(A) fill tank with water to the underside of the top of the tank or, for corrugated tanks, to the bottom of the upper most corrugation that forms the top of the tank; ~~outlet invert or pipe, as applicable;~~
(B) allow the tank to sit for one hour;
(C) tank shall be approved if the water level drops less than or equal to one-eighth inch in one hour;
(D) if a leak is detected, the tank may be repaired in accordance with the tank manufacturer's written instructions, refilled, and retested;
(E) surface wetness or condensation shall not be considered an active water leak; and
(F) the tank manufacturer or installer is allowed one attempt to retest the tank before the authorized agent can deny the tank for use in the installation based on failure to pass the leak test.

(2) The operational procedures to be followed for the vacuum test are:
(A) temporarily seal inlet and outlet pipes and access openings;
(B) using calibrated equipment, draw a vacuum on the empty tank to a negative pressure of two and one half inches of mercury;
(C) hold the vacuum for five minutes and re-measure and record the ending negative pressure inside the tank;
(D) no bracing or internal support that is not part of the approved tank shall be allowed;
(E) tank shall be approved if the difference between the starting negative pressure and the ending negative pressure is less than or equal to one-fifth inch;
(F) if a leak is detected, the tank may be repaired in accordance with the tank manufacturer's written instructions and retested;
(G) the tank manufacturer or installer is allowed one attempt to retest the tank before the authorized agent can deny the tank for use in the installation based on the failure to pass the leak test; and
(H) all tank openings shall be un-sealed after the vacuum test is completed.

(3) Instead of the operational procedures set out in Paragraphs (b)(2)(B) and (b)(2)(E) of this Rule, a tank manufacturer may choose to use a negative pressure of five inches of mercury held for two minutes with the tank approved if the difference between the starting negative pressure and the ending negative pressure is less than or equal to two-fifths of mercury.

(c) Tanks unable to pass a leak test or be repaired to pass a leak test shall be removed from the site and the imprint described in Rule .1402(d)(15) or (e)(8) of this Subchapter marked over.
(d) The septic tank outlet pipe shall be inserted through the outlet pipe penetration boot, creating a watertight joint, and extending a minimum of two feet beyond the septic tank outlet. The pump tank outlet pipe shall be inserted through the outlet pipe penetration boot, creating a watertight joint, or through another watertight joint, such as a rubber grommet, in the pump tank riser.
(e) The septic tank outlet pipe and pump tank outlet pipe shall be placed on undisturbed soil or bedded in accordance with Rule .0703(b) of this Subchapter to prevent differential settling of the pipe. The pipe shall be level for a minimum of two feet after exiting the tank.
(f) The tank shall be installed level. A tank is considered level if the difference between the front and back is plus or minus one inch and the difference from side to side is plus or minus one inch. The tank excavation, bedding, backfill, and compaction shall be in accordance with the tank manufacturer's installation requirements, specifications, and the tank approval.
(g) The tank excavation shall be separated from the dispersal system by at least two feet of undisturbed soil. Piping from the tank to the next component shall be placed on undisturbed soil, compacted soil, or bedded using sand, gravel, stone, or other aggregate.
(h) Effluent filters and risers shall be installed in accordance with the design and construction criteria of Rule .1402(b) and (c) of this Subchapter.
(i) Any system serving a facility with a DDF greater than 3,000 gpd shall have access manholes installed on the tank and extending at a minimum to finished grade. The access manholes shall be designed and maintained to prevent surface water inflow and sized to allow access for routine inspections, operation, and maintenance.

History Note: *Authority G.S. 130A-335(e), (f), and ~~(f1).~~ (f1); S.L. 2023-77, s.15.*

SECTION .0900 – SUBSURFACE DISPERSAL

15A NCAC 18E .0901 GENERAL DESIGN AND INSTALLATION CRITERIA FOR SUBSURFACE DISPERSAL SYSTEMS

(a) Wastewater systems shall be used on sites classified suitable in accordance with Rule .0509 of this Subchapter. The sizing and siting criteria in this Rule shall be based on soil receiving DSE. The site shall meet the following minimum criteria:
(1) 12 inches of naturally occurring soil between the infiltrative surface and any LC; and
(2) 18 inches of separation between the infiltrative surface and any SWC if more than six inches of separation consists of Group I soils.

(b) If any part of the trench or bed media extends above the naturally occurring soil surface, the system shall be a fill system and shall meet the requirements of Rule .0909 of this Section.
(c) The LTAR shall be determined in accordance with the following:
(1) Tables XVII and XVIII shall be used, as applicable;
(2) the LTAR shall be assigned based upon soil textural class or saprolite textural class, as applicable, structure, consistence, SWC, depth, percent coarse rock, landscape position, topography, and system type;

(3) LTARs determined from Table XVII shall be based on the soil textural class of the most limiting, naturally occurring soil horizon to a depth of 12 inches below the infiltrative surface or 18 inches to any SWC if more than six inches of the separation consists of Group I soils;

(4) LTARs determined from Table XVIII shall be based on the saprolite textural class of the most limiting, naturally occurring saprolite to a depth of 24 inches below the infiltrative surface, or less than 24 inches if combined with soil in accordance with Rule .0506(b) of this Subchapter; and

(5) for facilities that generate HSE as specified in Rule .0401(h) of this Subchapter or a facility with a full kitchen, the LTAR shall not exceed the mean rate for the applicable Soil Group.

TABLE XVII. LTAR for wastewater systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR in gpd/ft^2
I	Sands	Sand	0.8 – 1.2
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.6 – 0.8
		Loam	
III	Fine Loams	Sandy Clay Loam	0.3 – 0.6
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.1 – 0.4
		Silty Clay	
		Clay	

TABLE XVIII. LTAR for wastewater systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR in gpd/ft^2
I	Sands	Sand	0.6 – 0.8
		Loamy Sand	0.5 – 0.7
II	Loams	Sandy Loam	0.4 – 0.6
		Loam	0.2 – 0.4
III	Fine Loams	Silt Loam	0.1 – 0.3
		Sandy Clay Loam*	0.05 – 0.15

* Sandy clay loam saprolite can only be used with advanced pretreatment in accordance with Section .1200 of this Subchapter.

