

RULE NO.: R161-22.04**NOTICE OF PROPOSED RULE****POSTING DATE: January 12, 2022**

The Director of the Department of Austin Water proposes to adopt the following rule on or after February 14, 2022.

Comments on the proposed rule are requested from the public. Comments should be submitted to Mr. Eric Langhout, P.E.; Austin Water, 3907 S. Industrial Dr., Suite 236, Austin, Texas 78744, 512-972-0073, or via email at Eric.Langhout@austintexas.gov. To be considered, comments must be submitted before February 14, 2022, the 32nd day after the date this notice is posted. A summary of the written comments received will be included in the notice of rule adoption that must be posted for the rule to become effective.

An affordability impact statement regarding the proposed rule has been obtained and is available for inspection or copying at the address noted in the preceding paragraph.

EFFECTIVE DATE OF PROPOSED RULE

A rule proposed in this notice may not become effective before the effective date established by a separate notice of rule adoption. A notice of rule adoption may not be posted before February 14, 2022 (the 32nd day after the date of this notice) or not after March 23, 2022 (the 70th day after the date of this notice).

If a proposed rule is not adopted on or before March 23, 2022, it is automatically withdrawn and cannot be adopted without first posting a new notice of a proposed rule.

TEXT OF PROPOSED RULE

The text of the proposed rule, indicating changes from the current text, is attached to this notice.

BRIEF EXPLANATION OF PROPOSED RULE

R161-22.04: Proposed revision to the Standard Specifications 511

Rule 2 – Standard Specification 511

1. **Standard Spec 511.1** – We are continuing with the removal SI units in our Standard Specifications that was started with 510. This will occur throughout the section.
2. **Standard Spec 511.2** – We are continuing to add more acronyms throughout this section.

3. **Standard Spec 511.2.B.2&3** – We are capitalizing the first words in these two sections, like the others.
4. **Standard Spec 511.3.A** – We are removing this language because metal seated gate valve are no longer allowed and we have removed SPL WW-132.
5. **Standard Spec 511.3.A.5** – Tapping valve information no longer allowed.
6. **Standard Spec 511.3.B** – We are removing this language because butterfly valves are no longer allowed in our system.
7. **Standard Spec 511.3.E.1** – We are removing this “available upon request” language. This is now available on-line.
8. **Standard Spec 511.3.G** – Standard Detail 511S-9 has been replaced with 511-AW-03.
9. **Standard Spec 511.4.B** – Standard Detail 511S-17 has been replaced with 511-AW-02.
10. **Standard Spec 511.4.G** – Standard Detail 511S-9A has been replaced with 511-AW-03.
11. **Standard Spec 511.4.H** – Standard Details 511S-1A, 511S-1B, 511S-2A, 511S-2B, 511S-3A, and 511S-3B have been replaced with 511-AW-04.
12. **Standard Spec 511.6** – Replace Standard Details 511S-17 with 511-AW-02.
13. **Standard Spec 511.6** – Replace Standard Details 511S-9A with 511-AW-03.
14. **Standard Spec 511.6 Cross Reference Materials** – Standard Details 511S-1A, 511S-1B, 511S-2A, 511S-2B, 511S-3A, and 511S-3B have been replaced with 511-AW-04.
15. **Standard Spec 511.6 Cross Reference Materials** – Replace Standard Details 511S-9A with 511-AW-03.
16. **Standard Spec 511.6 Cross Reference Materials** – Replace Standard Details 511S-17 with 511-AW-02.
17. **Standard Spec 511.6 Cross Reference Materials** – Remove the reference to SPL WW-132.
18. **Standard Spec 511.6 Cross Reference Materials** – Added 515 to AWWA C- that was missing.

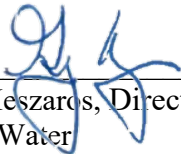
AUTHORITY FOR ADOPTION OF PROPOSED RULE

The authority and procedure for adoption of a rule to assist in the implementation, administration, or enforcement of a provision of the City Code is provided in Chapter 1-2 of the City Code. The authority to regulate construction requirements is established in Section 552.001 of the Texas Local Government Code and Title 15 of the City Code.

