



Project: B-3866  
County: LENOIR/GREENE

PROJECT SPECIAL PROVISIONS

Utility Construction

I. GENERAL CONSTRUCTION REQUIREMENTS:

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2002, and the following provisions.

The depth of pipeline installation may vary to achieve minimum clearance of existing or proposed utilities or storm drainage while maintaining the minimum cover specified (whether existing or proposed pipelines, conduits, cables, mains, and storm drainage are shown on the plans or not).

After the installed pipe, fittings, valves, hydrants, corporation stops and end plugs are inserted and secured, the pipe line shall be subjected to hydrostatic pressure test of 200 psi for a period of 2 hours, by pumping the section full of clean water using an approved pressure pump. Cross connection for flushing and chlorination shall be made by means of a temporary connection from the supply pipe with an approved backflow prevention device. Taps for the cross connection piping shall be made to the portion of the existing water main that will be removed from service. The proposed water main shall be laid to within one pipe length of the point of final connection prior to flushing and testing. All flushing and chlorination work shall be performed in accordance with AWWA C651-99. All fittings, valves and backflow prevention devices required for chlorination and testing shall be incidental to the cost of the pipe being tested.

Contractor shall make such arrangements, as the utility owner requires, for measuring and paying for water required to flush and test water mains.

Copies of bacterial testing reports shall be provided to the utility owner prior to activating new water mains.

Samples of water shall be taken at representative points along the pipeline by the contractor, in approved containers and submitted to a certified testing laboratory for bacterial and chlorine content.

**Owner and Owner's Requirements:**

The existing utilities belong to North Lenoir Water Corporation. The Contractor shall provide access for the owner's representatives to all phases of construction. Notify the owner two weeks before commencement of any work and one week before service interruption.

**Utility Locations Shown on the Plans:**

The location, size, 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 material of the existing facilities necessary for the construction of the proposed utilities and to avoid damage to existing facilities.

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 at the contract unit prices of the various utility items included in the contract.

**1. BEDDING MATERIAL:**

Bedding material for utility lines shall be installed in accordance with the applicable utility provisions herein, as shown on the utility construction plans, and/or as directed by the Engineer.

Bedding material shall meet the requirements of Article 1016-3 of the Standard Specifications. Bedding material shall be installed in accordance with Articles 300-6 and 300-7 of the Standard Specifications.

Bedding material installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price per ton for "Bedding Material, Utilities Class IV". Such prices and payments shall be full compensation for all materials, labor, equipment, compaction and shaping the bedding material in accordance with Article 300-4 of the Standard Specifications, and incidentals necessary to complete the work as required.

**2. 2" BLOW OFF ASSEMBLY**

Install blow off assemblies with dead end blocking in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

Blow off assemblies shall consist of valve boxes, concrete blocking, concrete pads, and the necessary pipe fittings and adapters.

Gate valve shall open by turning counter clockwise and shall be in accordance with the most recent edition of AWWA C-509 and such ASTM designations as apply with reference to chemical requirements as set forth in Table I of ASTM B-62. The working pressure of all valves shall be 200# WP.

All water pipe shall meet the requirements of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2002. Connect pipe using threaded fittings. Observe all local plumbing codes.

Valve boxes shall be of the screw or slip type, with a base to fit the valve yoke and a removable plug cap with the word "WATER" cast therein. Valve boxes shall be of cast iron conforming to ASTM A48, Class 35, unless otherwise shown on the utility plans and/or as directed by the Engineer.

**Install concrete blocking and concrete pads as shown on the utility plans and/or as directed by the Engineer.**

Blow off assemblies installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for " 2" Blow Off Assembly ". Such prices and payments shall be full compensation for all materials, labor, equipment, excavation, installation, sterilization, pressure testing, valve box installation with the necessary extension pieces, backfilling, and incidentals necessary to complete the work as required.

