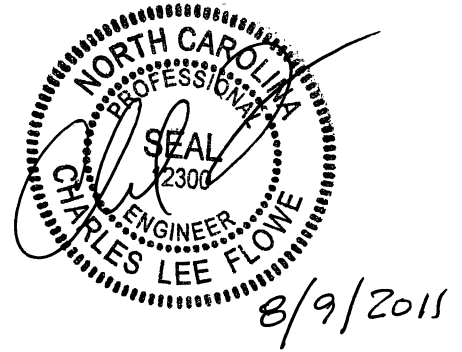




Project: B-4660 County: WAKE

PROJECT SPECIAL PROVISIONS
Utility Construction



I. Scope of Work

The Contractor shall be responsible for furnishing all equipment, labor and materials necessary to install a 12-inch ductile iron restrained joint water main from Station 23+78.00± -L- to 23+90.00± -L- and from 29+30± -L- to 29+84.00± -L-. This work will be performed concurrent and in coordination with the 12-inch ductile iron restrained joint water main installed by the Structural Plan and Special Provisions. Additionally, the Contractor will be responsible for the installation, relocation and protection of 8" PVC and 8" Ductile Iron Pipe gravity sewer and manholes as specified on the contract drawings. All water and sewer relocation and protection work shall be done in accordance with the Specifications as detailed below.

II. 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 2006, and the City of Raleigh Public Utilities Handbook, 2005 edition, as well as the following provisions.

The Contractor shall be responsible for field verifying location, size, type and elevation of all underground utilities, as well as reconnecting any water and/or sanitary sewer services disturbed during construction, even if they are not shown on the plans. The water line shall be installed as to provide a minimum of 3 feet of coverage above the top of pipe from finished grade, unless shown differently on plans. The Contractor shall verify that all new water and sanitary sewer lines have 10 feet horizontal clearance between each other.

The Contractor is herein forewarned as to the possibility of having to vary the depth of the 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, storm drainage are shown on the plans or not).

The existing water and sewer utilities belong to the City of Raleigh. 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 Contractor must call the Public Works at 890-3030 and give the location, project name, individual's name, company name, start date and indicate if it involves water or sewer relocations.

Interruption of water service on the 12 inch water main along SR 2000 (Falls of Neuse Road) has been approved by the City of Raleigh for the duration of the project contract in accordance with the construction plans.

Water lines and Valves:

Valve Operations:

No valve in the existing City of Raleigh system shall be operated without following the procedure outlined below. Failure to comply with these requirements shall be grounds for suspension of pipe-laying operations until written assurances can be obtained from a company official that such noncompliance will not occur again. The Contractor should be aware that the City of Raleigh regards violations of these requirements as justifying punitive measures.

Notification procedures are as follows:

- a. The Contractor shall notify the City of Raleigh Public Utilities Department's Maintenance Division at 250-2737 in order to request the operation of any valves. At least forty-eight hours notice should be given to the Public Utilities Department, and at least twenty-four hours notice must be given to each consumer affected by a water cut-off. The Contractor is responsible for notifying the affected consumers. All valve operations shall be done by a Public Utilities Department valve crew or by the City's representative..
- b. The Contractor shall provide the following information when calling for the Water Distribution Division valve operation:
 - (1) Name of person calling
 - (2) Name of company;
 - (3) Telephone number of company;
 - (4) Location of valve and map number if available;
 - (5) Reason for requesting operating and whether to be closed or open;
 - (6) Time valve to be opened or closed, and
 - (7) Approximate time water line to be out of service.
- c. Each time a Contractor needs a valve operated, he/she shall again secure permission, following the steps outlined.

- d. System valves shall be defined as any valve, which has main pressure against either gate face. Newly installed tapping valves and control valves to networks not yet accepted for service are considered as system valves. Valves within a network still under construction are not considered as system valves.

In case of an emergency, the Contractor shall be allowed to take such steps with the valves and hydrants as are necessary for the protection of life and property. Notification must be made after a break in a 4 inch or larger water main, or where ruptured smaller lines are causing property damage. After an emergency valve operation, the Contractor shall notify the Maintenance Division and give the details for that operation.

Hydrants shall not be operated without following the above procedures relative to requesting operating permission and reporting emergency use of hydrant.