CERTIFICATION BY CITY ATTORNEY

By signing this Notice of Proposed Rule R161-22.04, the City Attorney certifies the City Attorney has reviewed the rule and finds that adoption of the rule is a valid exercise of the Director's administrative authority.

REVIEWED AND APPROVED



Greg Meszaros, Director
Austin Water

Date: 12/21/2021

Deborah Thomas for

Anne L. Morgan
City Attorney

Date: 12/23/2021

SUMMARY OF 1st QUARTER - 2022 STANDARD SPECIFICATIONS CHANGES

Rule 2 – Standard Specification 511

1. **Standard Spec 511.1** – We are continuing with the removal SI units in our Standard Specifications that was started with 510. This will occur throughout the section.
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5115.1 - Description

This specification is applicable for projects or work involving either inch-pounds or SI units. Within the text, inch-pound units are given preference followed by SI units shown within parentheses.

5115.2 - Materials

The SPL's should not be interpreted as being a pre-approved list of products necessarily meeting the requirements for a given construction Project. Items contained in the SPL cannot be substituted for items shown on the Drawings, or called for in the specifications, or specified in the Bidding Requirements, Contract Forms and Conditions of Contract, unless approved by the E/A in conjunction with the AW Water and Wastewater Utility Standard Products Committee. The Standard Product List SPL current at the time of plan approval will govern.

All tests and inspections called for by the applicable standards shall be performed by the manufacturer. Upon request, results of these tests shall be made available to the purchaser.

Each submittal shall be accompanied by:

1. Complete data covering:
 - a. the operator, including type and size, model number, etc.,
 - b. the name and address of the manufacturer's nearest service facility,
 - c. the number of turns to fully open or close the valve.
2. Detailed instructions for calibrating the limit stops for open and closed positions, and
3. Any other information, that may be necessary to operate and maintain the operator.

4. Complete dimensional data and installation instructions for the valve assembly as it is to be installed, including the operator.
5. Complete replacement parts lists and drawings, identifying every part for both the valve and operator.

511S.3 - Valves

A. Iron-Body Gate Valves

Resilient-seated gate valves for potable or reclaimed service, including tapping valves, shall conform to AWWA C-509 and ~~Standard Products List~~ **SPL** item WW-282.

Reduced-wall, resilient-seated gate valves for potable or reclaimed service, including tapping valves, shall conform to AWWA C-515 and ~~Standard Products List~~ **SPL** item WW-700.

~~Metal-seated gate valves for potable or reclaimed service, including tapping valves, shall conform to AWWA C-500 and Standard Products List item WW-132.~~

1. Stem Seals: All valves shall have approved O-ring type stem seals. At least two O-rings shall be in contact with the valve stem where it penetrates the valve body.
2. Operation: All valves shall have non-rising stems with a 2-inch (50 mm) square operating nut, or with a spoke type handwheel when so ordered, turning clockwise to close.
3. Gearing: Gate valves in 24-inch (610 mm) and larger sizes shall be geared and, when necessary for proper bury depth and cover, shall be the horizontal bevel-geared type enclosed in a lubricated gear case.
4. Bypass: Unless otherwise indicated on the Drawings, 30-inch (762 mm) and larger metal-seated gate valves shall be equipped with a bypass of the non-rising stem type which meets the same AWWA standard required for the main valve.
5. Valve Ends: Valve ends shall be push-on, flanged or mechanical joint, as indicated or approved.

