

**MODIFICATION TO TUCSON WATER STANDARD WATERWORKS SPECIFICATIONS
NO. 1416, COPPER SERVICE MATERIALS**

1416.0201 Materials.

REMOVE ITEMS (A) AND REPLACE WITH THE FOLLOWING:

- (A) This technical provision covers 1” to 2” fittings and pipe for working pressures of 300 pounds per square inch.

REMOVE ITEM (B) AND REPLACE WITH THE FOLLOWING:

- (B) All service lines shall be copper. Fittings and connections directly to copper pipe shall be bronze ASTM B62 85-5-5-5 copper tube size (CTS). Flared fittings are prohibited.

REMOVE THE FIRST PARAGRAPH OF ITEM (D) AND REPLACE WITH THE FOLLOWING:

- (D) Corporation stops, size 1” to 2” inclusive, shall be ball valve, full opening with o-ring seal and bronze or stainless steel ball. Corporation stops shall be AWWA taper threads (Mueller “CC”) inlet x CTS outlet. AWWA taper (Mueller “CC”) threads are described in AWWA Specification C800 (latest edition).

REMOVE ITEM (E) AND REPLACE WITH THE FOLLOWING:

- (E) Splice unions shall be three-part design for use with type “K” copper service piping, size 1” to 2” inclusive. One three-piece splice union may be used for each hundred-foot roll of 1” copper tubing or each 40 foot roll of 1-1/2” and 2” copper tubing. A splice may be used only when necessary in extending existing copper services to a new required length or for repair sections.

REMOVE ITEM (F) AND REPLACE WITH THE FOLLOWING:

- (F) Adaptor couplings shall be male iron pipe (MIP) x CTS, or female iron pipe (FIP) x CTS. All fittings used in the installation of services shall be bronze and shall comply with AWWA Specification C800.

REMOVE ITEM (G) AND REPLACE WITH THE FOLLOWING:

- (G) Angle Meter Stops

- (1) Sizes ¾” and 1”

Angle meter stops (AMS) shall be all bronze ball style AMS with CTS or iron pipe (IP) inlet. All AMS shall be full ported and shall have locking wings.

(2) Sizes 1-1/2" and 2"

Angle meter stops (AMS) shall be all bronze ball style AMS with oval type water meter flange outlet and CTS inlet. All AMS shall be full ported and shall have locking wings.

REMOVE ITEM (H) AND REPLACE WITH THE FOLLOWING:

(H) Service clamps with bails and rubber or neoprene gaskets shall be either single or double strap, with CC thread, of corrosion resistant materials, described as follows:

1. Saddles

Acceptable materials for use in clamp saddles are (a) All bronze saddle with silicone bronze double straps, or (b) Ductile Iron, meeting ASTM Spec. No. A-536 factory coated externally with not less than 8 mils of fusion-bonded epoxy (holiday tested) with stainless steel straps and nuts. Nuts or bolts shall be factory coated with an anti-seize material. Ductile iron saddles may be single strap for 1" taps and double straps for 1-1/2" and 2" taps.

2. Straps

Bronze double straps shall be used with bronze saddle. Minimum type 304 stainless steel straps and nuts shall be used with Ductile Iron saddle. Each strap shall be designed to include a flattened surface suitable for tightening against the circular pipe exterior with evenly distributed bearing area. Stainless steel nuts or bolts shall be factory coated with an anti-seize material.

Stainless steel single strap may be used for 1" installations provided that the gasket to be furnished shall provide a tapered o-ring or ribbed seal to surround the tap and compresses uniformly when the strap nuts are tightened, avoiding eccentric loading problems.

Double strap clamps shall be used for all 1-1/2" and 2" installations. The gasket provided shall surround the tap and seal by tapered gasket, o-ring, or ribbed gasket. Compression shall be uniform as the strap nuts are tightened, avoiding eccentric loading.

ADD THE FOLLOWING AS ITEM LETTER (I):

(I) Taps to be performed by the Metropolitan Domestic Water Improvement District are to be paid by the customer/applicant at established fees or project cost estimate prior to commencing construction.