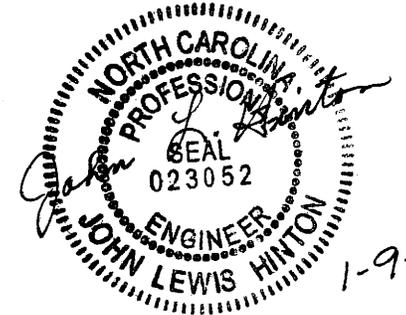




R-2320G/  
Documents/  
R2320GUCSpecs.doc

Project: R-2320G County: STANLY

**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 July 2006, the City of Albemarle's and Stanly County's specifications, and 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 ten (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).

All gate valves 12" and smaller for Stanly County and for the City of Albemarle shall be resilient-seat type valves conforming to ANSI/AWWA C-509. The direction of rotation of the handwheel or wrench nut to open the valve shall be to the left (counterclockwise) and be so marked.

Double strap tapping saddles shall be installed for all new/relocated service lines 1" and smaller in diameter.

All valve box covers and sanitary sewer manhole covers shall be cast to indicate "WATER" or "SEWER", as the case may be with the appropriate utility owner's special cover verbiage cast into the cover.

The Contractor shall submit his proposed method of anchoring to the Engineer for review and approval of restraining all pipe, pipe bends, valves and other related appurtenances. Anchoring will be the responsibility of the Contractor. Connecting to existing water mains may alter such lines to the extent that these

pipelines with existing pipe bends, valves and other related appurtenances may also require reaction blocking; this is also the responsibility of the Contractor.

### **Water lines and Valves:**

The existing water lines belong to the Stanly County and the City of Albemarle. The Contractor shall provide access for the Owner's representatives to all phases of construction. Notify the Owners two weeks before commencement of any work and one week before service interruption. Interruption of water service on main lines shall be limited to a maximum of four (4) hours. Individual service connection interruptions shall be scheduled between regular working hours. Water services shall be restored within the same working day.

All valves shall be Resilient-Seat Gate Valves or Butterfly Valves unless otherwise indicated herein. All valves shall meet the specification as shown in the NCDOT Standard Specifications for Roads and Structures. All service lines shall be PE (Polyethylene), SDR 9.

Disinfecting and pressure testing shall be done in accordance with the current Stanly County and City of Albemarle requirements and specifications.

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.

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 and be approved by Owners. 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 at representative points along the pipeline by a certified testing laboratory and tested for chlorine residual and coliform bacteria.

The Contractor shall use only concrete thrust blocks for restraining purposes. The Contractor shall also use flare fittings for all service lines and not use compression fittings.

### Gravity Sewer:

The existing sewer lines belong to the City of Albemarle. The City 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.

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:

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.

### **Owners and Owner's Requirements:**

The existing water utilities belong to Stanly County and the City of Albemarle. The existing sewer utilities belong to the City of Albemarle. 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.

#### Contacts:

City of Albemarle-Director of Public Utilities: Ernie Borders  
(704) 984-9608

City of Albemarle - Fire Marshall: Brian Taylor (704) 984-9480

City of Albemarle - Fire Chief: Eddy McDaniel (704) 984-9477

City of Albemarle - Utility Services Coord.: Judy Redwine (704) 984-9609

Stanly County - Utilities Director: Donna Davis-(704) 986-3691

### 1. WATER METER VAULT

- ^ The new water meter assembly and a new vault shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

The water meter assembly shall consist of the installation at the appropriate location inside a new vault. The water meters shall be Automated Meter Reading (AMR) type and shall be a compound meter and read in cubic feet. Any pipe and fittings necessary to connect the water meter assembly to the water line will be considered incidental.

The vault shall be precast concrete and shall meet the requirements of Section 1077 of the Standard Specifications. The vault shall be HS20 traffic bearing. Plans shall be submitted as required by Section 1077 with all calculations and drawings signed by a Professional Engineer registered in the State of North Carolina. The vault shall be provided with an access door. The access door shall be galvanized steel with anchor flange, hinge, drain channel, and neoprene gasket. The hinge pins shall be stainless steel. The door leaf shall be ¼" thick diamond plate. The door shall be HS20 load rated. The door shall open to 90° and lock automatically in this position. The door shall be equipped with a cylinder

lock or bolt lock. The vault and access door shall be approved by the Engineer and shall be placed as shown on the utility plans or as directed by the Engineer.

