SECTION 15108
AIR RELEASE VALVE, AIR AND VACUUM VALVE, COMBINATION AIR VALVE AND MANUAL AIRVALVE ASSEMBLIES

PART 1 GENERAL

1.01 DESCRIPTION

This section includes the materials and installation instructions for above ground air release valves, air and vacuum valves, and combination air valve assemblies and for below ground manual air valves.

The term "air valve" is used generically in this specification to refer to requirements common to all of the specified air release valves, air and vacuum valves, and combination air valves. Otherwise, the various types of air valves are addressed by the individual designations commonly used in AWWA and industry standards.

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

AWWA C512	-	Air-Release, Air/Vacuum, and Combination Air Valves for Waterworks Service
AWWA C550	-	Protective Interior Coatings for Valves and Hydrants

1.03 RELATED WORK SPECIFIED ELSEWHERE

Standard Drawings
Standard Specifications 02223, 03000, 09910, 15000, 15041, 15044, 15056, 15057, 15061,
15064, 15100, 16640

1.04 SERVICE APPLICATION

A. Combination air valves are generally installed on all potable, recycled water mains, LPS sewer mains and force mains where shown on the Approved Plans and in accordance with the Standard Drawings.

B. Unless otherwise directed by the District Engineer, combination air valves will be required as indicated below:

1. 1” combination air valve assemblies shall be installed on pipeline sizes (6”) through (10”).

2. 2” combination air valve assemblies shall be installed on pipeline sizes (12”) and (20”).

3. Combination air valve assemblies for pipeline sizes (24”) through (36”) will be sized per the District Engineer.

C. Air release valves, air and vacuum valves, and manual air valves shall be installed in accordance with the Approved Plans or as directed by the District Engineer.

1.05 DELIVERY, STORAGE, AND HANDLING

Valves shall be delivered and stored in accordance with AWWA C550. The port openings shall be covered with plastic, cardboard, or wood while in transit and during storage in the field. These covers shall remain in place until the valve is ready to be installed. Valves shall not be stored in contact with bare ground. Valves shall not be stacked.

1.06 RECYCLED WATER IDENTIFICATION

Air valve assemblies and enclosures used for recycled water shall be identified with purple- colored coating, identification labels or signs in accordance with Section 15151.

1.07 TRACER WIRE

Tracer wire shall be installed for air valve assemblies in accordance with Section 15000 and the Standard Drawings.

1.08 WARNING/IDENTIFICATION TAPE

Warning/Identification tape shall be installed for air valve assemblies in accordance with Section 15000.

PART 2 MATERIALS

2.01 COMBINATION AIR VALVES

A. Combination air valves and appurtenant components and materials suitable for the system pressure shall be selected from the Approved Materials List.

B. Combination air valves shall comply with AWWA C512 except as modified herein.

C. (2”) combination air valves shall be the single-body type incorporating stainless steel internal components and suction screen. National Pipe Threaded (NPT) inlet and outlet configurations.

D. (4”) and (6”) combination air valves shall be the single-body type incorporating stainless steel internal components, protective hood, suction screen and flanged inlet.

E. Internal protective epoxy coatings shall be provided in accordance with AWWA C550.

2.02 AIR RELEASE VALVES AND AIR AND VACUUM VALVES

A. Air release valves and air and vacuum valves shall be provided only as specifically shown on the Approved Plans. Air release valves, air and vacuum valves and appurtenant components and materials suitable for the system pressure, shall be selected from the Approved Materials List and or approved by the District Engineer.

B. Air release valves and air and vacuum valves shall comply with AWWA C512 except as modified herein.

C. (2") air release valves and air and vacuum valves shall be the single-body type incorporating stainless steel internal components and suction screen. National Pipe Threaded (NPT) inlet and outlet configurations.

D. (4") and (6") air release valves and air and vacuum valves shall be the single-body style. Valves shall incorporate stainless steel internal components, suction screen, protective hood and flanged inlet.

E. Epoxy linings and coatings for valves shall be provided in accordance with AWWA C550.

1. Liquid epoxy lining and coating materials shall be listed in the NSF Listing for Drinking Water Additives, Standard 61, certified for use in contact with potable water.

2. The minimum dry film thickness for epoxy linings shall be 0.203mm (0.008" or 8 mils). Liquid epoxy lining shall be applied in two (2) coats in accordance with AWWA C210.

2.03 MANUAL AIR VALVES

Manual air valves shall be provided only as specifically shown on the Approved Plans. Materials shall be in accordance with the Standard Drawings and selected from the Approved Materials List.

2.04 ENCLOSURES

Air Valve Enclosures shall be selected from W-16 of the Standard Drawings and or approved by the District Engineer.

2.05 CONCRETE

Concrete used for anchor or thrust blocks and equipment pads shall be in accordance

with Section 03000.

2.06 BOLTS AND NUTS

A. Combination air valves, air release valves and air and vacuum valves sized (4") and larger shall be installed with bolts and nuts in accordance with the Standard Drawings and selected from the Approved Materials List.

B. Bolts and nuts shall be zinc-plated A307 carbon steel in accordance with section 15000. Bolts used for uncoated or exterior application

2.07 TRACER WIRE

Tracer wire materials shall be in accordance with Section 15000 and selected from the Approved Materials List.

2.08 WARNING/IDENTIFICATION TAPE

Warning/Identification Tape shall be in accordance with Section 15000 and selected from the Approved Materials List.

2.09 FIELD PAINTING AND COATING

Field painting and coating materials shall be in accordance with Section 09900 and 09910 and selected from the Approved Materials List.

PART 3 EXECUTION

3.01 INSTALLATION

A. Air valve assemblies shall be provided as shown on the Approved Plans. Additional air valve assemblies may be required in areas of potential air entrapment, at the discretion of the District Engineer.

B. Air valve assemblies shall be installed relative to street improvements in accordance with the Standard Drawings.

C. Connections for the air valve assemblies shall be made within a section of the main line no closer than (36") to a bell, coupling, joint or fitting.

3.02 CONCRETE

Concrete thrust or anchor blocks and equipment pads shall be installed in accordance with Section 03000 and the Standard Drawings. Refer to Section 03000 for the minimum concrete curing time required.

3.03 TRACER WIRE

Tracer Wire shall be installed in accordance with Section 15000 and the Standard Drawings.

3.04 WARNING/IDENTIFICATION TAPE

Warning/Identification tape shall be installed in accordance with Section 15000 and the Standard Drawings.

3.05 DISINFECTION

Air valve assemblies shall be disinfected in accordance with Section 15041 in conjunction with disinfecting the main to which it is connected. The assembly valves shall be operated and the assembly flushed to completely disinfect all internal parts.

3.06 HYDROSTATIC TESTING

Air valve assemblies shall be hydrostatically tested in accordance with Section 15044 in conjunction with the pipeline to which they are connected.

3.07 FIELD PAINTING AND COATINGS

A. Air valve assemblies shall be color coded, if required, in accordance with Section 09900 and the Standard Drawings.

B. Field repairs to the enclosure shall not be permitted. Enclosures damaged and deemed unsuitable for use by the District Engineer, shall be replaced at the contractor's expense.

END OF SECTION 15108