(d) The minimum required infiltrative surface area and trench length shall be calculated in accordance with the following:

(1) the minimum required infiltrative surface area shall be calculated by dividing the DDF by the LTAR;

(2) the minimum trench length shall be calculated by dividing the minimum required infiltrative surface area by the equivalent trench width. The following equation shall be used to calculate the minimum trench length required:

TL = (DDF / LTAR) / ETW

Where TL = trench length, in feet
DDF = design daily flow, in gpd
LTAR = in gpd/ft^2
ETW = equivalent trench width, in feet;

(3) the area occupied by step-downs, drop boxes, and supply lines shall not be part of the minimum required infiltrative surface area;

(4) the total trench length required for trench products other than conventional gravel shall be as follows:

(A) for trench products identified in Section .0900 of this Subchapter, the minimum line length shall be calculated in accordance with this Section; or

(B) for trench products approved under Section .1700 of this Subchapter, the minimum line length shall be calculated in accordance with the PIA Approval; and

(5) when HSE is proposed to be discharged to a dispersal field with no advanced pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the adjusted LTAR in accordance with Rule .0402(b)(2) of this Subchapter.

(e) Any dispersal field where cover is required above the naturally occurring soil surface shall not be installed on slopes greater than 30 percent.

(f) Soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally five feet beyond the trenches. On level sites, the final grade of the dispersal field shall be crowned at one-half percent grade as measured from the centerline of the dispersal field.

(g) Wastewater system installation shall be in accordance with the following criteria:

(1) a device that measures elevation, such as an engineer's level or laser level shall be used for the following:
  (A) staking, flagging, or marking on the ground surface the location of trenches on site before installation begins;
  (B) installation of the trenches; and
  (C) verification of elevations, excavations, and installation of other system components;

(2) trenches shall be installed with 12 inches of naturally occurring suitable soil between the infiltrative surface and any unsuitable LC. If the vertical separation between the infiltrative surface and any SWC is less than 18 inches, and if more than six inches of the separation consists of Group I soils, a pressure dispersal system shall be required;

(3) the trenches shall follow the ground contour. Trenches may be installed level but off contour if an authorized agent has determined that there is sufficient vertical separation to a LC along the entire trench length in accordance with Subparagraph (2) of this Paragraph;

(4) the lateral shall be centered horizontally in the trench;

(5) the type and placement of soil cover shall be approved by the authorized agent in accordance with this Subparagraph. The cover material shall be free of trash, debris, or large clods that do not break apart. The system can be installed utilizing native backfill unless otherwise specified in this Section or the PIA Approval:

(6) final soil cover over the dispersal field shall be a minimum of six inches deep after settling. The finished grade over the tanks and dispersal field shall be sloped to shed surface water;

(7) surface water runoff, including stormwater, gutter drains, or downspouts, shall be diverted away from the wastewater system. No depressions shall be allowed over the dispersal field area;

(8) Schedule 40 PVC or other pipe approved pursuant to Section .0700 of this Subchapter may be used as needed to connect sections of trench and overcome site limitations. The trench bottom area where solid piping is installed shall not be included as part of the minimum required infiltrative surface area;

(9) gravity effluent distribution components including distribution boxes, drop boxes, and flow diversion devices shall be watertight, corrosion resistant, constructed to withstand active and passive loads, and their installation shall meet the following criteria:
  (A) separated by a minimum of two feet of undisturbed soil from the septic tank and trench(es);
  (B) placed level on a solid foundation of undisturbed soil, pea gravel, or concrete to prevent differential settling of the component; and
  (C) backfilled by hand to minimize disturbance;

(10) when parallel distribution is used to distribute effluent to the trenches, the installer shall demonstrate to the authorized agent during the final inspection that the distribution devices perform as designed;

(11) serial and sequential distribution shall be approved by the authorized agent when the step-down or drop box in an individual trench is constructed to allow full utilization of the upstream trench prior to overflowing to the next downslope trench in accordance with the following criteria:
  (A) step-downs shall be constructed of a minimum of two feet of undisturbed soil, bedding material, or concrete and the effluent shall be conveyed over the step-down through Schedule 40 PVC or other pipe approved in accordance with Rule .0703 of this Subchapter. The installer shall demonstrate that the step-downs perform as designed. The authorized agent shall approve the step-downs when the installation and elevations have been verified in accordance with the CA; or
  (B) drop boxes shall be separated from the trench by a minimum of two feet of undisturbed soil and constructed to allow for full utilization of the upstream trench prior to overflowing to the next lower drop box. The installer shall demonstrate that the drop boxes perform as designed. The authorized agent shall approve the drop boxes when the installation and elevations have been verified in accordance with the CA; and

(12) trench products other than conventional gravel shall be installed as follows:
  (A) for trench products identified in Section .0900, the trench products shall be installed in accordance with this Section; or
  (B) for trench products approved under Section .1700 of this Subchapter, the trench products shall be installed in accordance with their PIA Approval.

(h) Alternating dual dispersal fields shall only be used with DSE in Soil Groups III and IV. Alternating dual dispersal fields shall be approved when designed and installed in accordance with Paragraph (g) of this Rule and the following:

(1) both initial and repair dispersal fields shall be installed at the same time;

(2) initial and repair dispersal fields of the same system type are each sized at a minimum of 75 percent of the total trench length required;

(3) the initial and repair dispersal fields shall be separated by an effluent flow diversion valve(s);

(4) diversion valve(s) shall be resistant to 500 pounds crushing strength and corrosion resistant;

(5) effluent flow diversion valves shall be installed below finished grade in a valve box and be accessible and operable from the ground surface; and

(6) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA Approval.

History Note: *Authority G.S. 130A-335(e), (f), and (f1).*

15A NCAC 18E .0902 CONVENTIONAL WASTEWATER SYSTEMS

(a) A conventional wastewater system shall consist of a septic tank and a gravity distribution dispersal field. In addition to the requirements set forth in Rule .0901 of this Section, this Rule shall apply to conventional wastewater systems as defined in G.S. 130A-343.