~~Tapping valves shall have inlet flanges conforming to MSS SP-60, with bolt holes drilled per ANSI B16.1 Class 125. Seat rings and body casting shall be over-sized as required to accommodate full size cutters; the outlet end shall be constructed and drilled to allow the drilling machine adapter to be attached directly to the valve.~~

6. Gear Case: All geared valves shall have enclosed gear cases of the extended type, attached to the valve bonnet in a manner that makes it possible to replace the stem seal without disassembly and without disturbing the gears, bearing or gear lubricant. Gear cases shall be designed and fabricated with an opening to atmosphere so that leakage past the stem seal does not enter the gear case.
7. Valve Body: Double disc gate valves in 30-inch (762 mm) and larger sizes installed in the horizontal position shall have bronze rollers, tracks, scrapers, etc. For reclaimed water valves, the body shall be manufactured in purple, factory painted purple, or field painted purple.

B. ~~Butterfly Valves~~ **Reserved**

~~Unless otherwise indicated, all valves shall conform to the current "AWWA" Standard C-504, "Rubber-Seated Butterfly Valves," Class 150B, except as modified or supplemented herein.~~

~~1. Functional Requirements~~

- ~~a. Valves shall be the short body design and shall have flanged connections on both ends unless otherwise called for.~~
- ~~b. Valves shall be of such design that the valve discs will not vibrate or flutter when operated in a throttled position. Valve discs shall be secured to the shafts by means of keys or pins so arranged that the valve discs can be readily removed without damage thereto. All keys~~

and pins used in securing valve discs to shafts shall be stainless steel or monel. Valve discs shall be stainless steel or ductile iron, ASTM A 536, Grade 65-45-12 (448-310-12); seating edge shall be stainless steel or other corrosion resistant material.

c. Valve shafts shall be constructed of wrought stainless steel or monel. The ends of the shaft shall be permanently marked to indicate the position of the disc on the shaft.

d. All buried valves shall have approved manufacturer's O-ring type or split V type "Chevron" shaft seals. When O-ring seals are used, there shall be at least two O-rings in contact with the valve shaft where it penetrates the valve body.

On 24 inch (635 mm) and larger valves, the seat shall be completely replaceable and/or adjustable with common hand tools without disassembling the valve from the pipeline.

Rubber seats located on the valve disc shall be mechanically secured with stainless steel retainer rings and fasteners.

e. Unless otherwise indicated, valves shall be provided with manual operators with vertical stems and 2 inches (50 mm) square operating nut turning clockwise to close and equipped with a valve disc position indicator. All keys or pins shall be stainless steel or monel. Buried valves shall have the valve stems extended or adjusted to locate the top of the operating nut no more than 24 inches (0.6 meter) below finish grade.

f. Unless otherwise indicated, motorized butterfly valves shall be equipped with 230/460 volt, 3-phase reversing motor operators, extended as required to locate the center line of the operator shaft approximately 4 feet to 4 feet, 6 inches (1.2 to 1.4 meters) above finish grade. Operators shall be equipped with cast iron or malleable iron manual override hand wheel with a valve position indicator, local push button controls, lighted status/position indicator, torque and travel limit switches and all switches, relays and controls (except external power and signal wiring) necessary for both local and remote operation.

2. Performance Requirements

a. Unless otherwise indicated, valve operators shall be sized to seat, unseat, open and close the valve with 150 psi (1 megapascal) shutoff pressure differential across the disk and allow a flow velocity of 16 feet (4.9 meters) per second past the disc in either direction.

b. Motorized valve motors shall be capable of producing at least 140 percent of the torque required to operate the valves under conditions of maximum non-shock shutoff pressure without exceeding a permissible temperature rise of 1310F over 1040F ambient (55 degrees Celsius over 40 degrees Celsius ambient); they shall have a duty rating of not less than 15 minutes and shall be capable of operating the valve through 4½ cycles against full unbalanced pressure without exceeding the permissible temperature rise. Motors shall be suitable for operating the valve under maximum differential pressure when voltage to motor terminals is 80 percent of nominal voltage. Motor bearings shall be permanently lubricated and sealed.

C. Ball Valves

Ball valves shall be brass, bronze, stainless steel or PVC as indicated on the Drawings or Details or as approved by the Engineer or designated representative.

