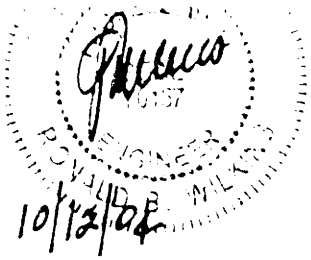


PROJECT SPECIAL PROVISIONS
Utility Construction



GENERAL CONSTRUCTION REQUIREMENTS:

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation "Standard Specifications for Roads and Structures" dated January 2002 and the provisions outlined below.

Owner and Owner's Requirements:

The existing water lines belong to the Tarheel Water Corporation and Bladen County. The contact person for Tarheel Water Corporation is Mr. G. B. Hall, Jr., and he can be reached by telephone at 910-862-2453. The contact person for Bladen County Water District is Mr. Randy Garner and he can be reached by telephone at 910-862-6996. 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 service interruption. Interruption of water service or force main sewer service on main lines shall be limited to a maximum of 4 hours unless approved by the Engineer. All water meters and meter boxes will be provided by the owners.

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 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. Cross connection and blowoff piping shall be 50mm in diameter for mains 200mm in diameter and smaller, and 100mm in diameter for mains greater than 200mm but less than 400mm 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.

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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 1.38 MPa.

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 the Contractor in approved containers and submitted to a certified testing laboratory for bacterial and chlorine content. Test results shall be provided to the appropriate utility owners.

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.

Dewatering will not be measured and paid for as a separate bid item. All costs involved in dewatering shall be included in the applicable bid item for the various forms of work, i.e. pipe, structures, etc.

Sterilization will not be measured and paid for as a separate bid item. All costs including chlorinating equipment, materials, excavation, barricades, backfilling, and any taps and corporations and re-sterilization shall be included in the applicable bid price for piping and other forms of work.

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 metric 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 Article 300-4 of the Standard Specifications, and incidentals necessary to complete the work as required.

2. POLYETHYLENE 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 D2239 or AWWA C901. PE tubing materials shall be PE 2406, PE 3406 or PE 3408 depending upon the required pressure class and dimension ratio (SDR) specified on the utility plans. Polyethylene plastic water tubing shall meet the requirements of the National Sanitation 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. The Engineer shall approve all couplings and fittings.

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 ____, ____ MPa WP". Such prices and payments will be full compensation for furnishing all labor, equipment, materials, compression couplings and fittings, excavation, chlorinating, testing, backfilling and incidentals necessary to complete the work as required.

3. BLOW-OFF ASSEMBLY:

Install blow off assemblies in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

Blow off assemblies shall include slip joint plug with 50mm tap, 50mm gate valve, 50mm piping, valve boxes, concrete blocking, concrete pads for valve boxes, and the necessary pipe fittings and adapters.

Gate valves shall be of all bronze construction with iron pipe thread, screw ends, wedge gates and non-rising stem. Gate valve shall open by turning to the right or clockwise using a tee head operating nut and shall be in accordance with the most recent edition of AWWA C-500 and such ASTM designations as apply with

reference to chemical requirements as set forth in Table I of ASTM B-62. The working pressure of all valves shall be 1.38 MPa.

Valve boxes shall be of the screw or slip type, with a base to fit the valve yoke and a removable plug cap with the word "WATER" cast therein. Valve boxes shall be cast iron conforming to ASTM A48, Class 30, unless otherwise shown on the utility plans and/or as directed by the Engineer.

Blow off assemblies installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "_____mm Blow Off Assembly". Such prices and payments shall be full compensation for all materials, including slip joint plug with tap, gate valve, piping, valve boxes, concrete blocking, concrete pads for valve boxes, and the necessary pipe fittings and adapters labor, equipment, excavation, installation, sterilization, pressure testing, valve box installation with the necessary extension pieces, backfilling, and incidentals necessary to complete the work as required.

4. REMOVE EXISTING WATER METER:

The existing water meters to be removed at the connection to the existing service piping and stockpiled in an area accessible by truck or as directed by the Engineer.

After the water meters are removed and stockpiled, the Contractor shall contact PWC and arrange for PWC maintenance forces to receive and remove the water meters from the jobsite.

The quantity of existing water meters removed, stockpiled, and accepted, will be measured and paid for at the contract unit price per each for "Remove Existing Water Meter". Such price and payment will be full compensation for all labor, excavation, removal, stockpiling, and incidentals necessary to complete the work as required.

5. RECONNECT EXISTING WATER METER:

The existing water meters to be reconnected shall be reconnected to the relocated water main with PE water tubing (paid for elsewhere) at the location shown on the utility construction plans and/or as directed by the Engineer.

After final grading work is completed in the area of the existing water meter, the meter shall be reconnected to the relocated water main by use of the appropriate piping/tubing, corporation stop and service saddle.

The quantity of existing water meters to be reconnected and accepted, will be measured and paid for at the contract unit price per each for "Reconnect Existing Water Meter". Such price and payment will be full compensation for all labor,

excavation, reconnection, and incidentals necessary to complete the work as required.

6. 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, PC 1.38 MPa, manufactured in accordance with ANSI/AWWA C906 (Polyethylene Pressure Pipe and Fittings, 100mm through 1600mm, For Water Distribution). 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 a 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 1.38 MPa in accordance with the testing procedures outlined in Section 1520 of the Standard Specifications.

