

ITEM 809 FIRE HYDRANTS

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809.01 Scope of Work. The Contractor shall furnish all labor, tools, material and equipment necessary to furnish and install new fire hydrants at the locations shown on the plans or as ordered and specified.

The item shall include all excavation, furnishing and installing the new fire hydrant complete with all fittings, approved polyethylene wrap, blocking, backfilling and all other incidental work necessary to complete this item of work. The Contractor shall install hydrant watch valves and 6 inch ductile iron hydrant leads where necessary, under Items 801 and 802.

The Contractor shall notify the Division of Fire prior to taking any fire hydrant out of service.

809.02 Description of Fire Hydrants. Provide post-type fire hydrants conforming in all respects to the American Water Works Association Standard for "Fire Hydrants for Ordinary Water Works Service", AWWA - C502 except as herein after specified.

1. **Type of Hydrant.** Provide a compression type hydrant with the valve opening with or against the pressure. Provide the stem or valve rod with the valve end constructed to eliminate contact of dissimilar metals in the presence of moisture, this construction to extend above the moisture line at valve.

Provide stems or valve rods made of 1-inch minimum steel stock before machine work between the valve and the operating nut. Locate a breaking coupling at the proper point to conform to the breaking connection in the standpipe.

Unless otherwise approved by the Administrator, Division of Power and Water, provide fire hydrants for use in the City of Columbus in accordance with the current Approved Materials List.

2. **Design.** Design the hydrants to localize and concentrate stresses generated by a smashing blow at a predetermined point in the couplings, straining the metal at this point beyond its ultimate tensile strength before a similar condition develops in the adjacent sections of the standpipe and stem. Design the hydrant so that the upper and lower sections of the hydrant breaks apart cleanly without bending the stem and without damage to the working parts of the hydrant, or the abutting parts of the standpipe sections with no leaking or flooding.

Secure the upper section of the standpipe that carries the nozzle to the lower section so that the upper section revolves, thus permitting the relocation of the nozzle to any desired direction.

Design a hydrant repairable using simple tools and the minimum number of parts, without the necessity of excavating or shutting off the water supply to the hydrant, if the hydrant breaks at the joint, and. Design the hydrant with a stem and main valve removable through the top of the standpipe without excavating.

3. **Materials.** Provide hydrant constructed of materials of the best commercial quality in their respective classes .
4. **Workmanship.** Provide clean and perfect castings. with no plugs or patches. Provide parts true to gauge to ensure interchangeability parts from one hydrant to another of the same make and size. The City will reject and return hydrants not conforming to specifications to the Contractor at Contractor's expense.
5. **Testing.** Provide hydrants properly assembled and tested before leaving the factory.
6. **Certification.** Provide certification that the hydrant manufacturer manufactured and tested the type hydrant furnished in accordance with these specifications.
7. **Paint.** Provide hydrants with two good coats of special yellow hydrant enamel, with the top 4 inches (102 mm) of the hydrant from operating nut down painted flat black.
8. **Valves.** Equip hydrants with rubber faced valves.
9. **Detailed Specifications, Size, Etc.**

Diameter of Port in Seal Ring:	minimum 4 1/4 inches
Size and type of connection to Main:	6 inches hub or bell or mechanical joint
Depth of Trench or Bury:	5 feet unless otherwise specified or shown on the plans
Number of Nozzles - One (1):	Center Front
Inside diameter of nozzle:	4 inches
Dimensions of nozzles and threads:	4 27/32 inches outside
Diameter of male thread:	4 37/64 inches root of diameter; 6 threads per inch (2.4 threads per cm)
Higbee cut. Length of thread:	1 1/4 inches right.

10. **Hydrants to Open to the Right (Clockwise).** Size and shape of nozzle caps and operating nuts - 7/8 inch square at top, tapered to 1 inch) at bottom, by 1 1/4 inch high. Thread on stem and nut - U.S. Standard (left hand).
11. **Drips or Draining Devices. Eliminate** drips or draining devices.

