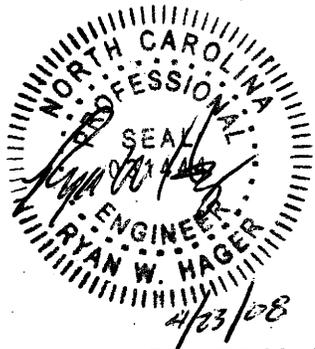


Project: R-3833a
County: Iredell



PROJECT SPECIAL PROVISIONS
Utility Construction

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, and the following provisions.

Lay water mains at least 10ft laterally from existing or proposed sanitary sewers.

The depth of pipeline installation may vary 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).

After the installed pipe, fittings, valves, hydrants, corporation stops and end plugs are inserted and secured, the pipe line shall be subjected to a hydrostatic pressure test of 200 psi for a period of 3 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. 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 preformed in accordance with AWWA C651-99. All fittings, valves and backflow prevention devices required for chlorination and testing shall be incidental to the cost of the proposed pipe being tested.

Contractor shall make such arrangements, as the utility owner requires, for measuring and paying for water required to flush and test water mains.

Contractor shall employ and pay for service of an independent firm acceptable to the Town of Mooresville to perform all bacteriological testing for new water lines. The contractor shall not activate new water mains until the Engineer has notified the Contractor that he may do so.

The final and temporary connections to the existing mains may need to be made at night to limit the interruption to the businesses and traffic in this area.

Owner and Owner's Requirements:

The existing utilities belong to The Town of Mooresville. The Contractor shall provide access for the owner's representatives to all phases of construction. Notify the owner two weeks before commencement of any work and one week before service interruption. The contractor shall provide the Town of Mooresville with as built drawings for the proposed water mains installed.

The contractor shall provide a set of as built plans to the Town of Mooresville after all the work shown on the Utility Construction Plans is completed.

Utility Locations Shown on the Plans:

The location, size, 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.

1. RELOCATE FIRE HYDRANT WITH NEW 6" GATE VALVE:

The relocated fire hydrants with new 6" gate valves shall be installed at the locations shown on the utility plans, and/or as directed by the Engineer.

The relocation of fire hydrants shall consist of the removal and installation of the existing fire hydrant. The existing 6" gate valve on the fire hydrant leg shall remain and a new 6" gate valve shall be installed outside the new pavement areas.

After the existing fire hydrants are relocated, the existing 6" gate valves shall remain in the open position and the valve box and cover shall be removed.

Gate valves associated with the fire hydrant relocations 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 or ANSI/AWWA C515. The valve body, bonnet and seal plate shall be coated on all exterior and interior surfaces with a minimum of 8-10 mils of fusion bonded epoxy in accordance with ANSI/AWWA C550. The valve shall incorporate a guide system with guide lugs on the wedge or on the body. The wedge shall be gray ductile iron, fully encapsulated with rubber. Non-rising stem valves shall have two O-ring seals above the stem thrust collar that can be replaced under pressure. The valve shall have a non-rising stem, mechanical joint end connections conforming to ANSI/AWWA C111/A21.11, and a 2" square operating nut and shall open by turning counterclockwise. Gate valves shall have a design working water pressure of 200 #WP. All valves shall be warranted

for 10 years from the date of purchase against defective materials and workmanship.

The fire hydrant assembly with new 6" gate valve, installed in accordance with plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Relocate Fire Hydrant with New 6" Gate Valve". Such prices and payments will be full compensation for all materials, relocation of existing fire hydrant, new 6" gate valve, equipment, excavation, pressure testing, labor, installation, backfilling, and incidentals necessary to complete the work as required.

2. RELOCATE FIRE HYDRANT AND ADJUST VALVE BOX TO PROPOSED FINISHED GRADE:

The relocated fire hydrants and adjust valve box to proposed finished grade shall be installed at the locations shown on the utility plans, and/or as directed by the Engineer.

The relocation of fire hydrants shall consist of the removal and installation of the existing fire hydrant. The existing 6" gate valve on the fire hydrant leg shall remain and the valve box shall be raised or lowered to proposed finished grade.

After the existing fire hydrants are relocated, the existing 6" gate valves shall remain in the open position.

The fire hydrant assembly and adjustment of valve box, installed in accordance with plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Relocate Fire Hydrant and Adjust Valve Box to Proposed Finished Grade". Such prices and payments will be full compensation for all materials, relocation of existing fire hydrant, adjustment of valve box, equipment, excavation, pressure testing, labor, installation, backfilling, and incidentals necessary to complete the work as required.

