SECTION 7. DOMESTIC WATER SYSTEM

7.1. GENERAL WATER SYSTEM CRITERIA

7.1.1. Standard Requirements. The design and construction of all domestic water system facilities to be operated and maintained by the City shall be in accordance with *City of Arcadia Water Standard Specifications and Standard Plans*; *AWWA Standards* by American Water Works Association, latest edition; *California Waterworks Standards* (Title 22, California Code of Regulations, Chapter 16); *Standard Specifications for Public Works Construction, (Greenbook*), latest edition; as well as the guidelines and requirements of the Insurance Service Office, the City Fire Marshal, and the California Department of Forestry.

7.1.2. NPDES Requirements. The contractor is required to adhere to the provisions of the Federal Clean Water Act as regulated by the U.S. Environmental Protection Agency in Code 40, Code of Federal Regulations (CFR) Parts 122, 123, 124, the Porter-Cologne Act (California Water Code), the Waste Discharge Requirements for Municipal Storm Water Discharges within the County of Los Angeles and the City of Arcadia Municipal Code, Section 7810. Copies of suitable Best Management Practices (BMPs) from the *California Storm Water Best Management Practices Handbook for Construction Activities* are available from the Public Works Services Department – Water Section upon request.

7.1.3. Excavation Permit. Contractor shall obtain a Permit to Construct, Repair, and Remove Asphalt and Concrete ("Excavation Permit") from the City of Arcadia Public Works Services Department prior to start of work. It will be necessary to post a deposit based on the amount and type of work to be done.

7.1.4. Master Plan. All domestic water system design, including water demands, pressure zones and system elements, shall be in accordance with the City of Arcadia, *"Water Master Plan,"* 2016, and all other supplements and revisions thereto.

7.1.5. Looped Systems. Each project or development shall have at least two connections to waterlines in different streets to form a looped water system. Non-looped systems will be permitted only with the express permission of the City.

7.1.6. Design System Pressures. The following criteria shall be met for all domestic water systems unless otherwise approved or specified by the Engineer:

A. The design minimum residual pressure at any point in the system shall be 20 psi at maximum day plus design fire flow demands; however, the design minimum residual pressure near the location of a fire flow shall conform to the requirements of the City Fire Marshal.

B. Pressure regulators are required to be installed if the static pressure exceeds 80 psi at the meter. Pressure regulators shall be installed in front of the house on the riser.

7.2. WORK CONDITIONS

7.2.1. Work shall be scheduled between 7:00 a.m. and 4:00 p.m. unless prior approval is given by a Public Works Services Department – Water Section representative. No work shall be performed on weekends or holidays when the City Public Works Services Department is closed.

7.2.2. The City Public Works Inspector shall be notified at least two working days prior to the start of construction and any subsequent required inspection. Phone (626) 254-2725 or (626) 254-2720 to reach the Public Works Inspector.

7.2.3. A pre-construction conference with representatives from all affected agencies and the contractor shall be held on the job site at least 24 hours prior to the start of construction.

7.2.4. The contractor shall notify Underground Service Alert at (800) 227-2600 at least two (2) working days prior to commencement of excavation.

7.2.5. The contractor is required to contact Los Angeles County Department of Public Works (Flood Control Division) for compliance with their requirements for crossing storm drain pipes.

7.2.6. Residents in the project area shall be notified in writing 48 hours prior to start of work. The contractor shall ensure that residents can access their properties at all times.

7.2.7. All equipment and/or material shall be removed from the City right-of-way (street and parkway) by the end of each working day unless prior written approval is obtained fro the Public Works Services Director.

7.2.8. The contractor shall protect all substructures during excavation and boring operations including street light and traffic signal conduits, traffic detector loops, storm drain pipes, sewers, and all major utilities. Detector loops damaged as a result of construction shall be replaced in kind to the satisfaction of the Public Works Services Director.

7.2.9. Every effort shall be made to minimize damage to parkway landscaping. Parkway trees shall be circumvented. Restoration shall be made to the satisfaction of the Public Works Services Director.

7.2.10. The contractor shall be responsible for alleviating all dust and nuisance conditions occasioned by his work.

7.2.11. Existing improvements damaged during construction shall be repaired immediately and to the satisfaction of the Public Works Services Department Director.

