# REGULATIONS

# GOVERNING

# WASTEWATER

# TREATMENT AND DISPERSAL SYSTEMS

# IN

# WAKE COUNTY

EFFECTIVE

November 21, 1988

AMENDED

May 23, 2002

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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) "Individual supply line easement" means the portion(s) of an off-site supply line easement for the sole purpose of installation and housing of the supply line for the lot in which the easement serves.

8) "Management Entity" means the person, entity, company, or firm designated by the owner of the wastewater system who has primary responsibility for the operation of the wastewater system in accordance with these regulations, IWWS 2016-1, 15A NCAC 18A .1935(40); .1961; .1969; .1970; , G.S. 90A, Article 3, and applicable rules of the Water Pollution Control System Operators Certification Commission. The Management Entity can be the owner, a public entity managing wastewater systems, a certified operator, a management company, or an entity that employs certified operators. When the wastewater system has a flow greater than 3,000 gallons per day, the Management Entity shall be a company or firm that is incorporated.

9) "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.

10) "Off-site drainfield easement" for the purposes of this provision means the portion of the off-site easement used exclusively for the installation and operation of the off-site drainfield.

11) "Off-site supply line" means only the portion(s) of supply line(s) not located in the Building lot itself.

12) "Off-site supply line easement" for the purposes of this provision means the portion of the off-site easement used exclusively for the conveyance of effluent, through the supply line, from the exit point of the property it serves to the entry point of the off-site drainfield easement.

13) "Off-site supply line network" means an offsite supply line as defined in North Carolina Department of Health and Human Services Division of Public Health Environmental Health Section Onsite Water Protection Branch Innovative System Approval Number IWWS-2016-01 for Off-Site Systems (IWWS 2016-01); and two or more individual off-site supply lines located wholly or in part within a "common" easement or encroachment in a single phase or section of development.

14) "Off-site wastewater system" means a "Wastewater system" any portion of which (initial and/or repair system) is in a separate non-contiguous area/easement than the lot or tract of land containing the facility it served. This also includes individual off-site supply line or supply line network(s), when a dedicated access is required for the purposes of installation of initial/repair, operation, and maintenance of the system. For Off-site system(s) located in common area and/or a common easement, provisions of IWWS 2016-01 shall also be met in addition to these provisions.

15) "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.

16) "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.

17) "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.

18) "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.).

19) "Supply line" means a watertight pipe used to convey effluent from the septic tank or pump tank to the distribution device or dispersal field.

20) "Supply Line Network" means two or more supply lines serving multiple facilities installed in a single easement.

21) "System" means the wastewater treatment and dispersal system referred to in that section.

22) "Wastewater system" as defined by NCGS 130A-334(15); means a system of wastewater collection, treatment, and disposal in single or multiple components, including a ground absorption system, privy, septic tank system, public or community wastewater system, wastewater reuse or recycle system, mechanical or biological wastewater treatment system, any other similar system, and any chemical toilet used only for human waste. A wastewater system located on multiple adjoining lots or tracts of land under common ownership or control shall be a single system for purposes of permitting under these Regulations.

23) "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.

24) "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: <u>SPECIFIC REQUIREMENTS FOR PERMITS TO CONSTRUCT OR REPAIR WASTEWATER TREATMENT AND DISPERSAL SYSTEMS</u>

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 any wastewater 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 wastewater system and a general maintenance schedule at the Wake County Register of Deeds prior to issuance of the Operation Permit for the system.

D) When it is proposed that a property is to be served by an innovative wastewater system, other than an accepted wastewater 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 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:

a. Entire property with dimensions,
b. Address of the property,
c. Bar scale,
d. Structural dimensions of all structures, existing and proposed,
e. Dimensional location of proposal(s) to at least 3 property lines measured perpendicular to the property lines,
f. Existing structures,
g. Driveways,
h. Easement,
i. Buffers
j. 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:

| Bedrooms | Minimum Liquid Capacity |
|---|---|
| 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, except when the conditions of IV:B)1)a) are met. Trenches have equivalent square footage of trench bottom area when the LTARs for all trenches are within five percent of the permitted LTAR.
   a) Trenches do not need to contain equivalent square footage of trench bottom area when the following conditions are met:
      i) The proposed design is approved by the Authorized Agent or permitted with an alternative wastewater system permitting option;
      ii) For gravity systems, stepdowns are constructed of Schedule 40 PVC, or other equivalent strength pipe, at a minimum and constructed to a height which fully utilizes the upstream trench; and
      iii) For pump systems, serial distribution may be used to connect no more than two individual line segments. If the two individual lines are of equivalent trench bottom square footage, the flow shall be split uniformly between the two lines.