D. Air-Vacuum Release Valves

1. Valves shall be combination air-release, air-vacuum units having small and large orifice units contained and operating within a single body or assembled unit.

The small orifice system shall automatically release small volumes of air while the pipe is operating under normal conditions. The large air-vacuum orifice system shall automatically exhaust large volumes of air while the pipe is being filled and shall permit immediate re-entry of air while being drained.

Valves shall be rated for at least 150 psi (~~1 megapascal~~) {maximum} normal service pressure.

2. Material Requirements

Valve exterior bodies and covers shall be cast iron or reinforced nylon.

Internal bushings, hinge pins, float guide and retaining screws, pins, etc., shall be stainless steel, bronze, nylon, or Buna-N rubber.

Orifice seats shall be Buna-N rubber.

Floats shall be stainless steel, nylon, or Buna-N rubber, rated at 1,000 psi (~~6.9 megapascals~~).

Unless otherwise indicated, these valves shall be as included in ~~the Standard Products List~~ (SPL WW-367 for water, ~~and~~ WW-462 for wastewater force mains).

E. Fire Hydrants

All fire hydrants shall be Dry Barrel, Traffic Model (break-away), Post Type having Compression Type Main Valves with 5 1/4" ~~inch~~ (~~133 mm~~) opening, closing with line pressure. Approved models are listed on SPL WW-3 ~~of the Austin Water Utility Standard Products List~~.

1. Applicable Specifications

AWWA C-502 current: "AWWA Standard for Dry-Barrel Fire Hydrants."

NFPA 1963: "National (American) Standard Fire Hose Coupling Screw Thread" and City of Austin 4 inch (~~102 mm~~) Fire Hose Connection Standard (~~Available upon request from the Austin Water Utility's Standards Committee Chairperson at 972-0204~~).

ANSI A-21.11 current: "American National Standard for Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings."

2. Functional Requirements

Design Working Pressure shall be 200 psi (~~1.38 megapascals~~) and a test pressure of 400 psi (~~2.76 megapascals~~).

Inlet shall be side connection hub end for mechanical joint (ANSI A-21.11-current). Shoe shall be rigidly designed to prevent breakage.

Lower Barrel shall be rigid to assure above ground break at traffic feature. Bury length of hydrant shall be ~~four (4) feet~~ (~~1.2 meters~~) minimum, ~~five (5) feet~~ (~~1.5 meters~~) maximum (hydrant lead pipe may be elbowed up from main using restrained joints; flanged joints in lead pipes are not allowed). Flange type connections between hydrant shoe, barrel sections and bonnet shall have minimum of ~~6~~ ~~six~~ corrosion resistant bolts.

Hydrant Main Valve shall be 5 1/4 inch (~~133 mm~~) I.D. Valve stem design shall meet requirements of AWWA C502, with Operating Nut turning clockwise to close. Operating Nut shall be pentagonal, 1 1/2 inch (~~38 mm~~) point to flat at base, and 1-7/16 inches (~~36.5 mm~~) at top and 1 inch (~~25 mm~~) minimum height. Seat ring shall be bronze (bronze to bronze threading), and shall be removable with lightweight stem wrench. Valve mechanisms shall be flushed with each operation of valve; there shall be a minimum of two (~~2~~) drain ports.

Traffic Feature shall have replaceable breakaway ferrous metal stem coupling held to stem by readily removable type 302 or 304 stainless steel fastenings. Breakaway flange or frangible lugs shall be designed to assure aboveground break. Breakaway or frangible bolts will not be acceptable.

Outlet Nozzles shall be located approximately 18 inches (450 mm) above ground. Each hydrant shall have two (2) 2½ inch (63.5 mm) nozzles 180 degrees apart with National (American) Standard Fire Hose Coupling Screw Thread NFPA 1963 and one (1) 4 inch (102 mm) pumper nozzle with City of Austin (COA) standard thread-six (6) threads per inch (25 mm) "Higbee" cut, 4.8590 inch (123.4 mm) O.D., 4.6425 inch (117.9 mm) root diameter. Nozzles shall be threaded or cam-locked, O-ring sealed, and shall have type 302 or 304 stainless steel locking devices. Nozzle caps (without chains) and cap gaskets shall be furnished on the hydrant. The cap nut shall have the same configuration as the operating nut.

