

REGULATIONS
GOVERNING
WASTEWATER
TREATMENT AND DISPERSAL SYSTEMS

IN

WAKE COUNTY

EFFECTIVE

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REGULATIONS GOVERNING WASTEWATER
TREATMENT AND DISPERSAL SYSTEMS IN WAKE COUNTY

WHEREAS, the Wake County Human Services Board finds it necessary to protect and advance the public health and safety of Wake County Citizens, visitors, and other community members by preventing the spread of diseases associated with failing wastewater treatment and dispersal systems; to educate the public about proper operation and maintenance of wastewater treatment and dispersal systems; and to promote water quality by reducing contaminated runoff from failed or poorly maintained wastewater treatment and dispersal systems and by ensuring that wastewater treatment and dispersal systems are properly operated, regularly inspected, and routinely maintained, that said Board regulates the installation of wastewater treatment and dispersal systems, to wit:

1. The relatively high density of wastewater treatment and dispersal systems,
2. The requisite to provide for long-term sustainability of these systems
3. Restrictive soil conditions in areas which serve as watersheds for public water supplies and in areas which are intensively utilized for groundwater supplies, and
4. Areas where population density have adverse impacts on the operations of such systems;

NOW, THEREFORE, BE IT RESOLVED by the Wake County Human Services Board that the Laws and Rules for Sewage Treatment, and Disposal Systems codified at 15A NCAC 18A Section .1900, as amended, are adopted by reference and shall apply to wastewater treatment and dispersal systems throughout Wake County, except as modified by these more stringent local regulations adopted pursuant to GS §§ 130A-39, 130A-43, 130A-335, 130A-336, 130A-337 and 130A-338 of the North Carolina General Statutes which shall also apply to wastewater treatment and dispersal systems throughout Wake County for the protection and promotion of the public health and safety of the citizens of Wake County.

SECTION I: DEFINITIONS

The following definitions shall apply throughout this Section:

- 1) The definitions contained in G.S. § 130A-334, G.S. § 130A-343, and 15A NCAC 18A.1935 are incorporated by reference including any subsequent amendments to those definitions.
- 2) The definitions contained in 15A NCAC 18C .0102 are incorporated by reference including any subsequent amendments to those definitions.
- 3) "Certified Contractor" means a person authorized to construct, install or repair a wastewater treatment and dispersal system in accordance with Article 5 of G.S. § 90A and any applicable rules of the North Carolina On-Site Wastewater Contractors and Inspectors Certification Board.

- 4) "Certified Inspector" means a person authorized to inspect a wastewater treatment and dispersal system in accordance with Article 5 of G.S. § 90A and who conducts an inspection of an on-site wastewater system at any time after the local health department has issued an Operation Permit pursuant to G.S. 130A-337.
- 5) "Certified Operator" means a person authorized to operate a wastewater treatment and dispersal system in accordance with G.S. § 90A, Article 3 and applicable rules of the Water Pollution Control System Operators Certification Commission.
- 6) "Director" means the administrative head of the Wake County Human Services Agency appointed pursuant to G.S. § 153A-77(e) or the Director's Authorized Delegate.
- 7) "Off-site area or system" means a ground absorption wastewater treatment and dispersal system (initial installation and/or repair system) that is located in an area/easement that is not contiguous with the lot or tract of land containing the facility that it serves. Also included are the supply lines connecting the facility and the off-site area or system, along with any connective narrow parcels or easements designed for conveyance of the supply lines.
- 8) "Owner or Owner's representative" means a person who holds legal title to the property or a person who is authorized to represent the legal interest of the owner. The owner's representative shall also mean an agent specifically designated by letter or contract to act on the owner's behalf to obtain permits.
- 9) "Pretreatment Component" means a device designed to enhance effluent quality such as an RWTS, Sand filter or other approved media. The performance standards and utilization approvals are found in 15A NCAC 18A .1934-.1970, and their specific state approvals.
- 10) "Shell building" means a building with an unfinished interior that can be partitioned without a roofline change such that one (1) or more separate commercial establishments may operate out of said building according to the specific conditions of an Operation Permit.
- 11) "Suitable or provisionally suitable area" means a specific area of soils which are classified or reclassified as suitable or provisionally suitable according to the provisions of 15A NCAC 18A Section .1900. For the purpose of Section V of these regulations the square footage of area suitable or provisionally suitable for the installation of a wastewater treatment and dispersal system shall not include areas where the installation of such system is expressly forbidden (i.e. easements, right-of-ways, area within 100 feet of a Class I or Class II reservoir, area within 50 feet of a stream or other impoundment, designated wetlands, any temporary or permanent erosion or stormwater device, etc.).
- 12) "Supply Line Network" means two or more supply lines serving multiple facilities installed in a single easement.
- 13) "System" means the wastewater treatment and dispersal system referred to in that section.

- 14) "Watershed" means the natural area of drainage to a Class I, Class II or Class III reservoir as established by 15A NCAC 18C .0102 (C) and includes all contributing tributaries.
- 15) "Zone Valve" means any hydraulically actuated mechanical device or an electrical device designed to direct the flow of wastewater to an individual zone within a wastewater treatment and dispersal system utilizing multiple zones.

SECTION II: SPECIFIC REQUIREMENTS FOR PERMITS TO CONSTRUCT OR REPAIR WASTEWATER TREATMENT AND DISPERSAL SYSTEMS

- A) The Authorized Agent may not perform a final inspection nor issue approval of a wastewater treatment and dispersal system installation unless a representative of the contracting firm is present. It shall be the responsibility of the said representative to aid in the inspection and to make such corrections as required by the Authorized Agent pursuant to State and local rules.
- B) The Authorized Agent may prohibit the installation of any wastewater treatment and dispersal system trenches during periods of wet soil conditions that may affect the integrity or performance of the permitted system.
- C) When a property is to be served by an accepted, alternative, conventional, experimental, innovative, pretreatment, or controlled demonstration wastewater treatment and dispersal system, which is required to be maintained by a Certified Operator on a routine basis pursuant to state regulations, the owner, must record a description of the system and a general maintenance schedule at the Wake County Register of Deeds prior to issuance of the Operation Permit for such system
- D) When it is proposed that a property is to be served by a wastewater treatment and dispersal system, other than an accepted wastewater treatment and dispersal system entailing no modification to system design as specified in 15 A NCAC 18A .1969 (i)(2), that receives a reduction in total nitrification trench length or trench bottom area, as compared to the total nitrification trench length or trench bottom area calculated for a 36 inch wide conventional wastewater treatment and dispersal system, the owner, or owner's legal representative must submit a letter to the office of the director of Environmental Services requesting the specific system and the reduction.
- E) Wastewater treatment and dispersal systems where the design daily flow exceeds 720 gallons must be designed by a professional engineer currently licensed in the State of North Carolina. Long-term acceptance rates, design flow, and location of such systems shall be reviewed and approved by the Authorized Agent. Plans and specifications for such systems, including methods of operation and maintenance, shall be reviewed and approved by the Authorized Agent prior to issuance of the Construction Authorization. An Operation Permit will not be issued until the design engineer certifies that the system has been installed in accordance with the approved plans and specifications.

F) Site plans submitted with applications must be prepared to scale. Additionally, the site plan must clearly identify all structures, appurtenances and the like, on the property. The site plan shall include, but not be limited to the following:

- 1) Entire property with dimensions,
- 2) Address of the property,
- 3) Bar scale,
- 4) Structural dimensions of all structures, existing and proposed,
- 5) Dimensional location of proposal(s) to at least 3 property lines measured perpendicular to the property lines,
- 6) Existing structures,
- 7) Driveways,
- 8) Easement,
- 9) Buffers
- 10) North arrow

G) All individual lots which have failing ground absorption wastewater treatment and dispersal systems shall, upon notice from the Authorized Agent, connect to an available municipal, county or community wastewater collection system when it is determined that 300 feet or less of sewer line is required for connection. The property owner shall be required to connect to the wastewater collection system within 90 days of the notice. The Authorized Agent shall evaluate individual lots with failing ground absorption wastewater treatment and dispersal systems upon owner request for a variance from the above requirement. Requests for variances shall be in writing and addressed to the Authorized Agent. The Department may grant a variance upon a finding that an on-site option is available, and compliance with the above requirement is impractical because of conditions beyond the control of the system owner, or results in unreasonable or unnecessary hardship to the system owner.

