

SECTION S919 - ABANDON EXISTING WATER VALVE VAULT; INSTALL DIRECT BURIAL VALVE(S)

S919-1 DESCRIPTION

Work consists of the abandonment of existing water valve vaults, removing existing gate valve(s) and installing new direct burial butterfly valve(s), as required in Contract Documents or as directed by Project Manager.

Work is to be in conformance with the requirements of Section S900 General Water Provisions.

S919-2 MATERIALS

S919-2.01 Bedding, Backfill and Surface Restoration Materials

All bedding, backfill and surface restoration materials shall be in conformance with requirements of Section S900 General Water Provisions.

S919-2.02 Valves and Valve Boxes

All valves and valve boxes shall be furnished by the City of Rochester Bureau of Water. Valves will be direct burial butterfly valves with mechanical joint ends. Valves come equipped with a 10 ft long valve shaft, to be cut to length in the field, and a torque limiting device with shear pin, to be installed near the road surface. The Contractor is to pick up valves, valve boxes and appurtenances from the Water Bureau Materials and Equipment Section, 401 Dewey Avenue, Rochester, NY 14613, (585) 428-7514, and deliver them to the Project Site. The Water Bureau requires 2 working days advance notice to make arrangements for pick-up.

S919-2.03 Bolted Sleeve Type Transition Couplings

Bolted sleeve type transition couplings shall conform to ANSI/AWWA Standard C219 Standard, latest revision. The coupling shall be designed for minimum 150 psi working pressure. Coupling shall have a solid center sleeve not less than 10 inches long. Gaskets shall be Nitrile, (Buna N) or SBR. Nuts and bolts shall be fluorocarbon coated, cold formed, high strength, low alloy steel in accordance with ANSI/AWWA C111/A21.11. Coupling shall be epoxy coated inside and outside.

Couplings shall be used for connecting new ductile iron water pipe with existing cast iron water pipe of different outside diameters. The following chart shows the range of outside diameters expected.

Nominal Diameter	Cast Iron Pipe Diameter Range		Ductile Iron Pipe Diameter Range	
	Minimum	Maximum	Minimum	Maximum
24"	25.7"	26.4"	25.7"	25.9"
30"	31.7"	32.8"	31.9"	32.1"
36"	37.9"	39.2"	38.2"	38.4"

S919-2.04 Mechanical Joint Restraints

Restraint devices used to restrain mechanical joint ends of valve to new spool pieces of ductile iron pipe shall be in conformance with requirements of Section S900 General Water Provisions and Section S901 Water Main Pipe and Fittings.

S919-2.05 Ductile Iron Pipe

Ductile iron pipe shall be Class 52, in conformance with requirements of Section S901 Water Main Pipe and Fittings.

S919-3 CONSTRUCTION DETAILS

Prior to ordering pipe couplings, the contractor shall coordinate with the Water Bureau to gain access to the vault. The Contractor may need to excavate test pits adjacent to vault, where new pipe will be connected to existing pipe, in order to obtain precise pipe diameter measurements. The pipe diameter inside of vault may not be the same as the pipe diameter outside of the vault. Shop drawings with diameter measurements must be approved by the Project Manager prior to ordering couplings. The Contractor should confirm delivery time for couplings, since there may be a long lead time for delivery of these items.

Valves required to isolate the valve vault shall be operated only by authorized Bureau of Water personnel. Dry shuts are not guaranteed. The Contractor must be prepared to work around leaking valves and will be responsible for draining the water mains at the work site.

Temporary bypass pipe and services may be required to maintain water service to customers affected by the shut. If temporary bypass is anticipated, it will be shown on the Contract Drawings and work performed in accordance with Section S916 Temporary Bypass.

The Water Bureau may require that some valve parts (i.e. gears, valve stems, bypass valves, etc.) be salvaged for re-use by the Bureau. Before work begins, the Water Bureau will identify which parts are to be salvaged. The Contractor shall remove and store salvaged valve parts for pick-up by the Water Bureau. The Contractor shall be responsible for properly recycling or disposing of the remainder of the valve.