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) System design shall accommodate for reduction of hydraulic interaction among the trenches when the following conditions are present. LPP systems shall follow

requirements in section IV:D of these regulations. Surface Drip systems shall follow the requirements set forth in their individual state innovative approval and 15A NCAC .1900 where applicable.

a) The slope from the top edge of the uppermost trench to the bottom edge of the lowermost trench is greater than 30 percent;
b) A restrictive layer, or a less permeable soil horizon, is present within 24 inches of the trench bottom (if criteria a and c are met, soil evaluation to 24 inches below the proposed trench bottom is required); and
c) One or more of the following drainfield criteria are present
    i) More than 5 consecutive trenches aligned from upslope to downslope less than 50 feet in length as the lowermost part of the design, or
    ii) More than 10 consecutive trenches of any length aligned from upslope to downslope.

System design modification options for systems up to 720 gallons per day flow rate include:

a) Alternating parallel or serial distribution;
b) increasing trench spacing to minimum ten feet on center;
c) loading of every other trench in the design for the initial system with the remaining trenches used for the repair system (utilization of this method may require the installation of all trenches during the initial system installation);
d) utilization of the loading rate of the least permeable layer within 24 inches of the trench bottom; or
e) An alternative design approved by the authorized agent or permitted with an alternative wastewater system permitting option.

Systems over 720 gallons per day flow rate shall require a special site assessment pursuant to 15A NCAC 18A .1970(p).

5) 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).

6) 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.

7) 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.

8) 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.

9) 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 | Daily Flow for Design |
|---|---|
| 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 15A NCAC 18A.1949, Food Service Facilities |
| Residential Care Facility | 120 gal/bed |
| Shell Building | 500 gal/day |

10) 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 retention 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) 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. When a pressure manifold is used to distribute effluent among unequal line lengths, the minimum pump run time shall meet the following requirements:

i) Manifold pressurization and pump operating flow rate at the design pressure head; and
ii) minimum dose volume.

The pump run time may be field adjusted after installation to optimize system performance based on operating conditions.

2) 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 unless the following requirements are met:

i) The system design is approved by the Authorized Agent or permitted with an alternative wastewater system permitting option; and

ii) the cover material used for the system installation can be stabilized to prevent erosion.

3) 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

| SOIL GROUP | SOIL GROUP CLASSES (USDA CLASSIFICATION) | | LONG-TERM ACCEPTANCE RATE gpd/ft2 |
|---|---|---|---|
| I | Sands (With S or PS structure and clay mineralogy) | Sand<br>Loamy Sand | 0.4-0.3 |
| II | Coarse Loams (With S or PS structure and clay mineralogy) | Sandy Loam<br>Loam | 0.3-0.2 |
| III | Fine Loams (With S or PS structure and clay mineralogy) | Sandy Clay Loam<br>Silt Loam<br>Clay Loam<br>Silty Clay Loam<br>Silt | 0.2-0.1 |
| IV | Clays (With S or PS structure and | Sandy Clay<br>Silty Clay | 0.15-0.05 |

Clay mineralogy) Clay

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 SYSTEM (S)

1) Permitting:

a. The application procedure for all off-site wastewater system(s) shall be as follows:

i. Improvement Permit ("IP"):

An application for an off-site wastewater treatment and dispersal system shall be submitted to the Wake County Department of Environmental Services pursuant to 15A NCAC 18A .1937(c) and the following conditions shall be met:

1. The proposed use of an off-site wastewater system shall be identified in each IP or Construction Authorization ("CA") application, as applicable. (IP for off-site supply line and dispersal field, CA only for off-site supply line).
2. 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.
3. Applications shall be submitted for all proposed off-site wastewater systems for a single phase or section of the development.
4. All applicable provisions of the Wake County Unified Development Ordinance must be met.

ii. Construction Authorization ("CA"):

A separate CA application must be submitted by the Property Owner or their legal representative for each off-site supply line.

The Following provision for a CA must be addressed for Off-site system(s) meeting the definition of Off-Site Supply Line Network:

1. Whenever any portion(s) of two or more off-site systems are 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 Property Owners Association (POA) or by a Management Entity. This POA or Management Entity shall be jointly named on any

Construction Authorization and Operation Permit to be issued for any such shared system.

