

## **PART 1 - GENERAL REQUIREMENTS**

### **1.01 SUMMARY**

- A. This Section includes commercial water filtering equipment.
  - 1. Control wiring between field-installed controls, indicating devices, and unit control panels.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 3 Section "Concrete Work" for formwork, reinforcement, and concrete for concrete bases.
  - 2. Refer to Division 22 Section "Basic Piping Materials and Methods" for unions and dielectric unions.
  - 3. Refer to Division 26 Section "Electrical Connections for Equipment" for power-supply wiring including field-installed disconnects and required electrical devices.
- C. Related Sections
  - 1. Section 01357 Sustainable Design Project Requirements

### **1.02 SUBMITTALS**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
  - 1. Product data including rated capacities of selected models, weights (shipping, installed, and operating), dimensions, furnished specialties, and accessories.
  - 2. Wiring diagrams detailing field-installed wiring for power and controls.
  - 3. Maintenance data for inclusion in Operating and Maintenance Manual specified in Division 1 and Division 15 Section "General Mechanical Requirements."

### **1.03 QUALITY ASSURANCE**

- A. Electrical Component Standard: Provide components complying with NFPA 70 "National Electrical Code."
- B. NSF-61 Compliant Listing and Labeling: Provide water filtering equipment that is listed or labeled.
  - 1. The terms "listed" and "labeled" shall be as defined in the National Electrical Code, Article 100.
  - 2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.
  - 3. Provide mineral products for water filters, acceptable under state and local public health control regulations.
- C. UL Compliance: Control panels shall be listed and labeled by UL and comply with Standard 508A "Control Panels".
- D. NEMA Compliance: Electric motors and components shall be listed and labeled NEMA.
- E. Manufacturer/Product Selection: The Drawings indicate sizes, profiles, and dimensional requirements of water filters and are based on the specific types and models indicated. Water filters having equal performance characteristics by other manufacturers may be considered provided that deviations in dimensions and profiles do not change the design concept or intended performance. The burden of proof of equality is on the proposer.

### **1.04 WARRANTY**

- 1. A single written warranty must be provided from the manufacturer of the water filter system covering workmanship and materials for the complete system for a minimum of (1) year.

## **PART 2 - PRODUCTS AND MATERIALS**

### **2.01 APPROVED MANUFACTURERS**

- A. Point-of-Entry Filtration System
  - 1. Easy Water

2. Harmsco
3. Hayward
4. U.S. Filter
5. Shelco

## **2.02 GENERAL DESCRIPTION**

- A. Provide commercial water filters having capacities as scheduled on the drawings.

## **2.03 POINT-OF-ENTRY FILTRATION SYSTEM (BAG FILTERS)**

ToxinShield with No-Salt Conditioner and UV Treatment

- a) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- 1) EasyWater, Inc. [www.easywater.com](http://www.easywater.com)
  - b) Description: EasyWater, Model TS-2472-1.5C-TA-NSC-UV-S
  - 1) System must include:
    - a) 30gpm, twin alternating self-backwashing ToxinShield filtration system
    - b) 30gpm monitored ultraviolet (UV) sanitization
    - c) 30gpm Electronic descaling system treatment for all domestic cold water. Electronic descaling technology must include a pre-wrapped and pre-flanged CPVC treatment spool and control panel with heat dissipating fins
    - d) Skid mounted, pre-plumbed and pre-wired with a single electrical disconnect

## **PART 3 - EXECUTION**

### **3.01 CONCRETE EQUIPMENT BASES**

- A. General: Construct concrete equipment bases in accordance with Section “Basic Mechanical Materials and Methods” for setting of equipment.

### 3.02 WATER FILTER INSTALLATION

- A. Install water filtering equipment level and plumb, on concrete bases in accordance with manufacturer's written instructions, layout drawings, the original design, and referenced standards. Maintain manufacturer's recommended clearances. Orient so controls and devices needing servicing are accessible.
- B. Install pressure gauges on water inlet and outlet piping of each water softener. Pressure gauges are specified in Division 22 Section "Meters and Gauges."
- C. Install water testing sets near water filters, wall-mounted, where indicated.
- D. Install vacuum relief valve on supply piping to filter where indicated on the drawings. Vacuum relief valves are specified in Division 22 Section "Water Heaters."

### 3.03 CONNECTIONS

- A. Water Distribution Piping: Piping installation requirements are specified in Division 22 Section "Water Distribution Piping." The Drawings indicate the general arrangement of piping, fittings, and specialties. The following are specific connection requirements:
  - 1. Install piping adjacent to equipment to allow servicing and maintenance.
  - 2. Connect water piping to units with shutoff valves and unions and provide full-size valved bypass around unit.
    - a) Where water connections are made with dissimilar metal water distribution piping, make connections with dielectric fittings or dielectric unions specified in Division 15 Section "Basic Piping Materials and Methods."
  - 3. Install drains as indirect wastes to spill into open drains or over floor sinks.
- B. Install fittings furnished by manufacturer but not specified to be factory mounted.
  - 1. Grounding: Connect unit components to ground in accordance with the National Electrical Code.

### **3.04 DEMONSTRATION**

- A. Start-Up Services: Provide the services of a factory-authorized service representative to provide start-up service and to demonstrate the operation of the equipment, accessories and controls.
  - 1. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

### **3.05 STARTUP**

- A. Perform the following before start-up final checks in the presence of an authorized factory representative:
  - 1. Water piping systems tests completed.
  - 2. Check for piping connections leaks.
  - 3. Test operation of safety controls and devices.
  - 4. Start up, test, and adjust water filter. Operate units including service, backwash, and rinsing. Adjust unit to maintain required steady state effluent water quality.
- B. Certification: CONTRACTOR shall submit to the Engineer a certification letter stating that the filter has been installed and tested per the manufacturer's installation instructions and signed by the authorized factory representative.

### **3.06 TRAINING**

- A. General: At a time mutually agreed upon between the OWNER and CONTRACTOR, provide the services of a factory trained and authorized representative to train OWNER's designated personnel for a minimum of eight hours on the operation and maintenance of the equipment provided under this section.
- B. Content: Training shall include but not be limited to:
  - 1. Overview of the system and/or equipment as it relates to the facility as a whole.
  - 2. Operation and maintenance procedures and schedules related to startup and shutdown, troubleshooting, servicing, preventive maintenance and appropriate operator intervention.
  - 3. Review data included in the operation and maintenance manuals. Refer to Division 1 Section "Operating and Maintenance Data."

4. Testing of effluent.

- C. Certification: CONTRACTOR shall submit to the Engineer a certification letter stating that the OWNER's designated representative has been trained as specified herein. Letter shall include date, time, attendees and subject of training. The certification letter shall be signed by the CONTRACTOR and the OWNER's representative indicating agreement that the training has been provided.
- D. Schedule: Schedule training with OWNER with at least 7 days' advance notice.

**END OF SECTION**