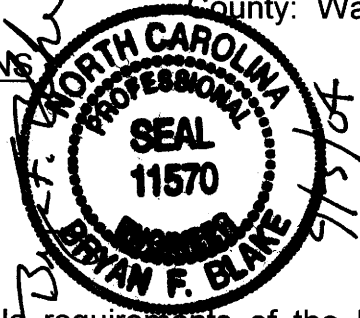


PROJECT SPECIAL PROVISIONS
Utility Construction



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 provisions outlined below.

Owner and Owner's Requirements:

The proposed sewer belongs to the Town of Wendell. The contact person is Tim Burgess, Town Manager. Mr. Burgess can be reached by telephone at (919) 365-4444. The Contractor shall provide access for the owner's representatives to all phases of construction. The owner shall be notified two weeks prior to commencement of any work and one week prior to any service interruption.

Inspection, Testing, and Acceptance - New Pipelines:

A. Inspection

- (1) Upon completion of each section of sewer or at such time as the Engineer may direct, a block or section of sewer shall be cleaned and inspected. All repairs shown necessary by the inspection shall be made. Broken or cracked pipe shall be replaced; defective joints, if any, replaced; all deposits removed; and the sewer left true to line and grade, entirely clean, free from lumps or protruding jointing material, etc., and ready for use. Each section of sewer between manholes shall show, upon examination from either end, a reasonably full circle of light.
- (2) Manholes shall be true circles of acceptable brick or block work, or for precast manhole, shall have no major defects. Tops shall be properly placed, and castings securely in place. Manholes shall show absolutely no evidence of leakage through the walls or bottom.

B. Testing

- (1) Infiltration and exfiltration shall be kept to the minimum amount possible. The allowable limit of groundwater infiltration/exfiltration for any or more selections of sewer with any type joint, including service lines, allowable under these specifications (all sizes), shall

not exceed 50 gallons per 24 hours per mile of sewer line per inch of diameter.

- (2) Any line that does not meet this specification will be rejected and must be repaired at the Contractor's expense.
- (3) No infiltration tests will be made until normal infiltration conditions are established. Tests shall be made before existing sewers or connections are made to new service lines and shall be measured by means of a V-notch weir inserted into the line at a manhole or built in a manhole. These tests will be conducted over a period of time sufficient to determine the correct rates of groundwater infiltration. Weir measurements shall be made at points designated by the Engineer along the completed pipelines, and at least one measurement shall be made for each pipe segment between manholes if requested by the Engineer. All expense of the above test or tests shall be borne by the Contractor and be included in the unit price bid per foot of sewer under each respective size of sewer. When infiltration occurs in excess of the specified amounts as hereinabove given, defective pipe or joints shall be located and repaired at the expense of the Contractor. If the defective portions cannot be so located, the Contractor shall, at his own expense, remove and reconstruct as much of the original work as necessary to obtain a sewer within the allowable infiltration limits upon retesting.
- (4) Where lines are above the ground water table, exfiltration testing will be required. Also for lines that may be seasonally under the ground water table or flood levels but, due to dry conditions, upon completion of construction normal infiltration conditions are not present (or the normal wet weather ground water level is not present), the Contractor has the option of conducting exfiltration tests in lieu of infiltration tests. Test procedure shall be as follows:
 - (a) Plug lower end of section to be tested.
 - (b) Fill line and manholes with water so that the level in the manhole furthest upstream is at least 3' above the top of the pipe, or a level as determined by the Engineer that models the height of the wet weather groundwater table or the local surface level during flood conditions.
 - (c) Let water stand overnight or at least 4 hours to allow all air to escape and sewer line to reach its maximum absorption.

- (d) After pipe has reached its maximum absorption, refill upstream manhole to original depth. After test period specified by the Engineer, record difference in elevation of water level and compute exfiltration rate. Minimum test period shall be six (6) hours.
- (e) When the leakage exceeds the specified amount, satisfactory correction shall be made. Both the measurement and the correction shall be made at no additional cost to the Owner.

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 material of the existing facilities necessary for the construction of the proposed utilities and to avoid damage to existing facilities.

Ductile iron pipe used for sanitary sewers shall be manufactured in accordance with AWWA Standard C-150-96. The minimum class pipe shall be a Class 50. Ductile iron may be used for any sewer main 8-inch and larger. Pipe joints shall be the "Push-on" type manufactured in accordance with AWWA Standard C-111-95. The outside of the pipe and fittings shall have a bituminous coating. The interior of the pipe shall be lined with a ceramic epoxy protective coating. Calcium aluminate coatings shall also be acceptable. Interior and exterior coating of the pipe shall be considered incidental to the sewer pipe.

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 VI". 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.

PROJECT SPECIAL PROVISIONS

Utility

UTILITIES BY OTHERS

General:

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

- A) Progress Energy (Distribution)
- B) Bell South - Telephone

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 owner. 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) Progress Energy (Distribution)

- 1) See Utilities by Others Plans.

NOTE: Progress Energy will complete relocations of their existing power distribution facilities to the new temporary location as shown on the utilities by others plans by the date of availability. After the detour is removed Progress Energy will relocate the temporary power distribution facilities to the new permanent location as shown on the utilities by others plans.

- B) Bell South - Telephone

- 1) See Utilities by Others Plans.

NOTE: The Contractor shall give Bell South two weeks notice prior to completing clearing and grubbing and allow Bell South two months to install a new telephone pole line to the new permanent location as shown on the utilities by others plans.

NOTE: All other utilities will remain in place and will be adjusted as necessary.