3. RELOCATE ___" WATER METER WITH NEW VAULT:

The relocated water meters with new vaults 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 of the existing water meter, valves, and bypass at the appropriate location with a new vault. Any pipe or fittings necessary to complete the work will be considered incidental.

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

The vault shall be precast concrete (24" x 36" x 31" Deep) and shall meet the requirements of Section 1077 of the Standard Specifications. The vault shall be HS-20 traffic bearing. Plans shall be submitted as required by Section 1077 with all calculations and drawings sign by a registered North Carolina Professional Engineer. If the contractor select a precast vault from NCDOT's approved list for precast reinforced concrete utility vaults, a North Carolina Professional Engineer's seal is not required. The access door and frame shall be aluminum with a neoprene gasket. The door leaf shall be diamond plate, HS-20 load rated, open to 90° and lock automatically in this position, and the door shall be equipped with recessed locking capability.

After the existing water meter assemblies are relocated to new vaults, the existing vaults to be abandoned shall be removed and disposed of properly.

The water meter assembly with new vault, installed in accordance with plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Relocate ___" Water Meter with New Vault". Such prices and payments will be full compensation for all materials, relocation of existing water meter, new vault, equipment, excavation, pressure testing, labor, installation, backfilling, and incidentals necessary to complete the work as required.

4. RELOCATE ___" RPZ BACKFLOW PREVENTION ASSEMBLY:

The existing RPZ backflow prevention assembly to be relocated shall be installed at the locations shown on the utility plans, and/or as directed by the Engineer.

The relocation of RPZ backflow prevention assembly shall consist of the removal and installation of the existing RPZ backflow device and valves at the appropriate location with the existing enclosure service box. Any pipe or fittings necessary to complete the work will be considered incidental.

RPZ Backflow prevention assembly shall be tested by an individual certified in accordance with the Town of Mooresville Backflow Handbook. All test results must be submitted to the Town of Mooresville Water/Sewer Maintenance Department.

All work shall be in accordance with the Town of Mooresville Land Development Design Standards, as shown on the plans and as directed by the Engineer.

The existing relocated service box enclosure shall be placed on a concrete pad 4" thick and 6" larger than the perimeter of the enclosure. The concrete pad shall be Class B in accordance to section 1000 of the Standard Specifications for Roads and Structures.

The RPZ backflow prevention assembly, installed in accordance with plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Relocate ___" RPZ Backflow Prevention Assembly". Such prices and payments will be full compensation for all materials, relocation of existing backflow assembly, equipment, excavation, pressure testing, labor, installation, backfilling, and incidentals necessary to complete the work as required.

5. RELOCATE ___" RPZ BACKFLOW PREVENTION ASSEMBLY WITH NEW VAULT:

The existing RPZ backflow prevention assembly with new vault 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 RPZ backflow prevention assembly shall consist of the removal and installation of the existing RPZ backflow device and valves at the appropriate location with a new vault. Any pipe or fittings necessary to complete the work will be considered incidental.

RPZ Backflow prevention assembly shall be tested by an individual certified in accordance with the Town of Mooresville Backflow Handbook. All test results must be submitted to the Town of Mooresville Water/Sewer Maintenance Department.

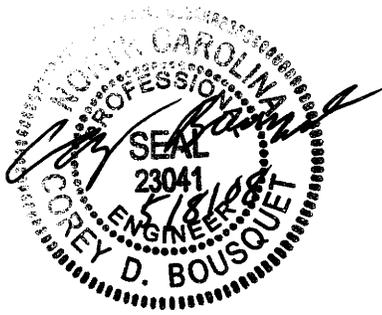
All work shall be in accordance with the Town of Mooresville Land Development Design Standards, as shown on the plans and as directed by the Engineer.

The vault shall be precast concrete (36" x 48") and shall meet the requirements of Section 1077 of the Standard Specifications. The vault shall be HS-20 traffic bearing. Plans shall be submitted as required by Section 1077 with all calculations and drawings sign by a registered North Carolina Professional Engineer. If the contractor select a precast vault from NCDOT's approved list for precast reinforced concrete utility vaults, a North Carolina Professional Engineer's seal is not required. The access door and frame shall be aluminum with a neoprene gasket. The door leaf shall be diamond plate, HS-20 load rated, open to 90° and lock automatically in this position, and the door shall be equipped with recessed locking capability.