- 1) When a facility is required to be connected to a county, municipal or community wastewater collection system, and the septic and/or pump tank is not being utilized as part of that connection, the septic and/or pump tank shall be properly abandoned.

SECTION III: SPECIFIC SITE EVALUATION REQUIREMENTS

- A) If laboratory determination of expansive clay mineralogy in accordance with 15A NCAC 18A .1941(3) is utilized, it shall NOT be considered decisive in altering the classification of the site with respect to clay mineralogy, unless substantiated by additional testing, which may include but may not be limited to, coefficient of linear extensibility, cation exchange capacity, particle size analysis, and hydraulic conductivity.
- B) Sites classified unsuitable as to soil structure, clay mineralogy, wetness or depth shall NOT be reclassified provisionally suitable using fill according to the provisions of 15A NCAC 18A .1957(b).
- C) Sedimentary parent material may not be classified as saprolite under 15A NCAC 18A .1935 (49).

SECTION IV: SPECIFIC CRITERIA FOR THE DESIGN AND CONSTRUCTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEMS

A) Septic and Pump Tank Construction:

- 1) Garbage disposals shall be prohibited for facilities served by ground absorption systems.
- 2) No septic tank or pump tank shall be permitted with a minimum liquid capacity of less than 1000 gallons. Minimum liquid capacity of the pump tank shall be at least equal to the required septic tank liquid capacity, and shall provide for emergency storage capacity that equals the design daily flow for the facility. The volume is measured from the high-water alarm activation level to the top of the pump tank.
- 3) Minimum liquid capacities for residential septic tanks shall be in accordance with the following:

<u>Bedrooms</u>	<u>Minimum Liquid Capacity</u>
3 bedrooms or less	1000 gallons
4 bedrooms	1200 gallons
5 bedrooms	1500 gallons
6 bedrooms	1800 gallons

For residences with more than 6 bedrooms, the minimum liquid capacity shall be 1800 gallons plus 300 gallons for each bedroom in excess of 6 bedrooms. The minimum liquid capacity of a septic tank serving two or more residences shall be 1500 gallons or greater as otherwise required based upon total number of bedrooms served and these criteria.

- 4) Every septic tank shall be constructed with above ground access risers to provide access to each compartment and the sanitary tee/effluent filter to facilitate periodic inspection, cleaning and pumping. The risers and lids shall be made of concrete, masonry or an equivalent durable material. The risers shall extend at least six (6) inches above the finished grade of the site. Inside dimensions shall be sufficient to allow removal of the lids from the tank openings. The risers and junctures with the tank shall be rendered water-tight.
- 5) The backwash water from water softener systems shall not be discharged into either the wastewater treatment and dispersal system or onto the ground in the initial or repair system areas. The State Division of Water Quality views the discharge of minor volumes of wastewater from residential and commercial water softener systems to the ground surface as deemed permitted and eligible for coverage under 15A NCAC 02T .0113, provided that the system does not result in any violations of surface water or groundwater standards, and there is no direct discharge to surface water.

B) Design of Wastewater Treatment and Dispersal Systems:

- 1) Where more than one nitrification line is used, an effluent distribution device as specified in 15A NCAC 18A .1955 shall be installed and all lines shall contain equivalent square footage of trench bottom area unless approved by the Authorized Agent.
- 2) It shall be the responsibility of the owner to control the elevation and location for the stub out of the building sewer to the septic tank system.
- 3) For segments of a line that are utilized for installation and repair, there must be sufficient line length to accommodate a minimum separation of six (6) feet of undisturbed soil between the line segments. This separation also applies to lines for installation and repair that abut one another.
- 4) Any conventional, accepted, innovative, control demonstration, or experimental trench as described in 15A NCAC 18A .1955, .1956 and .1969 shall have a minimum length of fifty (50) feet, except as designed using Section IV. B), 5) of these regulations. If low-pressure pipe distribution is utilized, the minimum trench length shall conform to Section IV. D), 7) of these regulations.
- 5) As an alternative to the minimum line length requirements to Section IV B) 4), the applicant may submit site-specific data to predict lateral and vertical flow away from the nitrification trenches. The data submitted shall include soil borings to depths greater than 48 inches, permeability and hydraulic conductivity measurements, and other information as determined necessary by the Authorized Agent. The site-specific data must show that the effluent will not become exposed on the ground surface within, or adjacent to, the nitrification field.
- 6) The pipe or tubing used between the septic tank, distribution device and the nitrification line shall be a minimum of three-inch nominal size Schedule 40 poly-vinyl chloride (PVC).
- 7) Backfill used to cover tanks, supply lines, distribution devices, trenches, or any other component of the wastewater treatment and dispersal system shall be free of building rubble, large rock, or anything other than small rocks, roots and other natural items.
- 8) Any wastewater treatment and dispersal system requiring a single effluent pump shall meet these minimum requirements. See Appendix A for pump tank schematic.
 - a. Minimum Control Panel Requirements Shall Include:
 - i. NEMA 4X enclosure located within 2 feet of the pump tank riser unless otherwise specified by the Authorized Agent;
 - ii. The bottom of the enclosure shall be affixed a minimum of 18 inches above final grade;
 - iii. Simplex Control Panel with an HOA (Hand, Off, Auto) switch to control the pump;

- iv. A motor contactor or approved equivalent device to prevent high voltage electricity in the water at all times;
 - v. An audible and visible alarm;
 - vi. An elapsed time meter and cycle counter; and
 - vii. Two (2) overcurrent devices such that one (1) overcurrent device shall protect the power supply for the pump, and one (1) overcurrent device shall protect the power supply for the alarm, and each overcurrent device shall be supplied by a separate circuit from the electrical panel of the facility. Required circuits shall not utilize a common ground conductor.
- b. Pump Controls
- i. Floats shall be attached to a float tree or float bracket constructed of non-corrosive material; and
 - ii. The float controls shall consist of a minimum three (3)-float system.
 - a) On Float
 - b) Off Float
 - c) Alarm Float
 - iii. Other State approved devices may be considered for use by the Department.
- c. Pump and Supply Line
- i. Supply line shall be constructed using a minimum of pressure rated SCH 40 PVC, ductile iron or its equivalent;
 - ii. Supply line must be sized at a minimum of one and one half inch (1 1/2 inch) SCH 40 PVC unless otherwise specified by the Authorized Agent.
 - iii. Watertight, flexible pipe seals (boots) shall be used for pipe penetrations through the pump tank wall
 - iv. An accessible ball valve, a union, and a check valve (located in the vertical position) shall be provided on the pump discharge piping.
 - v. Adequate anti-siphon devices such as a swing check valve that opens to atmosphere upon pump shutoff or approved equivalent device shall be provided whenever the discharge orifice is at a lower elevation than the pump shutoff level.
 - vi. The pump size and supply line size shall be selected such that a velocity of at least two (2) feet per second (minimum scour velocity) and no more than ten (10) feet per second (to minimize water hammering) is achieved.
- d. Distribution Devices
- i. A Pressure Distribution Device designed per these rules and Appendix B and C of these regulations shall be used except where specified under Section IV E) of these rules.
 - ii. The Manifold must have a straight connection of a minimum five (5) feet in length, from the supply line to the Manifold.
 - iii. The taps, pipes for the taps, and ball valves must be of equal internal diameter.
 - iv. Taps must have a straight connection from the manifold to the lateral feeder lines.