(b) In addition to the installation requirements set forth in Rule .0901(g) of this Section, the following shall apply:

(1) trenches shall be constructed level in all directions with a plus or minus one-half inch tolerance from side-to-side and the maximum fall in a single trench not to exceed one-fourth inch in 10 feet as determined by a device that measures elevation, such as an engineer's level or laser level;

(2) trenches shall be located not less than three times the trench width on centers. The minimum spacing for trenches is six feet on center;

(3) trench widths shall be at least two feet, but no more than three feet, and trench depth shall not exceed 36 inches on the downslope side of the trench, except as approved by an authorized agent;

(4) aggregate used in trenches shall be clean, washed gravel or crushed stone and graded or sized in accordance with size numbers 4, 5, or 6 of ASTM D448. The aggregate shall be distributed uniformly across the infiltrative surface and over the pipe and placed 12 inches deep with a minimum of six inches below the pipe and two inches over the pipe; and

(5) the laterals shall meet the requirements of Rule .0703(d) of this Subchapter.

History Note: *Authority G.S. 130A-335(e) and (f); 130A-343.*

15A NCAC 18E .0903 BED SYSTEMS[17]

(a) This Rule shall apply to bed systems receiving DSE.

(b) Bed systems shall be limited to 600 gpd unless approved for a greater DDF in accordance with a PIA Approval.

(c) Sites for bed systems shall meet the following criteria:

(1) soil texture is Group I, II, or ~~II;~~ III to a depth of 48 inches below the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper; and

(2) design options for the site are limited by topography or available space.

(d) The number of square feet of infiltrative surface area required shall be increased by 50 percent over that required for a trench system as calculated in accordance with Rule .0901(d) of this Section.

(e) In addition to the installation requirements set forth in Rule .0901(g) of this Section, the following shall apply:

(1) the bottom of the bed shall be excavated level, plus or minus one-half inch, in all directions;

(2) laterals shall be one and one-half feet from the side of the bed;

(3) laterals shall be placed on three-foot centers;

(4) aggregate used shall comply with the requirements of Rule .0902(b)(4) of this Section;

(5) products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA Approval;

(6) the gravel surface shall be covered by an approved geo-textile fabric capable of preventing the downward movement of soil particles while allowing the movement of liquids and gases; and

(7) when pressure dispersal is used, the lateral design criteria shall meet the minimum requirements of Rules .0907(e) or .0908(d) of this Section or in accordance with a PIA Approval.

History Note: *Authority G.S. 130A-335(e), (f), and ~~(f1).~~ (f1); S.L. 2023-77, s.16.*

15A NCAC 18E .0904 LARGE DIAMETER PIPE SYSTEMS

(a) LDP systems consist of laterals composed of corrugated, polyethylene tubing encased in a nylon and polyester blend filter wrap that are installed in trenches in the dispersal field. The laterals shall be one of the following:

(1) eight-inch inside diameter with a 10-inch outside diameter; or

(2) 10-inch inside diameter with a 12-inch outside diameter.

(b) LDP systems shall only be used with DSE.

(c) LDP pipe, filter wrap, and fittings shall meet the following criteria:

(1) pipe and fittings shall comply with the requirements of ASTM F667;

(2) the corrugated pipe shall have two rows of holes, each hole between three-eighths inch and one-half inch in diameter, located 120 degrees apart along the bottom half of the pipe with each hole 60 degrees from the bottom center line, and staggered so that one hole is present in the valley of each corrugation;

(3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of holes;

[17] Changed by S.L. 2023-77, Section 16

(4) corrugated pipe shall be covered with filter wrap at the factory;
(5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter wrap meeting the minimum requirements in Table XIX; and
(6) the LDP with filter wrap shall be encased in a black polyethylene sleeve prior to installation in the trench to prevent physical damage and ultraviolet radiation deterioration of the filter wrap.

Table XIX. Minimum filter wrap requirements for LDP

Property	Value
Unit Weight	1.0 ounce per square yard
Sheet Grab Tensile Strength	Machine Direction: 23 pounds
Trapezoid Tear Strength	Machine Direction: 6.2 pounds
Mullen Burst Strength	40 psi or 276 kilopascals
Frazier Air Permeability	500 cubic feet per minute per square foot at pressure differential of one-half inch of water

(d) The requirements of Rule .0901 of this Section shall apply to LDP systems except as follows:
(1) the LTAR determined in accordance with Rule .0901(c) of this Section shall not exceed 0.8 gpd/ft^2; and
(2) to calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width of two feet shall be used for eight-inch LDP and two and one-half feet shall be used for 10-inch LDP.
(e) In addition to the requirements set forth in Rule .0901(g) of this Section, LDP system installations shall comply with the following:
(1) trenches for eight-inch LDP shall be a minimum of 10 inches and a maximum of 18 inches wide. Trenches for ten-inch LDP shall be a minimum of 12 inches and a maximum of 24 inches wide;
(2) the infiltrative surface and pipe shall be level with a maximum fall of one inch in 100 feet;
(3) backfill shall have no more than 10 percent by volume of fibrous organics, building rubble, rocks, large clods, or other debris and shall be Soil Groups I, II, or III;
(4) the LDP shall be connected to the collection sewer or a stepdown pipe using an offset adapter to create a mechanical joint; and
(5) the minimum on center spacing for eight-inch LDP shall be five feet and for 10-inch LDP shall be six feet.

History Note: *Authority G.S. 130A-335(e) and (f).*

15A NCAC 18E .0905 PREFABRICATED PERMEABLE BLOCK PANEL SYSTEMS[18]
(a) PPBPS utilize both horizontal and vertical air chambers in a 16-inch PPBPS and are constructed to promote downline and horizontal distribution of effluent. PPBPS systems shall only be used with DSE.
(b) The requirements of Rule .0901 of this Section shall apply to PPBPS systems except as follows:
(1) the LTAR determined in accordance with Rule .0901(c) of this Section shall not exceed 0.8 gpd/ft^2; and
(2) to calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width of six feet shall be used.
(c) In addition to the requirements set forth in Rule .0901(g) of this Section, PPBPS system installations shall comply with the following and the manufacturer's specifications:
(1) PPBPS trenches shall be located a minimum of eight feet on center or three times the trench *width;* ~~*width, whichever is greater;*~~ and
(2) trench sidewalls shall be raked in Group IV soils.
(d) When used in ~~*bed and fill*~~ *bed, fill, or sand lined trench* systems, PPBPS shall use the equivalent trench width of six feet to calculate the minimum trench ~~*or lateral*~~ length ~~*required.*~~ *required, unless otherwise instructed by the manufacturer on a case-by-case basis.* ~~*(e) When used in sand lined trench systems, PPBPS shall use the equivalent trench width of three feet to calculate the minimum trench length required.*~~

