15A NCAC 18E .0304 SUBMITTAL REQUIREMENTS FOR PLANS, SPECIFICATIONS, AND REPORTS PREPARED BY LICENSED PROFESSIONALS FOR SYSTEMS OVER 3,000 GALLONS/DAY

All wastewater systems with a DDF greater than 3,000 gpd shall be designed by a PE, with site evaluation by an LSS, and LG, as applicable, in accordance with G.S. 89C, 89E, and 89F. The wastewater system plans, specifications, and reports shall contain the information necessary for construction of the wastewater system. Plans, specifications, and reports shall include the following information:

(1) Applicant information and DDF determination:
  (a) the seal, signature, and the date on all plans, specifications, and reports prepared by the PE, LSS, and any other licensed or registered professionals who contributed to the plans, specifications, or reports;
  (b) name, address, and phone number for the owner and all licensed professionals who have prepared plans, specifications, and reports for the wastewater system; and
  (c) DDF and projected wastewater strength based on the application submitted to the LHD that includes calculations and the basis for the proposed DDF and wastewater strength.

(2) Special site evaluation in accordance with Rule .0510 of this Subchapter, including soil and site evaluation, hydraulic and hydrologic assessment reports, and site plans:
  (a) soil and site evaluation report, written by the LSS, on the field evaluation of the soil conditions and site features within the proposed initial and repair dispersal field areas including the following:
    (i) vertical soil profile descriptions for pits and soil borings in accordance with Section .0500 of this Subchapter;
    (ii) recommended LTAR, system type, trench width, length, depth on downslope side of trench for proposed initial and repair dispersal field areas with justification;
    (iii) soil and site-based criteria for dispersal field design and site modifications;
    (iv) for sites originally classified unsuitable, written documentation indicating that the proposed system can be expected to function in accordance with Rule .0509(c) of this Subchapter; and
    (v) recommended effluent standard for proposed initial and repair dispersal field areas with justification; and
  (b) hydraulic assessment reports on site-specific field information that shall include:
    (i) in-situ Ksat measurements at the proposed infiltrative surface elevation where possible and at each distinct horizon within and beneath the treatment zone to a depth of 48 inches below the ground surface or to a depth referenced in an associated hydraulic assessment, such as groundwater mounding analysis or lateral flow analysis;
    (ii) logs from deep borings identifying restrictive layers, changes in texture and density, and aquifer boundaries;
    (iii) groundwater mounding for level sites or lateral flow analysis for sloping sites in accordance with Rule .0510(e) of this Subchapter, as applicable; and
    (iv) contaminant transport analysis showing projected compliance with groundwater standards at property lines or at the required setback from water supply sources within the property, as applicable;

(3) Site plan prepared by the PE based on a boundary survey prepared by a registered land surveyor with the following information:
  (a) site topography, proposed site modifications, location of existing and proposed site features listed in Rule .0601 of this Subchapter, proposed facility location, location of proposed initial and repair dispersal field areas and types, and location of LSS soil pits, hand auger borings, deep borings, and in-situ Kats tests, as applicable;
  (b) existing and proposed public wells or water supply sources on the property or within 500 feet of any proposed initial and repair dispersal field areas;
  (c) existing and proposed private wells or water supply sources within 200 feet of existing or proposed system component locations;

(d) other existing and proposed wells, existing and proposed water lines including fire protection, irrigation, etc., within the property boundaries and within 10 feet of any projected system component;

(e) surface waters with water quality classification, jurisdictional wetlands, and existing and proposed stormwater management drainage features and groundwater drainage systems;

(f) topographic map with two-foot contour intervals or spot elevations when there is less than a two-foot elevation difference across the site identifying areas evaluated for initial and repair dispersal field areas, proposed location of trenches, and pits and soil borings labeled to facilitate field identification;

(g) location of tanks and advanced pretreatment components, including means of access for pumping and maintenance; and

(h) any site modifications and site and slope stabilization plans.

(4) System components design, installation, operation, and maintenance information:

(a) collection systems and sewers:

(i) plan and profile drawings, including location, pipe diameter, invert and ground surface elevations of manholes and cleanouts;

(ii) proximity to utilities and site features listed in Rule .0601 of this Subchapter;

(iii) drawings of service connections, manholes, cleanouts, valves and other appurtenances, aerial crossings, road crossings, water lines, stormwater management drainage features, streams, or ditches; and

(iv) installation and testing procedures and pass or fail criteria;

(b) tank information:

(i) plan and profile drawings of all tanks, including tank dimensions and all elevations;

(ii) access riser, manhole, chamber interconnection, effluent filter, and inlet and outlet details;

(iii) construction details for built-in-place tanks, including dimensions, reinforcement details and calculations, and construction methods;

(iv) identification number for Department approved tanks;

(v) installation criteria and water tightness testing procedures with pass or fail criteria; and

(vi) anti-buoyancy calculations and provisions;

(c) pump stations, including raw sewage lift stations and pump tanks:

(i) information required in Sub-item (4)(b) of this Rule;

(ii) specifications for pumps, discharge piping, pump removal system, and all related appurtenances;

(iii) dosing system total dynamic head calculations, pump specifications, pump curves and expected operating conditions, including dosing, flushing, etc.;

(iv) control panel, floats and settings, high-water alarm components, location, and operational description under normal and high-water conditions;

(v) emergency storage capacity calculations, timer control settings, and provisions for stand-by power; and

(vi) lighting, ventilation, if applicable, wash-down water supply with back siphon protection, and protective fencing;

(d) advanced pretreatment systems:

(i) information required in Sub-items (4)(b) and (c) of this Rule;

(ii) drawings and details showing all advanced pretreatment units and appurtenances such as pumps, valves, floats, etc., size and type of piping, disinfection unit, blowers if needed, location of control panels, height of control panels, etc; and

(iii) documentation from the manufacturer supporting the proposed design and use of the advanced pretreatment system to achieve specified effluent standards if not otherwise approved by the Department in accordance with Section .1700 of this Subchapter;

(e) dispersal field plans and specifications with design and construction details:

(i) final field layout, including ground elevations based on field measurements at a maximum of two-foot intervals or spot elevations when there is less than a two-foot elevation difference across the site;
(ii) trench plan and profile drawings, including cross sectional details, length, spacing, connection details, cleanouts, etc., and invert elevations for each lateral;
(iii) manifolds, supply lines, pipe sizes, cleanouts and interconnection details, and invert elevations;
(iv) flow distribution device design;
(v) artificial drainage system locations, elevations, discharge points, and design details, as applicable;
(vi) site preparation procedures;
(vii) construction phasing and wastewater system testing; and
(viii) final landscaping and compliance with erosion control requirements, such as site stabilization procedures and drainage;

(f) materials specification for all materials to be used, methods of construction, means for assuring the quality and integrity of the finished product; and
(g) operation and maintenance procedures for the Management Entity, inspection schedules, and maintenance specifications for mechanical components and dispersal field vegetative cover; and

(5) any other information determined to be applicable by the LHD or the Department, such as the impact of projected wastewater constituents on the trench and receiving soil.

History Note: *Authority G.S. 130A-335;*
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