- v. A cap or other device approved by the Authorized Agent shall be used to prevent "splash back" where the tap enters the supply line. Any device not installed in an enclosed protective housing shall have the taps installed into the supply line such that there is a solid connection between the tap piping and the lateral feeder line.
 - vi. The device or its housing shall be installed level on a bed of gravel with a minimum thickness of 2 inches. The housing shall be installed such that the device is accessible from the ground's surface.
 - vii. When the device is installed in a fully enclosed protective housing, the housing shall have a drain hole to allow any liquids that enter the housing to drain out. The housing shall be installed such that the device is accessible from the ground's surface. Concrete "Pressure Manifold Boxes" shall be installed so the access is above grade.
 - viii. Supply lines from the device shall be installed with a viewing port that is accessible from the ground's surface. "Pressure Manifold Boxes" shall have the viewing ports located inside the housing. The ports shall be capped to prevent the escape of any liquid during normal operation.
 - ix. The device shall be designed with a gate valve on the inlet end, and a clean-out on the opposite end. Both the gate valve and the cleanout shall be accessible from the ground's surface.
 - x. Each device shall be equipped with a fitting for measuring operating pressure head. The standpipe shall be removable, and the fitting shall be sealed by means of a ball valve. Minimum sizing for this fitting shall be ½ inch SCH 40 PVC.
- 9) When it is proposed that a property be served by a wastewater treatment and dispersal system that receives a reduction in total nitrification trench length or trench bottom area that exceeds twenty-five percent (25%) as compared to the total nitrification trench length or trench bottom area calculated for a 36-inch-wide conventional (gravel aggregate) system, the following shall be required:
- a. The wastewater treatment and dispersal system footprint area shall be equal to or greater than 75% of the area required for installation of a 36-inch-wide conventional system designed to receive untreated septic tank effluent. The minimum system footprint area shall be calculated by multiplying 75% of the trench length (in feet) required for a 36-inch-wide conventional system by 9 feet. Minimum trench spacing for the system with proposed reduction shall be determined by dividing the footprint area by the actual proposed trench length. A larger spacing shall be required if field conditions require portions of trenches to be installed further apart in order for lines to be on contour. The repair system footprint area shall likewise be sized to be equal to or greater than 75% of the area required for a 36-inch-wide conventional system designed to receive untreated septic tank effluent, with minimum footprint area and spacing as calculated above. The system footprint and replacement system areas shall be suitable or provisionally suitable areas as defined in these Regulations.

Example: Three bedroom home: design flow 360 GPD and 0.3 GPD/ft² LTAR

$$\begin{aligned} \text{Required linear footage of gravel trench} &= \frac{(360 \text{ GPD}) / (0.3 \text{ GPD/ft}^2)}{3 \text{ ft}^2 / \text{lin. ft}} \\ &= 400 \text{ ft} \end{aligned}$$

$$\begin{aligned} \text{System footprint for conventional system} &= \text{trench length} \times \text{trench spacing} \\ &= 400 \text{ ft} \times 9 \text{ ft} = 3,600 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Required minimum footprint for any innovative product} &= 3,600 \text{ ft}^2 \times 0.75 \\ &= 2,700 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Required minimum trench spacing, assuming reduction in trench length} \\ \text{by 35\%} &= (2700 \text{ ft}^2) / (400 \times .65) = 10.4 \text{ ft} \end{aligned}$$

- b. The site shall be evaluated by a Licensed Soil Scientist. The Licensed Soil Scientist shall conduct a detailed assessment of site conditions and provide a written, signed and sealed report to the Department that includes:
 - i. Detailed descriptions of landscape position and soil morphological conditions to a depth of at least three (3) feet below the trench bottom in the drainfield and repair area.
 - ii. Field estimates of the depth and thickness of the least permeable horizons,
 - iii. Recommended depth for placement of the trench bottoms and the recommended LTAR,
 - iv. A hydraulic assessment, based on site-specific information, substantiating the projected effectiveness of the system performance. This shall include documentation that indicates the wastewater at the proposed LTAR will not discharge to the surface of the ground within or adjacent to the drainfield when the system is installed and operated within design parameters, and justification for any proposed drainage system.
 - v. Other site-specific requirements for system design, installation, site preparation, modifications and final landscaping.
- c. The system daily design flow shall not exceed 1,500 gallons, and the wastewater characteristics shall not exceed those of domestic wastewater.
- d. System installation shall be only by Certified Contractors trained and certified by the manufacturer of the specific product utilized. The manufacturer shall provide a current list of certified contractors to this Department as often as necessary. Installation of systems by persons not on the current installers list shall not be approved and the Operation Permit shall be denied.
- e. The manufacturer of the product utilized shall provide a performance warranty, as set forth in G.S 130A-343, to the owner or purchaser of the wastewater treatment and dispersal system which shall require:

- i. Certification by the manufacturer or certified contractor that the wastewater system is installed in accordance with the manufacturer's specifications, any conditions of regulatory approval and all conditions of the Authorization to Construct the wastewater system.
- ii. Copies of the certified warranty shall be returned to the manufacturer, the system owner or purchaser, and the Department, a copy of which shall be attached to the Operation Permit. A copy of the certified warranty shall also be recorded at the Wake County Register of Deeds prior to issuance of the Operation Permit.

10) Zone Valve Use

- a. If a zone valve is to be used, an approved effluent filter capable of removing a 1/32 size particle shall be required after the pump;
- b. Zones must be designed to be equivalent in size or within 5% variation when calculating length and square footage, except as required for electrically and independently controlled zone valves;
- c. Zones must be designed with equal dose volumes, except as required for electrically controlled zone valves;
- d. Zones must be designed with equal flow rates unless designed to accommodate the difference, and approved by the Authorized Agent; and
- e. A contract for operation and maintenance shall be executed between the system owner and an Operator in Responsible Charge (ORC) as required in accordance with 15A NCAC 18A .1961, .1969, or .1970 and shall be in effect as long as the system is in use;
- f. Any system utilizing a zone valve shall be inspected by the Operator in Responsible Charge (ORC) a minimum of once a year, unless a greater frequency is required for operation of an individual advanced pretreatment or pressure dispersal system pursuant to 15A NCAC 18A .1961, .1969, or .1970.

11) In addition to flow rates set forth in 15A NCAC 18A .1949, Table No. I shall be used to determine the minimum daily design flow for the specific facilities listed.

Table I

Type of Establishment
Design

Daily Flow for

Day Care Facilities

25 gal/person

Food Stands with public access to restrooms in addition to the requirements set forth in 15A NCAC 18A .1949(b)

The greater of 250 gal/water closet or if seating is provided, daily flow in accordance with 15 A NCAC 18A.1949, Food Service Facilities

Residential Care Facility

120 gal/bed

Shell Building

500 gal/day

- 12) In addition to setback requirements in 15A NCAC 18A .1950, all Wastewater System Components shall be located a minimum horizontal distance from the features described in Table II and as required in section IV 13) a-g:

Table II: Setback Requirements

Grave Site or Recorded Grave Yard Boundary	25ft
Drive/Sidewalk	3ft (in all directions)
Off-site Area or System Easement Lines	10ft
Stormwater Devices	Section IV (13) a-g
Permanent Stormwater Retention Device (a)	50ft (flood pool elevation)
Cistern or Storage Tank (b)	15ft
Vertical Cut or Embankment (b)	15ft
Any other non-water tight device (c)	25ft
Special Wastewater Components (g)	
Collection Sewers	10ft
Force Mains	10ft
Supply Lines	10ft

- a. All portions of the wastewater treatment and dispersal system must be at least fifty (50) feet from the flood pool elevation of any permanent stormwater detention pond [Ref. 15A NCAC 18A .1950(a)(8)].
- b. All portions of the wastewater treatment and dispersal system must be at least fifteen (15) feet from any vertical cut or embankment of two feet or more associated with construction of any stormwater management device and any underground cistern or storage tank used to collect and store stormwater. [Ref. 15A NCAC 18A .1950(a)(13)].
- c. All portions of the wastewater treatment and dispersal system must be at least twenty-five (25) feet from any other, non-watertight stormwater management device designed for conveyance, retention and/or infiltration of stormwater [Ref.

15A NCAC 18A 1950(a)(13)&(17)]. Exceptions may be made on a case-by-case basis if adequate substantiating information is provided to demonstrate that interference with the functionality of the wastewater treatment and dispersal system will not be altered. However, the location of stormwater devices must not represent a conflict with any applicable Laws, Rules and Regulations relative to septic systems.

