

APPROVAL PROCESS FOR NEW WATER SYSTEMS & LINE EXTENSIONS

Preliminary Plan Approval

Owner/Developer Submits the Preliminary Maps to County/Town to identify the location of the nearest water line to the proposed project site.

Owner/Developer Submits the Preliminary Maps and Plans to the Planning Board for the Initial Approval to proceed with project.

Design of Water System

Owner/Developer contracts a Registered Professional Engineer (P.E.) to design the new water lines extensions or subdivision utilities to meet the local County/Town requirements.

The Registered Professional Engineer (P.E.) designs the Water System or Subdivision Utilities in accordance with standards established by the American Water Works Association (AWWA) and all federal, state, county, and town regulations.

Submission to County/Town of Application, Plans, Specifications, Engineer's Report

The Registered Professional Engineer (P.E.) submits the North Carolina Department of Environment and Natural Resources (NCDENR) Application for Approval of Engineering Plans and Specifications for Water Supply Systems, copies of the Engineer's Report and the Project Specifications, along with the Plan & Profile to County/Town for review & subsequent approval. Any construction that will require digging or trenching in or along the North Carolina Department of Transportation (NCDOT) right-of-way (ROW), then the Owner/Developer must enter into a three (3) party encroachment agreement with the County/Town and the NCDOT. The Registered Professional Engineer (P.E.) will provide one (1) original and five (5) copies of a North Carolina Department of Transportation (NCDOT) Three-Party Encroachment Agreement [Form R/W 16.6] signed by the Owner/Developer along with the Plans and Specifications to be reviewed. The County/Town will endorse the Encroachment forms and return them to the Registered Professional Engineer (P.E.). The Registered Professional Engineer (P.E.) will submit the original and all copies of the signed NCDOT Encroachment form to the NCDOT Division Engineer for approval. The NCDOT Encroachment Agreement must be signed by the Owner/Developer along with one witness, by the County/Town along with one witness and approved by the NCDOT Division Engineer.

Plan Review by County/Town

The County/Town reviews the Plan & Profile, the Engineer's Report, and the Project Specifications for compliance with the established standards, ordinances, rules and regulations.

The County/Town will send the Registered Professional Engineer (P.E.) a Plan Review Comment Letter to the Registered Professional Engineer (P.E.) to discuss findings of the Plan Review and request revisions as necessary. The Registered Professional Engineer

(P.E.) incorporates any and all changes necessary into the Plan & Profile as directed by the Plan Review Comment Letter issued by the County/Town. And then resubmits the package back to the County/Town. Once the Plan & Profile satisfies all the established standards, ordinances, rules and regulations, then the County/Town will return the NCDENR Applications to the Registered Professional Engineer (P.E.) along with a Plan Approval letter.

Submission to NCDENR of Application, Plans, Specifications, Engineer's Report

The Registered Professional Engineer (P.E.) submits three (3) copies of the Application for Approval of Engineering Plans and Specifications for Water Supply Systems, three (3) copies of the Engineer's Report and Specifications, along with the latest version of the Plan & Profile to North Carolina Department of Environment & Natural Resources (NCDENR) – Public Water Supply Section (PWSS) for review & subsequent approval.

NCDENR-PWSS assigns a tracking number to the project and either approves the Engineers' Plans & Profile by signing the application and stamping the plans as "APPROVED"; or NCDENR-PWSS will return the package to the Registered Professional Engineer (P.E.) with a Comment Letter.

If the Registered Professional Engineer (P.E.) receives a Comment Letter from NCDENR-PWSS, then the Registered Professional Engineer (P.E.) must respond to NCDENR-PWSS directly and take the appropriate steps to satisfy all issues outlined in the Comment Letter from NCDENR-PWSS in order to obtain the necessary approval on the Engineering Plans.

Acquire the PERMIT

Once approved by the state, NCDENR-PWSS will issue an "AUTHORIZATION TO CONSTRUCT" Permit for the proposed water line extension that will be good for 24 months from the date of issue. If the "AUTHORIZATION TO CONSTRUCT" Permit expires before the project is completed, then the County/Town can apply for an extension on the permit if necessary. If construction does not begin before the "AUTHORIZATION TO CONSTRUCT" Permit expires, then the process must start all over and the Registered Professional Engineer (P.E.) must resubmit the entire package to the County/Town for approval and resubmit the NCDENR Applications to the Public Water Supply Section (PWSS) for review and subsequent approval into to get another "AUTHORIZATION TO CONSTRUCT" Permit.

