SECTION 02720

FIRE SERVICE WATER METERS – 4 INCH AND GREATER

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Installation of fire service water meters.

PART 2 - PRODUCTS

2.01 FIRE SERVICE WATER METERS – 4 INCH AND GREATER

A. Meter shall meet the requirements of AWWA C703 and NSF Standard 61, Annex F and G. Meters shall be Sensus OMNI™ F^2 and no substitution will be considered.

B. MAINCASE: The meter maincase shall be of an epoxy coated iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for non-lead regulation compliance.

C. MEASURING CHAMBER: The measuring chamber shall consist of a measuring element, removable housing, and all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearing and be essentially weightless in water. The measuring element shall be capable of operating within the listed accuracy limits for the meter without calibration when transferred from one maincase to another of the same size. The measuring chamber shall be so configured to capture all flows without the requirement of an automatic valve.

D. DIRECT MAGNETIC DRIVE SYSTEM: The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. Additional intermediate, magnetic or mechanical drive couplings are not acceptable.

E. ELECTRONIC REGISTER: The meter's register shall be all-electronic and not contain any mechanical gearing to display flow and accurate totalization. The electronic register shall include AMR resolution units that are fully programmable; pulse output frequency that is fully programmable; integral data logging capability; integral resettable accuracy testing feature; large, easy-to-read LCD display; and a 10-year battery life guarantee.

F. STRAINERS: The meter strainer shall have a separate UL listed and FM approved external fire service strainer as a part of the meter package. The strainer screen shall have a minimum net open area of at least four times the pipe opening and be V-shaped stainless steel screen for the purpose of maintaining a full

unobstructed flow pattern. The strainer body shall be a coated iron with stainless steel fasteners.

G. STRAIGTHENING VANES: A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

H. CONNECTIONS: Flanges for the meters shall be of the Class 125 round type, flat faced, and conform to ANSI B16.1 for specified diameter, drilling and thickness.

I. CERTIFICATIONS, MARKING AND PRESSURE RATING: All sizes of meters shall be UL (Underwriters Laboratories) listed and FM (Factory Mutual) approved as being accepted for use on fire service lines and domestic water use. For such applications, the meter shall have a UL/FM listed and approved strainer immediately upstream of the inlet flange. The meter assembly shall operate without leakage, damage or malfunction up to a maximum working pressure of 175 psi. All meter sizes shall display the size, model, manufacturer name and direction of flow cast on the side of the meter.

J. PERFORMANCE: The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as set forth in AWWA requirements without affecting long-term accuracy or causing undue component wear. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands.

PART 3 - EXECUTION

3.01 SETTING METERS

A. Meters shall be installed in precast concrete meter boxes as shown on the Standard Details. Meter boxes shall be set level with top of meter box a minimum of 4 inches above grade. Meter boxes shall be set atop a minimum of 8-inches of crushed stone and include a drain hole in the bottom of the meter box. Care shall be taken in the backfilling around the meter box to prevent damage to the meter box. Backfill around meter boxes shall be select backfill with no stone or rock greater than 2 inches.

B. Rubber gaskets shall be used at each flange during installation. Bolts on flanges shall be torqued to the manufacturer’s recommended requirements. Do not over-tighten bolts.

C. Meter appurtenances shall be provided in accordance with the Standard Details.

END OF SECTION