- d. The surface of the wastewater treatment and dispersal field must be shaped to prevent ponding of surface water, and runoff of surface water (stormwater) must be diverted away from the field [Ref. 15A NCAC 18A .1955(i)]. Thus, stormwater devices must be designed and installed so as not to discharge directly onto or spread water over the initial dispersal field and dispersal field repair area. Stormwater runoff that is not treated by a stormwater device, such as sheet flow from driveways or roof leaders, shall not concentrate or pond on the initial septic dispersal field or the dispersal field repair area.
- e. General Statutes [GS 130A-336] also provide for specification of permit conditions with respect to wastewater treatment and dispersal system installation and site modifications. All Authorization for Wastewater System Construction Permits in Wake County include conditions prohibiting site alteration (compaction/trafficking, cutting, filling & grading), underground utilities, water lines, or irrigation sprinkler systems within the original wastewater system installation and repair areas.
- f. If more than one of the foregoing requirements applies, the most restrictive shall prevail.
- g. Collection sewers, force mains and supply line shall maintain 10 feet from stormwater management devices.

C) Specific Requirements for Design of Modifications to Wastewater Treatment and Dispersal Systems:

- 1) Nitrification area for Prefabricated, Permeable, Block Panel systems (PPBPS) shall be determined in accordance with 15 A NCAC 18A.1955 (b) and 15 A NCAC 18A.1955 (c), with each linear foot of panel trench considered equivalent to one (1) linear foot of a three-foot wide conventional trench.
- 2) Effluent distribution devices (distribution boxes, flow dividers, pressure manifolds, etc.) shall feed lines of equivalent square footage in accordance with Section IV. B) 1) of these regulations. System designs that do not have equivalent square footage in the separate line segments may be considered for review and permitting if the designer can demonstrate conformance to the following items:
 - a. The flow per linear foot delivered to each separate line segment shall be as equal as possible. Any variation in flow to an individual line segment shall not result in a long-term acceptance rate (LTAR) for that particular line that exceeds the assigned

LTAR by more than 5 (five) percent. Additionally, the total square footage of the lines comprising the system shall be such that the assigned LTAR is not exceeded.

- b. Pressure manifolds may use SCH 40 and SCH 80 taps with a minimum of 2 feet of pressure head. The tap sizes may be 1/2in, 3/4in and 1in. Other possible modes of pressure distribution include low pressure pipe and drip.
- c. The minimum pump, run time, for a pressure manifold serving unequal line lengths is five minutes.

- 3) The slope of sites proposed for “at grade”, shallow placed drainfield systems as described in 15 A NCAC 18A .1956 (1), shall not exceed five (5) percent.
- 4) Sand Lined Trench Systems, as described in 15 A NCAC 18A .1956 (7), shall be installed such that the bottom of the trench enters into the receiving horizon a minimum of six (6) inches, and the required separation to unsuitable characteristics shall be maintained from the bottom of the trench.

D) Specific Requirements for Design of Alternative (Low Pressure Pipe) Wastewater Treatment and Dispersal Systems:

- 1) LPP nitrification fields shall not be permitted on slopes in excess of seven (7) percent unless special design procedures to address lateral and vertical flow away from the trenches and assure proper distribution of effluent over the nitrification field are approved.
- 2) Table III shall be used in determining the long-term acceptance rate for low-pressure pipe (LPP) Systems.

Table III

<u>SOIL GROUP</u>	<u>SOIL GROUP CLASSES (USDA CLASSIFICATION)</u>		<u>LONG-TERM ACCEPTANCE RATE gpd/ft²</u>
I	Sands (With S or PS structure and clay mineralogy)	Sand Loamy Sand	0.4-0.3
II	Coarse Loams (With S or PS structure and clay mineralogy)	Sandy Loam Loam	0.3-0.2
III	Fine Loams (With S or PS structure and clay)	Sandy Clay Loam Silt Loam Clay Loam	0.2-0.1

IV

mineralogy)	Silty Clay Loam Silt	
Clays (With S or PS structure and Clay mineralogy)	Sandy Clay Silty Clay Clay	0.15-0.05

- 3) The use of LPP systems shall be prohibited for food service facilities, meat markets and other places of business where accumulation of grease is expected. LPP systems utilizing pretreatment of effluent to remove grease and oil may be considered for food service facilities.
- 4) The maximum elevation difference between the highest and lowest laterals in a field shall not exceed eight (8) feet unless the flow is hydraulically split between subfield segments without requiring simultaneous adjustment of multiple valves.
- 5) The minimum width for LPP nitrification trenches shall be 18 inches. A 12 inch LPP trench width may be permitted by the Authorized Agent to address site specific conditions. All other provisions of these regulations must be met.
- 6) All LPP distribution laterals shall be sleeved within 4 inch corrugated tubing described by 15A NCAC 18A .1955(f). Two holes shall be oriented downward in each lateral at points approximating one third and two thirds of the lateral length. Design flow rate shall be based upon delivering four feet to seven feet of static pressure head at the distal end of all lines.
- 7) The minimum LPP lateral length, measured from the manifold to the distal end, shall be 25 feet for an end fed lateral and 15 feet for a center fed lateral. LPP lateral length within a subfield shall not decrease by more than 20 percent of the length of the nearest lateral established at a higher elevation, unless approved by the Authorized Agent. For a subfield served by an individual manifold and valve, the maximum decreasing line length from the lateral at the highest elevation to the lateral at the lowest elevation shall not exceed 30%, unless approved by the Authorized Agent. LPP lateral lengths may increase across a subfield from the highest elevation to the lowest elevation as dictated by site conditions.
- 8) A maximum of 360 linear feet of LPP lateral shall be controlled by one gate valve for systems with a design unit volume of 480 gpd or less.
- 9) Accepted or Innovative Drainfield Product being dosed by LPP Distribution shall meet the following requirements:
 - a. Minimum line lengths shall conform to lengths, and their allowed variations, under LPP design requirements in Section IV D) 7) of these regulations.

- b. If system design is based on square footage of product, then the LTAR of each trench must not be exceeded by the LPP distribution design.
 - c. The LPP must be designed using at least a 10% reduction in flow, from top to bottom. Impact on the LTAR of individual trenches must be shown in the design. The Department will review each design on a plan-by-plan basis.
- E) All wastewater treatment and dispersal systems requiring a pretreatment component for the repair system design in order to conform to these Regulations shall be required to have the initial system inspected and maintained by a Certified Inspector/Certified Operator at a frequency no less than once every five years or as required in 15A NCAC 18A .1961. A maintenance schedule as required in Section II: C) of these Regulations, must be recorded at the Wake County Register of Deeds.
- F) OFF-SITE WASTEWATER TREATMENT AND DISPERSAL SYSTEMS:

This Section shall apply to Off-Site area(s) or system(s) as defined in Section I of these Regulations. This rule shall also apply whenever the collection line or supply line that is needed to convey wastewater or effluent from the facility to the ground absorption system is located in:

- i) An independently owned parcel or easement, and encroachment, or a commonly owned parcel or easement, or
 - ii) A contiguous parcel or easement which is of insufficient width to facilitate uninhibited access to the conveyance line or direct access for inspection, operation and maintenance, or repair along this line from the facility served to the nitrification field.
- 1) Permitting:
- a. The requirements of 15A NCAC 18A .1938(j) for ownership and control of the entire wastewater collection, conveyance, treatment and dispersal system shall be met prior to the issuance of a Construction Authorization for an off-site system.
 - b. Applications for Improvements Permits for all proposed off-site system for a single phase or section of a development shall be submitted at the same time.
 - c. Whenever any portion of two or more off-site systems are located in a shared easement, encroachment, or commonly owned area, provisions shall be established for all such portions to be owned or controlled by a non-profit, incorporated owners association or by a public management entity. This Association or Entity shall be jointly named on any Construction Authorization and Operation Permit to be issued for any such shared system
 - d. A tri-party agreement, as required in 15A NCAC 18A .1937(h), shall be in effect. It shall also comply with Section V: C) of these Regulations.

- e. Where applicable, verification shall be provided that a non-profit, incorporated owners association has been duly established, as indicated by articles of incorporation and bylaws registered with the North Carolina Secretary of State's Office, and a draft agreement (tri-party) among the developer and the association submitted to the Department. The tri-party agreement shall address:
 - i. Ownership,
 - ii. Transfer of ownership,
 - iii. Maintenance of system and system sites,
 - iv. Drainage,
 - v. Repairs,
 - vi. Operation, and
 - vii. The necessary funds for the continued satisfactory performance of common wastewater system components, including but not limited to supply lines, access areas, nitrification fields, and other appurtenances.

