



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 January 2002 and the provisions outlined below.

Owner and Owner's Requirements:

The existing water line and gravity sewer line belongs to the City of Hendersonville. The contact person for the City is Mr. Ezra Allman at (828) 697-3063. 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 200 PSI 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 two inches (2") in diameter for mains eight inches (8") and smaller, and four inches (4") in diameter for mains greater than eight inches (8") and less than sixteen inches (16"). 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 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 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 Hendersonville.

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.

Services will be checked for leaks, cracked, broken, or missing pipe, deformed pipe and grade.

Upon notification from the City of Hendersonville advising that the line has passed final inspection, the Engineer shall complete the Engineer's Certification and send to the Division of Environmental Management with a copy to the City of Hendersonville. The city shall then issue an acceptance letter for the line.

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 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. DUCTILE IRON RIGID RESTRAINED JOINT SEWER PIPE:

Ductile Iron Rigid Restrained Joint Sewer 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 Rigid Restrained Joint Sewer Pipe shall be of the thickness class or pressure rating shown on the utility plans and shall conform to ANSI A21.51 (AWWA C151). Push-on joints for such pipe shall be in accordance with ANSI A21.11 (AWWA C111). Pipe thickness shall be designed in accordance with ANSI A21.50 (AWWA C150) and based on laying conditions and internal pressures as stated on the plans.

Cement mortar lining and seal coating for pipe shall be in accordance with ANSI A21.4 (AWWA C104). Bituminous outside coating shall be in accordance with ANSI A21.51 (AWWA C151).

Ductile Iron Rigid Restrained Joint Sewer Pipe (also identified as DI Rigid Restrained Joint Sewer 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 and valves, and paid for at the contract unit price per linear foot for, " _____ " DI Rigid Restrained Joint Sewer Pipe, PC ____ ". Such prices and payments will be full compensation for all materials, including pipe accessories, excavation, labor, pressure testing, sterilization, backfilling, and incidentals necessary to complete the work as required.

3. STEEL H-PILE PIERS:

Steel pile piers shall be furnished and installed as shown on the plans, as described in the provisions herein and in the contract and/or as directed by the Engineer.

Pier locations as shown on the plans shall be considered a guide only, with the final determination made at the time of construction by the Engineer. Pier spacing center to center will be shown on the plans, but all pier locations may be adjusted by the Engineer due to field conditions.

Piers will be placed parallel to the flow of the creek unless otherwise directed by the Engineer.

The work covered by this section consists of furnishing and driving piles, as indicated on the plans, the standard details, and as approved by the Engineer, in conformity with the specifications and to the bearing and penetration required.

Installation: General - The pilings shall be driven to obtain a bearing capacity of 10 tons based on the Standard Specifications and to a minimum depth of 10 feet in undisturbed

earth below the bottom of the creek channel or existing ground when not adjacent to the creek. Steel pile piers shall be of the size and configuration noted on the utility construction plan sheets.

Piles Lengths: Full length piles shall be used where practicable and not more than 2 pieces (1 splice) of steel pile will be permitted in making up one full length pile unless approved by the Engineer. Splices, where necessary and approved by the Engineer, shall be made as to maintain the true alignment and position of the pile sections. Both pieces of a spliced pile shall be the same shape.

Splices should develop not less than 100 percent of the bending strength of the pile and not less than 100 percent of the axial load strength of the pile. All welded splices will be of butt weld type with back-up plates welded to the flanges and web of the steel piles. All welding of structural steel in the shop or in the field shall meet the requirements of the AWS and be done by qualified welders. Certification of welders and welds will be required by the Engineer in accordance with the AWS Code.

Painting Steel Piers: Unless otherwise directed, all steel in the piers shall have a coal tar epoxy coating consisting of two coats of coal tar epoxy as specified. All surfaces of the steel to one foot below the disturbed ground shall receive the coating system and shall be thoroughly sand blasted prior to application to remove rust, dirt, grease, and other foreign material and to provide a clean surface to receive the coating. Each coat of paint shall be approved by the Engineer prior to application of the next coat. The total dry film thickness shall be at least 16 mils. Areas with coatings less than 16 mils shall be recoated as required to provide the specified film thickness.

Testing and Inspection: The Engineer will provide inspection and will determine bearing capacity of the driven piles. The Contractor shall submit the required hammer information as specified in the Standard Specifications to the Engineer.

Test piles which are not to be incorporated in the completed structure shall be removed to at least 2 feet below the surface of the ground or the stream bed, and the remaining hole backfilled with earth or other suitable material.

Pipe cradle shall be welded to steel plate as noted on the utility construction plan sheet details; spacing shall be sufficient to cradle pipe without lifting pipe from steel plate. Pipe cradle shall be welded to the steel piles. All welds shall be fillet welds and in conformance with the applicable AWS Structural Welding Code.

Straps and bolts shall be galvanized steel and straps shall be hot asphalt dipped. Straps shall be a 2" wide and ½" thick. Radius shall be ½ outside diameter of pipe.

Holes shall be drilled in strap and shall be 1/16" larger than bolt diameter. Bolts shall be ¾" diameter, 4" long, fully threaded, with flat washers top and bottom, and ¾" nuts. All steel shall be ASTM A36 steel.

Pipe cradles, straps, bolts, nuts and washers shall be considered incidental to steel pile piers.

Steel pile piers furnished and installed as required and accepted will be measured and paid for at the contract unit price per each for "Steel H-Pile Pier", such price and payments will be compensation in full for all materials, labor, equipment and incidentals necessary to complete the work.

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 (Distribution)
- B) Bell South - Telephone
- C) Mediacom – CATV
- D) Public Service of North Carolina – 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 (Distribution)

- 1) See Utilities by Others Plans.

NOTE: Duke Energy will complete relocations of their existing power distribution facilities to the new locations as shown on the utilities by others plans by July 10, 2004.

B) Bell South - Telephone

- 1) See Utilities by Others Plans.

NOTE: Bell South will relocate aerial telephone lines in joint use with proposed power and CATV throughout the project as shown on the utilities by others plans.

The minimum clearance over the Proposed Box Culvert will be 40 feet. The Contractor shall use caution when working around these telephone lines.

Bell South will complete relocations of their existing telephone facilities to the new locations as shown on the utilities by others plans by August 31, 2004.

C) Mediacom – CATV

- 1) See Utilities by Others Plans.

NOTE: Mediacom will relocate aerial CATV lines in joint use with proposed power and telephone throughout the project. Mediacom will install CATV lines following directly behind Duke Power's installation of their aerial facilities.

Mediacom will complete relocations of their existing CATV facilities to the new locations as shown on the utilities by others plans by July 30, 2004.

D) Public Service of North Carolina - Gas

- 1) See Utilities by Others Plans.

NOTE: The existing Gas line will be relocated to locations shown on the utilities by others plans.

The Contractor shall provide Public Service of North Carolina two weeks notice and then allow an additional two weeks to complete the relocation of their existing gas line facilities as shown on the utilities by others plans.

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