

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 details as shown on the plans, as outlined in the following provisions, or as directed by the Engineer.

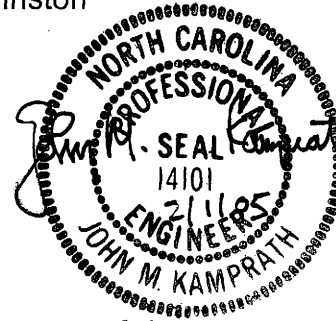
Water mains shall be laid at least 3.0m laterally from existing or proposed sanitary sewers. Water mains shall have a minimum of 0.46m vertical separation over sewer mains. Where this separation is not possible or the water main is laid under the sewer main, both the water and sewer pipe shall be ductile iron pipe. Center pipe spans at point of intersection in order to have 3.0m from water line joint to point of intersection.

The Contractor is herein forewarned as to the possibility of having to vary the depth of 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, and storm drainage are shown on the plans or not). The normal minimum cover for water mains shall be 0.91m for pipe up to 200mm in diameter and 1.06m for pipe 250mm and greater in diameter

The Contractor shall submit his proposed method of anchoring to the Engineer for review and approval prior to any applicable water main construction. Such approval will not relieve the Contractor of his responsibility of properly anchoring the water mains.

Owner and Owner's Requirements:

The existing water utilities and sewer lines on sheets UC-2 and UC-3 (Wake County) are owned by the City of Raleigh. All other existing water utilities are owned by Johnston County. 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. Only authorized personnel of the owner shall operate valves in the existing distribution or collection system.



Electronic Marker Balls:

Electronic location markers will be required with Ductile Iron pipe or PVC pipe main installations owned by Johnston County. These markers shall consist of 100mm marker balls having a passive device capable of reflecting a specifically designated repulse frequency, unique to the utility being installed. The marker ball will contain a passive-tuned antenna, molded inside a plastic disk, which is free-floating inside a water resistant polyethylene shell. The shell shall be impervious to minerals, chemicals and temperature extremes. Marker balls shall be color coded in accordance with the American Public Works Association's utility location and coordinating council standards. Marker balls shall be installed approximately 150mm over the point to be located, and a minimum of 150mm from any metal objects. However, burial shall not be less than 450mm nor more than 600mm. Marker balls shall be installed concurrently with water or sewer force mains. Marker balls to be hand backfilled to 300 millimeters above marker ball as to prevent movement or damage. Marker balls shall be installed at a minimum of one every 30.5 linear meters directly over main line; at bends 22 ½ degrees and larger; at capped or plugged ends if no blow-off assembly; and at tees over main line.

Valve Markers:

Valve markers will be required on valve installations owned by Johnston County. Valve markers shall be as shown on the construction detail sheets and be of concrete, reinforced as shown. Concrete shall be of a mix design to produce a 20.68 Mpa compressive strength at 28 days. They shall be marked with recessed letters, either MV, AV, or BO. In subdivisions or residential areas the valve markers must be less than or equal to 150 millimeters above grade.

Encasement Markers:

Steel encasement pipes installed for future service as shown on the plans shall be marked with wooden or concrete encasement markers as shown on the construction details.

Ductile Iron Force Main Sewer Pipe Coating:

All Ductile Iron Pipe and Ductile Iron fittings to be used for sanitary sewer force main shall have the interior coated with ceramic epoxy to produce a minimum dry film thickness of 40 mils. Calcium aluminate mortar lining of the ductile iron pipe and fittings shall also be acceptable.

II. COMPENSATION:

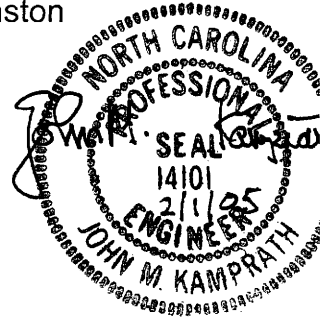
No direct payment will be made for utility construction work required by the preceding provisions, which are general requirements applying to utility construction, and all of the requirements stated will be considered incidental work, paid for at the contract unit prices of the various utility items included in the contract.

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.

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The Contractor shall submit his proposed method of anchoring to the Engineer for review and approval prior to any applicable water main construction. Such approval will not relieve the Contractor of his responsibility of properly anchoring the water mains.

Owner and Owner's Requirements:

The existing water and sewer utilities are owned by Johnston County. 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. Only authorized personnel of the owner shall operate valves in the existing distribution or collection system.

Electronic Marker Balls:

Electronic location markers will be required with Ductile Iron pipe or PVC pipe main installations. These markers shall consist of 100mm marker balls having a

passive device capable of reflecting a specifically designated repulse frequency, unique to the utility being installed. The marker ball will contain a passive-tuned antenna, molded inside a plastic disk, which is free-floating inside a water resistant polyethylene shell. The shell shall be impervious to minerals, chemicals and temperature extremes. Marker balls shall be color coded in accordance with the American Public Works Association's utility location and coordinating council standards. Marker balls shall be installed approximately 150mm over the point to be located, and a minimum of 150mm from any metal objects. However, burial shall not be less than 450mm nor more than 600mm. Marker balls shall be installed concurrently with water or sewer force mains. Marker balls to be hand backfilled to 300 millimeters above marker ball as to prevent movement or damage. Marker balls shall be installed at a minimum of one every 30.5 linear meters directly over main line; at bends 22 ½ degrees and larger; at capped or plugged ends if no blow-off assembly; and at tees over main line.

Valve Markers:

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Encasement Markers:

Steel encasement pipes installed for future service as shown on the plans shall be marked with wooden or concrete encasement markers as shown on the construction details.