2. Maps and/or detailed drawings of all locations of easements for all components which are not located on the Building Lot shall be provided.

b. Prior to the issuance of an Improvement Permit for any off-site wastewater system, the following items shall be completed:

i. Dispersal field 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 dispersal field 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. Initial and repair areas depicting
   i) Line lengths
   ii) Flag colors
   iii) Line elevations
2. All proposed easement and/or property lines, along with the lot and facility served, shall be clearly staked and labeled in the field.
3. All tankage, setbacks, important monuments, supply line, and any other appurtenances.

iv. The Authorized Agent ("AA") shall conduct:

1. A visual evaluation of the supply line path to determine feasibility of installation.
2. A review of field staked lines, facility, easement area/encroachment area.
3. A review to ensure that the total daily design flow to combined off-site dispersal field(s) is consistent with the provisions of these Rules, the Wake County Unified Development Ordinance, and 15A NCAC 18A .1970(p)(2).
4. A review of stormwater plans and assessment of effects of upslope and internal stormwater runoff, proposed stormwater management systems, and impacts of any other potentially hydraulically-interacting active dispersal field or repair area.

c. Prior to the issuance of a Construction Authorization for any off-site wastewater system, the following requirements shall be met:

i. All easements and property lines shall be surveyed and permanently marked in the field.

ii. Any encroachment agreements shall be obtained, where required, and recorded with Wake County Register of Deeds.

iii. A complete wastewater treatment and dispersal system design shall be submitted for review and approval.

iv. Plans, specifications and system design shall be required to be prepared by a person or persons who are licensed or registered to consult, investigate, evaluate, plan or design wastewater systems, soil and rock characteristics, ground water hydrology, or drainage systems if required by G.S. 89C, 89E, 89F, and/or 90A Article 4.

v. Plans shall incorporate best management practices and accepted design standards such as:

1. Minimizing supply line crossings and lengths
2. Accessibility of dispersal lines and other system components
3. Facilitation of the installation, operation, repair, and maintenance of the system
4. 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 dispersal field.
5. The designer of the supply line network may be required to submit substantiating data, as specified by the EHS, Wake County.
6. Plans and specifications shall be prepared by a registered professional engineer if required by G.S. 89C or when one or more of the following conditions are met:
    i) Utilization of pretreatment components that have not received prior state approval or as required by a pretreatment approval,
    ii) Daily design flow exceeds 720 gallons per day.
    iii) Supply lines are longer than 500 feet.
    iv) When elevation variations in the supply line or lines require(s) use of appurtenances, such as air release valves. An air release valve is usually required when the variation of elevation difference between conjugative high and low points is greater than 5 feet.
    v) Alternate materials or design specifications are proposed to be used for supply lines, or trenches
    vi) One or more off-site systems utilize pressure dispersal (Drip irrigation and Low Pressure Pipe ("LPP") fields) 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 to the dispersal fields between doses.

vii) 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.

viii) Duplex alternating pumps are required (duplex pumps are required if linear footage of nitrification trenches exceeds 2000 feet).

ix) When a system is otherwise required to be designed by a registered professional engineer pursuant to15A NCAC 18A .1938(d) or when required as part of a system approval issued pursuant to 15A NCAC 18A .1969.

x) Any system serving more than one facility so specified by Wake County.

xi) 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 shall be required for any supply line or system component so specified by the AA.

xii) An all-weather access road is included in the design.

xiii) When specified by the AA.

d. Construction Authorization (CA) approval for any off-site wastewater system shall be issued as follows:

i. Any CA issued by the AA shall address each component of the off-site wastewater system (e.g. supply lines, dispersal fields, tanks and appurtenances).

ii. If the supply lines are to be installed first, with the dispersal field nitrification lines to be installed later, a CA shall be issued for the supply lines installation only.

iii. "AS needed "A separate CA be issued for each supply line and each dispersal field to be installed at this time. A separate CA shall be issued for dispersal fields to be installed after easement recordation.

e. 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. An as-built drawing must be submitted showing the location of property lines and all off-site system components, including easements and encroachments.

ii. The installation and testing of the offsite system must be inspected and approved by the AA.

iii. 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 a written certification sealed, signed and dated by the engineer that the system was installed in accordance with the approved plans and specifications.