Hydrants shall be Dry-Top Construction, factory lubricated oil or grease with the lubricant plug readily accessible. The system shall be described for City approval.

A blue Type II-B-B reflectorized pavement marker, conforming to Standard Specification Item No. 863S, shall be placed 2 to 3 feet (0.6 to 0.9 meters) offset from the centerline of paved streets, on the side of and in line with, all newly installed fire hydrants.

Hydrant shall have double O-ring seals in a bronze stem sheath housing to assure separation of lubricant from water and shall have a weather cap or seal, or both, as approved by the Owner, to provide complete weather protection.

3. Material Requirements

All below ground bolts shall be corrosion resistant. The hydrant valve shall be Neoprene, 90 durometer minimum. The seat ring, drain ring, operating nut and nozzles shall be bronze, AWWA C-502 current, containing not over 16 percent zinc. Break-away stem coupling shall be of ferrous material; its retaining pins, bolts, nuts, etc. of type 302 or 304 stainless steel.

Coatings shall be durable and applied to clean surfaces. Exterior surfaces above ground shall receive a coating of the type and color specified in the applicable version of City of Austin AW SPL WW-3. The coating shall be applied according to coating manufacturer's specifications. Other exposed ferrous metal shall receive asphalt-based varnish, or approved equal, applied according to the coating manufacturer's specifications.

F. Pressure/Flow Control Valves

All control valves to regulate pressure, flow, etc., in City lines shall be models listed in the AW Austin Water Utility Standard Products List (SPL).

G. Drain Valves

Drain valve materials and installation shall conform to City of Austin COA Standard Detail No. 511-AW-03 511S-9.

H. Valve Stem Extensions:

Valve stem extensions shall consist of a single piece of the required length with a socket on one end and a nut on the other.

511S.4 - Construction Methods

A. Setting Valves, Drains and Air Releases

Unless otherwise indicated, main line valves, drain valves and piping, air and vacuum release assemblies and other miscellaneous accessories shall be set and jointed in the manner described for cleaning, laying, and jointing pipe.

Unless otherwise indicated, valves shall be set at the locations shown on the Drawings and such that their location does not conflict with other appurtenances such as curb ramps. Valves shall be installed so that the tops of operating stems will be at the proper elevation required for the piping at

the location indicated above. Valve boxes and valve stem casings shall be firmly supported and maintained, centered and aligned plumb over the valve or operating stem, with the top of the box or casing installed flush with the finished ground or pavement in existing streets, and installed with the top of the box or casing approximately 6 inches (150 mm) below the standard street subgrade in streets which are excavated for paving construction or where such excavation is scheduled or elsewhere as directed by the Engineer or designated representative.

Drainage branches or air blowoffs shall not be connected to any sanitary sewer or submerged in any stream or be installed in any other manner that will permit back siphonage into the distribution system (see City of Austin COA "Standard Detail Drawings Series 500/500S"). Every drain line and every air release line shall have a full sized independent gate valve flanged directly to the main. Flap-valves, shear gates, etc., will not be accepted.

B. Setting Fire Hydrants

Fire hydrants shall be located in a manner to provide accessibility and in such a manner that the possibility of damage from vehicles or conflict with pedestrian travel will be minimized. Unless otherwise directed, the setting of any hydrant shall conform to the following:

Hydrants between curb and sidewalk on public streets, shall be installed as shown on Standard **511-AW-02** 511S-17, with outermost point of large nozzle cap 6 inches to 18 inches (150 mm to 450 mm) behind back of curb. Where walk abuts curb, and in other public areas or in commercial areas, dimension from gutter face of curb to outermost part of any nozzle cap shall be not less than 3 feet (0.9 meters), nor more than 6 feet (1.8 meters), except that no part of a hydrant or its nozzle caps shall be within 6 inches (150 mm) of any sidewalk or pedestrian ramp. Any fire hydrant placed near a street corner shall be no less than 20 feet (6 meters) from the curb line point of tangency. Fire hydrants shall not be installed within **9** nine feet (2.75 meters) vertically or horizontally of any sanitary sewer line regardless of construction.