- f. An Improvement Permit and/or Construction Authorization may be issued allowing for the use of the proposed off-site wastewater treatment and dispersal system if applicable provisions of the Wake County Unified Development Ordinance have been met and upon a finding that all provisions of this section and all other applicable rules and regulations are met. The Construction Authorization shall contain conditions regarding the design, installation, and use of the off-site system. The Operation Permit shall specify system components and requirements for operation and maintenance.

- g. An application for an off-site wastewater treatment and dispersal system shall be submitted to Wake County Department of Environmental Services pursuant to 15A NCAC 18A .1937. Additionally, the NC Licensed Soil Scientist working with the project must submit a statement of necessity for use of the off-site system with the application, if applicable.

- h. Prior to the issuance of an Improvement Permit for an off-site wastewater treatment and dispersal system, the following items shall be completed:
 - i. Nitrification lines shall be field flagged by use of an engineer's level or laser level to assure conformity with natural contours by the owner or owner's representative.
 - ii. The proposed nitrification lines shall be measured, as needed, to verify design requirements for sizing, location and separation distances. Allowances shall be made for additional area, as needed, to accommodate staging of materials and maneuvering of construction equipment without encroaching on other properties or system areas.
 - iii. A site plan shall be prepared that includes:
 - 1. Drainfield and repair area
 - a. Line lengths
 - b. Flag colors (as applicable)
 - c. Line elevations (as applicable)

2. All proposed easement and/or property lines, along with the parcel and facility served.
 3. Any other appurtenances.
- iv. All proposed easements and/or property lines and facility location shall be clearly staked in the field and labeled for review by the Authorized Agent.
 - v. The Authorized Agent shall conduct a visual evaluation of the supply line path to determine feasibility of installation.
 - vi. The cumulative daily design flow to contiguous off-site drainfields shall not exceed 1250 gallons per day per 40,000 square feet. The 40,000 square feet shall be determined based on the smallest total area within and surrounding the contiguous drainfields and repair areas that are hydraulically interacting. A special site evaluation in accordance with the protocol specified in 15A NCAC 18A .1970(p)(2) may be required.
 - vii. Any other site specific information as deemed necessary by the Authorized Agent including, but not limited to:
 1. Mounding analysis,
 2. Lateral and vertical flow analysis,
 3. Deep soil borings (greater than 48 inches),
 4. Permeability and hydraulic conductivity measurements, or
 5. Stormwater plans.
- i. Prior to the issuance of a Construction Authorization, a complete wastewater treatment and dispersal system design shall be submitted for review and approval. Plans shall incorporate best management practices and accepted design standards including, but not limited to: minimizing supply line crossings and lengths, accessibility of nitrification lines and other system components, facilitation of the installation, operation, repair, and maintenance of the system, pump calculations including flow rate, total dynamic head, and velocity in supply lines, hydraulic profile (if needed), and calculations specifying the amount of drain-back to either the pump tank or drainfield. The designer of the supply line network may be required to submit substantiating data, as specified by the Department.
 - i. Plans and specifications shall be prepared by a registered professional engineer when one or more of the following conditions are met, if required by G.S. 89C:
 1. Pretreatment components that have not received prior state approval or as required by a pretreatment approval,
 2. Daily flow exceeds 720 gallons per day,
 3. Supply lines are longer than 1000 feet.
 4. When elevation variations require use of appurtenances such as air release valves (such as when an intermediate high point is greater than five feet higher than line segments on either side of the high point).
 5. Alternate materials or design specifications proposed to be used for supply lines and trenches.

6. One or more off-site systems utilize pressure dispersal and its supply line is on a net downhill grade or includes a portion that will drain more than 25-percent of the field dose volume between doses.
 7. A common pressure sewer or supply line is used to convey wastewater or effluent from two or more pump tanks to a common off-site area.
 8. Duplex pumps are required (duplex pumps are required if linear footage of nitrification trenches exceeds 2000 feet),
 9. When a system is otherwise required to be designed by an engineer pursuant to Rule .1938(d) or when required as part of a system approval issued pursuant to Rule .1969.
 10. Any system serving more than one facility so specified by the Department.
 11. If two or more off-site systems are proposed, all off-site wastewater supply lines shall be designed by a registered professional engineer (P.E.), and P.E. design may be required for any supply line or system component so specified by the Authorized Agent.
 12. When specified by the Authorized Agent
- j. Prior to the issuance of a Construction Authorization by the Authorized Agent,
 - i. All easements and property lines shall be surveyed and marked in the field,
 - ii. Easements, agreements, declarations and subordination documents shall be recorded at the Wake County Register of Deeds, as required, and
 - iii. Any encroachment agreements shall be obtained, as required.
 - k. A Construction Authorization shall be issued by the Authorized Agent that addresses each component of the off-site wastewater treatment and dispersal system (e.g. supply lines, nitrification fields, tanks and appurtenances). If the entire system, supply lines, nitrification fields, tanks, etc. are to be installed at the same time, one Construction Authorization shall be issued. If the supply lines are installed first, with the nitrification lines to be installed at a later date, a Construction Authorization shall be issued for the supply lines prior to installation. When the nitrification fields are installed at the later date, a separate Construction Authorization shall be issued. The entire system, supply lines, nitrification fields, tanks, pumps, and appurtenances, must be installed, tested and approved by the Authorized Agent prior to the issuance of the Operation Permit.
 - l. All wastewater treatment and dispersal system components shall be installed by an installer certified in accordance with Article 5 G.S. 90A (Grade III or higher). A pre-construction conference is required prior to the installation of any supply line network or off-site system. The owner or owner's representative, the installer and the Authorized Agent shall meet on the site with the approved off-site system design plan and supply line network plan.

- m. Prior to the issuance of the Operation Permit for an off-site wastewater treatment and dispersal system, all the following criteria shall be met, as applicable:
 - i. A contract for operation and maintenance shall be executed between the system owner and an Operator in Responsible Charge (ORC) as required in accordance with 15A NCAC 18A .1961, .1969, or .1970 and shall be in effect as long as the system is in use.
 - ii. All inspections as required by the Authorized Agent shall be completed.
 - iii. Pump delivery rate and minimum pressure head shall be verified by the Authorized Agent.
 - iv. For systems or system components required to be designed by a P.E. or an individual licensed or registered in accordance with G.S. 89E, 89F or 90A, Article 4, the owner shall submit:
 - 1. A written certification sealed, signed and dated by the engineer/designer that the system was installed in accordance with the approved plans and specifications.
 - 2. An as-built diagram representing the system components as they were installed (if different from approval).
 - 3. All individual easement areas shall be surveyed and marked with permanent markers or monuments that are clearly labeled as to the easement area and the lot it serves.
 - 4. All documents shall be properly executed and recorded at the Register of Deeds as required including, but not limited to:
 - a. Encroachment agreements,
 - b. Recorded Maintenance Schedule, and
 - c. Easements.
- n. Any subdivision with a supply line network shall have a Home Owners Association (HOA) and management entity for wastewater system components, along with any documentation as required in 15A NCAC 18A .1937(h) and Section V: (C) of these Regulations. The HOA and documents shall be reviewed and approved by the Authorized Agent and recorded with the Register of Deeds. HOA documents shall, at a minimum, address the following:
 - i. The use and/or limits of use for Private Sewer Line Access and Maintenance Easements and Remote Wastewater Treatment and Dispersal System Areas.
 - ii. The maintenance of Private Sewer Line Access and Maintenance Easements and Off-site Wastewater Treatment and Dispersal System Areas.
 - iii. Outline a course of action in the event that a repair to an off-site wastewater treatment and dispersal system is necessary.
- o. No other agencies may issue permits for a facility, pursuant to G.S. 130A-338, until all Construction Authorizations have been issued for the entire wastewater system.