Once the "AUTHORIZATION TO CONSTRUCT" Permit has been issued then the Owner/Developer may then hire a Licensed Utility Contractor to install the water system. The Licensed Utility Contractor shall provide least forty-eight (48) hours notice to the County/Town prior to the commencement of construction. The Licensed Utility Contractor, the Registered Professional Engineer (P.E.) and the Owner/Developer must schedule a pre-construction meeting with the County/Town before construction may begin to install the new water line extension(s). In addition, Licensed Utility Contractor should submit all the necessary documentation to the County/Town on the materials to be

used in construction of the approved project. The material submittals demonstrate that the materials will meet all specifications as outlined in the approved plans as designed by the Registered Professional Engineer (P.E.).

North Carolina One Call Center

Prior to digging and trenching, the Licensed Utility Contractor and all sub-contractors are required by state law to notify the North Carolina One Call Center at **1-800-632-4949** in order to request locators from each utility company to make an on-site visit for the purpose of locating all existing underground utilities. The Licensed Utility Contractor is responsible to ensure that all sub-contractors follow this requirement. Failure to follow this procedure can result in property damage, service outages, and possibly life threatening hazardous conditions.

Pre-Construction Meeting

A pre-construction meeting is scheduled to discuss the scope of the project, safety, and any additional site requirements that must be addressed prior to construction. Prior to digging and trenching, the Licensed Utility Contractor is responsible to ensure that all sub-contractors follow the approved plans and all requirements established by the NCDENR permit.

Construction

Following the pre-construction meeting, the Licensed Utility Contractor may begin construction in accordance with the approved plans. All underground utilities must be inspected by the County/Town prior to being buried. Every water line shall be installed with at least three (3') feet of cover along with all required blocking, reinforcement and proper backfilling of suitable soils. Each water main shall be marked and identified by installing a tracer wire (12 gauge insulated copper conductor) that is run along side the water main and it shall be terminated by rolling up approximately three (3') feet of wire at each end in the associated valve box. The underground utilities are normally installed along the North Carolina Department of Transportation (NCDOT) right-of-way (ROW). Property easement shall be issued to the County/Town for any underground utilities that are not installed along the North Carolina Department of Transportation (NCDOT) right-of-way (ROW) in order to provide legal access to the underground utilities for the purposes of operation, maintenance, testing, and repairs.

Field Changes

If the project work site requires any field changes, then all such change orders must be reported to the P.E. of record. The P.E. will then determine if the change orders are major or minor. Major change orders must be addressed by re-submitting the revised Engineering Plans to the County/Town and NCDENR for the necessary approval. Minor change orders may be documented on the As-Built Record Drawings once the construction is completed.

On-Site Field Inspection

The Field Liaison or Inspector for the County/Town will conduct on-site visits to inspect the quality of work throughout the course of the project. The quality and workmanship of each project shall meet the established standards of the American water Works Association (AWWA). After the water system has been installed and inspected by the County/Town, a pressure test is performed on the system in accordance with established requirements outlined in the rules, regulations and AWWA standard C-600.

Pressure Testing

Sections to be pressure tested shall be between valves not to exceed 2,000 feet per test. Duration for all pressure tests will not be less than 2 hours. All lines shall be tested at 50 psi over the working pressure or 200 psi whichever is greater. Allowable leakage shall not exceed 10 gallons/inch diameter/ mile/24 hours. Water for testing and blow-off may be obtained from existing water main. The contractor is responsible for any cost of water used during testing.

Flushing

Following the successful completion of the pressure test, the water system shall be flushed and cleaned. The contractor shall pump dry and dispose of all extraneous ground water, and other sand, gravel and foreign objects within the water main. Such material shall not be flushed into the existing operating sewer mains, pump stations or pertinent facilities. Flushing of water main lines under construction into sewer main lines is prohibited. Water for flushing and cleaning shall be provided by the County/Town upon payment of the appropriate fees for a fire hydrant meter in accordance with established standards, rates and regulations.

Disinfection

All new, cleaned or repaired water mains shall be disinfected in accordance with AWWA Standard C-601. The project specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains.

