of surface water associated with a STS shall not negatively impact drainage of or onto other properties or storm water management.
- (C) An interceptor drain shall be sited no closer than six feet upslope of a soil absorption component, and shall prevent effluent from entering the interceptor drain. The specifications for the interceptor drain shall comply with paragraphs (D) and (E) of this rule, and shall be included in the design plan.
- (D) A perimeter drain intended to create a gradient to improve the drainage of a site with seasonal saturation or an engineered drainage system designed in accordance with appendix A to this rule shall meet the following:
 - (1) Be sited no closer than six feet on the upslope side of the soil absorption component and eight feet from the outermost extent of the other sides of the soil absorption component and shall not cross any portion of the soil absorption component;
 - (2) Where a flow restrictive layer is present, the bottom elevation of the perimeter drain must be installed no deeper than two inches into the flow restrictive horizon except when the bottom elevation must be deeper to allow for proper drainage at the outfall;
 - (3) The bottom elevation of the perimeter drain shall maintain sufficient vertical distance between the bottom of the perimeter drain, and the bottom of the soil absorption component to induce flow to the drain;
 - (4) Be designed and constructed to ensure subsurface flow of water to the drain;

- (5) Be limited to sites with at least six inches of unsaturated soil beneath the bottom of the infiltrative surface of the soil absorption component of the STS unless the STS design uses a pretreatment component approved for meeting the one-thousand fecal coliform CFU per one hundred milliliters standard prior to dispersal to the soil; and
 - (6) Be sited not less than eight feet from a mound lateral or one foot from the toe of the mound.
- (E) Subsurface drainage shall comply with the following:
- (1) The drainage pipe shall be slotted pipe four inches in diameter;
 - (2) Drainage pipe wrapped with a geotextile fabric shall not be used when the soil has a silt content greater than forty per cent;
 - (3) The subsurface drain trench shall have a positive slope of at least one-tenth foot per one hundred feet;
 - (4) The drainage pipe shall be backfilled with a minimum of ten inches of coarse aggregate. As determined by the designer or the local board of health, a subsurface drain trench may be backfilled to final grade or to within six inches of final grade with coarse aggregate, and the final six inches, if applicable, to final grade with cover soil material. When ground water can develop velocities sufficient to move sand or silt or both into the drain, filter or drain envelopes may be required in lieu of the coarse aggregate envelope. Filter or drain envelopes must be able to restrict the movement of sand and/or silt into the drain pipe so that the hydraulic capacity of the drain pipe is maintained. Filter or drain envelopes should be installed according to the manufacturers specifications, or in accordance with part 650, chapter 14 of the NRCS, national engineering handbook; and
 - (5) The subsurface drain trench and the associated discharge piping shall be designed to have water flow by gravity from the drain when possible.
- (F) Engineered drainage shall be designed in accordance with appendix A to this rule to lower seasonal saturation in the soil across the soil absorption area throughout the year to provide a sufficient thickness of unsaturated soil to meet the vertical separation distance requirements. Engineered drains shall meet the following requirements:
- (1) Water discharged from engineered drainage systems shall not create a public health nuisance as defined in section 3718.011 of the Revised Code;
 - (2) Engineered drainage systems shall be properly installed and maintained to ensure consistent operation during the life of the STS;
 - (3) A STS design that proposes to use an engineered drainage system shall identify the depth to the seasonal water table with no drainage and the depth to which the seasonal water table will be lowered with drainage to demonstrate that the vertical separation distance required is met; and
 - (4) The engineered drainage design shall demonstrate that the proposed drain spacing and depth can lower the seasonal water table to the desired depth to achieve a thickness of unsaturated soil to meet the vertical separation distance

required at least three hundred and thirty days each year, with no more than thirty days of continuous saturation above the desired depth, at a recurrence frequency of thirty per cent (an average of at least nine years in thirty).

- (G) A drainage outlet for interceptor, perimeter, or engineered drain shall comply with the following:
- (1) The drainage outlet must be accessible, include rigid solid wall pipe and animal guard, and shall be designed to allow for free flow from the invert of the pipe for the purpose of sampling. Where the drainage outlet is not accessible a sampling port may be required;
 - (2) The drainage outlet shall be designed and installed to prevent clogging by siltation or vegetative growth and accessibility shall be maintained for cleaning;
 - (3) The drainage outlet must have sufficient freeboard above typical annual maximum flow to ensure the drain flows in all seasons. The invert of the pipe for a gravity flow outlet shall be at least four inches above the water level of the receiving stream or ground surface, whichever is closer;
 - (4) If a gravity flow outlet cannot be achieved the drain shall include a pump vault accessible for sampling and of sufficient size and dose volume to maximize pump life. A pumped drain may include a check valve and an alarm in compliance with paragraph (M) of rule 3701-29-12 of the Administrative Code;
 - (5) The receiving area for a drainage outlet shall not pond and shall allow free flow away from the outlet during both dry and wet weather conditions to an established drainage feature. Drainage designs may need to consider other models for surface water drainage for the area; and
 - (6) Written permission shall be obtained from the owner, agency, or other controlling entity for placement of a drain outlet within a right-of-way or legally established public drainage improvement. A drain outlet associated with a STS shall be subject to the easement provisions of paragraph (G) of rule 3701-29-06 of the Administrative Code.

Replaces: 3701-29-11, 3701-29-12

Effective: 01/01/2015

Five Year Review (FYR Dates): 01/01/2020

CERTIFIED ELECTRONICALLY

Certification

09/29/2014

Date

Promulgated Under: 119.03
Statutory Authority: 3718.02
Rule Amplifies: 3718.02
Prior Effective Dates: 7/1/1974, 7/1/77, 7/2/07, 7/30/07