History Note: *Authority G.S. 130A-335(e) and* ~~*(f).*~~ *(f); S.L. 2023-63, s.16.*

15A NCAC 18E .0906 SAND LINED TRENCH SYSTEMS[19]
(a) Sand lined trench systems receiving DSE may be used ~~on sites originally classified unsuitable due to SWC, soil morphology, restrictive horizon, or soil depth that may be reclassified as suitable~~ in accordance with this Rule when there is a DDF less than or equal to 1,500 gpd.
(b) Sand lined trench systems with advanced pretreatment shall comply with Rule .1205 of this Subchapter.
(c) The soil and site shall meet the following criteria:

[18] Changed by S.L. 2023-66, Section 16
[19] Changed by S.L. 2023-77, Section 17

(1) the texture of the receiving permeable horizon is sand, loamy sand, sandy loam, loam, or silt loam;
(2) the structure of the receiving permeable horizon is classified suitable;
(3) the moist consistence of the receiving permeable horizon is loose, very friable, friable, or firm;
(4) if the receiving permeable horizon has zones of heavier textured materials, these zones are discontinuous with an average thickness not exceeding one-third of the required thickness of the receiving permeable horizon;
(5) the naturally occurring receiving permeable horizon shall be less than or equal to 60 inches below the naturally occurring soil surface. If the receiving permeable horizon is greater than 60 inches below the naturally occurring soil surface, advanced pretreatment shall be used in accordance with Rule .1205 of this Subchapter;
(6) artificial drainage shall be provided, as needed, to maintain the following minimum vertical separation from the infiltrative surface to a SWC:
(A) 18 inches with gravity or pressure dosed gravity distribution; or
(B) 12 inches with pressure dispersal; and
(7) the minimum required thickness of the receiving permeable horizon shall be determined by the texture of that horizon as follows:
(A) sand or loamy sand texture requires a minimum thickness of one foot;
(B) sandy loam or loam texture requires a minimum thickness of two feet; or
(C) silt loam texture requires a minimum thickness of three feet.

(d) If a groundwater lowering system is required to comply with the minimum vertical separation in Paragraph (c)(6) of this Rule to a SWC that is not related to lateral water movement, design plans and specifications shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F. The groundwater lowering system shall:
(1) extend into the receiving permeable horizon;
(2) have an outlet with location and elevation that allows for free discharge of groundwater as required for the groundwater lowering system to be functional. The outlet location and elevation shall be shown on the artificial drainage system plan with relative water level elevations and wastewater system site elevations labeled; and
(3) all groundwater lowering system components are integral to the wastewater system and subject to ownership and control requirements of Rule .0301(b) and (c) of this Subchapter.

(e) The LTAR shall be determined in accordance with Table XX for sand-lined trench systems. The minimum trench length shall be calculated in accordance with Rule .0901(d) of this Section, except that the ETW shall be equal to the installed trench width. The LTAR shall be based on the lesser of the following:
(1) LTAR set forth in Table XX based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon; or
(2) 10 percent of the in-situ Ksat of the receiving permeable horizon.

TABLE XX. LTAR for sand lined trench systems based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	Distribution Type	LTAR in gpd/ft^2
I	Sands	Gravity or Pressure Dosed Gravity	0.7 – 0.9
		Pressure Dispersal	0.8 – 1.2
II	Coarse Loams	Gravity or Pressure Dosed Gravity	0.5 – 0.7
		Pressure Dispersal	0.6 – 0.8
III	Fine Loams	Gravity or Pressure Dosed Gravity	0.2 – 0.4
		Pressure Dispersal	0.3 – 0.6
IV	Clays	Gravity or Pressure Dosed Gravity	0.1 – 0.2
		Pressure Dispersal	0.15 – 0.3

(f) ~~There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~ Trench length for trench dispersal products approved with a specific dispersal field reduction in area or trench length when receiving DSE in accordance with this Subchapter or a PIA Approval shall be calculated in accordance with this Subchapter or the PIA Approval.

(g) A special site evaluation in accordance with Rule .0510 of this Subchapter shall be required for the following conditions to field verify the LTAR:
(1) the texture of the receiving permeable horizon is sandy loam or loam and the system DDF is greater than 600 gpd; or
(2) the texture of the receiving permeable horizon is silt loam.

(h) In addition to the requirements set forth in Rule .0901(g) of this Section, sand lined trench system installations shall comply with the following:
(1) gravity trenches shall have a maximum width of three feet and a minimum width of one and a half feet;
(2) trenches shall be located not less than three times the trench width on center. The minimum spacing for trenches shall be five feet on center;
(3) the sand lined trenches shall be constructed to extend into the naturally occurring receiving permeable horizon;

(4) the infiltrative surface shall be no deeper than 24 inches below finished grade. The top of the trench media shall be at or below the naturally occurring soil surface. Drip tubing shall be installed a minimum of six inches below the natural grade;

(5) soil used to line the trench shall be sand in texture. The installer shall provide written laboratory verification of the media textural classification and quality when requested by the LHD based on a visual inspection of the sand used during installation. When laboratory analysis is required, the material shall be clean, uncoated fine, medium, or coarse sand with a minimum of 90 percent in sizes ranging from 0.1 to 2.0 millimeters, with no more than one percent smaller than 0.074 millimeters or a No. 200 Sieve;

(6) pressure dosed gravity distribution or pressure dispersal shall be used when the total dispersal field line length exceeds 750 linear feet in a single system;

(7) pressure dispersal shall be used when the total dispersal field line length exceeds 1,200 linear feet in a single system;

(8) when pressure dispersal is used, the pressure dispersal network shall be designed in accordance with Rules .0907(e) or .0908(f) of this Section, except that the trench width shall comply with this Paragraph. The total line length shall be calculated based on infiltrative surface area;

(9) drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with emitters as follows:

(A) a minimum of two runs within a trench between one and one half and two feet wide; and

(B) a minimum of three runs within a trench between two and three feet wide.