7.2.12. No trenches or potholes shall remain open by the end of the working day. All trenches and potholes shall be protected safely at all times.

7.2.13. At the end of each working day, the entire trench and/or pothole area and adjacent streets shall be swept and cleaned to the satisfaction of the Public Works Services Director.

7.2.14. The contractor shall be responsible for furnishing an adequate supply of water for required use. The contractor shall not use water from any fire hydrant without first obtaining a "no fee" Fire Hydrant Permit from the Public Works Services Department – Water Section, providing a deposit, and installing a meter loaned by the City. The contractor shall pay for the water used.

7.3. TRAFFIC CONTROL

7.3.1. At least one traffic lane shall be maintained in each direction at all times. All temporary traffic lanes shall be a minimum of 10 feet in width. In addition, lane clearances shall be a minimum of five (5) feet from an open excavation and two (2) feet from a curb or other vertical obstruction.

7.3.2. Safe ingress and egress to residences and/or businesses along the work location shall be maintained at all times.

7.3.3. Toe boards shall be used on the traffic and/or pedestrian side of the spoil at the discretion of the Public Works Services Director.

7.3.4. Where conditions warrant restriction of parking, "No Parking" signs shall be posted 24 hours prior to such requirement and the Police Department shall be notified of such posting. The contractor shall maintain a record of posting such notices.

7.4. TRAFFIC CONTROL DEVICES

7.4.1. All traffic control devices shall conform to the latest editions of the *Work Area Traffic Control Handbook*, American Public Works Association and the *State of California Manual of Traffic Controls*, California Department of Transportation.

7.4.2. The contractor shall maintain traffic control devices throughout the construction period. Signs shall be removed immediately after the work is completed.

7.4.3. Advance warning signs shall be located on the right-hand side of the traffic lanes.

7.5. BUSINESS LICENSE AND LIABILITY INSURANCE

7.5.1. Contractor and all subcontractors are required to be properly insured and to obtain a City of Arcadia Business License (Arcadia Municipal Code Section 6211).

7.5.2. Contractor shall have a "Class A" General Engineering Contractor's license issued by the California Contractor's State License Board.

7.6. IMPROVEMENT PLANS

7.6.1. Improvement plans shall be submitted to the Public Works Services Department in paper copy and digital format.

7.6.2. Substantiating engineering calculations for demands and pressures, using the attached calculation sheet, shall accompany plan submittals.

7.6.3. Improvement plans shall be prepared in accordance with the following:

A. Show profiles of water mains 12 inches in diameter and larger.

B. Provide detailed quantity estimates indicating linear footage of pipe by size, class and type; number of valves by size, class and type; number of fire hydrants; number of water services by size; number of blowoffs and air and vacuum valve assemblies; linear footage of concrete encasements (if applicable); and any other appurtenances which should be identified for quantity purposes.

C. List all applicable construction notes on each sheet. Standard domestic water system notes include, but are not limited to, the following:

WATER STANDARD SPECIFICATIONS

1) The water system shown on these plans shall be constructed by the Developer. All design and construction to be in accordance with City of Arcadia Water Standard Specifications and Standard Plans; American Water Works Association (AWWA) Standards; and Greenbook 2018. The Contractor shall have a copy of each of these standards, as well as a copy of the project plans and specifications, on the job at all times.

2) The Developer shall furnish the City with recorded easements for all portions of the water system outside the public right-of-way.

3) The City shall be furnished with six copies of approved construction plans prior to the start of construction.

4) The contractor shall obtain all City and/or County permits prior to the start of construction.

5) Water mains shall be staked for line and grade or shall be installed subsequent to the installation of the curbs but prior to paving of the streets. The minimum cover over domestic water mains shall be 42 inches below pavement finished grade.

6) No valve shall be located within a gutter or other concrete drainage device.

7) All fire hydrants shall be installed per the Public Works Services Department - Water Section's **Standard Plan No. 706** and shall have a concrete pad placed around them.

8) No facility is to be backfilled until inspected by the City.

9) Shut down of existing water lines to facilitate connection to existing facilities shall be coordinated with the Public Works Inspector and conducted exclusively by City crews. No connections to the City's existing water system shall be made until the new facilities have been successfully tested and disinfected. All connections to the City's water system shall be made in the presence of the Public Works Services Department - Water Section's Public Works Inspector and/or other designee

10) Water house connection laterals shall be installed behind the curb prior to paving of the street. The services shall be extended to their final location by the Developer at a time prior to pressure testing of the water system.