Vault shall be placed with the top flush with the finish grade of the project.

After the existing RPZ backflow prevention assembly is relocated to the new vault, the existing backflow vault to be abandoned shall be removed and disposed of properly.

The RPZ backflow prevention assembly with new vault, installed in accordance with plans and provisions herein and accepted, will be measured and paid for at the contract unit price per each for "Relocate ___" RPZ Backflow Prevention Assembly with New Vault". Such prices and payments will be full compensation for all materials, relocation of existing backflow assembly, new vault, equipment, excavation, pressure testing, labor, installation, backfilling, and incidentals necessary to complete the work as required.



Project: R-3833A
County: Iredell

PROJECT SPECIAL PROVISIONS
Utility Construction

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, and the following provisions.

Lay water mains at least 10ft laterally from existing or proposed sanitary sewers.

The depth of pipeline installation may vary 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).

After the installed pipe, fittings, valves, hydrants, corporation stops and end plugs are inserted and secured, the pipe line shall be subjected to a hydrostatic pressure test of 200 psi for a period of 3 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. 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 and backflow prevention devices required for chlorination and testing shall be incidental to the cost of the proposed pipe being tested.

Contractor shall make such arrangements, as the utility owner requires, for measuring and paying for water required to flush and test water mains.

The bacteriological testing cover by these specifications is for Aqua of North Carolina. The contractor shall employ the service of an independent firm acceptable to Aqua of North Carolina to perform bacteriological testing for the new water lines. The contractor shall not activate new water mains until Aqua of North Carolina approves the bacteriological testing.

Service lines being lowered under the proposed drainage as adjust service line will be paid for as a standard pay item reconnect water meter.

Owner and Owner's Requirements:

The existing utilities belong to Brawley Commons Shopping Center, Aqua of North Carolina, Carolina Water Services, Inc. and Town of Mooresville. The Contractor shall provide access for the owner's representatives to all phases of construction. Notify the owner two weeks before commencement of any work and one week before service interruption.

Contacts:

Brawley Commons Shopping Center	Bill Miller (704) 399-1506
Aqua of North Carolina	Gary Moseley (704) 489-9404 ext. 226
Carolina Water Services, Inc.	Martin Lashua (704) 525-7990
Town of Mooresville	Mike Koury (980) 722-6249

All work to remove the existing sanitary sewer pump station and install the proposed 8" gravity sanitary sewer line and manhole on sheet UC-4AA shall be done between Monday midnight at 12:00 AM and Tuesday morning 8:00 AM. The sanitary sewer pump station is owned by Brawley Commons Shopping Center. The control panels and pumps will be removed by Brawley Commons Shopping Center. Contact Bill Miller to have the control panel and pumps remove. The contractor shall contact Bill Miller 2 days prior to starting work at the pump station. All work to remove the existing sanitary pump station and install the proposed 8" gravity sewer line and manhole will need to be coordinated with Bill Miller and completed within the time frame listed above. The proposed 8" gravity sewer line shall be Ductile Iron.

Utility Locations Shown on the Plans:

The location, size, 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.

1. REMOVE EXISTING SANITARY SEWER PUMP STATION:

The existing sanitary sewer pump station shall be removed and disposed of in accordance with the state and local regulations or as directed by the Engineer.

Before the existing pump station can be removed, the control panel and pumps shall be removed by Brawley Commons Shopping Center representative. The shopping center will need two days notice before starting work. The contact person for the shopping center is Bill Miller.

The quantity of sanitary sewer pump station removed, and accepted, will be measured and paid for at the contract unit price per each for "Remove Existing Sanitary Sewer Pump Station". Such price and payment will be full compensation for all labor, excavation, removal, stockpiling, and incidentals necessary to complete the work as required.

PROJECT: R-3833A
COUNTY: Iredell

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
- B. Windstream Communications
- C. PSNC Gas
- D. Time Warner Cable

The conflicting facilities will be adjusted prior to the date of availability except where 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.

Utilities Requiring Adjustment:

- A. Duke Energy
 - 1. See "Utilities by Others Plans" for utility conflicts.
- B. Windstream Communications
 - 2. See "Utilities by Others Plans" for utility conflicts.
- C. PSNC Gas
 - 3. See "Utilities by Others Plans" for utility conflicts.
- D. Time Warner Cable
 - 4. See "Utilities by Others Plans" for utility conflicts.