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All Ductile Iron Pipe and Ductile Iron fittings to be used for sanitary sewer force main shall have the interior coated with ceramic epoxy to produce a minimum dry film thickness of 40 mils. Calcium aluminate mortar lining of the ductile iron pipe and fittings shall also be acceptable.

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.

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. ____ MM AIR RELEASE VALVE & MANHOLE

Combination air release valve and manhole 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 combination air release valve and manhole shall consist of an air release valve, a corporation cock on the main, brass pipe, brass fittings, two bronze ball valve curb stops, necessary fittings and connecting pieces, and a manhole.

The combination air release valve shall be of the type which releases accumulated air from the pipe line when the line is under pressure and releases large quantities of air during filling and emptying of the water or forced sewer main. Air release valves shall be iron body with bronze or rubber seals and bronze or stainless steel working parts. Air release valve shall have a hydrostatic pressure rating of 1.38 MPa.

Air release valve for use on water mains shall conform to ANSI/AWWA C512. Air release valves for use on sanitary sewer force mains shall be of the type designed for sanitary sewer service.

All interior iron surfaces of the air valve shall be coated with a minimum of 8 mils of fusion-bonded epoxy or liquid epoxy in accordance with ANSI/AWWA C550.

Bronze ball valve curb stops shall be designed for a working pressure of 1.38 MPa.

The 1500mm-diameter manhole to house the air release valve shall be pre-cast concrete conforming to ASTM C478. The manhole ring and cover shall be of an approved type.

The quantity of air release valve and manhole, installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price each for "_____MM Air Release Valve and Manhole". Such prices and payments shall be full compensation for all labor, materials, excavation, backfilling, equipment, approved air release valve, ball valve curb stops, pipe, fittings, 1500mm diameter manhole construction, ring and cover, and incidentals necessary to complete the work as required.

3. REMOVE EXISTING FIRE HYDRANT

The existing fire hydrants shall be removed at the connection to the existing valve and stockpiled in an area accessible by truck or as directed by the Engineer.

After the fire hydrants are removed and stockpiled, the Contractor shall contact the owner and arrange for maintenance forces to receive and remove the fire hydrants from the jobsite.

The quantity of fire hydrants removed, stockpiled, and accepted, will be measured and paid for at the contract unit price per each for "Remove Existing Fire Hydrant". Such price and payment will be full compensation for all labor, excavation, removal, stockpiling, 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 – Power (Distribution)
- B) Bellsouth Communications – Telephone
- C) Cardinal Pipeline – Gas
- D) Sprint Carolina Telephone & Telegraph – Telephone
- E) Time Warner Telecommunications – CATV
- F) Progress Energy – Power (Transmission)

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 – Power (Distribution)

- 1. See Utilities By Others Plans for Details.

NOTE: Temporary pole line will be constructed prior to the date of availability along –Y2- (New Bethel Road). Permanent facilities will be installed after completion of bridge work. Contractor must allow Progress Energy one (1) week to perform work.

Temporary pole line will be constructed prior to the date of availability along –Y4- (Cornwallis Road). Permanent facilities will be installed after completion of bridge work. Contractor must allow Progress Energy one (1) week to perform work.

B) Bellsouth Communications – Telephone

1. See Utilities By Others Plans for Details.

NOTE: The existing aerial lines attached to Progress Energy’s poles along –Y2- (New Bethel Road) crossing –I1 Y1- (I-40) will be temporarily relocated prior to construction. At the proper stage of construction a permanent pole line will be constructed as shown on the plans. Contractor must give Bellsouth two (2) weeks notice and one (1) week to perform work.

C) Cardinal Pipeline – Gas

1. See Utilities By Others Plans for Details.

NOTE: Contractor must use extreme caution when working over existing 600mm pipeline crossing –I1 Y1- (I-40) at Sta. 15+40.

D) Sprint Carolina Telephone & Telegraph – Telephone

1. See Utilities By Others Plans for Details.

NOTE: All work shall be done prior to the date of availability.

E) Time Warner Telecommunications – CATV

1. See Utilities By Others Plans for Details.

NOTE: All work shall be done prior to the date of availability.

F) Progress Energy – Power (Transmission)

1. See Utilities By Others Plans for Details.

NOTE: The existing 500kv transmission facility will be raised in place Proposed roadway clearance will be 30.48 meters to bottom conductor. This work will begin around the middle of September, 2005 and be completed by December 30, 2005.

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 – Power (Distribution)**
- B) Sprint Carolina Telephone & Telegraph – Telephone**
- C) NC Natural Gas – Gas**
- D) Time Warner Telecommunications - 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 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 – Power (Distribution)

- 1. See Utilities By Others Plans for Details.

NOTE: Temporary pole line will be installed prior to the date of availability. Permanent facilities will be installed after completion of bridge work. Contractor must allow Progress Energy two (2) weeks to perform work.

B) Sprint Carolina Telephone & Telegraph – Telephone

- 1. See Utilities By Others Plans for Details.

NOTE: Temporary pole line installation around the proposed detour will be completed by September 1, 2005. After rough grading has been completed, Contractor will give Sprint two (2) weeks notice and four (4) weeks to install underground facilities and remove temporary facilities.

C) NC Natural Gas – Gas

1. See Utilities By Others Plans for Details.

NOTE: Proposed gas main to be installed prior to the date of availability.
Existing gas main to be cut and plugged.

D) Time Warner Telecommunications – CATV

1. See Utilities By Others Plans for Details.

NOTE: Temporary facilities to be attached to Progress Energy power poles prior to the date of availability. Permanent facilities will be installed upon completion of bridge work and installation of Progress Energy permanent facilities. Contractor must allow Time Warner one (1) week to perform work.