11) Separation of water mains and sewers shall be per the Public Works Services Department - Water Section's Standard Plan Number 701.

12) All water services supplied with pressure greater than 80 psig shall be provided with approved pressure regulators set at less than 80 psig.

13) Meter boxes shall be installed directly behind the curb whether sidewalk is directly behind the curb or not. Meter boxes installed behind rolled curb shall have traffic lids. No meter boxes shall be permitted within driveways.

14) Valves shall be installed per the Public Works Services Department - Water Section's Standard Plan Number 716. The Developer shall raise all valve boxes to the finished pavement grade upon completion of the pavement. If the surface course of pavement is not completed within a reasonable amount of time after the base course of pavement is completed, the Developer shall raise the valve boxes to the finished grade of the base course so that the City may operate the valves. The Developer shall then raise all valve boxes to final finished grade of the pavement upon completion of the surface course of pavement.

D. All drafting to use standard symbols, legends and abbreviations.

E. Show north arrow and graphic scale. Scale is to be 1” = 20’, or 1” = 40’ with approval of the Public Works Services Department Director.

F. Show all street centerline bearings.

G. Show all street centerline and water main curve data in tabulated form.

H. Reference all other sheets for same reach and for details.

I. All stationing will run along street centerline. All stationing will run left to right, south to north, or west to east.

J. Reference street or survey stationing at all centerline intersections, B.C.’s and E.C.’s.

K. Show stations of all water main intersections, junctions, angle points, B.C.’s and E.C.’s.

L. Show match line station and sheet number.

M. Show all utility lines pertinent to water main construction. Label utilities per City of Arcadia standards.

N. Show all street and water main dimensions.

O. Show all parkway topography.

P. Station all water services, fire hydrants and any other connections to water.

Q. Exact fire hydrant locations to be set by City Public Works Services Department Director.

R. Hot tap on existing water main shall be minimum one size less than existing water main size, except with prior approval of City Public Works Services Director.

S. Reference existing water plans by Plan number.

T. Minimum depth of water main shall be 42”.

U. List all plan numbers used for reference.

V. All sheets to be signed, stamped and dated by a registered Civil Engineer with License expiration date.

W. Show plan description, street name and sheet limits.

X. Plan number to be assigned by City.

Y. Fire hydrant numbers to be assigned by City.

7.7. WATER SERVICES

Water services shall be installed in accordance with the City’s Standard Plans and the following requirements:

A. All service lines shall be 2-inch copper tubing, or 4-inch or 6-inch ductile iron pipe manifold.

B. The minimum service line size to the meter shall be 2" in diameter, unless a smaller size is approved by the Public Works Services Department Director as part of a manifold installation.

C. Special designs are required to be submitted for approval of the Public Works Services Department Director for commercial, irrigation, or industrial services

to which the City's Water Standard Specifications and/or Standard Plans are not applicable.

D. No water meter shall be located in an area or location which is not easily accessible to the City at all times.

E. All water service lines with a long side lead shall be installed by boring rather than trenching. Trenching is allowed for placing water service lines with short side leads except boring is required under existing curbs and gutters, cross gutters and sidewalks unless otherwise approved by the Public Works Services Department Director.

F. After the new service, including water meter and box, is installed, contractor will abandon the old service at the main pipeline by closing the Corporation Stop Valve and cutting and removing a section of the old service line.

7.8. WATER MAINS

7.8.1. General. Water mains shall be installed per the Public Works Services Department - Water Section's Standard Plan Number 700 and "AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances," AWWA C600-93.

7.8.2. Hot Tap Inspections. No connections to the City's existing water system shall be made without the presence of the Public Works Services Department - Water Section's Water Quality/Backflow Inspector and/or Public Works Inspector.

7.8.3. Sizes of Mains. The normal minimum size transmission main shall be 12 inches in diameter. The normal minimum size distribution main shall be 8 inches in diameter. No 10-inch or 14-inch diameter mains will be allowed without specific approval of the Engineer. Unless otherwise specified herein or approved by the Engineer, all water mains shall be looped.
Transmission mains shall normally be sized based on a headloss of 3 feet or less per 1000 linear feet of pipe, and in no case shall the design headloss exceed 5 feet per 1000 linear feet of pipe unless specifically approved by the Engineer. For distribution mains, the maximum allowable design velocity shall be 8 feet per second.