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 meter for "_____mm 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, concrete thrust blocking, testing, backfilling, and incidentals necessary to complete the work as required.

PROJECT SPECIAL PROVISIONS
Utility Construction

GENERAL CONSTRUCTION REQUIREMENTS:

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation "Standard Specifications for Roads and Structures" dated January 2002 and the provisions outlined below.

Owner and Owner's Requirements:

The existing water and sewer lines belong to the Town of Dublin and Bladen County. The contact person for Town of Dublin is Mr. Franklin Guill, and he can be reached by telephone at 910-862-4301. The contact person for Bladen County Water District is Mr. Randy Garner, and he can be reached by telephone at 910-862-6996. 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 service interruption. Interruption of water service or force main sewer service on main lines shall be limited to a maximum of 4 hours unless approved by the Engineer. All water meters and meter boxes will be provided by the owners.

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 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. Cross connection and blowoff piping shall be 50mm in diameter for mains 200mm in diameter and smaller, and 100mm in diameter for mains greater than 200mm but less than 400mm 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 1.38 MPa.

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 the Contractor in approved containers and submitted to a certified testing laboratory for bacterial and chlorine content. Test results shall be provided to the appropriate utility owners.

Water meters and fire hydrants that are noted as being relocated on the Utility Construction plans shall be identified by the Contractor and the owner shall be given the opportunity to substitute either new or rebuilt water meters and/or fire hydrants for installation. The existing water meters and fire hydrants that are to be relocated shall remain the property of the utility owner.

Sanitary sewer cleanouts are identified on the Utility Construction plans from the best available information. The Contractor shall verify the cleanouts that require relocation and provide the Engineer with the number and location of cleanouts that are to be relocated or installed prior to undertaking the sewer work.

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.

Dewatering will not be measured and paid for as a separate bid item. All costs involved in dewatering shall be included in the applicable bid item for the various forms of work, i.e. pipe, structures, etc.

Sterilization will not be measured and paid for as a separate bid item. All costs including chlorinating equipment, materials, excavation, barricades, backfilling, and any taps and corporations and re-sterilization shall be included in the applicable bid price for piping and other forms of work.

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 metric 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 Article 300-4 of the Standard Specifications, and incidentals necessary to complete the work as required.

2. POLYETHYLENE 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 D2239 or AWWA C901. PE tubing materials shall be PE 2406, PE 3406 or PE 3408 depending upon the required pressure class and dimension ration (SDR) specified on the utility plans. Polyethylene plastic water tubing shall meet the requirements of the National Sanitation 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. The Engineer shall approve all couplings and fittings.

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 ____, ____MPa WP". Such prices and payments will be full compensation fur furnishing all labor, equipment, materials, compression couplings and fittings, excavation, chlorinating, testing, backfilling 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. FOUR COUNTY EMC
- C. SPRINT
- D. STAR TELEPHONE
- E. STAR CATV
- F. NORTH CAROLINA NATURAL GAS

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. PROGRESS ENERGY

- 1. PROGRESS ENERGY WILL COMPLETE THEIR RELOCATIONS BY SEPTEMBER 29, 2005.
- 2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

B. FOUR COUNTY EMC

- 1. FOUR COUNTY EMC WILL COMPLETE THEIR RELOCATIONS BY JULY 5, 2005.
- 2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

C. SPRINT

1. SPRINT WILL BEGIN THEIR RELOCATIONS AFTER CLEARING AND GRUBBING IS COMPLETED. SPRINT WILL NEED TWO WEEKS NOTICE AND WILL COMPLETE THEIR RELOCATIONS JULY 29, 2005.
2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

D. STAR TELEPHONE

1. STAR TELEPHONE WILL COMPLETE THEIR RELOCATIONS BY JULY 22, 2005.
2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

E. STAR CATV

1. STAR CATV WILL COMPLETE THEIR RELOCATIONS BY JULY 22, 2005.
2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

F. NORTH CAROLINA NATURAL GAS

1. NORTH CAROLINA NATURAL GAS WILL COMPLETE THEIR RELOCATIONS BY SEPT 1, 2005.
2. SEE UTILITIES BY OTHERS PLANS FOR DETAILS.

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 Corp. – Power (Distribution)
- B) Sprint (Telephone)
- C) Time Warner (CATV)
- D) NC Natural Gas

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 Corp. - Power (Distribution)

- 1) See Utilities by Others Plans.

NOTE: Progress Energy will complete relocations of their existing power distribution facilities to the new locations as shown on the utilities by others plans by September 29, 2005.

- B) Sprint (Telephone)

- 1) See Utilities by Others Plans.

NOTE: The contractor shall give Sprint 2 weeks notice prior to completion of clearing and grubbing and allow Sprint 16 weeks to complete relocations of their existing telephone facilities to the new locations as shown on the utilities by others plans.

C) Time Warner (CATV)

- 1) See Utilities by Others Plans.

NOTE: Time Warner will complete relocations of their existing CATV facilities to the new locations as shown on the utilities by others plans by October 29, 2005.

D) NC Natural Gas

- 1) See Utilities by Others Plans.

NOTE: NC Natural Gas will complete relocations of their existing gas facilities to the new locations as shown on the utilities by others plans by June 3, 2005.

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