All hydrants shall stand plumb; those near curbs shall have the 4-inch (102 mm) nozzle facing the curb and perpendicular to it. The hydrant bury mark shall be located at ground or other finish grade; nozzles of all new hydrants shall be approximately 18 inches (450 mm) above grade. Lower barrel length shall not exceed 5 feet (1.5 meters). Barrel extensions are not permitted unless approved by the Engineer or designated representative. Each hydrant shall be connected to the main by 6-inch (152 mm) ductile iron pipe; a 6-inch (152 mm) gate valve shall be installed in the line for individual shutoff of each new hydrant.

Below each hydrant, a drainage pit 2 feet (0.6 meter) in diameter and 2 feet (0.6 meter) deep shall be excavated and filled with compacted coarse gravel or broken stone mixed with coarse sand under and around the bowl of the hydrant, except where thrust blocking is located (City of Austin COA Specification Item 510 and Standard Detail 510-6 and to a level 6 inches (150 mm) above the hydrant drain opening.

The hydrant drainage pit shall not be connected to a sanitary sewer. The drain gravel shall be covered with filter fabric to prevent blockage of voids in the gravel by migration of backfill material. The bowl of each hydrant shall be well braced against unexcavated earth at the end of the trench with concrete thrust blocking (taking care not to obstruct the hydrant drain holes), or the hydrant shall be tied to the pipe with approved metal harness rods and clamps. The fire line shall be provided with joint restraint from the main line to the fire hydrant. Hydrants shall be thoroughly cleaned of dirt or foreign matter before setting.

Fire hydrants on mains under construction shall be securely wrapped with a poly wrap bag or envelope taped into place. When the mains are accepted and placed in service the bag shall be removed.

- C. Pressure Taps: Refer to Section 510.3 (24) of Standard Specification Item Number 510, "Pipe."
- D. Plugging Dead Ends

Standard plugs shall be inserted into the bells of all dead ends of pipes, tees or crosses and spigot ends shall be capped. All end plugs or caps shall be secured to the pipe conforming to Section 510.3 (22) of Standard Specification Item Number 510, "Pipe."

E. Protective Covering

Unless otherwise indicated, all flanges, nuts, bolts, threaded outlets and all other steel component shall be coal tar coated and shall be wrapped with standard minimum 8-mil (0.2 mm) low density polyethylene film or a minimum 4-mil (0.1 mm) cross laminated high-density polyethylene meeting ANSI/AWWA Specification C-105-current, with all edges and laps taped securely to provide a continuous and watertight wrap. Repair all punctures of the polyethylene, including those caused in the placement of bedding aggregates, with duct tape to restore the continuous protective wrap before backfilling. For reclaimed water piping, the polyethylene shall be purple.

F. Valve Box, Casing and Cover

Stems of all buried valves shall be protected by valve box assemblies. Valve box castings shall conform to ASTM A 48, Class 30B. Testing shall be verified by the manufacturer at the time of shipment. Each casting shall have cast upon it a distinct mark identifying the manufacturer and the country of origin. Valve boxes and covers for potable water shall be round. Valve boxes and covers for reclaimed water piping shall be square and shall have "Reclaimed Water" indicated on the lid.

G. Drain Valve Installations

Refer to COA City of Austin Standards 511S-0A 511-AW-03.

H. Air Release Assemblies

Refer to COA City of Austin Standards 511S-1A, 511S-1B, 511S-2A, 511S-2B, 511S-3A and 511S-3B 511-AW-04.

I. Pressure/Flow Control Valves

Assemblies shall be installed as indicated.

