This master should be used by designers working on Port of Portland construction projects and by designers working for PDX tenants (“Tenants”). Usage notes highlight a few specific editing choices, however the entire section should be evaluated and edited to fit specific project needs.

SECTION 210523 – GENERAL DUTY VALVES FOR WATER-BASED FIRE SUPPRESSION PIPING

1. GENERAL
   * + 1. DESCRIPTION
          1. This section describes general duty valves, specialty valves, and safety shutoff valves.
       2. RELATED WORK SPECIFIED ELSEWHERE
          1. Section 210553, Identification for Fire Suppression Piping and Equipment
       3. REFERENCES
          1. MSS: Manufacturers Standardization Society
       4. SUBMITTALS
          1. Submit product data, shop drawings, and maintenance data for products specified in this section.
2. PRODUCTS
   * + 1. GENERAL
          1. All instances of each valve type shall be of one manufacturer.
          2. All gate, butterfly, and check valves shall meet MSS standards.
          3. Bronze gate and check valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.
          4. Full lug and grooved butterfly valves shall be suitable for bi-directional dead end service at full rated pressure without use or need of a downstream flange.
          5. Valves in insulated piping: Valves shall have 2-inch stem extensions and the following features:

Gate Valves: Rising-stem type.

Butterfly Valves: Shall have extended necks.

* + - 1. GATE VALVES
         1. Acceptable Manufacturers: Apollo, Crane, Hammond, Nibco, or equal.
         2. Bronze Gate, High Pressure, Fire Protection: Bronze body, screwed, bronze screwed bonnet; bronze solid wedge; OS and Y; rising stem; 175 psi rating, CWP; UL listed, FM approved; Nibco T‑104.
         3. Iron Gate, High Pressure, Fire Protection: Iron body, bronze trim, flanged, OS and Y pattern, solid wedge, pre-grooved stem for supervisory switch mounting, 175 psi CWP, UL listed, FM‑approved; Nibco F-607-OTS.
      2. CHECK VALVES
         1. Acceptable Manufacturers: Apollo, Crane, Hammond, Nibco, or equal.
         2. Horizontal Bronze Swing Check: Bronze body, bronze-mounted, screwed, TFE disc, 150 psi SWP, 300 psi CWP, Nibco T-443-Y. With soldered ends, Nibco S‑433‑Y.
         3. Horizontal Bronze Swing Check, High Pressure: Bronze body, bronze-mounted, screwed, regrinding bronze disc, 300 psi SWP, 600 psi CWP, Nibco T-473-B.
         4. Horizontal Iron Swing Check: Iron body, bronze-mounted, flanged, regrinding bronze disc and seat ring, 125 psi SWP, 200 psi CWP, Nibco F-918-B.
         5. Vertical and Silent Check Valves: Iron body, stainless steel spring, wafer type, globe style. To fit class 125 flanges, 200 psi CWP, Nibco W-910-B-LF, with flanged ends, Nibco F-910-B. To fit class 250 flanges, 400 psi CWP, Nibco W-960-B-LF, with flanged ends, Nibco F-960-B.
      3. BUTTERFLY VALVES
         1. Acceptable Manufacturers: Apollo, Nibco, Keystone, Victaulic, or equal.
         2. Ductile iron body, aluminum-bronze disc and one-piece stainless steel shaft, copper bushing, with lever handle and locking feature on valves 6 inches and smaller, gear operator on valves 8 inches and larger; treaded lug or grooved end type, EPDM liner or disc, 200 psi CWP, Nibco LD 2000 (lug style), Nibco GD-4765 (grooved ends). Do not use fasteners and pins to attach stem to disc.
      4. SPECIALTY VALVES
         1. Acceptable Manufacturers: Nibco, Apollo, or equal.
         2. Drain Valves: Bronze ball valve, garden hose end, cap and chain 3/4-inch size, bronze cast body, chrome-plated full port ball, threaded, with handle, Teflon seat, threaded body packnut design (no threaded stem designs allowed) with adjustable stem packing, 600 psi CWP, Nibco T‑585‑70‑HC.
         3. Gauge Cocks: Brass, tee handle, male to female, 200 psi working pressure, 1/4-inch, Conbraco 41 series.

1. EXECUTION
   * + 1. INSTALLATION
          1. Provide valves at connections to equipment where shown or required for equipment isolation.
          2. Install all valves accessible and same size as connected piping.
          3. Provide separate support for valves where necessary.
          4. Grooved type valve end connections may be used in lieu of flanged on services where mechanical pipe couplings and fittings are specified.
          5. Provide drain valves in all low points in the piping system, at coils and equipment and as indicated.
       2. APPLIED LOCATIONS
          1. Fire Protection Service and Fire Pumps:

In piping 2 inches and smaller, bronze gate valve, high pressure, fire protection.

In piping 2 1/2 inches and larger, iron gate valve, high pressure, fire protection.

UL-approved butterfly valves.

Horizontal bronze swing check, high pressure.

* + - * 1. Provide gauge cock for all pressure gauges.
      1. VALVE IDENTIFICATION
         1. Identify valves to indicate their function and system served.

END OF SECTION 210523