On dead-end streets, the minimum size main shall be 8 inches to at least the last fire hydrant. On dead-end streets serving the equivalent of 25 or fewer normally-sized residential lots, looping of the water main will not be required; however, the water main shall be extended beyond the last fire hydrant with a minimum 4-inch diameter line, which shall terminate with a blow-off conforming to the Public Works Services Department - Water Section's Standard Plans. If the water main is looped to an adjacent street,

the water main shall be a minimum of 8 inches in diameter, extending through an easement, and valved at each end of the easement within the street pavement.

All water mains 12" in diameter and larger shall have a profile shown on the improvement plans.

7.8.4. Pressure Testing of New Water Mains. A water pressure test to check for leakage shall be performed on a completed water main pipeline prior to final disinfection. The mainline and hydrant laterals shall be tested at 225 pounds per square inch (psi). The pressure shall be held for at least four (4) hours. The allowable leakage shall not exceed that specified in AWWA Standard C600.

When leakage exceeds the amount allowed by these specifications, the contractor at his expense shall locate the leaks and make the necessary repairs or replacements to reduce the leakage to the specified limits. Any individually detectable leaks shall be repaired, regardless of the results of the tests.

7.8.5. Disinfection of New and Repaired Water Mains. All new water mains shall be disinfected and bacteriologically tested before they are placed in service and before making a physical connection to an existing mainline. All water mains taken out of service for inspection, repair, or other activities that might lead to contamination of water shall be disinfected and tested before they are returned to service.

Disinfection and bacteriological testing shall be performed according to AWWA Standard C651 and the City's Standard Plan No. 700. The continuous feed method with chlorine gas shall be used for disinfection. The free chlorine concentration in the main after initial dosing shall not be less that 50 mg/l. The chlorinated water shall be retained in the main for at least 24 hours, during which time all valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a residual of not less than 25 mg/l.

The City's Water Quality Backflow Inspector will verify that the specified residual exists in the main after 24 hours. In the event that the residual at the end of the 24-hr. retention period is less than the amount allowed by these specifications, at the City Inspector's discretion, the City may determine that the contractor has to rechlorinate the line at his own expense.

After the specified residual has been demonstrated, the contractor shall dechlorinate the water in the main using sodium thiosulfate. Water from

the main cannot be discharged to the street, gutter, or any area leading to a storm drain unless the water has first been dechlorinated to 0.5 mg/l free residual chlorine or less.

For short reaches of pipe where the continuous feed method is not practical, the contractor may use the calcium hypochorite tablet method as per AWWA Standard No. C651.

7.9. CONSTRUCTION and RESURFACING DETAILS

7.9.1. General. Earthwork, trenching, subgrade preparation, preparation of base materials, backfill, densification, compaction, and resurfacing shall be performed according to Greenbook 2018 and these City of Arcadia Water Standard Plans and Specifications, including the following details:

7.9.2. Pothole dimensions shall be a minimum of 3’ by 3’ to allow proper compaction and prevent damage to existing asphalt concrete in good condition.

7.9.3. Asphalt concrete pavement shall be saw cut a minimum of 75% of total depth. The limit of concrete removal and replacement shall be determined in the field by the City’s Public Works Inspector prior to construction.

7.9.4. One-sack cement slurry backfill shall be used in tunneled areas under concrete pavement, drive apron or curb and gutter.

7.9.5. Compaction test to be performed by City at contractor’s expense or by private soils consultant retained by consultant and approved by City. Copies of test results shall be given to City by contractor for approval before final acceptance of work.

7.9.6. Untreated base for pavement, curb, gutter, and similar types of improvements shall be crushed aggregate base.

7.9.7. Asphalt concrete pavement shall consist of a minimum of two courses: A 1” thick minimum finish course of D1-PG-64-10 (3/8” aggregate size) and a base course of B-PG-64-10 (3/4” aggregate size). The base course shall be 1” deeper than the existing asphalt concrete pavement.