The drip tubing shall be uniformly spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (5) of this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this Subchapter and this Rule;

(10) finished grade shall provide for positive surface drainage away from all system components, with the dispersal field crowned at one-half percent as measured from the centerline of the dispersal field. The finished grade requirements shall be made a condition of the CA; and

(11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA Approval.

(i) Other sand lined trench systems may be approved on a site-specific basis in accordance with Rule .0509(c) of this Subchapter.

History Note: *Authority G.S. 130A-335(e) and ~~(f).~~ (f); S.L. 2023-77, s.17.*

15A NCAC 18E .0907 LOW PRESSURE PIPE SYSTEMS

(a) LPP systems utilize a network of small diameter pipes with three feet to six feet pressure head to distribute effluent across the entire dispersal field. Any subsurface dispersal system listed in this Section may incorporate LPP dispersal.

(b) LPP systems with advanced pretreatment shall comply with Rules .1202, .1203, .1205, or .1206 of this Subchapter.

(c) The LTAR shall be determined as follows:

(1) Tables XXI and XXII shall be used to determine the LTAR for LPP systems, as applicable;

(2) the LTAR determined from Table XXI shall be based on the soil textural class of the most limiting, naturally occurring soil horizon to a depth of 12 inches below the infiltrative surface;

(3) the LTAR determined from Table XXII shall be based on the saprolite textural class of the most limiting, naturally occurring saprolite to a depth of 24 inches below the infiltrative surface, or less than 24 inches if combined with soil in accordance with Rule .0506(b) of this Subchapter; and

(4) for facilities that generate HSE as specified in Rule .0401(h) of this Subchapter or a facility with a full kitchen, the LTAR shall not exceed the mean rate for the applicable Soil Group.

TABLE XXI. LTAR for LPP systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR in gpd/ft^2
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

TABLE XXII. LTAR for LPP systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR in gpd/ft^2
I	Sands	Sand	0.3 – 0.4
		Loamy Sand	0.25 – 0.35
II	Loams	Sandy Loam	0.2 – 0.3
		Loam	0.1 – 0.2
		Silt Loam	0.05 – 0.15

(d) The minimum required dispersal field area and trench length shall be calculated in accordance with the following:

(1) the minimum required dispersal field area shall be calculated by dividing the DDF by the LTAR; and

(2) the minimum trench length shall be calculated by dividing the required dispersal field area by a lateral spacing of five feet. The following equation shall be used to calculate the minimum line length required.

TL = (DDF / LTAR) / LS

Where TL = length of trench, in feet
DDF = design daily flow, in gpd
LTAR = in gpd/ft^2
LS = five-foot line spacing

(3) When HSE is proposed to be discharged to an LPP dispersal field with no advanced pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the adjusted LTAR in accordance with Rule .0402(b) of this Subchapter.

(e) In addition to the requirements set forth in Rule .0901(g) of this Section, LPP system design and installation shall comply with the following, unless otherwise specified in a PIA Approval:

(1) the LPP distribution network shall be constructed of one to two-inch diameter pressure rated Schedule 40 PVC laterals placed in gravel that meets the requirements in Rule .0902(b)(4) of this Section or other approved media;

(2) the trench width shall be one to two feet;

(3) trenches shall be located not less than three times the trench width on center. The minimum spacing for trenches shall be five feet on center:

(4) trenches shall include a minimum of eight inches of gravel or other approved media, either from a PIA Approval or subsurface dispersal system listed in Section .0900 of this Subchapter. The lateral shall be installed a minimum of five inches above the infiltrative surface;

(5) laterals, manifolds and LPP fields shall comply with the following design criteria:

(A) the maximum lateral length shall yield no more than a 10 percent difference in orifice delivery rate between the first and last orifice along the lateral;

(B) no more than one-third of the total number of holes shall be less than 5/32 inches in diameter, with no orifices sized smaller than one-eighth inch in diameter in any lateral line;

(C) all orifices shall face upwards, except for two orifices, one-third of the way from the beginning and end of each lateral, which shall face downward; and

(D) maximum orifice spacing shall be as follows: Soil Group I - five feet; Soil Group II - six feet; Soil Group III - eight feet; and Soil Group IV - 10 feet;

(6) the orifices shall be protected by the following:

(A) lateral sleeved within a three or four-inch perforated corrugated or smooth wall tubing meeting the requirements of Rule .0703(d) of this Subchapter; or

(B) orifice shields that prevent aggregate, soil, and tree roots from clogging the orifices;

(7) the following additional design provisions shall be required for sloping sites:

(A) separately valved manifolds shall be required for all subfield segments where the elevation difference between the highest and lowest laterals exceeds three feet;

(B) the orifice spacing, orifice size or both shall be adjusted to compensate for relative elevation differences between laterals branching off a common supply manifold and to compensate for the lines at the lowest elevation receiving more effluent at the beginning and end of a dosing cycle;

(C) the lateral network shall be designed to achieve a 10 to 40 percent higher steady state flow rate per linear foot into the upper lines, relative to the lower lines, depending on the amount of elevation difference and the number of laterals. The steady state flow rate is based on the pipe being full;

(D) maximum elevation difference between the highest and lowest laterals in a field shall not exceed 10 feet unless the flow is uniformly divided using multiple pumps or split between subfield segments without requiring simultaneous adjustment of multiple pressure regulating valves in separate locations. Flow shall be uniformly divided such that the dose volumes to the subfields does not vary more than 10 percent on an area basis; and

(E) the Department shall approve other designs based upon the authorized designer or PE providing documentation showing equivalent hydraulic performance to this Subparagraph;

