

SECTION 100

FIRE HYDRANTS

PART 1 - GENERAL

1.01 SCOPE

Under this item the Contractor shall furnish and install fire hydrants at the locations shown on the plans or as otherwise directed by the Engineer.

1.02 INSPECTION AND TESTS

Certified manufacturer's test reports will be acceptable under this item unless Owner authorizes inspection and tests by an independent testing laboratory at his own expense.

1.03 GUARANTEES

The Contractor shall provide a guarantee against defective equipment and workmanship in accordance with the requirements of the section entitled "Guarantees and Warranties", of these Specifications.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Fire hydrants shall be cast iron, fully bronze mounted, suitable for a working pressure of 150 psi and conform to the latest American Water Works Association Specifications C 502. They shall be similar and equal to compression type hydrants as manufactured by the Muller Company, U.S. Pipe Company, and American Darling B-84-B.
- B. Hydrants shall be constructed in a manner that will permit withdrawal of internal working parts without disturbing the barrel or casing. Valve shall be compression type, opening against pressure and so constructed that the main valve will remain closed should the hydrant be broken off by traffic a accident. Valve opening shall be at least 5 1/4 inches in diameter and shall have a net area of waterway at the smallest part of not less than 120 percent of the valve opening when the valve is wide open. There shall be no chattering or water hammer under any conditions of operation.
- C. Barrel shall be made in two pieces with flanged joint above the finished grade or ground line. Flange bolts shall be breakable type. Two positive acting, noncorrodible drain valves shall be provided in the hydrant shoe automatically

to open and provide rapid and complete drainage of the hydrant barrel when the main valve is closed.

- D. Hydrant bonnet shall be designed to protect the operating head against rust, corrosion and dirt. The stuffing box shall have bronze glands and O-ring seal. Suitable means shall be provided for lubricating the stem threads, O-ring and bearing surfaces in the bonnet.
- E. The main valve rod shall be of steel and shall be bronze sheathed where it passes through the stuffing box. Stem shall be equipped with a safety or breakable stem coupling to prevent damage to the stem when hydrant is hit by a vehicle. A positive stop shall be provided to permit full opening of the valve and prevent over travel of the stem.
- F. Each hydrant shall be tested at the factory to a hydrostatic pressure of 300 psi with valve in both open and closed positions. Manufacturer's certificates shall be furnished to the Engineer stating that such tests have been passed successfully before shipping any hydrants to the project.
- G. The direction of opening shall be cast on the head of the hydrant and it shall be as directed by the Engineer.
- H. Operating nut shall be National Standard 1 1/2-inch pentagon shaped.
- I. Two 2 1/2-inch hose nozzles and one 4 1/2-inch pump nozzle shall be provided on each hydrant. Hose and pumper nozzles shall be of bronze or noncorrosive metal, and threads shall be National Standard. Nozzle caps shall be securely chained to the barrel.
- J. Hydrants that are to be connected to cast iron pipe shall be equipped with mechanical joint inlet with gland, gaskets, bolts and nuts. Suitable ringtight or fluidtight inlets shall be provided on hydrants that are to be connected to cement asbestos pipe.
- K. Fire hydrants shall be painted one coat of zinc chromate primer and two finishing coats of enamel equal to Sonneborn's Hydrant Enamel or approved equal. Color shall be factory orange above the ground. Where paint has been damaged by shipping or during installation, the damaged surfaces shall be repainted in the field.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install fire hydrants at approximate locations as indicated on the Contract Drawings as approved by the Engineer. It may be necessary to determine in the field the final location of the fire hydrant. If hydrant locations are changed, approval must be obtained by the Engineer.
- B. Fire hydrant installations shall include a 6" gate valve for fire hydrant leads where tapping sleeves and valves are required for connection to existing water lines. A 6" gate valve shall also be installed on fire hydrant leads for new waterlines. All fire hydrant locations and valves shall be shown on the Contract Drawings and approved by the Engineer.
- C. Fire hydrant leads shall be of ductile iron material and have a diameter of 6 inches.
- D. Set each hydrant on a 4" thick 15" square minimum size precast concrete slab, in true plumb position, with lowest nozzle at least 12" above finished grade. Securely block and anchor hydrant by using retainer glands to prevent it from blowing off of lead, and place at least 1/4 cubic yard of crushed stone around base to at least 12" above and 12" below the drain hole for proper drainage. See the Drawings of these specifications.
- E. Fire Hydrant extensions: Normal fire bury lengths for new water line installations is 3.5 feet. Where conditions or circumstances require a longer bury length, fire hydrant extensions may be ordered and installed only with the approval of the Engineer. Each extension length must be reviewed and approved by the Engineer on a case by case basis. Payment for fire hydrant extensions will be made per vertical foot as stated in the contract Bid Schedule. No payment will be made for extensions where the Contractor did not meet all water line extension requirements of these specifications or did not obtain the approval from the Engineer.
- F. After setting, and after testing and final cleanup of the work, finish paint each hydrant above ground line with two coats of highest quality outside paint, color as selected by the Engineer.

** END OF SECTION **