iv. All easement areas (access, supply line and dispersal fields) shall be surveyed and marked with permanent markers or monuments that are described in Section III: F) 2.a) i) 8 of these Regulations.

v. All documents that are required to be executed, and recorded at the Register of Deeds, shall be so executed and recorded, including, but not limited to:
   1. Encroachment agreements,
   2. Maintenance agreements, and
   3. Easements.

vi. Any subdivision with an off-site supply line shall have provisions for:
   1. A Management Entity for wastewater system components.
   2. All documents shall be reviewed and approved by the AA and recorded with the Register of Deeds. The documents shall at a minimum, address the following:
      i) The use and/or limits of use for supply line Access and Maintenance of Easements and Remote Wastewater Treatment and Dispersal System Areas.
      ii) Outline a course of action in the event that a repair to an off-site wastewater treatment and dispersal system is necessary, including details of ownership and financial responsibility.

vii. No other agencies may issue permits for a facility, pursuant to G.S. 130A-338, until all CAs have been issued for the entire wastewater system.

viii. Each Operation Permit for a completed individual off-site wastewater system shall include as parties to the permit the owner of the individual design unit and system, and the (POA) as applicable, and shall delineate the responsibilities of each party for operation and maintenance of the system.

2) System Sizing and Design Criteria:
   a) Supply Lines:
      i) Supply Lines Locations:
      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 easement(s). Easements shall extend completely from the building lot to the dispersal field 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 and shall be located a minimum of 5 feet from any other parallel utility or greater distance (e.g. 10 feet required from water line.)
3. No other utilities shall be installed in the same trench as the supply lines
4. Any utility crossings over or under the supply lines must meet the requirements of 15A NCAC 18A .1950(f) and (g), and any necessary encroachment agreements shall be obtained and executed.
5. Supply lines crossing a stream must meet the requirements of 15A NCAC 18A .1950(h).
6. Off-site 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 wastewater system components for installation, operation, maintenance and repair.
7. Both sides of off-site supply line easements shall be permanently marked at the beginning of the easement where it leaves the building lot, at the location where it leaves the road frontage, at least every 300 feet and at every directional change. Markers shall be visible from the ground surface, permanent in construction, easily locatable, and shall permanently identify the easement that is being marked. Easement field marker or monument locations shall be depicted on the as-built survey.
8. Easements for the off-site supply line and off-site area or lot corners shall be marked with permanent ground markers or monuments clearly labeled as to the easement area and the lot it serves. For purposes of these Regulations, “permanent construction” is defined as a marker which requires the use of mechanical tools to remove; “easily locatable” means no specialized or mechanical tools are required to locate and uncover the marker; “visible from the ground surface” means a marker that is located on the ground surface, or, if located below ground, a marker that is in a box with its top visible at the ground surface (e.g. valve box or water meter box).
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.

ii) Off-site Supply Line Design:

Off-site Supply line design specifications shall meet the requirements of Section IV B) 8) c) of these Regulations, as well as the following conditions specific to off-site supply lines:

1. All pipe, fittings, joints, installation and testing methods shall conform to the appropriate ASTM International (ASTM), American National Standards Institute (ANSI), or American Water Works Association (AWWA) standards. Alternate materials, proposed by a professional engineer, may be approved by the AA.
2. All pipe segments shall be permanently marked every ten feet on the crown of the pipe with the corresponding unique lot number or letter, which shall be visible at the time of inspection. The printed lot number or letter shall be at least one inch in height and legible.
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:
    i. The pipe shall be uniformly and continuously supported over its entire length with clean, firm, and stable backfill material.
        a) In situ material which does not contain any large objects, rock, or organics may be used for fill.
        b) Proper continuous bedding shall be required to prevent bridging of pipes.
        c) Any other backfill method will need AA's approval.
    ii. 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. Sleeving may also be used. Backfill material along the pipes (in network) sides and top of the pipe shall be uniformly hand compacted and walked-in prior to completing the trench backfilling process. Alternatively, spacers may be used with following requirements:
        a) Spacers shall be of similar strength as of the pipes during installation with no sharp edges (wood stakes may be used),
        b) Spacers shall have a minimum width of one and one-half the diameter of the supply line

pipe used,

c) Spacers Shall be placed at a minimum 10 feet apart at the markings, along the pipe length. Additional spacers may be used.

iii. Thrust blocking at the bends and elbows shall be installed where specified by the designer.

iv. Each individual supply line installed in a common trench shall be separated horizontally by a minimum distance equal to the diameter of one pipe. Vertical stacking of pipe is prohibited.

v. The discharge piping and supply lines shall be a minimum of one and one-half (1 ½) inches in diameter.