### **3. 4" HDPE Water Pipe**

4 " High Density Polyethylene (HDPE) Water Pipe to be installed by directional bore beneath Wheat Swamp Creek and wetlands. Install water pipe in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

#### **DESCRIPTION\MATERIAL**

HDPE Water Pipe to be 4", SDR 9, 200 PSI, manufactured in accordance with ANSI /AWWA C906-90. HDPE Pipe materials shall be either PE 2406, PE 3406 or PE 3408 depending upon the required pressure class and dimension ratio (SDR) specified on the plans. Polyethylene plastic water pipe shall meet the requirements of the National Sanitation Foundation Seal of Approval for potable water.

Furnish fittings to connect to ductile iron water pipe and fuse onto each end of the HDPE water pipe.

North Lenoir Water Corporation requires a mechanical joint grip ring at points where 4" HDPE Water pipe and 3" PVC Water pipe are joined.

Drilling fluid to be bentonite slurry. Use admixtures suitable to the site conditions.

### **CONSTRUCTION REQUIREMENTS**

HDPE water pipe to be fused and tested prior to placement beneath the river. Join pipe segments by cutting the ends square, heating and fusing under sufficient pressure to create a single length of pipe sufficient to complete installation in one continuous pulling operation. The pipe manufacturers listing of fusion parameters validated by appropriate testing and the parameters of the contractor's fusion system shall be submitted to the Resident Engineer prior to fusing of segments of HDPE water pipe into the pipe string. HDPE water pipe string to be tested to a hydrostatic pressure of 200 psi in accordance with testing procedure outlined in section 1510 of the standard specifications prior to being placed beneath the Wheat Swamp Creek.

HDPE water pipe to be installed beneath the creek by boring or drilling a small pilot hole along a parabolic arc beneath the creek. A minimum cover of 3 feet of cover shall be maintained over the HDPE water pipe at all times. The profile shown on the plans is from the best available information and is for informational purposes only. Enlarge the pilot hole by use of a reamer or reamers to the desired diameter. When the bored hole is of the diameter recommended by the pipe manufacturer for the 4" HDPE water pipe, the contractor will pull the pipe string through the hole by the drill string. Cap the pipe string during the pulling operation. Pulling operation to incorporate a swivel connection to minimize torsional stress imposed upon the pipe string. Fully support the pipe string before and during pull back so that the pipe string will move freely without damage. Contractor may elect to conduct reaming and pulling of the pipe string as one operation at the discretion of the engineer.

Drilling fluid to be re-circulated through use of a solids control system to remove spoil from drilling fluid surface returns. After cleaning, return the drilling fluid surface returns to the active system.

### **METHOD OF MEASUREMENT/METHOD OF PAYMENT**

HDPE Water Pipe, installed in accordance with the plans and provisions herein and accepted, will be measured along the pipe from end to end, with no deductions for fittings or couplings, and paid for at the contract unit price per linear foot for "4" HDPE Water Pipe by Directional Bore". Such prices and payments will be full compensation for furnishing all labor, equipment, material, couplings and fittings, excavation, installation, testing, backfilling, and incidentals necessary to complete the work as required.

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PROJECT SPECIAL PROVISIONS

UTILITIES BY OTHERS:

General:

The following utility companies have facilities that will be in conflict with the construction of this project:

- A. SPRINT
- B. PROGRESS ENERGY

The conflicting facilities of these concerns will be adjusted prior to the date of availability, unless otherwise noted and are therefore listed in these special provisions for the benefit of the Contractor. The utility owners will do all utility work listed herein. All utilities are shown on the plans from the best available information.

The Contractor's attention is directed to Article 105.8 of the Standard Specifications.

Utilities Requiring Adjustment:

- A. SPRINT  
The new lines will be installed and completed by date of availability.  
See Utilities by Others Plans for details.
- B. PROGRESS ENERGY  
Power poles are to remain in place along the west side of bridge.  
See Utilities by Others Plans for details.