2) System Sizing and Design Criteria:

Easements for the supply line and off-site area or lot corners shall be marked with permanent above ground markers or monuments clearly labeled as to the easement area and the lot it serves.

a. Supply Lines:

- ii. Supply lines serving off-site wastewater treatment and dispersal systems, shall be located either individually in dedicated easements/parcels or within supply line networks in common easements. Easements shall extend completely from the building lot to the drainfield area.
 1. All supply lines in a supply line network shall be installed concurrently.
 2. Individual easements/parcels shall be a minimum width of 15 feet. If there is an existing utility easement on the property, a total easement width of 20 feet must be provided, with an exclusive septic easement not less than 12 feet.
 3. No other utilities shall be installed in the same trench as the supply lines.
 4. When two (2) or more supply lines are present, there shall be no other utilities installed in the same parcel or easement, unless the easement is at least 20 feet wide and all other utilities are located above grade and maintained at least 10 feet from supply lines.
 5. Any utility crossings over or under the supply lines must meet the requirements of 15A NCAC 18A .1950(f) and (g).
 6. Supply lines crossing a stream must meet the requirements of 15A NCAC 18A .1950(h).
 7. Supply line network easements or multiple individual dedicated easements/parcels installed contiguously shall be under common ownership or control and provide for accessibility to all components for installation, operation, maintenance and repair.
 8. Both sides of supply line easements shall be permanently marked at least four (4) feet above finished grade, at least every 300 feet and at every direction change. Easement field marker or monument locations shall be depicted on the survey.
 9. All easements/parcels shall remain free of structures, landscaping, or any activities that would interfere with the use of the easement for its intended purpose.
- iii. Supply line design specifications shall meet the requirements of Section IV B) 8) c) of these Regulations as well as the following minimum criteria:
 1. Supply lines shall be constructed of pressure rated solvent welded Schedule 40 PVC pipe and fittings labeled NSF-PW or ductile iron pipe with mechanical joints. Alternate materials, proposed by a professional engineer, may be approved by the Authorized Agent based on adherence with the following conditions:

- a. Other pressure rated pipe and joints used shall have a minimum pressure rating of 100 psi, or twice the projected maximum operating pressure projected for the system, whichever is greater.
 - b. All pipe materials and fittings shall be specified to comply with applicable ASTM or ANSI/AWWA standards, with methods of joining and other special installation procedures specified which are appropriate for the pipe to be used; and
 - c. Hydrostatic testing shall be required for all supply lines.
2. All pipe segments shall be permanently marked on the crown of the pipe every 10 feet with the corresponding lot number and shall be visible at the time of inspection.
 3. A minimum of five (5) feet of separation is required between the supply line and the boundary of the supply line parcel or easement.
 4. Supply line trench width and depth shall be constructed in accordance with approved design specifications:
 - a. The pipe shall be uniformly and continuously supported over its entire length with clean, firm, and stable backfill material.
 - b. Where rock, restrictive horizon, or boulders are encountered which cannot be avoided or removed, a minimum of a four (4) inch bed of compacted washed gravel or sand shall be placed to form the bottom of that portion of the trench.
 - c. Pipes shall be jointed and placed into the excavated trench per project specification and pipe manufacturer's recommendations.
 - d. Backfill material along the pipe sides and covering the pipe shall be uniformly hand compacted and walked in prior to completing the trench backfilling process.
 - e. Thrust blocking at the bends and elbows shall be installed where specified by the designer.
 5. Unless otherwise addressed under 15A NCAC 18A.1955, a minimum burial depth of 24 inches, as measured from the crown of the pipe to the ground surface, shall be provided throughout the length of the force main.
 6. If the 24 inch minimum burial depth cannot be met and for road crossings, the supply lines shall be sleeved in ductile iron, or other material approved by the Authorized Agent.
 7. Provisions must be made to address any supply line drainback volume to either the pump tank or drainfield.
 8. The pump supply line size and pump capacity shall be sized such that a minimum velocity of two (2) feet per second, and a maximum velocity of five (5) feet per second is achieved.
 9. Provisions to stabilize the disturbed trenches shall be made upon backfilling in order to prevent erosion.

b. Pump Tanks:

- i. The minimum total capacity for pump tanks shall meet all requirements of these regulations as well as,

1. The size of the dose volume shall also account for the portion of the supply line that drains back into the pump tank or into the drainfield between doses.
2. Pump tanks that are part of a STEP (septic tank effluent pump) system involving a second pump tank shall meet the minimum sizing requirements of these regulations.
3. Any pump tank or pretreatment device not located on the building property shall have its alarm designed for auto-dialer hook up to a 24 hour maintenance service.

c. Nitrification Field:

- i. The initial (and repair, if applicable) nitrification fields and the supply line shall be installed prior to the issuance of the Operation Permit.
- ii. Access to off-site nitrification field areas shall be by a publicly maintained road or by a dedicated access parcel or easement that meets the following criteria:
 1. Access shall be at least 20 feet wide, if needed, to allow for the passage of equipment normally used to install, inspect, operate, maintain and repair the system,
 2. Access shall be either owned or controlled by the owner of the off-site area, or commonly owned or controlled by the owners association whom owns or controls this and any other common portions of the system, and
 3. An all weather access shall be maintained at all times in a condition adequate for passage of equipment normally used to install, operate, maintain and repair the system.
- iii. Nitrification fields and other supply line components shall be protected from traffic or other unauthorized access.
- iv. All system and repair areas, within an area of off-site systems, shall be located at least twenty (20) feet from all other system and repair areas.

3) Installation and Testing Procedures:

- a. A pre-construction conference with the owner or owner's representative, the system designer, other licensed or professional consultants (as applicable), the installer and the Authorized Agent shall be required prior to beginning construction of the off-site system.
- b. The installation and testing of the supply lines are certified by a professional engineer to adhere to ASTM D-2774 Standard for Underground Installation of Thermoplastic Pressure Piping, or other ASTM or ANSI/AWWA installation and testing standards, if applicable. Adherence to this standard includes requirements for the individual bedding of each pipe, use of selected bedding and backfill material, and use of thrust blocking at all bends.

- c. Leak testing, using water under pressure, shall be performed whenever a supply line exceeds 500 feet in length or two or more lines are located in common parcels, dedicated easement or encroachment in a supply line network.
 - i. Leak testing shall be done in accordance with ASTM D-2774 Standard Practice for Underground Installation of Thermoplastic Piping, or in adherence with equivalent prior-approved test methods.
 - ii. All leaks shall be repaired and the line recharged and retested following the same procedure prior to approval.
 - iii. Leak testing shall be field-verified by the system designer and the Department
- d. Nitrification fields shall be graded to shed surface water and in a manner which facilitates easy maintenance with standard mowing equipment. A grass or other suitable vegetative cover shall be established so as to prevent erosion and to allow for effective system inspection.
- e. All supply line networks shall be installed and approved prior to final plat recordation.
- f. At the final inspection, the Authorized Agent shall observe the nitrification field, alternating device(s), other distribution devices, and all other system components to be functional, and accessible from the finished ground surface.

4) Operation, Maintenance, and Monitoring:

- a. System Management shall be required in accordance with 15A NCAC 18A .1961 (b), with the minimum classification of a Type IV system. The off-site system and its components shall be inspected by the Operator in Responsible Charge (ORC) a minimum of once a year, unless a greater frequency is required for operation of an individual advanced pretreatment or pressure dispersal system is required in 15A NCAC 18A .1961, .1969, or .1970. Repair and maintenance responsibilities shall be clearly specified in the ORC contract.
- b. The owner shall provide to the Department the following:
 - i. Survey plat showing as built field location or property lines, all off-site system components, easements and encroachments where all off-site system components are located.
 - ii. Written certification that the system was installed in accordance with the approved plans and specifications, or approved modifications as applicable for Type IV, V, and VI systems.
 - iii. Certifications shall be sealed, signed and dated by the licensed or registered professional that made field inspections of the system installation.
- c. The ORC shall provide monitoring reports to the Wake County Department of Environmental Services within 30 days of each required inspection. The ORC shall maintain a log of all malfunction incidences/notifications, observations and

maintenance activities. Minimum maintenance during each required inspection shall include:

- i. Visual observation of the drainfield,
 - ii. Visual observation of the supply line and appurtenant valves for leakage and damage,
 - iii. Alternation of drainfield alternating devices as applicable,
 - iv. Measuring of pressure head and flushing of distribution devices as applicable,
 - v. Assurance that the ground surface and vegetation over the drainfield and supply lines are maintained.
- d. The owner of the off-site wastewater treatment and dispersal system and applicable components shall be responsible for assurance of all maintenance, monitoring and repair of all system components, including the mowing of grass over the drainfield and maintenance of access of the supply line easement areas. The Owners Association shall be jointly responsible for the assurance of all maintenance and repair of system components or drainage within common parcels, easements, or encroachments. Repair and maintenance responsibilities shall be clearly defined and specified in the Operation Permit.
- e. Whenever two or more supply lines are located along a road right-of-way or encroachment under the ownership, control or management of an owners association, the association shall maintain updated information with the Register of Deeds office, and, upon notification of excavation, provide location and marking information pursuant to the requirements of the Underground Damage Prevention Act, NCGS Chapter 87.

