

**PROJECT SPECIAL PROVISIONS**  
**Utility Construction**  
**6" DI RJ WATER MAIN**  
**BRIDGE STATION 11+52**



**1. SCOPE OF WORK**

The Contractor shall be responsible for furnishing all equipment, labor, and materials necessary to install a 6" ductile iron restrained joint water main from station 10+58 -L1- to station 12+46 -L1- including attachment of the water main to the proposed bridge at station 11+52 -L1-.

All work shall be performed in accordance with the Structure Plans, these Special Provisions, the S-N sheet and as directed by the Engineer and subject to the approval of the Owner.

**2. GENERAL CONSTRUCTION REQUIREMENTS**

**MATERIAL SPECIFICATION**

When brand names of materials have been determined, the Contractor shall obtain approval, through the engineer, from the State Project Services Engineer and the owner prior to their use and/or installation.

The Contractor shall furnish, but is not limited to furnishing, catalog cuts and/or shop drawings of the materials. Forty days shall be allowed for the engineer's review of each submittal, eight copies of each catalog cut and/or shop drawing (signed and sealed) shall be submitted.

**PIPE SLEEVES**

The pipe sleeves shall be of the thickness shown on the plans and shall conform to the requirements of ASTM A53 Grade B or API 5L Grade B.

The pipe sleeves are to be installed in the endwalls as shown on the plans. Both ends of the sleeves shall be flush with both faces of the endwalls, and vertical grade that the main will be installed. If not fabricated to fit, a torch shall be used to cut the ends of the sleeves, and protective shields are to be placed on both faces of the endwalls.

All rough edges on the ends and inside of the sleeves caused by cutting shall be removed by filing or reaming.

**CONCRETE INSERTS**

Concrete inserts shall be galvanized in accordance with Section 1076 and have a minimum working load tension capacity of 3.147 kips for 7/8" rods. Concrete Inserts shall be installed in strict compliance with the recommendations specified by the manufacturer.

HARDWARE

Bolts, nuts, and washers shall be high strength and galvanized in accordance with Article 1072-7 of Standard Specifications.

HANGER RODS

The hanger rods shall be galvanized in accordance with Section 1076, threaded on both ends or threaded continuously and conforming to ASTM-A36 or A-575. The hanger rods shall be of a proper length so as to place the main at the vertical location shown on the plans.

PIPE HANGERS

The pipe hangers shall be an approved adjustable steel yoke pipe hanger type capable of supporting the RJ ductile iron water main and accepting the hanger rod. The entire hanger assembly is to be galvanized except the pipe yoke, which is to be coated with a minimum of 5 mils thickness of polyvinyl chloride or neoprene.

DUCTILE IRON "RESTRAINED JOINT" WATER PIPE

Ductile Iron Restrained Joint Water Pipe shall be of the thickness class and 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).

All Ductile Iron Restrained Joint Water Pipe shall be installed in accordance with laying condition Type 2 as stated in ANSI A21.51 (AWWA C151) unless otherwise shown on the plans.

Restraining joints shall be boltless, flexible type design using an integrally cast extended bell. Restraining gaskets are not acceptable.

Ductile iron restrained joint pipe shall be manufactured to the lengths required. Cutting of ductile iron pipe by the contractor will not be allowed.

ENDWALL SEAL

Seals shall be placed to fill the annular space between the carrier pipe and the endwalls, as indicated on the plans. The seal shall be of an approved link, lock or modular sleeve and casing type. Seals shall be modular mechanical type consisting of interlocking synthetic or rubber links shaped to continuously fill the annular space between the carrier pipe and the endwall. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. The seal shall be recessed a minimum of 2" from the fill face of the endwalls. After the seal assembly is positioned around the carrier pipe,

tightening of the bolts shall cause the rubber sealing elements to expand and provide a watertight seal between the carrier pipe and the endwall. The seal shall be constructed so as to provide insulation between the pipe and the endwall, thus preventing the flow of stray currents from the main to the bridge. See Utility Attachment Detail Sheet UC-9.

#### CORING THROUGH EXISTING RETAINING WALL

The existing retaining wall is proposed to be retained (see structure plan sheets). The existing wall shall be cored using a nondestructive method as determined by the Engineer for the proposed water line.

#### PAINTING

The surface of all exposed metallic materials that are not galvanized or otherwise coated shall be painted in accordance with the Standard Specifications using the materials specified herein.

Surface Preparation – Surface preparation shall be in accordance with Subarticle 442-8(A) of the Standard Specifications.

Shop Paint – All steel shall have shop coat of self-curing inorganic zinc paint conforming to Article 1080-7 of the Standard Specifications.

Field paint – All surfaces shall be given two (2) coats of a minimum dry thickness of 1 ½ mils for each coat of an approved type zinc paint conforming to Section 1080-9 of the Standard Specifications.

#### PRESSURE TEST, LEAKAGE TEST AND STERILIZATION

The pressure test, leakage test and sterilization of the main shall be performed as provided for in the Standard Specifications.

#### STEEL ENCASEMENT PIPE:

Steel encasement shall be provided to encase the six (6) inch water line to be attached to the proposed bridge. Construction methods and materials shall be in accordance to 2006 Standard Specifications for roads and structures.

### 3. Method of Measurement and Basis of Payment

Measurement and Payment shall be made at the contract lump sum price bid for “ 6” DI RJ Water Main Attachment” which includes furnishing and installing the water main, steel pipe sleeves, insulation, hangers, inserts, labor, materials, and incidentals. The lump sum bid price shall be full compensation for all materials, equipment and labor necessary to complete the work in accordance with the plans, Specifications, and as directed by the Engineer.

PROJECT: B-3189  
COUNTY: Haywood

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 – Telephone
- C. PSNC Energy - Gas
- D. Charter Communications - CATV

The conflicting facilities of these concerns will be adjusted prior to July 2, 2007, 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.

Utilities Requiring Adjustment:

A) Progress Energy - Power Distribution

- 1) See Utilities by Others Plans.

B) BellSouth - Telephone

- 1) See Utilities by Others Plans.

NOTE: BellSouth will complete its relocation by August 1, 2007.

C) PSNC Energy – Gas

- 1) See Utilities by Others Plans.

D) Charter Communications - CATV

- 1) See Utilities by Others Plans.

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