

WATER SPECIAL PROVISIONS

GENERAL REQUIREMENTS

1-11 GENERAL CONSTRUCTION REQUIREMENTS

All water system work and materials shall comply with the City of Kelso/Longview specifications, latest edition of WSDOT specifications for road, bridge, and municipal construction, and the Washington State Division Administrative Rules Chapter 333, in that order.

CDF requirements

Plans & Specs on Washington South Datum

Electronic as-builts in latest version of CAD

On all utilities, service lines shall be perpendicular to main

All abandonment of services shall be capped at the main

Shop drawings are required on all city facilities prior to construction

All nuts and bolts shall be torqued to manufacturer's specifications in the presence of city inspector

2-07 WATERING

Section 2-07.4; Measurement

This section is replaced with the following:

Water shall be measured by meters installed by the City Water Department. If the Contractor chooses to obtain water from a fire hydrant, the Contractor shall make arrangements with the City Water Department for a hydrant meter to be installed, and shall pay all applicable fees. City may limit flow rate – contractor to submit flow requirements to be approved by City.

The Contractor may use only specific hydrants designated by the Water Department and in strict accordance with its requirements. The following hydrant(s) may be used for watering during this project: Insert Location Here

The Contractor shall secure written permission from and comply with all requirements of the Water Department before obtaining water from fire hydrants. The Contractor shall make application for hydrant use a minimum of 2 weeks prior to obtaining water. The Contractor shall provide the Engineer with written permission from the City Water Department prior to being allowed access to the hydrant.

The Contractor is not to operate the hydrant. Violation of these requirements will result in fines. The Contractor shall be liable for damages due to malfunctioning or damaged fire hydrants as a result of its actions or negligence.



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1-11, 2-07

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7-09 WATER MAINS

Section 7-09.2; Materials

Paragraph 1 is replaced with the following:

Materials shall meet the following sections:

Pipe	9-30.1
Ductile Iron Pipe (Restrained Joint)	9-30.1(1)
Fittings	9-30.2
Ductile Iron Pipe	9-30.2(1)
Restrained Joints	9-30.2(6)
Bolted Sleeve-Type Couplings for Plain End Pipe	9-30.2(7)
Valves	9-30.3
Gate Valves (3 inches to 10 inches)	9-30.3(1)
Butterfly Valves (12 inches and greater)	9-30.3(3)
Valve Boxes	9-30.3(4)
Valve Marker Posts	9-30.3(5)
Valve Stem Extension	9-30.3(6)
Combination Air Release Valves	9-30.3(7)
Tapping Sleeve and Valve Assembly	9-30.3(8)
Hydrants (All bolts and nuts to be stainless steel with Anti-seize Compound)	9-30.5
Service Connections (2 inches and Smaller)	9-30.6

All Ductile Iron Pipe, fittings and appurtenances shall have restrained joints by the use of Mega-Lugs, Romac Grip Rings, Field-Lock gaskets, or approved equal.

Bolts and nuts for flanged pipe and fittings shall conform in size and length with ANSI/AWWA C115/A21.15. All bolts and nuts shall be made from COR-TEN steel in accordance with ANSI/AWWA C111/A21.11.

Concrete thrust blocks are to be constructed at Tees, Bends, Fire hydrants, Blow-offs, and where indicated on the plans and standards details. The minimum bearing surface against undisturbed soil is shown on the detail sheet. Thrust blocks shall be allowed to cure 14 days before pipeline pressure testing. Fittings shall be wrapped with a poly plastic as a bond breaker.

Note: The City reserves the right for any or all salvage rights to any existing materials removed including but not limited to fire hydrants, crosses, tees, gate valves or pipe.

It shall be determined by the City as to what materials will be salvaged.

Any material requested for salvage will be delivered by the contractor to the City's Water/Sewer operation center located in kelso/Longview. All costs associated with delivery or removal and disposal shall be borne by the contractor.

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7-09 WATER MAINS

Construction Requirements

Section 7-09.3(5); Grade and Alignment

This section is supplemented with the following:

All water line pipe shall have minimum of 36 inches of cover over the top of pipe.

A minimum horizontal separation of 10 feet between sanitary sewers and any existing potable water lines, and a minimum vertical separation of 18 inches between the bottom of the water line and the crown of the sewer, shall be maintained. The distance shall be measured edge to edge. Sewer line should be lower than water line and installed in separate trenches or as approved by City Engineer.

Section 7-09.3(9); Bedding the Pipe

Sentence 1 is replaced with the following:

Bedding material shall be crushed surfacing top course.

7-09.3(12) GENERAL PIPE INSTALLATION

Section 7-09. ; Construction Requirements

This section is supplemented with the following:

Trace Wire

Trace wire shall be installed on all watermains except 2" and smaller service lines. The wire shall be attached to the lines at 15 foot intervals and shall be brought to the surface at all junctions and termini using methods approved by the Engineer. Trace wire material for water lines shall be 12 Gauge, soft drawn, insulated, and shall be blue in color. If lay length on facilities other than mains is longer than 6 feet, tracer wire is required.

Splices shall be made with a kit containing a "T" shaped open cell centering device and a plastic bag of urethane and hardener which is mixed at the time of installation or heat shrinkable insulating tubing. Heat shrinking insulating tubing shall consist of a mastic lined heavy wall polyolefin cable sleeve. The resin used with the "T" shaped open cell centering device shall be a quick curing flexible compound with an approximate set-up time of 4 minutes at 72° F. Also, a pre-filled, direct bury, safety wire connector can be used.