5. Unless otherwise addressed under 15A NCAC 18A.1955, a minimum burial depth of 30 inches, as measured from the crown of the pipe to the ground surface, shall be provided throughout the length of the supply line. If the 30-inch minimum burial depth cannot be met, or a road crossing is required, the supply lines shall be sleeved in ductile iron, or DOT traffic rated road crossing culvert pipe extending to a minimum of 5 feet beyond the shallowest area on each side. The minimum burial depth to top of sleeving is per the pipe sleeving manufacturer's recommendation, but in no case less than 6 inches.
6. Provisions must be made to address any supply line drainback volume to either the pump tank or dispersal field.
7. The pump supply line size and pump capacity shall be sized such that a minimum velocity of two (2) feet per second is achieved in the supply line,
8. Air/vacuum relief valves shall be specified at high points as specified by the design engineer to release trapped air from the supply line and maintain system performance.
9. Provisions to stabilize the surface of the excavation shall be made upon backfilling in order to prevent erosion.

b) Pump Tanks:

The minimum total capacity for pump tanks shall meet all requirements of SECTION IV of these Regulations, as well as the following requirements:

i) 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 dispersal field between doses.

ii) 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.

iii) Any pump tank or pretreatment device not located on the building property building-lot shall have its alarm designed for auto-dialer hook up <u>to a 24-hour maintenance service.</u>

c) Dispersal Field:

i) Access or Access Road

1. An all-weather access to off-site wastewater system area shall be by a properly maintained, publicly accessed road for the passage of equipment normally used to install, inspect, operate, maintain and repair the wastewater system, or via a dedicated access parcel or easement which shall be maintained to prevent any hindrance of free movement through this area and shall be of following width:
    a) 20 feet for single off-site supply line if the wastewater drainfield easement is not cleared,
    b) 15 feet for single off-site supply line if drainfield easement is cleared, but drainfield and appurtenances not installed
    c) 10 feet for individual off-site supply line, if drainfield and appurtenances in drainfield easement installed up front.
2. The access area provided shall be either owned or controlled by the owner of the off-site area, or commonly owned or controlled by the POA.
3. When an access road is required it shall be designed by a registered professional engineer and per IWWS-2016-01.
4. All weather access may be eliminated if the Engineer or Designer stipulates and the CA for each design unit requires that:
    a) All the adjacent and contiguous offsite wastewater system components within a phase of construction, including any repair/replacement dispersal fields, are installed at the same time (prior to the Operation Permit), or
    b) All the offsite wastewater system components are installed by hand (without the use of equipment on the site).
    c) Notwithstanding the exclusions noted in a) and b) above, the design shall ensure effective access to off-site wastewater system components for the system's continued operation, maintenance, and repair.

ii) Dispersal fields, supply lines, and all wastewater system components shall be protected from traffic or other unauthorized access.

iii) 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.

iv) Any surface water runoff, drains, ditch discharges shall be diverted away from the dispersal field.

v) Final soil cover shall be provided such that a depth of six inches cover remains after settling.

vi) Stabilization of final cover with appropriate vegetation shall be provided.

3) Installation, Inspection, and Testing Procedures:

a. A pre-construction conference is required prior to the installation of an off-site wastewater system. The owner or owner's representative, the installer and the AA shall meet on the site to review the approved off-site wastewater system design plan and supply line plan as applicable.
b. All off-site wastewater systems shall be installed by an installer certified in accordance with G.S. 90A-72 (Grade III or higher required).
c. Leak testing, using water under pressure, shall be performed whenever a supply line exceeds 500 feet in length or two or more supply lines are in common parcels, a dedicated easement or encroachment. Leak testing shall be field-verified by the system designer in the presence of the AA.
d. All off-site supply lines shall be installed and approved prior to final plat recordation.
e. At the final inspection, the AA shall observe the dispersal field, alternating device(s), other distribution devices, and all other system components, and shall determine them to be functional and accessible from the finished ground surface.
f. For individual supply line easements with a minimum width of 30 feet and a maximum length of 100 feet, the supply line shall not be required to be installed prior to the recordation of the easement(s).