SECTION V: MINIMUM REQUIREMENTS FOR PERMITTING AND OPERATION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEMS

- A) No Improvement Permit shall be issued for the installation of a wastewater treatment and dispersal system designed to serve a single family residence, place of business or place of public assembly on any lot which contains less than 30,000 square feet of suitable or provisionally suitable area for the installation of such system, unless exempted under Section VI of these Regulations.
- B) No Improvement Permit shall be issued for the installation of a wastewater treatment and dispersal system on any lot to be utilized for a multiple family dwelling with two or more dwelling units unless the lot contains at least 30,000 square feet of suitable or provisionally suitable area for the initial dwelling unit, and an additional 20,000 square feet of suitable or provisionally suitable area for each additional dwelling unit in the same structure, unless exempted under Section VI of these Regulations.
- C) No improvement permit shall be issued for a wastewater treatment and dispersal system to serve a condominium or other multiple-ownership development where the system will be

under common or joint control, including control by any franchised utility, without a showing that necessary funds for continued satisfactory operation, maintenance and replacement of such system will be provided. Provision of such funds through letter of credit, deposit of monies in a custodial account or other approved funding for the life of the system shall be required prior to issuance of an Operation Permit.

- D) No Improvement Permit shall be issued for the installation of a wastewater treatment and dispersal system designed to serve a single family residence, place of business or place of public assembly on any lot located in the watershed of a Class I, II or III reservoir which contains less than 40,000 square feet of suitable or provisionally suitable area except that when such lots are served by a public water system, a minimum of 30,000 square feet shall be suitable or provisionally suitable for the installation of such systems, unless exempted under Section VI of these Regulations. This requirement becomes effective whenever funds have been appropriated either for purchase of land or construction of a Class I, II or III reservoir.
- E) No Improvement Permit shall be issued for the installation of a wastewater treatment and dispersal system unless a minimum of 40,000 square feet of area is provided for each 1,250 gallons, or portion thereof, of wastewater anticipated to be generated per day based on 15A NCAC 18A.1949.
- F) The requirements of this Section are minimum requirements. Each lot must contain sufficient available space for the installation of two complete sanitary wastewater treatment and dispersal systems that meet the requirements set out in these Regulations.

SECTION VI: POSSIBLE EXEMPTIONS TO ADDRESS SELECTED SITE LIMITATIONS:

Based on site specific conditions, certain lots may be exempted from the provisions of Section V (A), (B), and (D) of these regulations if so doing does not constitute potential adverse impact on public health and if all of the following conditions are met:

- A) All other requirements set out in these Regulations are met and,
- B) There is sufficient space available for the installation of two complete wastewater treatment and dispersal systems meeting the requirements set out in these Regulations.
- C) The applicant may be required to have a Licensed Soil Scientist, Professional Geologist, Professional Land Surveyor, Professional Engineer, or Registered Environmental Health Specialist if required by G.S. 89C, 89E, 89F and 90A, Article 4, to prepare information that demonstrates conformance to the minimum requirements of these rules. This demonstration may include but not be limited to:
 - 1) A survey of the lot.
 - 2) A proposed site plan.
 - 3) Designation of wastewater treatment and dispersal site on site plan.
 - 4) Written evaluation of site.

- 5) Written justification of proposed application rate.
- 6) Calculations of drainfield requirements using proposed design unit volume.
- 7) Field staking of location for the structure, tanks, property lines, drainfield lines etc.

Upon finding the site suitable or provisionally suitable and that a system can be installed in accordance with these rules, the Authorized Agent will issue an Improvements Permit in accordance with 15A NCAC 18A .1937 (c) or when the permit is denied, the Authorized Agent will prepare a written report in accordance with 15A NCAC 18A .1937 (i).

SECTION VII: SUSPENSION AND REVOCATION OF PERMITS

- A) The Authorized Agent may suspend or revoke an Improvement Permit, Authorization to Construct or Operation Permit previously issued upon finding that a violation of the applicable provisions of these rules and regulations or a condition imposed upon the permit has occurred. A permit may also be suspended or revoked upon a finding that its issuance was based upon incorrect or inadequate information that materially affected the decision to issue the permit.
- B) The Applicant/Owner shall be given notice that there has been a tentative decision to suspend or revoke the permit, at which time the Applicant/Owner may challenge the tentative decision as provided in Section VIII of these rules and regulations.
- C) If a violation of the regulations presents an imminent hazard, a permit may be suspended or revoked immediately. The Authorized Agent shall immediately give notice of the revocation to the Applicant/Owner, at which time the Applicant/Owner may challenge the decision as provided in Section VIII of these regulations.

SECTION VIII: APPEAL PROCEDURE

Appeals concerning the interpretation and enforcement of these rules and regulations shall be conducted in accordance with the Wake County Human Services - Department of Environmental Services Rules of Appeal as amended and in compliance with G.S. 130A-24 as amended.

SECTION IX: SEVERABILITY

If any provisions of these regulations or the application thereof to any person or circumstances is held invalid, the remainder of the regulations and the application of such provisions to other persons or circumstances shall not be affected thereby.

SECTION X: PENALTIES

Any person who violates any of these regulations or shall fail to perform any acts required by these regulations shall be guilty of a misdemeanor and shall be subject to punishment as provided in G.S. 130A-25 as well as civil remedies set forth in Part 2, Article 1 of General Statutes Chapter 130A.

SECTION XI: ADMINISTRATIVE PENALTIES

A) Definitions - as used in this section the term:

- 1) "Delegate" means any person to whom the Director has delegated authority in writing to act in relation to administrative penalties;
- 2) "Hearing Officer" means the Director or Director's Authorized Representative;
- 3) "Respondent" means the person against whom a penalty has been assessed;

B) Administrative Penalties

The following rules concern the imposition of administrative penalties imposed by the Director pursuant to G.S. 130A-22 (H).

C) Who May Assess Penalties

Administrative penalties may be assessed by the Director or Director's Delegate.

D) When Penalties May Be Assessed

Administrative penalties may be assessed against any person for violations of Article 11 of G.S. Chapter 130A; or the Regulations Governing Wastewater Treatment and Dispersal Systems in Wake County, and/or any conditions imposed upon a permit issued under these regulations.

E) Amount of Penalty Assessment

- 1) The penalty shall not exceed fifty dollars (\$50.00) per day in the case of a wastewater treatment and dispersal system with a design daily flow of no more than 480 gallons or in the case of any system serving a single one-family dwelling. The penalty shall not exceed three hundred dollars (\$300.00) per day in the case of a wastewater treatment and dispersal system with a design daily flow of more than 480 gallons not serving a single one-family dwelling.
- 2) Each day of a continuing violation shall constitute a separate violation.
- 3) Each violation of a specific provision of Article 11 of G.S. Chapter 130A, or of these Regulations adopted by the Wake County Human Services Board pursuant to Article 11, or a condition imposed upon a permit issued under Article 11, shall be a separate violation.

