

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 on this project belong to Winston-Salem/Forsyth County Utilities. The contact person for Winston-Salem/Forsyth County Utilities is Mr. Scott Angell and he can be reached by phone at 336.727.8418. Any work on these lines must be coordinated through the Engineer and the utility owner before beginning. 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.

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 City of Winston-Salem/Forsyth County.

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. WATER LINE:

Ductile iron 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 water pipe shall be PC 2.41 and shall conform to ANSI A21.51 (AWWA C151). Pipe shall be either mechanical joint or push-on-joint and installed with rubber gaskets in accordance with ANSI A21.11 (AWWA C111). All

water pipe shall be provided and installed in accordance with Articles 1036 and 1510 of the Standard Specifications for Roads and Structures. Water pipe shall be restrained as noted on the utility construction plans.

Ductile iron 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 valves, and paid for at the contract unit price per meter for "____ mm Water Line". Such prices and payments will be full compensation for all materials, including pipe accessories, ductile iron fittings, gaskets, excavation, labor, anchoring pipe fittings, pressure testing, sterilization, backfilling, and incidentals necessary to complete the work as required. All ductile iron fittings and stone bedding material shall be incidental to the water line/pipe.

2. RESILIENT SEAT GATE VALVES:

Gate valves shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans, and/or as directed by the Engineer.

Gate valves shall be resilient seat types conforming to ANSI/AWWA C509. Gate valves shall have non-rising stems with a two-inch square operating nut and O-ring seals, and shall open by turning counterclockwise. Gate valves shall be rated for an operating pressure of 1.38 Mpa. Gate valves shall have mechanical joint ends conforming to ANSI/AWWA C111/A21.11 unless otherwise shown on the utility construction plans, or directed by the Engineer.

The quantity of gate valves 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 Valve". Such prices and payments will be full compensation for all materials, excavation, labor, installation, sterilization, pressure testing, valve manhole, backfilling, and incidentals necessary to complete the work as required. No payment will be made for resilient seat gate valves that are part of a new fire hydrant assembly. Valves installed as part of a new fire hydrant assembly are measured and paid for elsewhere.

3. RELOCATE WATER METER:

The existing water meters that are to be relocated shall be installed at the locations shown on the utility plans, and/or as directed by the Engineer.

The relocation of water meters shall consist of the removal and installation at the appropriate location of the water meter, meter yoke, meter valves, and meter boxes. Any fittings necessary to reconnect the relocated meter to the water line will be considered incidental. Any pipe necessary to complete the relocation will be paid for as provided elsewhere in these provisions and/or in the Standard Specification.

All work shall be in accordance with the applicable plumbing codes, as shown on the plans and as directed by the Engineer.

Relocated meter boxes shall be placed with the top of the meter box or vault flush with finish grade of the project, as shown on the plans and/or as directed by the Engineer.

The quantity of water meters and meter boxes relocated and accepted will be measured and paid for at the contract unit price per each for "Relocate Water Meter". Such price and payment will be full compensation for all materials, labor, removing, installing and reconnecting the existing meter and box, excavation, backfilling, and incidentals necessary to complete the work as required.

4. FIRE HYDRANT:

Install fire hydrants outside of the vehicle recovery area of the roadway, adjacent to the right of way line, in protected areas as shown on the utility construction plan sheets or as directed by the Engineer.

Connect the fire hydrant to the main with a 6 inch valve and branch line having at least as much cover as the distribution main. Set hydrants plumb with the pumper nozzle facing the roadway and with the breakaway safety flange between 1 and 4 inches above the surrounding finished grade. Except where approved otherwise, place fire hydrants into service as soon as possible. Place at least 7 cubic feet of clean crushed stone around the base of the hydrant to ensure proper drainage of the hydrant barrel.

Where necessary, remove the hydrant shoe and replace with the appropriate type to connect a relocated hydrant to the new pipe. Furnish and install or remove hydrant extension pieces to provide the proper bury of the pipe and the hydrant.

The quantity of fire hydrants to be installed and accepted will be measured and paid for at the contract unit price each for "Fire Hydrant". Such price and payment will be full compensation for all labor and materials, excavation, the new hydrant, backfilling, and incidentals necessary to complete the work as required. Valves, piping, fittings, restrained retainer glands, concrete and bedding material necessary to install the fire hydrants as shown on the utility construction plans shall be incidental to the fire hydrant, and as such, no separate measurement or payment will be made for these items.

5. RELOCATE FIRE HYDRANT:

All existing fire hydrants that are impacted by construction and are to be permanently relocated, shall be relocated as shown on the utility construction plans or as directed by the Engineer.

Where necessary, the hydrant shoe shall be removed and replaced with the appropriate type to connect the relocated hydrant to the new pipe. Hydrant extension pieces shall be furnished and installed or removed to provide the proper bury depth of the pipe and the hydrant. New piping shall include necessary fittings (if required), restraint and associated appurtenances, all of which will be paid for elsewhere in the contract. The owner shall have the option of providing a new or refurbished hydrant for the Contractor to install and take possession of the existing hydrant.

The quantity of existing fire hydrants to be relocated and accepted will be measured and paid for at the contract unit price each for "Relocate Fire Hydrant". Such price and payment will be full compensation for all labor and materials, excavation, removal and relocation of the existing hydrant, backfilling, and incidentals necessary to complete the work as required.

6. ABANDON UTILITY PIPE

All existing utility piping that is to be abandoned shall be abandoned as shown on the utility construction plans or as directed by the Engineer.

The pipe shall be abandoned as described in Section 1530 of the 2002 Standard Specifications (specifically 1530-3(A)).

The quantity of existing utility pipe to be abandoned will be measured and paid for at the contract unit price per meter for "Abandon ____mm Utility Pipe". Such price and payment will be full compensation for all labor and materials, excavation, removal or filling of the existing pipe, 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) Duke Energy – Power (Distribution)
- B) AT&T – Telephone
- C) Time Warner - CATV
- D) Piedmont 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) Duke Energy - Power (Distribution)

- 1) See Utilities by Others Plans.

- B) AT&T – Telephone

- 1) See Utilities by Others Plans.

- Time Warner - CATV

- 1) See Utilities by Others Plans.

- C) Piedmont Natural Gas

- 1) See Utilities by Others Plans.

NOTE: Existing Gas main will remain in place to be adjusted as necessary.
Piedmont Natural Gas requires 2 days notice and 3 days to adjust their gas line at each conflict locations.

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