4) Operation, Maintenance, and Monitoring:

a. The Owner/POA shall retain a Management Entity to be responsible on its behalf to operate and maintain all components of an off-site wastewater system within a supply line network, within common areas that are owned or controlled by the POA, and all associated subsequent components of the system. An individual owner of an off-site wastewater system will also be responsible for separately contracting with an ME if required based on the system type pursuant to 15A NCAC 18A .1961.
b. A Multi-Party agreement, as required in 15A NCAC 18A .1938, shall be in effect. Where applicable, verification shall be provided that a non-profit, incorporated property 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 (Multi-Party) among the developer/owner and the association has been submitted to the Department. The Multi-Party agreement shall address:
    1. Ownership,
    2. Transfer of ownership,
    3. Maintenance of system and system sites,
    4. Drainage,
    5. Repairs,
    6. Operation, and

7. The necessary funds for the continued satisfactory performance of common wastewater system components, including but not limited to supply lines, access areas, dispersal fields, and other appurtenances.

c. Easements, agreements, declarations and subordination documents shall be recorded at the Wake County Register of Deeds, as required,

d. 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 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.

e. 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:

1. Visual observation of the dispersal field,
2. Visual observation of the supply line and appurtenant valves for leakage and damage,
3. Alternation of dispersal field alternating devices as applicable,
4. Measuring of pressure head and flushing of distribution devices as applicable, and
5. Assurance that the ground surface and vegetation over the dispersal field and supply lines are maintained.

f. Whenever two or more Supply Line Easements are located along a road right-of-way or encroachment under the ownership, control or management of an POA, 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.

g. In lieu to membership to locating service such as *811, An alternate method of locating supply lines e.g. by tracing by means of Tape or equivalent is acceptable for single off-site supply lines.

## 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: ADMNISTRATIVE 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 regulations adopted by the Wake County Health and Human Services Board on October 27, 2011, and most recently amended on November 19, 2021, shall be in full force and effect from and after November 19, 2021 and supersedes all prior wastewater treatment and dispersal system regulations.

Approved As To Form

_____

Wake County Attorney

_____

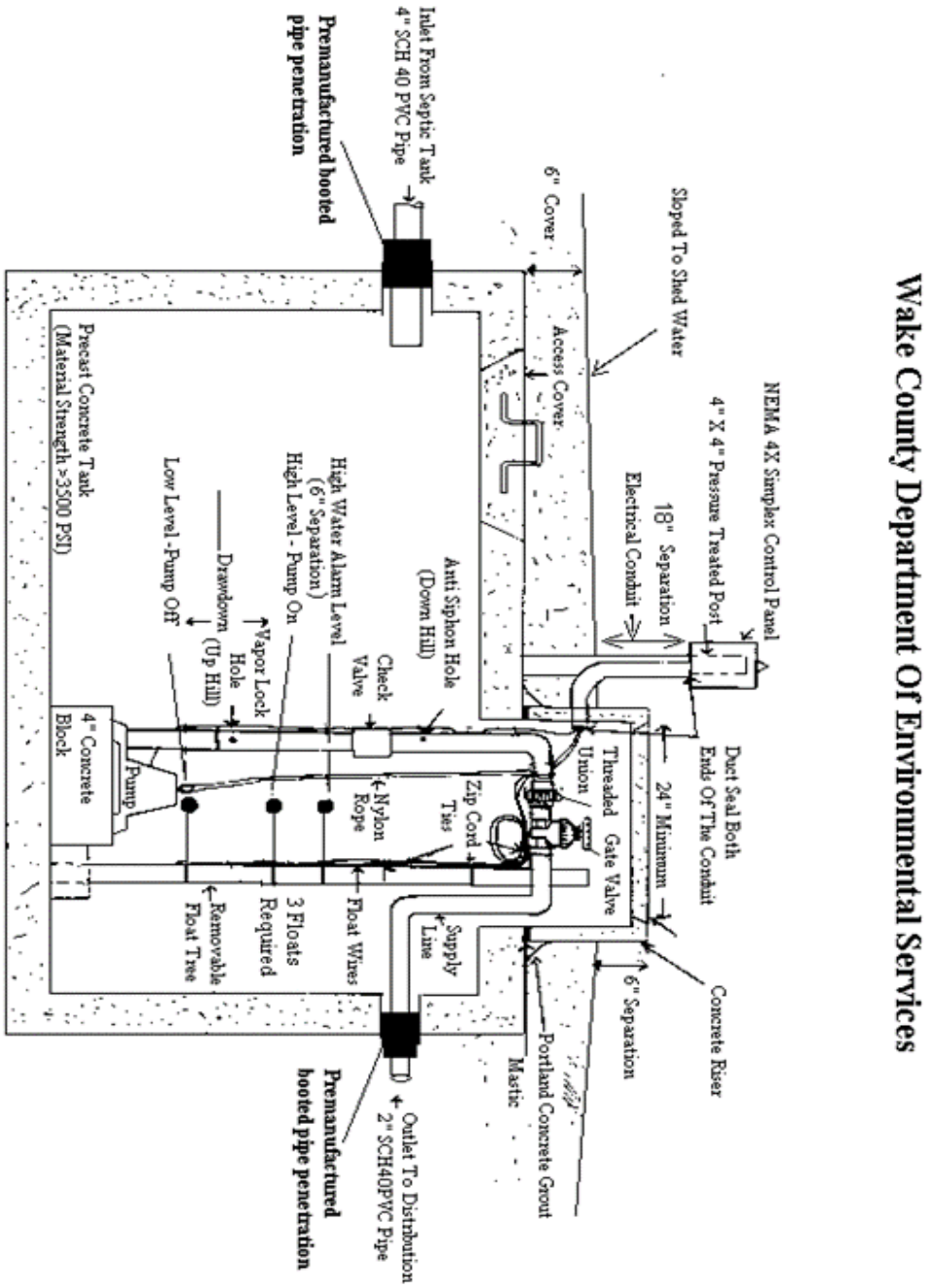
Chairman
Wake County Human Services Board