12. **The Pumper Nozzle.** Provide threaded or lead type pumper nozzles. Provide the nozzle that screws into the standpipe with pipe threads.
13. **The Breaking Connection.** Provide a breaking connection of a type approved by the Administrator of the Division of Power and Water.

Exclusive of the main valve opening the cross sectional area available for water flow at any point of the waterway of the barrel or foot-piece of the smallest part shall not be less than 120 percent of that of the net opening of the main valve.

14. **Shop Drawings.** Before installing any hydrant under the jurisdiction of this specification, obtain approval of drawings of the proposed hydrant. Provide drawings in sufficient detail to enable checking design and material. Correct errors or omissions discovered and supply the hydrant in accordance with the specifications.

809.03 Installation. Furnish and install hydrants at the locations shown on the plans. Locate hydrants 2 feet behind the back of the curb line or 8 feet from the edge of paved area on non-curbed roadways unless otherwise shown on the plans or directed by the Engineer. Provide hydrants of the proper length to suit the depth of cover over the water lines at the locations shown on the plans and furnish the necessary extensions to obtain the proper length. Locate fire hydrants a minimum of 6 feet clear of all driveway openings and curb returns. Install a second watch valve within 2 feet of the hydrant if the hydrant lead exceeds 15 feet in length.

Excavate the pit or trench for the fire hydrant so when installed, the hydrant base rests on a concrete slab on undisturbed soil. Set the hydrant plumb with nozzle outlet approximately 18 inches from ground line. Set hydrants set in accordance with grade line or approximately 2 inches below bottom of break connection on the hydrant standpipe.

Install fire hydrants with hardwood backing against Class "C" concrete backing poured against undisturbed earth, as approved by the Engineer.

809.04 Backfilling. Backfill with granular material conforming to Section 304.02 or Section 703.11 or approved suitable excavated material, power tamped in layers not exceeding 4 inches in thickness, loose measurement. Extend the granular backfill from the bottom of the pit or trench to 6 inches below the existing or proposed surface of the surrounding area. Include the cost of furnishing and placing this backfill in the price bid per fire hydrant.

809.05 Hydrant Delivered. Provide and install hydrant outlets, valves, and valve boxes, as indicated on the plans, for fire hydrant outlets specified and indicated on the plans as outside the corporation limits of the City of Columbus. Do not install fire hydrants outside the corporation limits of the City of Columbus, deliver hydrants to the Water Maintenance, 910 Dublin Road, Columbus, Ohio. The City will pay for hydrants not installed as per unit price bid, only for the material cost.

809.06 Hydrant Relocation. Relocate fire hydrants removing the existing hydrant, installing new 6 inch ductile iron pipe and cast iron fittings as required to set hydrant at location and elevation shown on the plans, resetting hydrant, blocking and backfilling to complete the work. If the new hydrant lead exceeds 15 feet in length, install a second

809.07

watch valve and restrain within 2 feet of the relocated hydrant. For relocations that parallel the right-of-way, if relocating more than 15 feet abandon the existing fire hydrant per Item 809.07 and a new fire hydrant installed at the proposed location.

809.07 Hydrant Abandoned. Where shown on the plans or directed by the Engineer abandon fire hydrants by either removing the anchoring tee and installing a solid sleeve on the water line or installing a mechanical joint plug and concrete blocking at the tee. Block in accordance with L-7001. Deliver abandoned hydrants to the Water Maintenance, 910 Dublin Road, Columbus, Ohio, unless otherwise directed by the Engineer. The City will make no additional payment for this delivery.

809.08 Basis of Payment. The City will pay for fire hydrants at the contract unit price bid for each hydrant installed or relocated, complete and ready for use, or for hydrant abandoned. The City will consider the unit price and payment as full compensation for doing all work and providing all materials above described. the City will pay for temporary repaving, permanent repaving and hydrant extensions under the appropriate items. The City will pay for the cost of the hydrant lead and watch valve under Items 801 and 802.

The City will make payment at the contract price for:

Item	Unit	Description
809	Each	Fire Hydrant
809	Each	Fire Hydrant, Delivered
809	Each	Fire Hydrant, Relocated
809	Each	Fire Hydrant, Abandoned