

## **SECTION S908 - CUT AND PLUG EXISTING WATER MAIN**

### **S908-1 DESCRIPTION**

Work consists of cutting and plugging or capping existing water mains that are to remain in service, as required in the Contract Documents and as directed by the Project Manager.

Work is to be in conformance with the requirements of Sections S900 General Water Provisions and S901 Water Main Pipe and Fittings.

### **S908-2 MATERIALS**

Ductile iron plugs and caps shall be required on ductile iron, cast iron and PVC/PVCO pipe. PVC plugs and caps are not to be used. Plugs and caps are to be in conformance with the requirements of Section S901 Water Main Pipe and Fittings. Tapped plugs and caps, if used, shall have a 2 inch tap and brass plug.

Plugs and caps installed on ductile iron and PVC/PVCO pipe shall be restrained to the pipe using mechanical joint or harness type joint restraint device in conformance with the requirements of S901 Water Main Pipe and Fittings.

Tie rods, socket clamps and tie bars may be used on cast iron pipe, in lieu of mechanical joint or harness type joint restraint device, subject to the prior approval of the Project Manager. Number and size of tie rods shall be as specified in S900 General Water Provisions. Tie bars shall be 3 inch steel channels, 5 pounds per foot.

### **S908-3 CONSTRUCTION DETAILS**

Whenever possible, plug shall be installed at a tee, cross or similar connection fitting. Where the water main is to be plugged at a water pipe joint, the plug shall be installed in the bell end of the water pipe.

A section of water main pipe shall be cut and removed and the interior of all water main pipe and fittings not receiving 24 hour chlorine disinfection contact time must be spray or swab disinfected with a 1 to 5 percent solution of chlorine no more than 30 minutes prior to installation. The interior and exterior of existing fitting or pipe joint and cut end of existing pipe which will be plugged or capped shall also be cleaned and disinfected.

On cast iron water pipe and fittings, where plugs cannot be bolted directly to the water pipe or fitting joint or otherwise restrained using a mechanical joint or harness type joint restraint device, the plug or cap shall be installed and held in place by a retaining bar extending across the center of the plug. A socket clamp shall be installed on the water pipe or fitting behind the bell, and the retaining bar secured to the socket clamp with steel rods, socket clamp washers, lock washers and nuts.

Prior to backfilling, uncoated tie rods, clamps and any components made of metal used for restrained joints are to receive hand brushed application of an approved bitumastic coating specifically manufactured for underground use or petrolatum wax tape coating system.

Non epoxy coated ductile iron fittings installed on PVC/PVCO water main pipe shall be coated with petrolatum wax tape coating system applied in conformance with manufacturer's instructions. One nine pound anode shall be thermite welded to each ductile iron fitting.

All joints shall be made watertight. Prior to backfilling, the water main shall be filled with potable water and installation tested for leaks under line pressure in the presence of the Project Manager.

In conjunction with mechanical restraints, cast-in-place concrete thrust blocks shall be provided to transmit the thrust due to water pressure to undisturbed earth. Prior to placing the concrete, all wet and undesirable material shall be removed from the excavation. Timber blocking will not be allowed.

**S908-4 METHOD OF MEASUREMENT**

The quantity to be measured for payment shall be the number of plugs or caps installed.

**S908-5 BASIS OF PAYMENT**

The unit price bid shall include the cost of: cutting and removing a section of the existing water main; dewatering and cleaning existing water main; furnishing and using all temporary plugs and disinfection to prevent contamination of the existing water main and new fittings; furnishing and placing plug or cap, mechanical restraints and appurtenances; protective coating; constructing the concrete thrust block; plugging the abandoned water main with concrete; pavement saw cutting; pressure testing; and furnishing all labor, material and equipment necessary to complete the work.

Excavation, rock excavation, furnishing and placing of magnesium anodes, bedding and select granular backfill, and surface restoration will be paid for under separate bid items.

Payment will be made under:

| <b>ITEM NO.</b> | <b>ITEM</b>                         | <b>PAY UNIT</b> |
|-----------------|-------------------------------------|-----------------|
| S908.01XX       | Cut and Plug Existing X" Water Main | Ea              |

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