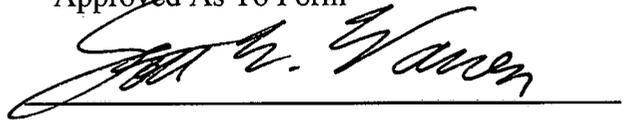
F) Procedure For Assessment

- 1) A notice of assessment shall be sent to the respondent by registered or certified mail. If the registered or certified notice is refused or unclaimed by the respondent at his last known legal address, first class mail to the respondent at his last known legal address will be lawful and sufficient service under these regulations. The notice shall describe the nature of the violation with reasonable particularity, state the amount of the penalty for each violation, advise that each day of a continuing violation constitutes a separate violation, advise that the penalty is now due or continues to accrue, and advise the respondent of his rights of appeal as specified in SECTION VIII of these Regulations.
- 2) The Director may modify a penalty upon finding that additional or different facts should have been considered in determining the amount of the assessment.

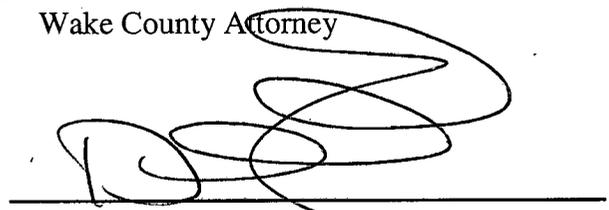
SECTION XII: EFFECTIVE DATE

These amended regulations adopted by the Wake County Human Services Board on October 27, 2011, shall be in full force and effect from and after October 27, 2011 and supersedes all prior wastewater treatment and dispersal system regulations.

Approved As To Form



Wake County Attorney



Chairman
Wake County Human Services Board

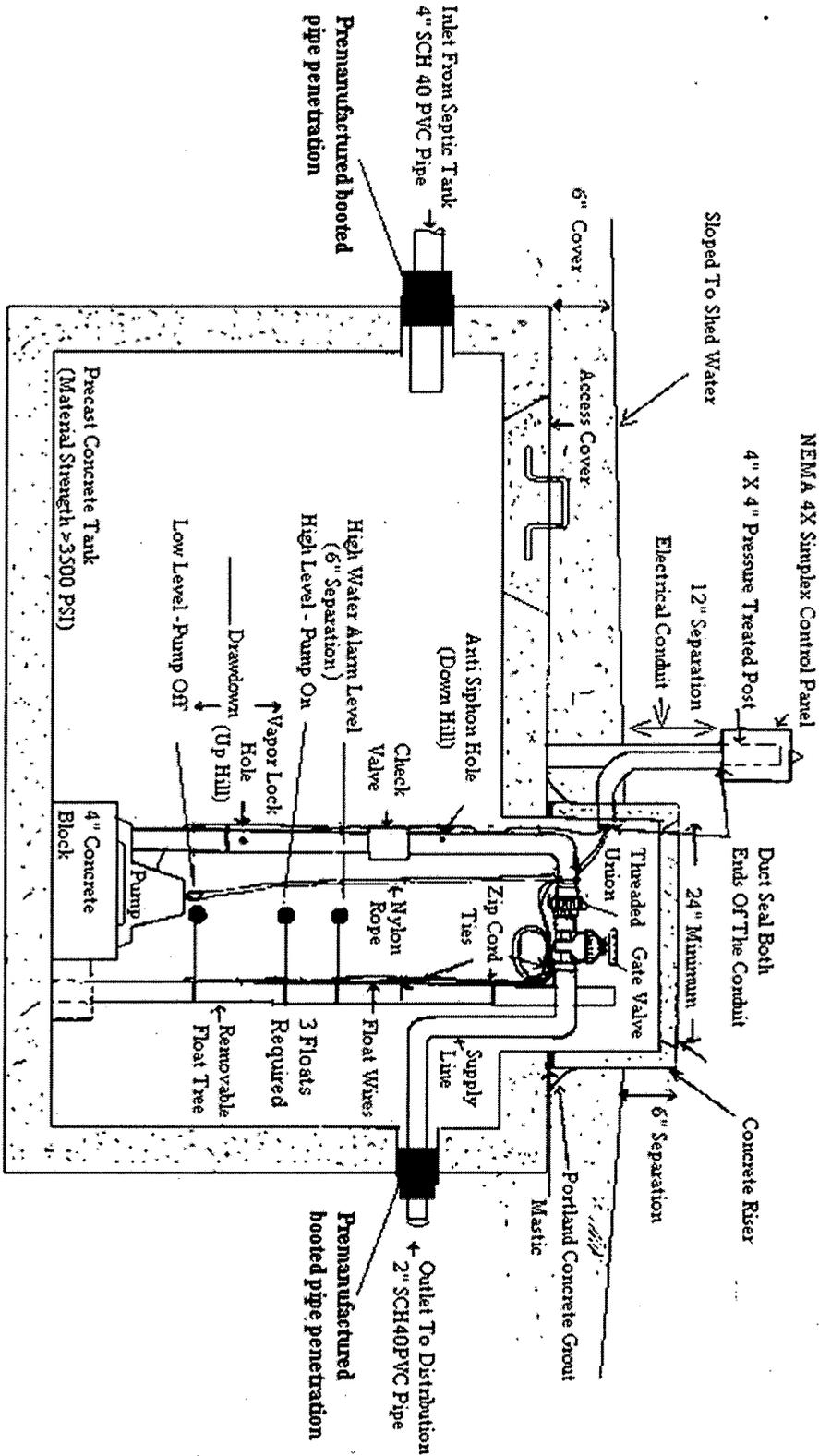


Director
Wake County Human Services Agency

APPENDIX A

Wake County Pump Tank Design :

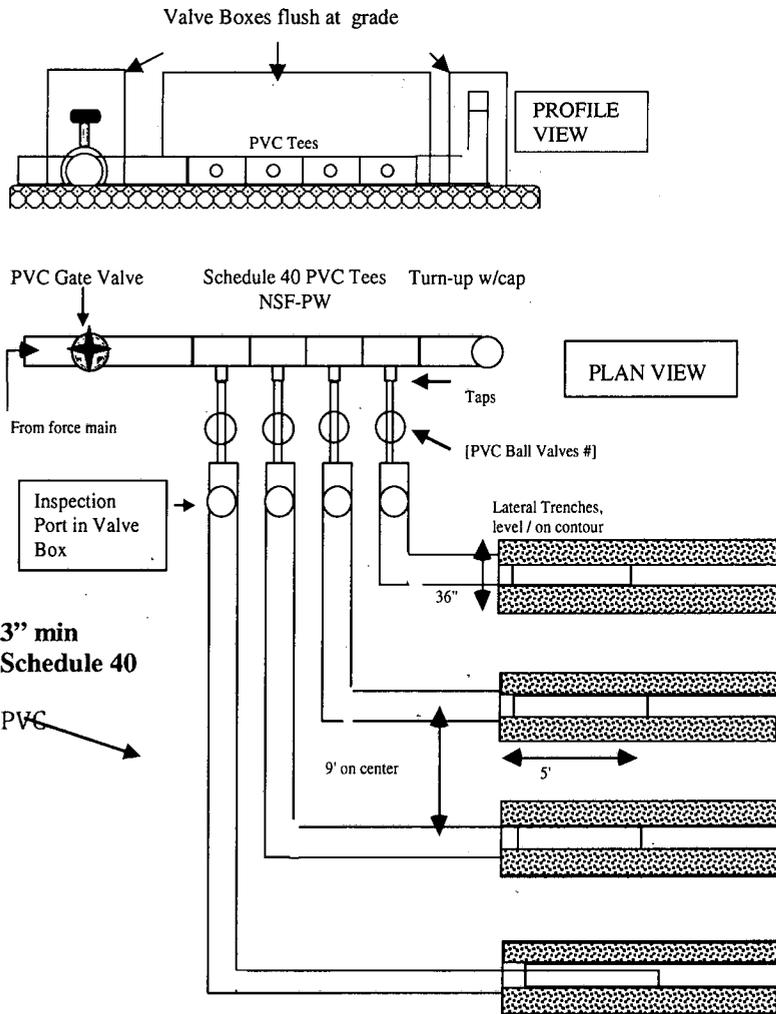
Wake County Department Of Environmental Services



3 GALLON PUMP TANK

APPENDIX B

Wake County Mani-Tee Design:



APPENDIX C

Pressure Manifold Design :