(8) turn-ups shall be provided at the ends of each lateral, constructed of Schedule 40 PVC pipe or stronger pressure-rated pipe, and shall terminate at the ground surface and be installed in a valve box or equivalent that provides access for operation and maintenance;
(9) the supply manifold shall be constructed of solvent-welded pressure rated Schedule 40 PVC;
(10) the supply manifold shall be sized large enough based on the size and number of laterals served to prevent more than a 20 percent variation in pressure head between the first and last laterals due to losses within the manifold when feeding the manifold from a lower elevation;
(11) the supply manifold shall comply with the following design criteria:
(A) the ratio of the supply manifold inside cross-sectional area to the sum of the inside cross-sectional areas of the laterals served shall exceed 0.7:1 as measured from where the supply line connects to the manifold;
(B) the reduction between the manifold and connecting laterals shall be made off the manifold using reducing tees or fittings; and
(C) cleanouts shall be installed at the distal ends of the supply manifold and shall be enclosed in valve boxes accessible from the ground surface;
(12) pressure regulating valves shall be provided for pressure adjustment at the fields;
(13) valves shall be installed in an access device, such as a valve box, and be accessible and operable from the ground surface. Valves serving contiguous subfields shall be in a common valve box;
(14) the LPP dosing system shall comply with the following design criteria:
(A) the pump operating flow rate shall be based upon delivering three feet to six feet of residual pressure head at the distal end of all laterals;
(B) the dose volume shall be between five and 10 times the liquid capacity of the lateral pipe dosed, plus the liquid capacity of the portions of manifold and supply lines which drain between doses; and
(C) when pumping downhill and the supply line volume exceeds 20 percent of the calculated dose volume, special design considerations shall be followed to prevent more than 20 percent of the dose volume from draining by gravity to the dispersal field between doses; and
(15) the trenches shall be covered to a minimum depth of four inches after settling.

(f) The authorized agent or Department may approve on a site-specific basis drip dispersal systems used in LPP trenches and other LPP designs based on documentation showing that the proposed design meets the performance requirements of this Rule.

History Note: *Authority G.S. 130A-335(e) and (f).*

15A NCAC 18E .0908 DRIP DISPERSAL SYSTEMS

(a) This Rule provides for the permitting of drip dispersal systems receiving DSE. Drip dispersal systems shall comply with the provisions of this Rule and Section .1600 of this Subchapter.
(b) Drip dispersal systems with advanced pretreatment shall comply with Rule .1204 of this Subchapter.
(c) Drip dispersal systems shall meet the following soil and site criteria:
(1) A minimum of 18 inches of naturally occurring suitable soil above a LC, 13 inches of naturally occurring suitable soil above a SWC, and the minimum vertical separation to any LC shall be 12 inches. A groundwater lowering system may be used to comply with the vertical separation to a SWC when only Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface.
(2) For new fill, the soil and site shall meet the following criteria:
(A) Rule .0909(b) and (c) of this Section, except as otherwise specified in this Subparagraph;
(B) no SWC shall exist within the first 12 inches below the naturally occurring soil surface. A groundwater lowering system shall not be used to comply with the initial site requirements for a new fill system; and
(C) minimum vertical separation to any unsuitable soil horizon or rock shall be 18 inches and 12 inches for any SWC.
(3) For existing fill, the soil and site shall meet the following criteria:
(A) Rule .0909(d) and (e) of this Section, except as otherwise specified in this Subparagraph; and
(B) minimum vertical separation to any LC shall be 24 inches.

(d) Tables XXIII and XXIV shall be used to determine the LTAR for all DSE drip dispersal systems:
(1) Table XXIII shall be used for systems utilizing soil. The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper;
(2) Table XXIV shall be used for systems utilizing saprolite. The LTAR shall be based on the most limiting, naturally occurring saprolite to a depth of 24 inches below the infiltrative surface;
(3) the LTAR for new fill systems shall not exceed 0.5 gpd/ft^2 for Group I, 0.3 for gpd/ft^2 Group II, 0.15 gpd/ft^2 for Group III or 0.05 gpd/ft^2 for Group IV soils, respectively;
(4) sections of blank tubing without emitters shall not count towards the minimum dripline length required; and
(5) the DDF shall be divided by the LTAR, determined from Table XXIII or XXIV, to determine the minimum dispersal field area required. The minimum dripline length shall be determined by dividing the required area by the maximum

line spacing of two feet. The designer may recommend additional linear footage as soil and site conditions allow. The following equations shall be used to calculate the minimum dispersal field area and dripline length required:

MA = DDF / LTAR
DL = MA / LS

Where MA = minimum dispersal field area, in ft^2
DDF = design daily flow, in gpd
LTAR = in gpd/ft^2
DL = dripline length, in feet
LS = two-foot line spacing

TABLE XXIII. LTAR for DSE drip dispersal systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR in gpd/ft^2
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

TABLE XXIV. LTAR for DSE drip dispersal systems based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class	LTAR in gpd/ft^2
I	Sand	0.3 – 0.4
	Loamy sand	0.25 – 0.35
II	Sandy loam	0.2 – 0.3
	Loam	0.1 – 0.2
	Silt Loam	0.05 – 0.1

(e) A special site evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.
(f) Drip dispersal installation shall be in accordance with the following criteria:
(1) dripline shall be installed in accordance with the approved design. The design shall specify installation depth, installation equipment, blanking, drainback prevention, and any other site-specific design requirements identified by the designer;
(2) dripline shall be installed a minimum of one inch into naturally occurring soil, except when installed in a fill system;
(3) driplines shall be installed level. A maximum variance of plus or minus two inches shall be allowed within any contiguous section of dripline containing drip emitters;
(4) a minimum of six inches of cover shall be maintained over the dripline. The six inches of cover may be met by the addition of up to six inches, after settling, of suitable Group II or III soil over the drip field;
(5) drip dispersal fields shall be sloped to shed surface water;
(6) if cover material is required and the slope is greater than 30 percent, a slope stabilization plan shall be provided by a licensed professional if required in G.S. 89C, 89E, or 89F; and
(7) the drip dispersal system shall be field tested after installation in accordance with Rule .1603 of this Subchapter.

History Note: *Authority G.S. 130A-335(e) and (f).*

15A NCAC 18E .0909 FILL SYSTEMS

(a) Both new and existing fill systems are a system in which all or part of the dispersal field media is installed in fill material. The system includes both the basal area of dispersal field and the toe slope in all directions.
(b) New fill systems may be installed on sites that meet the following requirements:
(1) a minimum of the first 18 inches below the naturally occurring soil surface consists of suitable soil with the exception that no SWC exists within the first 12 inches below the naturally occurring soil surface and a groundwater lowering system is not used to meet this requirement;
(2) systems shall be installed only on sites with uniform slopes less than four percent;

(3) stormwater diversions, subsurface interceptor drains, or swales shall be required as needed upslope of the system to divert surface runoff or lateral flow from passing over or into the system; and

(4) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slope in all directions.

