



Project : B-4009
County: Anson

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 Contractor is herein forewarned as to the possibility of having to vary the depth of pipeline installation to achieve minimum clearance of existing or proposed utilities or storm drainage while maintaining minimum cover specified (whether existing or proposed pipelines, conduits, cables, mains, and storm drainage are shown on the plans or not).

Owner and Owner's Requirements:

The existing utilities belong to the County of Anson. The Contractor shall provide access for the owner's representatives to all phases of construction. The owners shall be notified two weeks prior to commencement of any work and one week prior to service interruption.

The owners shall be notified in advance of any interruptions of water service with ample time to make arrangements. Interruption of water service on main lines shall be limited to a maximum of 8 hours unless approved by the Engineer.

After the installed pipe, fittings, valves, hydrants, corporation stops and end plugs are inserted and secured, the pipeline shall be subjected to a hydrostatic pressure 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. Cross connection and blowoff piping shall be 2 inches in diameter for mains 8-inches and smaller, and 4 inches in diameter for mains greater than 8-inches but less than 16 inches in diameter. 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 proposed pipe being tested.

Any cracked, damaged, or defective pipe, fittings, valves, hydrants, 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.

After the pressure test is complete, the Contractor shall make a leakage test. Such leakage test shall last at least 2 hours at a pressure of 200 psi.

The pressure test and leakage test may be performed concurrently.

All valves on the lines being sterilized shall be opened and closed several times during the chlorinating period. The pipeline shall be flushed with clean water until the residual chlorine is reduced to less than 1.0 ppm or at the same level as in the existing 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. Test results shall be provided to Anson County.

II. 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

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 ____". 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. ____" HDPE WATER PIPE BY DIRECTIONAL BORE:

High Density Polyethelyne (HDPE) Water Pipe to be installed by directional boring or drilling beneath Brown Creek and Little Brown Creek. Install water pipe in accordance

with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

HDPE Water Pipe is to be, SDR 9, 200 # WP and 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.

Concrete for thrust restraint shall be class B concrete meeting the requirements of Section 1000 of the Standard Specifications. The concrete shall be placed around the pipe as shown on the plans and/or as directed by the Engineer. The proposed HDPE water pipe shall have a fitting with an integral ring for thrust restraint fused into the pipe string adjacent to the proposed adapter from HDPE to the DI fitting. The proposed DI reducer shall be tied to the concrete thrust collar by threaded rods.

The reinforcing steel shall meet the requirements of Section 1070 of the Standard Specifications. Reinforcing steel shall be placed in the center of the thrust block and shall be tied to the threaded rods.

Threaded rods shall be A-36 steel and shall match the diameter of the bolts in the coupling and/or ductile iron force main pipe fitting, but shall be no less than 3/4" diameter. The proposed transition coupling and/or the nearest ductile iron water pipe fitting shall be tied to the thrust block. A minimum of four threaded rods shall be used, located as shown on the plans.

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

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 manufacturer's 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 # WP in accordance with testing procedure outlined in section 1510 of the standard specifications prior to being placed beneath Brown Creek and Little Brown Creek.

HDPE water pipe to be installed beneath Brown Creek and Little Brown Creek by boring or drilling a small pilot hole along a parabolic arc beneath the creeks. A minimum cover of 3 feet shall be maintained over the HDPE water pipe at all times. 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 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. HDPE Water Pipe installed by directional boring shall not be connected to existing pipe or fittings for one week from the time of installation to allow tensional stresses to relax. Contractor may elect to conduct reaming and pulling of the pipe string as one operation at the discretion of the engineer.

Locator Wire: A 10 guage insulated copper wire shall run continuously and shall be taped securely to the water main. The locator wire shall be accessible above ground at locations not to exceed one thousand feet (1,000) and shall be protected by a metal cleanout box or cathodic test station. Cost and installation of the locator wire shall be considered incidental to the installation of the water main.

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.

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 “___” HDPE Water Pipe by Directional Bore “. Such prices and payments will be full compensation for furnishing all labor, equipment, material, couplings and fittings, reducers, excavation, installation, locator wires, connector assemblies, testing, backfilling, and incidentals necessary to complete the work as required.

PROJECT: B-4009
COUNTY: Anson

PROJECT SPECIAL PROVISIONS
UTILITY

GENERAL:

THE FOLLOWING UTILITY COMPANIES HAVE FACILITIES THAT WILL BE IN CONFLICT WITH THE CONSTRUCTION OF THIS PROJECT:

- A. PROGRESS ENERGY (POWER - DISTRIBUTION)**
- B. ALLTEL**
- C. WFL CABLE**

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. ALL UTILITY WORK LISTED HEREIN WILL BE DONE BY THE UTILITY OWNERS. 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.

- A. PROGRESS ENERGY (POWER - DISTRIBUTION)**
(NO CONFLICTS)
- B. ALLTEL**
(NO CONFLICTS)
- C. WFL CABLE**

1. All existing buried CATV cable will remain in place and be adjusted as needed during construction. The contractor will provide WFL Cable seven (7) calendar days notice and seven (7) calendar days to complete this work.