Construction Water:

The City of Raleigh Public Utilities Department does not provide free or otherwise unmetered construction water for any construction project. Hydrant meters may only be moved with express written permission of the Public Utilities Department. In residential areas hydrant meters may only be used for the filling of swimming pools unless prior approval of the Public Utilities Department. Contractors are responsible for adequate construction water for their job sites in one of the following approved manners:

- a. Apply for permanent water service connection at the Inspections Department Permit Office, 4th floor, Raleigh Municipal Building, 222 West Hargett Street, (890-3450). Sufficient lead-time (6 weeks) should be provided for all new service taps and all fees must be paid in full prior to the work order being authorized.
- b. Apply in person with the Public Utilities Meters Division Office, 3304 Lake Woodard Drive, for rental of a hydrant meter. There are a limited number of these meters and they are reserved in advance by contacting the Meter Division (250-2797). A deposit is required along with a per month rental fee per account plus the cost of the water used, at the outside City rate. Hydrant meters are read in 100 cubic feet (ccf). There is a minimum rental fee and an administration fee for billing and closing an account. A service charge is charged when accounts are closed. Customers are responsible for notifying the Meters Division if the meter is not registering usage. The following information is required:

(1) Meter location;

- (2) Billing address, telephone number, responsible party name, and federal tax id#;
 - (3) Location of hydrant;
 - (4) Water to be used for;
 - (5) Duration of use and frequency of meter reading,
 - (6) Meters must be brought to the Utilities Operations Center for monthly reading.
- c. Upon application approval, the City shall install hydrant meters and approved backflow prevention Devices on the fire hydrant requested by the customer, but acceptable to the City, within three (3) business days of the application and deposit being received.
 - d. Hydrant meters accounts are billed monthly. Failure to report usage in a timely manner for billing or accounts that are not paid in full will result in the loss of water service and the closing of the account with the City.
 - e. Hydrant meters will only be set when the temperature is over 35 degrees. Damage to meters from cold weather or abuse will be charged to the customers.
 - f. Hydrant meters used for long term use shall be returned at the end of every one year block for inspection.

Upon completion of hydrant usage, deposits shall be refunded to customers within 30 days provided the following has occurred:

- 1. Hydrant meter and backflow device have been returned in good condition, with no excessive wear nor damage.
 - 2. All outstanding water usage charges and rental charges for the meter and backflow device have been paid in full by the customer.
- g. The cut off to apply for new accounts is 3:00 PM each business day.
 - h. It is a violation of the City Code to establish a direct connection to a fire hydrant to fill a tank or tank vehicle. It is also illegal to use a RP or Double detector check valve on a domestic or fireline service for temporary water service. Violations of the City Code will result in loss of service, fines, and other measures as specified by the code.
 - i. Continued use of a hydrant meter, when usage readings are not being registered is considered theft of City water and subject to civil

penalties of \$500.00/day. It is the responsibility of the customer to notify the Meters Division at 250-2737 when the meter is not registering/recording the water usage properly.

- j. Hydrant meters and backflow assemblies approved for use in this program is the property of the City of Raleigh Utilities Department. Failure to return the hydrant meter and backflow preventer at the end of the rental period will be considered theft of City property and prosecuted to the fullest extent of the law.

Note: Individuals caught using water unmetered and/or unauthorized by the Public Utilities Department will be prosecuted to the fullest extent of the law.

Material Specifications:

When brand names of materials have been determined, the Contractor shall obtain approval, through the engineer and the owner prior to their use and/or installation.

Then Contractor shall furnish, but is not limited to furnishing, catalog cuts and/or shop drawings of the materials. Thirty days shall be allowed for the engineer's review of each submittal eight copies of each catalog cut and/or shop drawing (signed and sealed) shall be submitted.

Bedding Material:

Bedding material for utility lines shall be installed in accordance with the applicable City of Raleigh Public Utilities Handbook, 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 and the detail sheets which are part of the Utility Construction Plans.

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. 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.

Ductile Iron “Restrained Joint” Pipe:

Ductile iron restrained joint 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.

Ductile iron restrained joint water pipe shall be of the thickness class and pressure rating shown on the utility plans and shall conform to ANSI A21.51 (AWWA C151). Push-on joints for such pipe shall be in accordance with ANSI A21.11 (AWWA C111). Pipe thickness shall be designed in accordance with ANSI A21.50 (AWWA C150) and based on laying conditions and internal pressures as stated on the plans.

Cement mortar lining and seal coating for pipe shall be in accordance with ANSI A21.4 (AWWA C104). Bituminous outside coating shall be in accordance with ANSI A21.51 (AWWA C151).

All ductile iron restrained joint water pipe shall be installed in accordance with laying condition Type 2 as stated in ANSI A21.51 (AWWA C151) unless otherwise shown on the plans.