_____

Director

APPENDIX A

Wake County Pump Tank Design

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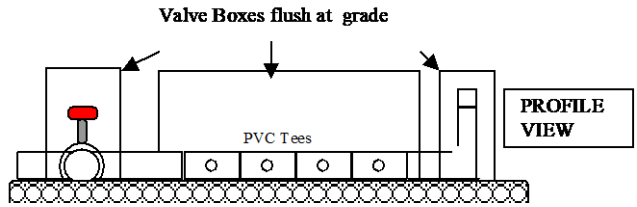
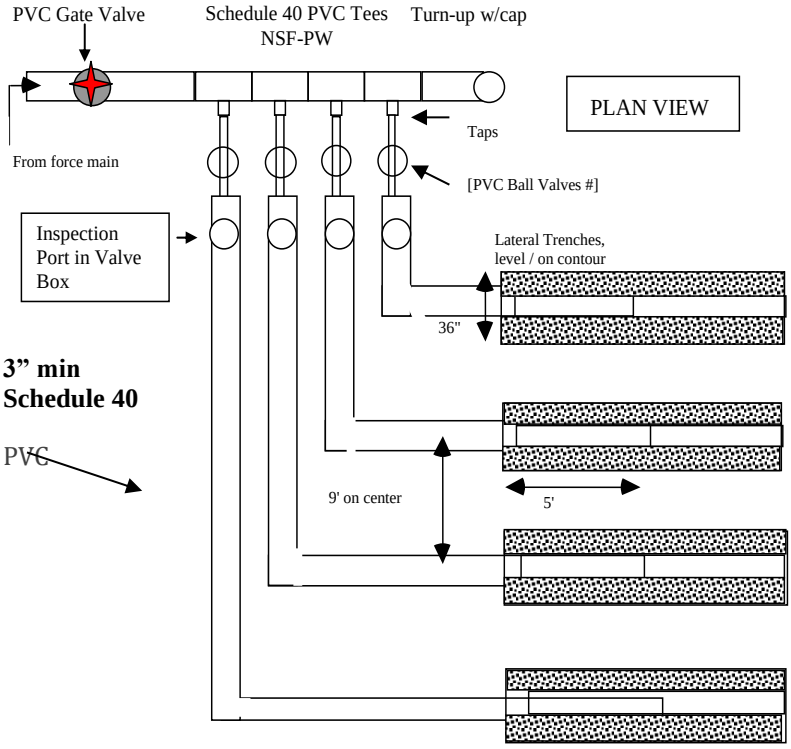
# APPENDIX B

## Wake County Mani-Tee Design:



# APPENDIX C

## Pressure Manifold Design :