

Prepared by:
Rummel, Klepper & Kahl, LLP
Consulting Engineers
900 Ridgefield Drive, Suite 350
Raleigh, NC 27609
Phone: (919) 878-9560
Fax: (919) 790-8382



PROJECT SPECIAL PROVISIONS

Cape Fear Public Utility Authority; Water & Sanitary Sewer Line Construction
August 19, 2016

GENERAL CONSTRUCTION REQUIREMENTS:

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation "Standard Specifications for Roads and Structures" dated January 2012, Cape Fear Public Utility Authority's "Technical Standard Specification and Detail Manual" and the provisions outlined below.

Contractor shall meet the installation standards of the AWWA or ASTM for water line construction.

Construct gravity sanitary sewer in conformance with NCDENR "Gravity Sewer Minimum Design Criteria".

Owner and Owner's Requirements:

The existing water mains and sanitary sewer mains are owned by the Cape Fear Public Utility Authority (CFPUA). The primary contact person for the owner is Mr. David Dailey; office phone: (910) 332-6626. The contractor shall provide access for the owner's representatives to all phases of construction. Contractor and contractor's utility contractor shall schedule a pre-construction meeting with CFPUA prior to any utility work starting. The owner shall also be notified two (2) weeks prior to commencement of any work and one (1) week prior to service interruption. Interruption of water service on main lines shall be limited to a maximum of 4 hours during regular working hours unless otherwise approved by the Cape Fear Public Utility Authority.

It shall be the Contractor's responsibility to meet with the CFPUA and provide the CFPUA with any documentation the CFPUA requires regarding shut downs and tie-ins to all the CFPUA's water and sanitary sewer facilities; as well as to notify customers affected by necessary shut downs of the existing water system at least 24 hours in advance.

Only the CFPUA's Public Works personnel shall operate valves and hydrants except in the case of an emergency. Notify the owner immediately of an emergency requiring valve or hydrant operation.

All removed water meters and fire hydrants shall be stockpiled by the Contractor in one area accessible for the owner to pick up.

Any cracked, damaged, or defective pipe, fittings, or other attachments discovered as a result of the pressure test, shall be removed and replaced with sound material. The tests shall be repeated until test results are satisfactory.

The Contractor shall have Bacteriological testing samples analyzed per CFPUA specifications.

The Contractor shall have each manhole vacuum tested after completing pipe connections and sealing but before completing backfill around manhole. See CFPUA testing requirements.

Sewer pipe Deflection testing shall be performed per CFPUA testing requirements.

Revise the NCDOT 2012 "Standard Specifications for Roads and Structures" as follows:

Page 15-7, Subarticle 1510-3 (A) Construction Requirements:

Follow the allowable leakage formula from the most current versions of AWWA C600 (for ductile iron pipe) or AWWA C605 (for PVC pipe). The allowable leakage formula is:

$$W=LD(P)^{1/2} / 148,000$$

For disinfection, use the "Continuous-Feed Method" as described in the most current version of AWWA C651, Section 4.4.3 and as directed in NCDENR "The Rules of Governing Public Water Systems", Section .1003. This method requires a solution of at least 50ppm chlorine to be introduced into the new pipe line and held for at least 24 hours. During this time, the residual concentration of chlorine shall remain at least 10ppm. If the chlorine concentration drops below 10ppm, the test shall be repeated. Collected samples shall be analyzed at a state approved laboratory and the result provided to the utility owner.

The testing, cleaning and sterilization shall be performed consecutively.

Page 15-14, Article 1520-3(A)(2) Testing, line 5:

Test all 24" and smaller gravity sewer lines for leakage using infiltration, exfiltration, or air test. Perform visual inspection on gravity sewer lines larger than 24". Perform line and grade testing and deflection testing on all gravity sewer lines.

Utility Locations Shown on the Plans:

The locations, sizes, and type material of the existing utilities shown on the plans are from the best available information. The contractor will be responsible for determining the exact location, size, and type of material of the existing facilities necessary for the construction of the proposed utilities and to avoid damage to existing facilities. All water and sanitary sewer services disturbed during construction shall be reconnected, even if not shown on the plans. Contractor is to make the Engineer/owner aware of any plan discrepancies.

Water line location in relation to sewers shall conform to NCDOT's 2012 "Standard Specifications for Roads and Structures" Section 1500-5 and NCDENR's "The Rules of Governing Public Water Systems" Section .0906.

Ductile iron pipe fittings shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans and/or as directed by the Engineer.

Ductile iron bends and tees shall be in accordance with the applicable requirements of ANSI A21.10 (AWWA C110) or ANSI 21.53 (AWWA C153). Joints for such bends and tees shall be cement mortar lined and seal coated in accordance with ANSI A21.4 (AWWA C104). All ductile iron pipe fittings shall have a minimum working pressure of 250 PSI.

For the purpose of identification of buried plastic or non-metallic pressurized pipes during future trenching or location, a continuous "detectable" identification wire shall be installed. The wire shall be a minimum 12 gauge, single strand, coated copper wire that is suitable for underground use. The wire shall be buried continuously along the pipe.

The Contractor shall abandon/remove the existing asbestos cement (AC) water line in accordance with Federal, State and local regulations.

All water services being installed or relocated shall be provided with copper tubing. PE tubing or piping will not be used on this project. Copper water tubing shall be Type K, soft copper manufactured in accordance with ASTM B88. The minimum pressure rating for the copper water pipe shall be 65 PSI. Valves on water mains that are being abandoned shall either be removed or closed and the top of the valve box removed and backfilled in accordance with NCDOT standards.

PVC gravity sewer pipe shall meet the requirements of ASTM 3034 with a minimum SDR of 35. Joints shall be push on type.

Open Cut Installation:

All water and sanitary sewer line construction performed using open cut installation within or adjacent to traffic shall have the final approved traffic control measures in place prior to beginning any open cut installation.

Material Specifications:

When brand names of materials have been determined, the Contractor shall obtain approval, through the engineer or owner prior to their use and/or installation.

Then Contractor shall furnish, but is not limited to furnishing, catalog cuts and/or shop drawings of the materials. Thirty days shall be allowed for the Engineer's review of each submittal. Eight copies of each catalog cut and/or shop drawing (signed and sealed) shall be submitted.

COMPENSATION:

No direct payment will be made for utility construction work required by the preceding provisions which are general requirements applying to utility construction, and all of the requirements stated will be considered incidental work, paid for under the various contract pay items.