7.9.8. When using portland cement concrete class 660-B-4200 (maximum 3”– 4” slump), there shall be a minimum curing time of 48 hours before traffic is allowed. When using portland cement concrete class 520-A-2500 (maximum 3” slump), the minimum curing time shall be 7 days before traffic is allowed. Contractor shall install No. 5 steel tie bars 24” long embedded 12” into existing concrete at 30” on center. Tie bars shall be installed along each side of new concrete panel utilizing epoxy grout.

7.9.9. The contractor shall provide the Public Works Inspector with a ticket for the asphalt concrete and/or portland cement concrete being constructed.

7.9.10. **All permanent resurfacing within City right-of-way shall be completed within ten (10) days from the date of temporary resurfacing. Failure to complete permanent resurfacing will cause the City to compete the work at contractor's expense**.

7.9.11. **Contractor shall notify the City's Public Works Inspector 24 hours prior to construction of permanent paving at (626) 254-2725 or (626) 254-2720. The contractor shall provide the City Public Works Inspector with a ticket for the asphalt cement and/or P.C.C. being constructed.**

7.9.12. If the street area being permanently resurfaced has been slurry sealed within the last 5 years as part of the City's Annual Slurry Seal Program, the street cut area shall be slurry sealed by the contractor after permanent paving is completed. The area to be slurry sealed and type of slurry seal shall be determined the Public Works Inspector.

7.10. PIPE APPURTENANCES

7.10.1. Thrust and Anchor Blocks. Thrust blocks and anchor blocks shall be as shown on **Standard Plan Number 710** or as directed by the Public Works Services Director or his appointed representative.

7.11. WATER VALVES

7.11.1. General. Valves shall be installed per the Public Works Services Department - Water Section's **Standard Plans Number 716 and 717** and American Water Works Association (AWWA) Standards.

7.11.2. Type of Valves. All main line water valves shall be resilient-seated gate valves, unless otherwise specified by the Public Works Services Director. Gate valves shall conform to the "AWWA Standard for Resilient-Seated Gate Valves for Water Supply Service" ANSI/AWWA C509-94. Valve ends shall be flanged or mechanical-joint as shown on the drawings. Flanges shall be 125-1b., AWWA/ANSI C110/A21.10 or ANSI B16.1. Mechanical joints shall conform to the "Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings" AWWA C111/A21.11. Mechanical-joint bolts, glands and gaskets shall be supplied by the valve manufacturer. Approved valve types are specified in the City's "List of Approved Materials" and/or on the City's Standard Plans.

7.11.3. Location of Valves. There shall be at least three gate valves at the 3-way intersection of any water mains; at least four gate valves at the 4-way intersection of any water mains; and four gate valves at any 4-way intersection of major distribution mains. All fire hydrant laterals shall have a control valve. The control valves at all intersections as described herein shall be flanged to the main line tee or cross unless otherwise approved by the Public Works Services Director. Valves on distribution mains shall be spaced a maximum of 1000 feet apart so that no more than three fire hydrants would be taken out of service at any one time. Unless specifically approved by the Public Works Services Director, the maximum allowable spacing for intermediate valves on transmission mains is 1,200 feet. All intermediate main line valves should be located on the prolongation of a property line wherever possible.

Where water mains are located within an easement outside of paved streets, a valve shall be located at each end of the easement within the street section.

In no event shall any valve be installed within a gutter or other concrete drainage device.

Valve stem tops having over 48 inches of cover shall be provided with an approved extension.

The final determination of the locations of all valves shall be subject to the approval of the Public Works Services Department – Water Section.

7.11.4. Blow-offs and Air and Vacuum Valves. Blow-offs (flush-outs) shall be installed at any point along the main where either the flow velocity or the slope of the main could cause sediment to settle. Blow-offs shall normally be installed at all low points in transmission mains and the ends of dead-end streets or cul-de-sacs (unless a fire hydrant is available for flushing). Blow-offs shall be installed at any other location specified by the Public Works Services Department – Water Section to assure the capability of complete flushing of a main. Air and vacuum valves shall be installed at all high points in mains larger than 8 inches in diameter.

7.12. FIRE HYDRANTS

Fire hydrants shall be installed in accordance with the City's Standard Plan No. 706 and the following requirements:

A. Types. All fire hydrant assemblies shall be wet barrel, of the types and configuration specified in the City's Standard Plan No. 706 and "List of Approved Materials."

