

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 1.38 MPa 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.

All gate valves shall be mechanical joint, Resilient seated and rodded.

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 the Town of Ellerbe and Richmond County. 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.

The Town of Ellerbe requests that any shutdown of their waterlines be done between the hours of 8:00 PM and 5:00 AM in order to reduce the impact to area businesses.

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 metric 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. RELOCATE EXISTING WATER METER:

The existing water meters and meter boxes that are to be relocated shall be installed at the locations shown on the utility plans, or as directed by the Engineer.

The relocation of water meters shall consist of the removal and installation at the appropriate location of the water meter, meter yoke, meter valve, and meter box. Any fittings necessary to reconnect the relocated meter to the water line will be considered incidental. Any pipe necessary to complete the relocation will be paid for as provided elsewhere in these provisions.

All work shall be in accordance with the applicable plumbing codes, as shown on the plans, and as directed by the Engineer.

Relocated meter boxes shall be placed with the top of the meter box flush with finish grade of the project.

The quantity of water meters and meter boxes relocated and accepted will be measured and paid for at the contract unit price each for "Relocate Existing Water Meter". Such price and payment will be full compensation for all labor, excavation, removing, installing and reconnecting the meter and box, backfilling, and incidentals necessary to complete the work as required.

3. POLYETHYLENE (PE) PLASTIC WATER TUBING:

Polyethylene plastic water tubing shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

PE water tubing shall conform to ASTM D2737 or AWWA C901. PE tubing 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 tubing shall meet the requirements of the National Sanitation Foundation Seal of Approval for potable water.

The ends of the plastic water tubing shall be connected using approved compression type couplings and/or compression type fittings. Such couplings and fittings shall have been approved by the Engineer.

Polyethylene plastic water tubing, 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 meter for "___" mm PE Water Tubing, SDR 9, 1.38 MPa WP". Such prices and payments will be full compensation for furnishing all labor, equipment, material, compression couplings and fittings, excavation, chlorinating, backfilling, and incidentals necessary to complete the work as required.

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4. TRENCHLESS INSTALLATION OF UTILITY PIPES

Description

Install the pipeline by a trenchless method designed by a Professional Engineer.

Materials

Grout Article 1040-9
 Flowable fillSection 340
 Steel casing pipe Article 1036-4
 Structural timberSection 1082
 Structural steelSection 1072
 ConcreteSection1000
 Steel tunnel liner plates shall meet the requirements of AASHTO Section 16 and Section 25 Standard Specifications for Highway Bridges
 Other materials will be considered with adequate design and quality control.

Construction Requirements

Install the pipeline to the lines and grades shown on the plans.

Use methods of construction and installation that will not disturb the soils outside of the immediate vicinity of the pipeline. Before construction, provide detailed plans for the method of installation certified by a Professional Engineer. Provide certified calculations demonstrating the method of installation as safe and of minimal risk. Provide certified calculations of the structural adequacy of all materials. The design shall meet the applicable requirements of AASHTO Standard Specifications for Highway Bridges. A Professional Engineer shall certify changes or modifications to the designed method.

The Contractor shall conduct in the presence of the DOT Engineer a pre-construction meeting to review the proposed method for installation of the pipe. The meeting shall consist of, but is not limited to, reviewing all installation methods to insure no settlement of the pipe or the completed roadway section and for filling any potential voids around the pipe. The pre-construction meeting for each installation shall be held at least 48 hours before the beginning of the installation.

Before excavation, establish control points for measuring settlement of the road at 10-foot intervals along the centerline and 10 feet each side of the pipeline. A licensed Land Surveyor shall monitor these points daily until construction is complete.

Provide groundwater control and removal as appropriate for the method of excavation and installation. Remove the groundwater using an engineered dewatering system. Keep surface waters out of the excavation and pits.

Maintain continuous and active support to the soils surrounding the excavation. Work continuously (24 hrs/day and 7 days/week) on the operations from the time the excavation

begins through the filling of voids. Alternatively, during periods of work stoppage, shore the excavation using an engineered system.

Fill all voids around the pipeline with structural fill material. Fill the annular space between the pipeline and any casing pipes, tunnel liners, or other shoring.

Use workers that are skilled in the method of construction. Construct the tunnel with good workmanship by skilled workers along with proper safety precautions.

The Contractor at no cost to the Department shall replace damaged or defective installations. The method to be used shall be designed by the Contractor's Engineer and approved by the Resident Engineer.

Method of Measurement

Trenchless Installation in Soil

The quantity of trenchless installation in soil will be measured horizontally to the nearest tenth of a linear meter for installations in soil or installations that have not been observed by the Resident Engineer.

Basis of Payment

Payment for trenchless installation will be made as additional compensation for the various sizes and types of completed and accepted pipeline when installed by a trenchless method.

No additional payment will be made for access pits or shoring.

Such prices and payments will include, but is not limited to, furnishing all labor, tools, materials, equipment, groundwater control, shoring, and incidentals necessary for completing the work.

Payment will be made under:

Trenchless Installation of 300MM Water Pipe, in SoilLinear Meter

PROJECT: R-3303
COUNTY: Richmond County

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. ELLERBE TELEPHONE
- B. PEE DEE EMC
- C. PROGRESS ENERGY COMPANY-DISTRIBUTION
- D. TIME WARNER 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. 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. ELLERBE TELEPHONE
Ellerbe Telephone will relocate its facilities on existing Hwy 73 after the contractor clears and grubs the L line from station 8+40 to station 11+00. Ellerbe Telephone will require 2 weeks notice and 2 weeks construction to complete this work. See Utilities by Others Plans for details.
- B. PEE DEE EMC
The new lines will be installed and existing lines in conflict removed, all by date of availability. See Utilities by Others Plans for details.
- C. PROGRESS ENERGY COMPANY-DISTRIBUTION
The new lines will be installed and existing lines in conflict removed, all by date of availability. See Utilities by Others Plans for details.
- D. TIME WARNER CABLE
The new lines will be installed and existing lines in conflict removed, all by date of availability. Time Warner Cable will follow Progress Energy Company's relocation plans (on shared poles) on sheet UO-1. See Utilities by Others Plans for details.