(c) New fill system design and installation shall be in accordance with the following criteria:

(1) trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any LC for gravity distribution and pressure dosed gravity distribution, except for any SWC that requires 18 inches of separation. If pressure dispersal is used, the minimum separation distance shall be 18 inches between the infiltrative surface and any LC and 12 inches to a SWC. This separation requirement may be met with the use of a groundwater lowering system only in Soil Groups I and II with suitable structure;

(2) fill systems with a DDF greater than 480 gpd shall use pressure dispersal systems;

(3) fill material soil texture shall be classified as Group I up to the top of the trenches. The final six inches of fill used to cover the system shall have a finer texture, such as Group II or III soils, for the establishment of a vegetative cover;

(4) minimum cover shall be six inches after settling;

(5) additional fill may be added to facilitate drainage and accommodate final landscaping requirements at the site necessary to stabilize the fill, shed surface water, and establish a vegetative cover. The additional fill may be provided if the infiltrative surface is less than 30 inches below the finished grade;

(6) where fill material is added, the fill material and the existing soil shall be mixed to a depth of six inches below the interface. Vegetative cover, organic litter, and the O horizon shall be removed before the additional fill material is incorporated;

(7) the fill system shall be constructed as an elongated berm with the long axis parallel to the ground elevation contours of the slope;

(8) the side slope of the fill system shall not exceed a rise to run ratio of 1:4. If the first 18 inches below the naturally occurring soil surface is Group I soil, the side slope of the fill shall not exceed a rise to run ratio of 1:3;

(9) the outside edge of the trench shall be located a minimum of five feet horizontally from the top of the side slope;

(10) the fill system shall be shaped to shed surface water and shall be stabilized with a vegetative cover;

(11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA Approval; and

(12) the setback requirements shall be measured from the projected toe of the slope. If this setback cannot be met, the setback requirements shall be measured five feet from the nearest edge of the trench if the following conditions are met:

(A) slope of the site does not exceed two percent;

(B) the first 18 inches of soil beneath the naturally occurring soil surface shall consist of Group I soils; and

(C) the lot or tract of land was recorded on or before December 31, 1989.

(d) An existing pre-July 1, 1977 fill site that does not meet the requirements of Paragraph (b) of this Rule may be utilized for a wastewater system if the following requirements are met:

(1) substantiating data are provided by the lot owner indicating that the fill material was placed on the site prior to July 1, 1977;

(2) the fill material shall have Group I soil texture for a minimum depth of 24 inches below the existing ground surface;

(3) the fill material shall have no more than 10 percent by volume of fibrous organics, building rubble, or other debris, and shall not have discreet layers containing greater than 35 percent of shell fragments;

(4) if a minimum of 24 inches of Group I fill material is present, additional fill with soil texture classified Group I may be added to comply with the separation requirements of Subparagraph (e)(5) of this Rule;

(5) SWC is 18 inches or greater below the ground surface of the fill. This requirement shall be met without the use of a groundwater lowering system; and

(6) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slopes in all directions.

(e) Existing fill system design and installation shall be in accordance with Paragraph (c) of this Rule and the following criteria:

(1) the DDF shall not exceed 480 gpd;

(2) pressure dispersal shall be used. LPP systems shall meet the requirements of Rule .0907(d) and (e) of this Section. Drip dispersal systems shall meet the requirements of Rule .0908(d) and (f) of this Section;

(3) the LTAR shall not exceed 0.5 gpd/ft^2 for pressure dispersal systems;

(4) existing fill sites with 48 inches of Group I soils may use conventional trenches with a maximum LTAR of 1.0 gpd/ft^2 in lieu of a pressure dispersal system;

(5) the minimum vertical separation to any LC shall be 24 inches for pressure dispersal systems and 48 inches for conventional systems. This vertical separation requirement may be met by adding additional Group I soil, but shall not be met with the use of a groundwater lowering system;

(6) where additional Group I fill is to be added, the side slope of the fill shall not exceed a side slope ratio of 1:3; and

(7) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA Approval.

(f) The LTAR for new and existing fill systems shall be determined in accordance with Rule .0901(c) of this Section and the following:

(1) the LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the ground surface or to a depth 12 inches below the infiltrative surface, whichever is deeper;
(2) the lowest LTAR for the applicable Soil Group shall be used for systems installed in accordance with this Rule; and
(3) for sites with a minimum of 18 inches of Group I soils below the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper, the LTAR shall not exceed 1.0 gpd/ft^2 for gravity or pressure dosed gravity distribution or 0.5 gpd/ft^2 for pressure dispersal systems.

(g) The authorized agent or Department may approve other fill system designs on a site-specific basis in accordance with a PIA Approval or Rule .0509(c) of this Subchapter.

History Note: *Authority G.S. 130A-335(e) and (f).*

15A NCAC 18E .0910 ARTIFICIAL DRAINAGE SYSTEMS

(a) Artificial drainage systems are a site modification and may be proposed to reclassify sites as suitable that were originally classified unsuitable due to a SWC, lateral water movement, saturated soils, a perched water table, or other oxyaquic conditions. Artificial drainage systems include groundwater lowering systems, interceptor drains, and surface water diversions.

(b) Groundwater lowering systems may be used when the following criteria are met:
(1) the site has Group I or II soils with suitable structure and clay mineralogy; and
(2) the groundwater lowering system shall be designed to maintain the vertical separation to a SWC as specified in Rule .0901(g)(2) of this Section.