J. Connections to Existing System

Refer to Item No. 510, "Pipe" for connections to the existing system.

K. Shutoffs

Refer to Item No. 510, "Pipe" for shutoffs.

511S.5 - Measurement

All types of valves will be measured per each. Fire hydrants and drain valve assemblies will be measured per each. Fire Hydrant barrel extensions will be measured per vertical foot (meter: 1 meter equals 3.28 feet). Pressure/Flow control valve assemblies and both manual and automatic air release assemblies will be measured per each. Reflectorized pavement markers for identifying the location of newly installed fire hydrants shall be measured per each, as per Standard Specification Item No. 863S.7.

Bury depths exceeding 5.5 feet (1.68 meters) are defined as Additional Bury Depths. Additional bury depths will only be measured if indicated on the Drawings and identified in the Standard Contract Bid Form 00300U; otherwise, the unit bid price for each completed unit includes all depths.

511S.6 - Payment

Payment shall include full compensation, in accordance with the pay item established in the bid, for excavation, furnishing, hauling and placing valves, drain valve assemblies, fire hydrants and barrel extensions including anchorage and all incidental materials and work; preparing, shaping, dewatering,

bedding, placing and compacting backfill materials and for all other incidentals necessary to complete the installation, as indicated in the Drawings, complete in place.

Payment for iron fittings and for wet connections is covered in Section 510.6 of Standard Specification Item 510, "Pipe."

Payment for excavation safety systems is covered in Section 509S.10 of Standard Specification Item 509S, Excavation Safety Systems.

- A. Valves: Valves will be paid for at the unit bid price for the size and type valve installed, including valve stem casing and cover, excavation and backfill, setting, adjusting to grade, anchoring in place, and other appurtenances necessary for proper operation.
- B. Fire Hydrants: Fire Hydrants installation shall be paid for at the unit bid price, which includes all necessary labor and materials to set, adjust to grade and anchor the hydrant body, barrel extensions, concrete block, gravel drain and other appurtenances necessary for proper operation; but shall not include pipe and valve between the main line and fire hydrant base.
- C. Pressure or Flow Control Valve Assemblies: Pressure control and flow control valve assemblies will be paid for at the unit bid price, including box or vault, setting, adjusting to grade, anchoring in place, adjusting the control device to the required conditions, providing other appurtenances necessary for proper operation, and placing in operation.
- D. Drain Valve Assemblies: Drain valve installation shall be paid for at the unit bid price, which includes all necessary labor and materials to set, adjust to grade and anchor the bends, vertical piping, blind flange, joint restraint devices, concrete blocking, concrete pad the drain valve, setting, adjusting to grade, anchoring in place, and other appurtenances necessary for proper operation; but shall not include pipe and valve between the main line and drain valve buried bend.
- E. Manual Air Release Assemblies: Manual air release installations will be paid for at the unit bid price and shall include valves, fittings, pipe, tapping the main, box and cover, and other appurtenances necessary for proper operation.
- F. Automatic Combination Air/Vacuum Release Valve Assembly: Automatic air-vacuum release assemblies will be paid for at the unit bid price and will include the main line tap or outlet, all pipe, valves, fittings, box or vault and cover, and other appurtenances necessary for proper operation.
- G. Additional Bury Depth: Additional bury depth will be paid for at the unit bid price, which will include all work necessary to install units with bury depths exceeding 5.5 feet (1.68 meters).
- H. Fire Hydrant Barrel Extensions: Hydrant barrel extensions will be paid for at the unit bid price which will include necessary hardware and rod extensions.
- I. Reflectorized Pavement Markers: Pavement markers will be paid for at the unit bid price, which will include necessary surface preparation and adhesive, as per Standard Specification Item No. 863S.8.

Payment, when included as a contract pay item, will be made under one of the following:

Pay Item No. 511S-A:	Valves, _____ Type, ____ Diameter	Per Each.
Pay Item No. 511S-B:	Fire Hydrants (See Standard 511-AW-02 No. 511S-17)	Per Each.
Pay Item No. 511S-C:	Pressure or Flow Control Valve Assemblies	Per Each.

