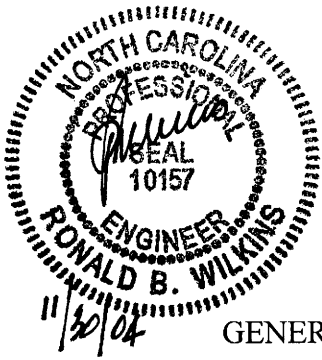


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PROJECT SPECIAL PROVISIONS
Utility Construction



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).

On new force main sewers or water lines, and tie in sections of existing force main sewers or water lines, the method of anchoring pipe bends, valves, and related appurtenances will be the responsibility of the Contractor. Tying in to existing force main sewers or water lines may alter such lines to the extent that these pipelines with existing pipe bends, valves and related appurtenances may also require reaction backing; this work shall also be the responsibility of the Contractor.

The Contractor shall submit his proposed method of anchoring to the Engineer for review and approval prior to any applicable force main sewer construction. Such approval will not relieve the Contractor of his responsibility of properly anchoring the force main sewers. Concrete thrust blocking and/or thrust collars shall be installed as noted on the utility construction plans and details, and as directed by the Engineer, and shall be incidental to the pipe being anchored.

Owner and Owner's Requirements:

The existing water and sewer lines belong to Robeson County Public Works Department. The contact person for the Robeson County Public Works Department is Mr. Henry Harris. Mr. Harris can be reached by telephone at (910) 671-3485. 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.

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 in diameter 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, 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 then 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 by the Robeson County Public Works Department representatives points along the pipeline in approved containers and submitted to a certified testing laboratory for bacterial and chlorine content. The Robeson County Public Works Department will provide copies of the certified test reports to the Engineer who will in turn provide certified copies to the Contractor for his records.

Water meters that require relocation shall be relocated as shown on the utility construction plans. Relocation of the water meters shall be paid for as noted in the Standard Specifications. Should backflow prevention devices be present on the existing water meters, relocation of such devices shall be incidental.

The owners shall be notified in advance of any interruptions of water or sewer service with ample time to make arrangements. Interruption of water service on main lines shall be limited to a maximum of 4 hours unless approved by the Engineer.

Utilities and Utility Locations Shown on the Plans:

The location, size, and type material of the existing utilities shown on the plans is 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. The Engineer shall be notified of the Contractor's findings regarding material type and condition as soon as this information is obtained.

All water lines shall be installed with a minimum of three feet of cover. Installation that requires more than two-meters of fill over the proposed line shall be evaluated by the Engineer on a case by case basis.

Gate Valves and Butterfly Valves:

All butterfly valves and gate valves shall conform to the requirements of ANSI/AWWA C504 and/or ANSI/AWWA C509. The direction of rotation of the handwheel or wrench nut to open the valve shall be to the left or counterclockwise.

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 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 ____". Such prices and payments shall be full compensation for all materials, labor, equipment, compaction and shaping the bedding material in accordance with the Standard Specifications, and incidentals necessary to complete the work as required

2. HDPE WATER PIPE BY DIRECTIONAL BORE:

High-density polyethylene (HDPE) water pipe shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer

HDPE water pipe shall be DR9, 200 PSI WP, manufactured in accordance with ANSI/AWWA C906. HDPE pipe materials shall be made from materials conforming to standard PE code designation PE 3408, and shall meet the National Sanitation Foundation Standard Number 61 (Drinking Water System Components – Health Effects).

The Contractor shall furnish fittings necessary to connect the ductile iron water main to the HDPE, and fuse the fittings onto each end of the HDPE section of water line.

Drilling fluid shall consist of bentonite slurry. Admixtures may be added which are suitable to the site conditions encountered.

HDPE water line shall be fused prior to placement beneath the stream noted on the plans. Join pipe segments by cutting 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 systems, shall be submitted to the Resident Engineer prior to fusing segments of HDPE water pipe into the pipe string.

After installation, the HDPE water pipe string shall be tested under the stream to a hydrostatic pressure of 200 PSI in accordance with the testing procedures outlined in Section 1520 of the Standard Specifications and elsewhere in these provisions.

HDPE water pipe shall be installed beneath the stream by boring or drilling a small pilot hole along a parabolic arc beneath the stream. A minimum cover of one meter 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 HDPE water line, the Contractor shall pull the pipe string through the hole by the drill string. Cap the pipe string during the pulling operation. The pulling operation shall incorporate a swivel connection to minimize torsional stresses 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.

The Contractor may elect to conduct reaming and pulling of the pipe string in one operation at the discretion of the Engineer. The reamer head shall be fitted with a sleeve to prevent possible spalling that may become lodged and prohibit the pull back of the pipe string.

Drilling fluid shall re-circulated through the use of a solid 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, excavation, installation, testing, backfilling, and incidentals necessary to complete the work as required.

PROJECT SPECIAL PROVISIONS
UTILITYUTILITIES BY OTHERS

GENERAL:

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

- A. LUMBEE RIVER EMC
- B. BELL SOUTH

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. LUMBEE RIVER EMC

1. SEE UTILITIES BY OTHERS FOR RELOCATION DETAILS.

B. BELL SOUTH

1. SEE UTILITIES BY OTHERS FOR RELOCATION DETAILS.
2. THE CONTRACTOR SHALL COMPLETE CLEARING AND GRUBBING OPERATIONS NORTH AND WEST OF THE PROPOSED BRIDGE BETWEEN STATIONS 11+50 AND 16+00 BEFORE BELL SOUTH INSTALLS THEIR NEW BURIED CABLE. UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS IN THE AFOREMENTIONED AREA, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND BELL SOUTH. THE CONTRACTOR SHALL THEN ALLOW BELL SOUTH ONE WEEK TO COMPLETE INSTALLATION OF THE BURIED CABLE.