The water valve vault roof, including manhole frame(s) and cover(s) shall be completely removed and properly disposed of without damaging the contents of the vault. Vault walls shall be removed to a depth of at least 4 feet below the surface.

The Contractor shall saw cut the pipe on either side of the existing valve(s) and carefully remove them from the vault. The valve(s) shall not be scrapped until parts to be salvaged have been removed. If necessary, cut ends of existing pipe shall be re-cut to accommodate installation of new valve(s), pipe and couplings.

Water-tight pipe plugs shall be inserted into open cut ends of pipe to prevent groundwater or debris from entering the pipe whenever the pipe is left unattended. The new valve(s), pipe and couplings shall be spray- or swab-disinfected prior to installation.

Marks shall be made near pipe ends to assist in centering couplings at pipe joints during installation. The gap between pipe ends at couplings shall not exceed that specified by the coupling manufacturer. Mechanical joint restraint shall be installed on both ends of new valve(s). Installation of valve(s) and couplings shall be in accordance with manufacturer's instructions.

Any drains in the vault shall be plugged with concrete and the vault floor shall be broken-up to keep groundwater from ponding in the bottom of the vault.

To allow the venting of air from the water main when it is refilled, the Water Bureau may require that the Contractor install a 3/4-inch corporation stop on top of the pipe. The corporation stop shall be closed and a brass cap installed on the outlet after the water main has been filled and prior to backfilling.

The water main shall be filled prior to backfilling and all joints visually inspected for leaks at line pressure. Leaks shall be repaired by the Contractor before backfilling. The Water Bureau will flush the water main until the chlorine concentration of water leaving the water main is the same as that generally prevailing in the system. A sample of water will be collected by the Water Bureau and tested for the presence of bacteria.

The valve shaft shall be cut to the appropriate length and the torque limiting device installed on the top of the shaft. The bottom of the shaft shall sit on top of the valve operating nut, but shall not be fastened to it. Valve box(es) shall be installed in accordance with Section S909 Water Valve Box.

The area shall be backfilled with select granular backfill in 6 inch lifts, with each lift being thoroughly compacted. Special attention shall be made to insure that backfill is properly placed under the new valve(s) and fittings.

Surface restoration shall be completed as required in the Contract Documents or as directed by the Project Manager.

The Contractor shall properly dispose of all removed materials and debris. Any hazardous waste removed from the excavation or vault shall be disposed of in accordance with all applicable New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) solid and/or hazardous waste management regulations. Solid hazardous waste must be disposed of at waste management or recycling facilities permitted to receive specific waste. Proposed disposal or recycling facilities must be approved by the City of Rochester prior to shipment by the Contractor. Disposal or recycling receipts must be provided to the City.

S919-4 METHOD OF MEASUREMENT

The quantity to be measured for payment will be for each water valve vault abandoned.

S919-5 BASIS OF PAYMENT

The lump sum price bid for each valve vault shall include the cost of: excavating test pits and measuring diameter of pipes; dewatering of the water main and vault; furnishing, installing and removing bypass pipe; saw cutting roadway; excavation and rock excavation; removing and disposing of water manhole frame(s) and cover(s); removing and disposing of water vault roof and walls, cutting of water main on each side of valve to be removed; furnishing and installing watertight plugs; salvaging and storing valve parts; removing and disposing of or recycling existing valve; furnishing and installing couplings, joint restraint devices and ductile iron pipe, pick-up and delivery of valve(s) and appurtenances and valve box(es) to the project site; spray or swab disinfecting all components; installing new valve and appurtenances; installing corporation stop; plugging vault drains; breaking-up vault floor; placing and compacting select granular fill; temporary surface restoration, pavement restoration; and furnishing all labor, material and equipment necessary to complete the work.

Payment will be made under:

ITEM NO.	ITEM	PAY UNIT
S919.02XX	Abandon Existing Water Valve Vault and Install Direct Burial Valve(s) (Furnished) (Including Excavation and Backfill)	Lump Sum
S919.03XX	Abandon Existing Water Valve Vault and Install Direct Burial Valve(s) (Furnished) (Including Excavation, Backfill and Surface Restoration)	Lump Sum

REVISED February 7, 2011