Any electrical service connections and relocations, in addition to all permits, licenses and inspections shall be the responsibility of the Contractor and considered incidental to this new location.

The quantity of water meter assemblies and vaults installed in accordance with the plans and utility provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Water Meter Vault". Such prices and payments will be full compensation for all materials including vault and access door, pipe, fittings, valves, steps, equipment, excavation, labor, connecting the water meter assembly, backfilling, and incidentals necessary to complete the work as required.

City of ALBEMARLE

Albemarle Water Resources Department  
Approved Products Manufacturers  
Water System Relocations for  
The City of Albemarle  
Water System

1. **Resilient Seat Gate Valves (6" through 12")**  
**200 PSI Rating, AWWA C-500 and AWWA C-509:**
  - Mueller 2360 Series
  - Waterous
  
2. **Butterfly Valves (16")**
  - Mueller
  - Waterous
  
3. **Fire Hydrants:**
  - Mueller
  - Waterous
  
4. **Corporation Stops:**
  - Mueller
  - Ford
  
5. **PE Service Pipe:**
  - Polyethylene Pipe (PE) Water Tubing SDR 9
  
6. **Water Meter (in Vault):**
  - Hersey
  - Badger
  - Neptune



Project: R-2320G County: STANLY

**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) City of Albemarle Electric Department - Power (Distribution)  
Charles Burris (704) 984-9624**
- B) Windstream Concord Telephone – Telephone  
Jim Foley (704) 722-2822**
- C) Time Warner Cable – CATV  
Donnie Solomon (980) 722-7049**
- D) Piedmont Natural Gas - Gas  
Johnny Parsons (704) 282-8472**

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 NCDOT "Standard Specifications For Roads and Structures" dated January 2006.

**Utilities Requiring Adjustments:**

- A) City of Albemarle Electric Department - Power (Distribution)**
  1. After rough grading has been completed and at the proper stage of construction the proposed power can be completed between station 14+70 right and 22+65 left of Line -Y4- and after clearing and grubbing has been completed, the proposed power line can be completed between station 100+50 and 116+50 right of Line -L-. The contractor shall contact the City of Albemarle one(1) calendar month prior to the date they can begin work. The City of Albemarle shall be given one(1) calendar month to complete their work. All other City of Albemarle Power work within the limits of this project will be completed by August 1, 2008. See Utilities By Others Plans for details.
- B) Windstream Concord Telephone - Telephone**
  1. After rough grading has been completed and at the proper stage of construction the proposed telephone can be completed between station 15+00 right and 20+30 left of Line -Y4- and after clearing and grubbing has been completed the proposed telephone line can be completed between station 100+50 and 116+50 right of Line -L-. The contractor

shall contact Windstream one(1) calendar month prior to the date they can begin work. Windstream shall be given one(1) calendar month to complete their work. All other Windstream Telephone work within the limits of this project will be completed by August 29, 2008. See Utilities By Others Plans for details.

C) Time Warner Cable – CATV

1. After rough grading has been completed and at the proper stage of construction the proposed CATV line can be completed between station 14+70 right and 22+50 left of Line -Y4- and after clearing and grubbing has been completed the proposed cable line can be completed between station 100+50 and 116+50 right of Line -L-. The contractor shall contact the Time Warner Cable one(1) calendar month prior to the date they can begin work. Time Warner Cable shall be given one(1) calendar month to complete their work. All other Time Warner CATV work within the limits of this project will be completed by September 19, 2008. See Utilities By Others Plans for details(Time Warner Cable is attached to power or telephone poles throughout the project).

D) Piedmont Natural Gas - Natural Gas

1. All Piedmont Natural Gas lines located within the limits of this project shall remain in place and be adjusted if necessary. The Contractor shall give Piedmont Natural Gas 1 (one) week prior notice before beginning work and 3 (three) days to complete construction at each location in conflict. See Utilities By Others Plans for details.