The following steps must be taken for satisfactory disinfection of new, cleaned or repaired water main(s) as outlined herein below:

- a. Water distribution systems including water mains shall be pressure tested with satisfactory results prior to starting any disinfection procedures. All water mains to be disinfected must be flushed to remove sediment and other foreign matter after testing for leaks. Pipe section(s) to be disinfected shall not exceed 5,000 feet under any circumstances.
- b. HCDPU requires that all water mains shall be disinfected using a chlorine solution only. No other chemicals may be introduced into a water main for any other reason. The water mains shall be disinfected by the addition and thorough dispersion of a chlorine solution in concentrations sufficient to produce a chlorine residual of at least 50 milligrams per liter (mg/l) or 50 parts per million (ppm) throughout the distribution system, including all water mains and storage tanks.

- c. The chlorine solution shall remain in contact with the internal surfaces of the water system for a period of not less than 24 hours.
- d. Following at least 24 hours of contact time, the pipe section(s) shall be flushed and refilled with fresh, potable water from an approved water source until the chlorine solution is dispelled.
- e. Representative samples of the water in the pipe section(s) shall then be collected by the Contractor at least 72 hours after the pipe is flushed and refilled. The representative sample(s) collected by the Contractor shall be submitted to the HCDPU laboratory for microbiological /bacteriological analysis and subsequent approval.
- f. If the microbiological /bacteriological tests of the water samples indicate that the water quality is satisfactory, then the water main(s) may be approved to be placed into service.
- g. If the microbiological /bacteriological tests of the water samples indicate that the water quality is unsatisfactory, then the water mains shall be flushed and disinfected again until satisfactory bacteriological test results are attained before the water main(s) may be approved to be placed into service.

Final Inspection

A Final Inspection is performed by the County/Town Field Liaison or Inspector. This Final Inspection will be required for the project to be approved by the County/Town. Upon acceptance of the new water system, the Engineer of record will complete a thorough review of the entire project including all field changes and adjustments.

Request for Final Documents

Following the Final Inspection, the County/Town will send a letter to the Engineer of record requesting the Engineer's Certification, the Cost of the System, along with the As-Built Record Drawings record in three (3) formats: Blueprints, Mylars, and Digital Drawings.

As-Built RECORD Drawings & Engineer's Certification

As-Built RECORD Drawings are produced by the Engineer of record in three (3) formats: Blueprints, Mylars, and Digital Drawings. The Engineer of record will submit the As-Built RECORD Drawings in all three (3) formats above along with the Engineer's Certification and the Cost of the System to the County/Town that will assume ownership of the system.

Final Certifications

Upon receipt of the Engineer's Certification, the Cost of the System, along with the As-Built Record Drawings record in three (3) formats: Blueprints, Mylars, and Digital Drawings the County/Town will submit copies of the Engineer's Certification along with an Applicant Certification Form to NCDENR for Final Approval by the State of North Carolina in accordance with 15A NCAC 18C .0303 (c). At this point, the County/Town is certifying to the State of North Carolina that all requirements have been completely satisfied and the County/Town is prepared to accept the new system and tie it into the existing water system.

Warranty Period

The County/Town will accept the new water system and allow it to be activated once NCDENR has issued the Final Approval. The Owner/Developer will provide the necessary documents to the County/Town to transfer ownership of the new water system along with all necessary easements when the Plat or Final Map is recorded with the Register of Deeds Office. The Owner/Developer will then turn over the control and ownership of the new system to the County/Town with a one (1) year warranty.

The County/Town will then accept the new water system with a one (1) year warranty period beginning on (date), and ending on (date). This subdivision or new water system will be serviced through the appropriate Water and Sewer District of the County/Town. A final inspection will be conducted by the County/Town Field Liaison or Inspector at the end of the one (1) year warranty period.

Note:

The warranty period shall begin at the discretion of the County/Town. However, once the County/Town accepts all the applicable capacity fees, taps, fees, meter fees and places the first meter into service, then this action should imply acceptance of the new water system.

Final Inspection & End of Warranty Period

At the time of final acceptance, the County/Town will send the Owner/Developer a letter to inform the Owner/Developer when the warranty period shall end. The County/Town will conduct a final warranty inspection of the new water system. The new water system is now considered complete and is accepted as part of the appropriate Water & Sewer District of the County/Town.