B. Location. Locations of fire hydrants shall be to the satisfaction of the City Fire Marshal, shall be accessible at all times, and shall conform to the following criteria:

   a. On distribution mains rather than transmission mains unless otherwise specified or approved by the Public Works Services Director.

   b. On the larger main at the intersection of two mains.

   c. On the side of the main nearer to the street right-of-way line.

   d. At the street intersection rather than in the cul-de-sac for cul-de-sacs less than 200 feet in length.

   e. On the beginning of the curb return (BCR) at intersections.

   f. On the prolongation of a lot line, but a minimum of 3 feet from the edge of any driveway, light standard, underground utility vaults or other similar obstructions.

   g. A minimum horizontal clearance of 24" from the face of curb, with the 4" pumper outlet perpendicular to the curb face.

   h. A minimum horizontal and vertical clearance of 24" around operating nuts and protective caps, with the hydrant flange mounted at least 4" above finished grade.

   i. Any hydrant located behind the sidewalk shall be set in a 3' x 3' concrete pad.

C. Spacing. The required spacing of all fire hydrants shall be subject to the approval of the City Fire Marshal. The following guidelines for maximum spacing of hydrants are presented for normal installations:

   a. Residential areas - 300 feet, but not more than 120,000 square feet per hydrant.

   b. Commercial and industrial areas - 300 feet, but not more than 90,000 square feet per hydrant. Private on-site hydrants may be included as part of the approved system in order to meet area requirements, provided they meet the requirements of the City Fire Marshal and the Uniform Fire Code.

D. All onsite fire hydrants and fire protection supply mains for commercial/industrial developments shall be private and shall be owned, operated and maintained by the property owner.

7.13. BACKFLOW PREVENTION DEVICES

7.13.1. Only backflow prevention devices which are approved by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research shall be used. For questions, contact the Public Works Services Department - Water Section's Water Quality/Backflow Inspector at (626) 254-2722.

7.13.2. Backflow prevention devices shall be installed as shown on Standard Plan No. **712 (Reduced Pressure Principle Type), 714 (Double Check Detector Assembly) or 713 (Double Check Valve Assembly)**.

7.13.3. Any industrial or commercial irrigation system shall be connected to the City's domestic water system through an approved backflow prevention device. A reduced pressure principle type of device shall be used unless otherwise specified by Title 17, California Code of Regulations, "Public Health."

7.13.4. Each private fire protection system shall be connected to the City's domestic water system through an approved backflow prevention device in conformance with National Fire Protection Association (NFPA) standards. A double check valve assembly type shall be used for low-hazard residential applications (NFPA Standard 13D) and a double check detector assembly type shall be used for commercial/industrial applications (NFPA Standard 13), unless otherwise specified by Title 17, California Code of Regulations, "Public Health" or NFPA standards.

7.14. INSPECTION OF WORK

7.14.1. General. All work shall be left open and uncovered until inspected and approved by the Public Works Services Department – Water Section's Public Works Inspector and/or other designee. The contractor shall not proceed with any subsequent phase of work until the previous phase has been inspected and approved. No work requiring same-day inspection shall be performed on alternate Fridays (check with City for closed Fridays.)

7.14.2. Inspection and approval shall be obtained during and/or at the completion of the following portions of work, as determined by the Public Works Services Department – Water Section:

A. Trench excavation and pipe bedding installation

B. Hot tap

C. Placing pipe, fittings and structures, including identification tape, on nondomestic water main and service lines

D. Placing of all concrete anchors and thrust blocks

E. Placing and compacting the pipe zone backfill

F. Backfilling balance of trench to grade (Compaction test to be performed by City at contractor's expense or by private soils consultant retained by consultant and approved by City. Copies of test results shall be given to City by contractor for approval before final acceptance of work.)

G. Pressure testing of all mains and services

H. Disinfecting and flushing of pipelines

I. Repaving trench cuts

J. Raising valve box covers to finished grade

K. Installation of service lines, meter boxes, water meters, and backflow prevention devices.

7.14.3. Final Water Facilities Inspection. Before final acceptance, the Public Works Inspector, accompanied by a representative from the Public Works Services Department - Water Section and the contractor's superintendent or foreman, will make a final inspection of all work to check particularly on the following items:

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A. That all phases of the job are completed in accordance with plans and specifications.