Pay Item No. 511S-D:	Drain Valve Assemblies (See Standard 511-AW-03 No. 511S-9A)	Per Each.
Pay Item No. 511S-E:	Manual Air Release Assemblies, ____Diameter	Per Each.
Pay Item No. 511S-F:	Automatic Combination Air/Vacuum Release Valve Assembly, ____ Diameter.	Per Each.
Pay Item No. 511S-G:	Additional Bury Depth	Per Vertical Foot.
Pay Item No. 511S-H:	Fire Hydrant Barrel Extensions	Per Vertical foot.

END

<u>SPECIFIC CROSS REFERENCE MATERIALS</u>	
Standard Specification Item No. 511S, "Water Valves"	
City of Austin COA Standard Specification Items	
<u>Designation</u>	<u>Description</u>
Item No. 510	Pipe
Section Item 510.3 (22)	Pipe Anchorage, Support and Protection
Section Item 510.3(24)	Water System Connections
City of Austin COA Standard Details	
<u>Designation</u>	<u>Description</u>

511S-1A 511-AW-04	25 mm (1") – 76 mm (2") Vented Air Release and Air/Vacuum Valve Installation (Type I)
511S-1B	25 mm (1") – 76 mm (2") Non-Vented Air Release Valve Installation (Type I)
511S-2A	Type II – 76 mm (3") or Larger Vented Air/Vacuum Valve Installation
511S-2B	Type II – 76 mm (3") or Larger Non-Vented Air/Vacuum Valve Installation
511S-3A	Type III – 76mm (3") or Larger Vented Air/Vacuum Valve Installation
511S-3B	Type III – 76mm (3") or Larger Non-Vented Air/Vacuum Valve Installation
511S-9A 511-AW-03	Drain Valve Assembly
511S-17 511-AW-02	Standard Fire Hydrant Installation
Austin Water Utility AW Standard Products Lists	
<u>Designation</u>	<u>Description</u>
WW-132	Standard Products List for Metal-Seated Gate Valves, AWWA C-500
SPL WW-282	Standard Products List for Resilient-Seated Gate Valves, AWWA C-509
SPL WW-367	Standard Products List for Air Release Valves for Water
SPL WW-462	Standard Products List for Air Release/Vacuum Relief Valves for Wastewater
SPL WW-700	Standard Products List for Resilient-Seated Gate Valves, AWWA C- 515
ANSI/AWWA Standards	
<u>Designation</u>	<u>Description</u>
A-21.11	American National Standard for Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings

C-105	American National Standard for Polyethylene Encasement for Ductile-Iron Pipe
C-500	Metal-Seated Gate Valves for Water Supply Service
C-502	Dry-Barrel Fire Hydrants
C-504	Rubber-Seated Butterfly Valves
C-509	Resilient Seated Gate Valves for Water and Sewerage Systems
C-515	Reduced-Wall, Resilient-Seated Gate Valves For Water Supply Service-515
<u>ASTM Standards</u>	
<u>Designation</u>	<u>Description</u>
ASTM A48/A48M	Specification for Gray Iron Castings
ASTM A 536	Specification for Ductile Iron Castings
<u>National Fire Protection Association (NFPA)</u>	
1963 National (American) Standard Fire Hose Coupling Screw Thread	

<u>RELATED CROSS REFERENCE MATERIALS</u>	
<u>Specification 511S, "Water Valves"</u>	
City of Austin COA Standard Specification Items	
<u>Designation</u>	<u>Description</u>

Item No. 501\$	Jacking or Boring Pipe
Item No. 503\$	Frames, Grates, Rings and Covers
Item No. 505\$	Concrete Encasement and Encasement Pipe
Item No. 506	Manholes
Item No. 507\$	Bulkheads
Item No. 508\$	Miscellaneous Structures and Appurtenances
Item No. 509\$	Trench Safety Systems