Ductile iron restrained joint pipe shall be manufactured to the lengths required. Cutting of ductile iron pipe by the contractor will not be allowed.

Pressure Test, Leakage Test and Sterilization:

The pressure test, leakage test and sterilization of the main shall be performed as provided for in the NCDOT Standard Specifications and in accordance with City of Raleigh Public Utilities Department Handbook.

Construction - Gravity Sewer:

City of Raleigh shall be notified two weeks in advance before the Contractor begins work and one week in advance of any interruptions of sewer service with ample time to make arrangements. Contractor shall be aware that the sewer lines being relocated are active at this time. The Contractor shall invite the City of Raleigh to the preconstruction meeting. The Contractor shall be responsible for any bypass pumping necessary during installation or replacement of sanitary sewer lines and manholes.

All lines and manholes shall be installed at proper grade, alignment and location. All gravity sewer lines regardless of material will be tested by low pressure air test and/or vacuum test. Services will be installed prior to the test and they will be tested along with the line. The line shall be pressurized to 4psi and stabilized. After stabilization the pressure will be lowered to 3.5psi and the inspector will

determine the time it takes for the pressure to drop to 2.5psi. The allowable time of drop for a 12” diameter line is 1.8min/100ft of pipe. If the pressure remains between 3.5psi and 2.5psi for the test time, the lines are acceptable. If the line does not pass, check the installation of the lines and run the test again.

All manholes shall be tested after assembly and prior to backfilling using a vacuum tester. All lift holes shall be plugged with non-shrink grout. All pipes entering the manhole shall be plugged. All plugs shall be braced to keep plug from being drawn into manhole. The inside of the manhole shall be wet down with a soap and water solution which will visibly indicate areas of leakage after the test is performed. Test head shall be placed on or in the cone section and the seal inflated as per the manufacturer’s specifications. A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With the valve closed, the time it takes for the vacuum to drop to 9 inches shall be measured. The manhole shall pass if the time is greater than the values below:

Manhole Depth	Manhole Diameter		
	48”	60”	72”
10’ or less	60sec	75sec	90sec
10’ – 15’	75sec	90sec	105sec
Over 15’	90sec	105sec	120sec

If the manhole fails, necessary repairs shall be made using non-shrink grout. Then re-test until manhole is acceptable.

All lines shall be inspected for pipe deflection by pulling a mandrel through the lines. Deflection shall not exceed 5%. Mandrel must be 95% of the diameter of the pipe.

II. COMPENSATION:

Payment shall be made measured and paid for under NCDOT Standard Specifications items 1510, 1520, 1525, 1530 and 1540

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 thee various utility items included in the contract.

III. Sealed As Built Plans:

Certified surveyed “As built” plans and profiles, sealed by a Professional Land Surveyor, shall be furnished to the Public Utilities Department, by the Engineer who inspects the utility installation, upon completion and acceptance of the public main by the City and completion of private systems. The surveyed “as built” plans shall have North Carolina Geodetic Survey grid coordinates to all meter boxes, valves, manholes, and mains along with the depth information. The water permit

number information must also be included. Surveyed "As built" plans of installed utilities shall be furnished to the City prior to issuance of the letter of acceptance. All service stubs shall be shown on the surveyed "as built" plans.

Certified surveyed "As built" should be provided in a digital format. The digital file of utilities needs to show the overall water and sewer system layout along with the property of subdivision boundaries and connecting manhole. The water distribution system drawings should show mains sizes, material, hydrants, valves, blow-off assemblies, and any other relevant information (backflow preventers, air release valves, etc.). The digital file should be delivered in DXF format. If this is not possible, then, DWG, DGN, and SHP are also acceptable formats.

May 11, 2011

County: Wake
Project: B-4660PROJECT 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 – Power (Distribution)
- B) AT&T Communications - Telephone
- C) Time Warner Cable – CATV

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 identified herein are based on the best available information.

The Contractor's attention is directed to Article 105-8 of the Standard Specifications.

Utilities Requiring Adjustment:

- A) Progress Energy - Power (Distribution)
 - 1) See Utilities by Others Plans.
- B) AT&T Communications - Telephone
 - 1) See Utilities by Others Plans.
 - 2) AT&T Communications will be in joint use with Progress Energy and will be complete with all of the relocations of their telephone facilities by the Date of Availability.
- C) Time Warner Cable - CATV
 - 1) See Utilities by Others Plans.

- 2) Time Warner Cable will be in joint use with Progress Energy and will be complete with all of the relocations of their CATV facilities by the Date of Availability.

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