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B. That all valve boxes are raised to finish grade and that all repatching is completed.

D. That all valves are referenced out and the Public Works Inspector has been given all reference measurements.

E. That all right-angle meter stops and meters are properly positioned and that all meter boxes are positioned and raised to proper grade.

F. That fire hydrants are raised to proper grade, in a vertical position, painted, and that the concrete pad is placed properly.

G. That backfill has passed all compaction requirements.

H. That all system valves are turned and left open (except those specifically required to be normally closed), and that the turns required for complete open/close cycle are recorded on the record drawings.

I. That all waterlines have been chlorinated and disinfected.

J. That all line pressure testing and flushing has been completed.

K. That the job site is clean and that all of the contractor's equipment and materials are removed.

L. That backflow prevention devices are properly installed.

M. That all survey monuments, centerline ties and survey reference points have been protected in place or re-established where disturbed in accordance with Section 8771 of the Land Surveyors Act.

End of Section

City of Arcadia

Section 7 – Domestic Water System
LIST OF APPROVED MATERIALS
Revised 8/2/22

	Description	Manufacturer's Stock No. or Size
1-Inch Meter Installation		
	(Size of Main) x 1" Double Strap Saddle with CC Pipe Thread	Mueller DR2A, Ford F-202 or Smith Blair 313 Romac
	1-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller P-B25008-4N, or Jones E1937
	1-inch Angle Ball Meter Valve (CTS Compression Inlet by Meter Swivel Nut Outlet)	Mueller BA43-444W or Jones E4201
	Meter – BLMJ Meter. Allegro 4G AMI Register of under the Glass	Master Meter B16-A31-B15-0101A-F
	Meter Coupling (Iron Pipe Thread by Meter Swivel Nut with washers)	Ford C38-44-3.5 or Jones J-130x1"
	1-inch Brass Ball Valve	Mueller B-24351-330N
	Meter Box - 12" x 20" x 12" Rotocast Polyethylene	Armorcast P6000485
	Meter Box Cover - 12" x 20" x 1-3/4" RPM Cover with Hinged RPM Lid	Armorcast A6000484R
	Type "K" Soft Copper Tubing	1"
1 ½ -Inch Meter Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Ford F-202, Smith Blair 313, Romac, or Mueller DR2A
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller B25008, Ford FB 1000-7-Q,or Jones E1937
	Type "K" Soft Copper Tubing	2"
	90^0 Slp x Slp Elbow	2"
	1 ½ -inch Angle Ball Meter Valve (CTS Compression Inlet by Meter Flange Outlet)	Mueller 24276, Ford BFA 43-777W-Q, Jones J-1975WSG
	1 ½ -inch Brass Ball Valve	Mueller B-24337, Ford BF13-777W-NL, or Jones E1913WJ
	FLG x MIP Bronze Meter Flange	Mueller, Ford, or Jones
	Meter – FLG. MJ (MS), Lead Free Body. Allegro 4G AMI Register CF under the Glass	Master Meter M21-A00-B15-0101A-F

	Description	Manufacturer's Stock No. or Size
	Meter Box – 17" x 30" x 12" Pedestrian Rated	Armorcast P6001534x12
	Meter Box Cover	Armorcast A6001643DZ
	Meter Read Cover	Armorcast A6000482T Logo: "WATER"
2-Inch Meter Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Mueller DR2A, Ford F-202, Smith Blair 313, or Romac
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller B25008, Ford FB 1000-7-Q, or Jones E1937
	Type "K" Soft Copper Tubing	2"
	90^0 Slp x Slp Elbow	2"
	Angle Ball Meter Valve (CTS Compression Inlet by Meter Flange Outlet)	Mueller B24276, Ford BFA43-777W-Q, or Jones J-1975WSG
	Meter – FLG. MJ (MS) Meter. Lead Free Body. Allegro 4G AMI Register CF under the Glass	Master Meter M23-A00-B15-0101A-F
	Meter Box – 17" x 30" x 12" Pedestrian Rated	Armorcast P6001534x12
	Meter Box Cover	Armorcast A6001643DZ
	Meter Read Cover	Armorcast A6000482T Logo: "WATER"
	2" Brass Ball Valve	Mueller B-24337, Ford BF13-777W-NL, or Jones E1913WJ
	FLG x MIP Bronze Meter Flange	Mueller, Ford, or Jones
3-Inch Compound Meter Installation		
	(Size of Main) x 4" MJ x FE Ductile Iron Tee or (Size of Main) x 4" MJ x FE Tapping Sleeve	Smith Blair, Romac, Ford, Mueller
	4" MJ x FE R/W Gate Valve or 4" MJ x FE Tapping Valve, RW Epoxy Coated – 8 ml	Clow, Kennedy, or American Flow Control
	4" MJ Retaining Gland with Set Screws	Romac or Grip Tite
	4" Ductile Iron Pipe	Class 52
	4" x 18" MJ Offset or MJ /PE	DIP or Galv. Iron Pipe, Cl. 250
	4" x 16" FE x PE Adapter	DIP or Galv. Iron Pipe, CL. 250