(c) Plans and specifications for the use of a groundwater lowering system to comply with the vertical separation to a SWC shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F in accordance with Rule .0303 of this Subchapter. The plans and specifications shall meet the following design criteria:
(1) Gravity groundwater lowering systems shall be designed in accordance with the following:
(A) substantiating information, calculations, and data shall be provided justifying the effectiveness of the proposed drainage system design;
(B) design and devices shall comply with accepted standards of practice as set forth in the USDA-NRCS National Engineering Handbook, Part 624 - Drainage, Chapter 10 - Water Table Control, and Part 650 - Engineering Field Handbook, Chapter 14 - Water Management, Drainage;
(C) the effectiveness of groundwater lowering systems shall be determined by use of the Ellipse, Hooghoudt, or equivalent drainage equations for sites with Group I or II soils. Justification for use of a specific drainage equation shall be provided;
(D) drainage equation input parameters shall be based upon field descriptions of soil profiles and in-situ Ksat measurements. The drainage coefficient used in these equations shall be calculated from the highest monthly rainfall value with a 30-percent exceedance probability from the closest available National Weather Service or SCO. A source of these data is the WETS tables published in the Natural Resource Conservation Service Field Office Technical Guides available online at: efotg.sc.egov.usda.gov/efotg_locator.aspx. This monthly value shall be divided by 14 to give the drainage coefficient in inches per day. For systems with a DDF greater than 1,500 gpd, the projected contribution of wastewater application shall be added to the drainage coefficient used in the equations;
(E) DRAINMOD shall be used to determine the groundwater lowering system effectiveness at sites with three or more effective soil layers, Group III or IV soils within 36 inches of the naturally occurring soil surface, or sites requiring a groundwater lowering system using pumps; and
(F) the modeling procedure set forth in Rule .0504(h) of this Subchapter shall be followed.
(2) Groundwater lowering systems using pumps shall be designed in accordance with the following:
(A) plan and profile detail drawings of pump tank, showing all dimensions, pumps, discharge piping, floats, and float and alarm activation levels;
(B) calculations and supporting information shall be provided as the basis for sizing the pumps, dose volume, emergency storage capacity, and overall tank capacity;
(C) the high-water alarm in the control panel shall automatically contact a 24-hour maintenance service;
(D) information on discharge pipe line, line location, materials, and provisions for erosion control at the discharge point;
(E) except as otherwise provided in this Paragraph, the requirements of Section .1100 of this Subchapter shall apply to artificial drainage systems using pumps; and
(F) dual alternating pumps shall be required when serving two or more design units. Each pump shall be sized at a capacity of two and one half times the projected peak inflow rate to the pump tank.
(3) Plans and specifications for all groundwater lowering systems shall include the following:
(A) location of existing and proposed drainage systems in relation to all facilities and wastewater system components. Plans shall indicate flow direction, slope and drain outlet location;
(B) profile drawings showing drainage trench dimensions, depth, pipe size, aggregate envelope, and filter fabric detail, cover, and cleanout detail;
(C) elevations with reference to an established benchmark;

(D) specifications for all groundwater lowering system materials and installation procedures;
(E) the entire groundwater lowering system, including the outlet, shall be on property owned or controlled by the person owning or controlling the system. Necessary legal agreements shall be provided in accordance with Rule .0301(c) of this Subchapter; and
(F) easements for egress, ingress, and regress for maintenance of groundwater lowering systems serving two or more lots shall be at least 20 feet wide plus the width of the groundwater lowering system.

(d) Interceptor drains shall be used on sites where a SWC results from laterally flowing groundwater that can be diverted away from the dispersal field.

(e) Other artificial drainage systems, including surface water diversions, shall comply with USDA-NRCS guidance documents.

History Note: *Authority G.S. 130A-335(e) and (f).*

15A NCAC 18E .0911 PRIVIES

(a) A privy shall be approved when it consists of a pit, floor slab, and seat assembly housed in a building that affords privacy and protection from the weather and meets the following criteria:

(1) the pit shall consist of an excavation with a minimum bottom surface area of three and one half feet square;
(2) the maximum depth of the pit shall not exceed 36 inches;
(3) the pit bottom shall not be located closer than 12 inches to a LC;
(4) the pit shall be curbed to prevent caving. In sandy or loose soil, the curb shall extend the full depth of the pit. In clay soils, partial curbing may be acceptable if soils have sufficient cohesion to not collapse;
(5) the floor shall be constructed of concrete, wood, or other approved materials. The following criteria shall be met, as applicable:
(A) for wood construction, rot resistant joists are used covered with tight tongue-and-groove rot resistant flooring;
(B) wood floors shall be anchored to the sills. The minimum sill size shall be four-inch by four-inch; and
(C) when other materials are used the material shall be shown to provide strength, durability and prevent entrance of flies and mosquitoes to the privy pit;
(6) the pit shall be vented through screened PVC Schedule 40 pipe or other pipe approved in accordance with Rule .0703 of this Subchapter, six inches in diameter, and extending above the roofline. The vent pipe shall be:
(A) located on a south side wall of the building;
(B) covered to prevent rainfall from entering, but still allow gases to escape;
(C) straight without any bends in the pipe; and
(D) black colored pipe; and
(7) privies shall not be used for the disposal of water-carried sewage.

(b) Any person owning or controlling the property upon which a privy is located shall be responsible for the following requirements:

(1) when the pit becomes filled to within 18 inches of the top of the ground, the privy building shall be moved to a new pit and the old pit covered with soil; and
(2) if the pit caves in, a new pit shall be provided.

(c) The person owning or controlling the system shall be responsible for the following requirements:

(1) the privy and grounds adjacent shall be kept free of debris;
(2) a hinged seat cover and hinged door shall be provided and kept closed when the privy is not in use;
(3) flies shall be excluded from the pit by the privy building door fitting in the frame and no unscreened openings in the building;
(4) garbage and trash shall be kept out of the pit; and
(5) the privy building shall not be used for storage.

(d) When a new pit is required, a CA and OP shall be obtained.

History Note: *Authority G.S. 130A-335(e) and (f).*

SECTION .1000 – NON-GROUND ABSORPTION WASTEWATER TREATMENT SYSTEMS

15A NCAC 18E .1001 ALTERNATIVE TOILETS

(a) Use of alternative toilets, such as incinerating, composting, and mechanical toilets, and privies shall comply with the North Carolina Plumbing Code and this Rule.

(b) Use of chemical or portable toilets is governed by G.S. 130A-335(h).

(c) When an alternative toilet or chemical toilet is used, all wastewater generated in the facility shall be discharged to a wastewater system that is approved under this Subchapter.

(d) Removal of residuals from incinerating toilets, composting toilets, mechanical toilets, vault privies, chemical toilets, or portable toilets shall be performed only by a person that holds a current NC Septage Management Firm permit in accordance with Rule 15A NCAC 13B .0832(a)(1). All waste shall be taken to an approved disposal site per G.S. 130A-291.1(d).

History Note: *Authority G.S. 130A-335(e).*