	Description	Manufacturer's Stock No. or Size
	4" x 3" Compression Reducing Flange	
	3" Nipple	Brass
	3" x 1" Tee	Brass 2308 TE
	3" Ball Valve	Apollo or equal domestic brand
	3" x 12" Nipple (Cut to fit flex Cplg.)	Brass
	3" Flex Coupling	1223 CO
	3" Flange (4 hole)	DIP or Galv. Iron Pipe, Cl. 250
	3" DC14-2BM-AJA-2 w/(2) - 199 004 45 3GDS Clip On Tranceivers, Programmed to Utility Code #83	Master Meter
	3" Threaded Flange	
	1" Sweat Nipple	Copper
	1" 90^0 Slp x Slp Elbow	Copper
	1" Straight Meter Coupling (Compression x Male Thread)	
	1" Straight Curb Stop (Copper Both Ends)	Ford B22-444
	Type "K" Copper Tubing	1"
	Concrete Meter Vault (3'-0" x 5'-0" inside)	Brooks Vault #736
	6" Valve Cap	Cast Iron
	6" Dia. Valve Can	PVC sch 80, or Blue Brut (Cut to Fit), 14-guage Galv. Steel
	6" Dia. X 18" Valve Sleeve, Slip Can	14-gauge Galv. Steel

	Description	Manufacturer's Stock No. or Size
6"Fire Hydrant Installation		
	6" x 4" x 2 ½" Hydrant (Residential) 6" x 4" x 4" x 2 ½" Hydrant (Commercial)	Jones J-3710PL Jones-3775PL or Clow 2050R Clow 2065R
	Break Off Bolts	Set of 8
	6" Ductile Iron Pipe	Class 52
	Retaining Glands with Set Screws	Romac
	(Size of Main) x 6" MJ x FE Ductile Iron Tee or (Size of Main) x 6" MJ x FE Tapping Sleeve	Smith Blair, Romac, Ford, Mueller
	6" MJ x FE R/W Gate Valve or 6" MJ x FE Tapping Valve	C504-450 or Clow , Kennedy, or American Flow Control
	4" and 2 ½" Outlet Caps	Orange Plastic

	6" FE Spool **Description**	8 Hole **Manufacturer's Stock No. or Size**
	6" Valve Cap	Cast Iron
	6" Dia. Valve Can	PVC sch 80, or Blue Brut (Cut to Fit), 14-gauge Galv. Steel
	6" Dia. X 18" Valve Sleeve, Slip Can	14-gauge Galv. Steel
	(Size of Main) x 1" Double Strap Saddle with Iron Pipe Thread	Ford F-202 or Smith Blair 313 or Romac
2-Inch Air Release and Air Vacuum Valve Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Mueller DR2A, Ford F-202, Smith Blair 313, or Romac
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller 25008, Ford FB 1000-7-Q, or Jones J-1937SG
	Type "K" Soft Copper Tubing	2"
	Combination Air Release and Air Vacuum Release Valve	2" Apco 145C 2" Valmatic 202C.2
	Brass Close Nipple	2"
	Brass Gate Valve	2"
	Brass Nipple	2" x 18"
	Concrete Pad, Poured in Place	8" th. x 24" x 24"
	90^0 Copper Bend, Fitted with Screen	2"
	Steel Can Anchors	1" x ¼" Steel Stock with ½" x 2" Machine Nuts & Bolts
	Steel AR & AV Can Cover	Size to fit

Notes: 1) All materials, including water meters and meter boxes, will be supplied by contractor.