A continuity test shall be performed on tracer wire with inspector present prior to paving roadway.

The curb shall be stamped at each location where the water service line crosses it with a "W" in a manner approved by the City Engineer.

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Connections 7-09.3(19)

Section 7-09.3(19)A; Connections to Existing Mains

Paragraphs 1, 4, 5, and 6 are replaced with the following:

- 1 Connection to the water system shall be inspected by the Public Works Department. 48 hours (2 working days) notice for inspection.
- 1 Utility permits must be applied and paid for prior to any connections being made to the water system.
- 1 Submittals and shop drawings must be approved before the shut down is scheduled.
- 1 Connections to the existing water main shall not be made without first making the necessary arrangements with the City Water/Sewer Department in advance. Work shall not be started until the existing main has been potholed to determine the materials, equipment, and labor necessary to properly complete the work. All the materials to properly complete the work shall be assembled on the site before work is started. Torque tighten all bolts that will not be included in the pressure test.
- 4 When work is once started on a connection, it shall proceed continuously without interruption, and as rapidly as possible until completed. No shutoff of mains will be permitted overnight, over weekends, on Mondays or Fridays, or on holidays. The Water/Sewer Superintendent must be notified a minimum of 48 hours prior to any shutoff and must give approval prior to the shutoff taking place.
- 5 If the connection to the existing system involves turning off the water, the Contractor shall be responsible for written notification of the residents affected by the shutoff a minimum of 48 hours prior to the shutoff with a city approved notice. The Water/Sewer Superintendent will advise which property owners are to be notified.
- 6 Connections must be performed between 8:00 a.m. and 4:00 p.m. Tuesday through Thursdays unless other arrangements have been made with the Water/Sewer Superintendent. Any overtime cost by city staff will be incurred by the contractor.

All waterlines and services shall be abandoned at the main and provide a one foot separation from the water main. Flushing and/or connections may be required to be performed at night (per City of Kelso/Longview) during non-peak flows as determined by the water/sewer superintendent.

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Section 7-09.3(21); Concrete Thrust Blocking

This section is supplemented with the following:

All forms for concrete and deformed rebar thrust blocking must be approved by the City Engineer prior to pouring the concrete.

Section 7-09.3(23); Hydrostatic Pressure Test

Paragraphs 1, 4, 5 and 6 are replaced with the following:

- 1 All water mains and appurtenances shall be tested in sections of convenient length under a hydrostatic pressure equal to 1.5 times that under which they will operate or 200 psi whichever is greater. All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and measuring equipment necessary for performing the test shall be furnished and operated by the Contractor. The Engineering Department must be notified a minimum of 48 hours prior to testing and must be present when tests are performed.
- 4 The mains shall be filled with water and allowed to stand under pressure a sufficient length of time to allow the escape of air and allow the lining of the pipe to absorb water. The Contractor shall be responsible for providing the water necessary to fill the pipelines for testing purposes.
- 5 The test shall be accomplished by pumping the main up to the required pressure, stopping the pump for 2 hours, and then pumping the main up to the test pressure again. During the test, the section being tested shall be observed to detect any visible leakage. A clean container shall be used for holding water for pumping up pressure on the main being tested. This makeup water shall be sterilized by the addition of chlorine to a concentration of 50 mg/l. In accordance with AWWA Standards.

Disinfection of Water Mains 7-09.3(24)

Section 7-09.3(24)A; Flushing

Paragraph 1 is replaced with the following:

The contractor shall take precautions to protect pipe interiors, fittings, and valves against contamination. Fittings and pipe sections that will not be disinfected by chlorine in line for 25 hours shall have the interiors swabbed with a 50 mg/l hypochlorite solution before they are installed. Swabbing shall be witnessed by the City inspector.

Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. Tap shall be provided large enough to develop a velocity of at least 6 fps in the main. Hydrants are not to be used for pipe flushing; only approved blow off assemblies are to be used. Connecting to city mains or flushing may be required at night depending on system conditions as determined by the engineer.

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All water system flushing, including fire lines, shall be scheduled through the Public Works Department who will in turn schedule the Water Department to be present to record water used and to operate City valves. No one other than City Water Department personnel to operate valves. All valves to remain accessible during all phases of work.

Chlorination and de-chlorination of system required. Contractor shall submit chlorination and de-chlorination plan one week prior to chlorination. No discharge of chlorinated water allowed. Sanitary sewer not to be used for discharge.

Prior to energizing the water system, a bacteriological water sample shall be taken by the City of Kelso/Longview Water Department inspector, submitted to an accredited testing lab, and returned to the Department indicating no hazards exist.

Contractor to provide sampling station point consisting of reducer, 3' nipple, ¾" ball valve, ¾" 90°, 4" nipple, and ¾" 90°.

Section 7-09.3(24)D; Dry Calcium Hypochlorite

This section is deleted in its entirety.

7-12 VALVES FOR WATER MAINS

Construction Requirements 7-12.3

Section 7-12.3(1); Installation of Valve Marker Post

This section is replaced with the following:

Gate valves, sized 3" thru 10", shall conform to the latest revision of American Water Works Association (AWWA) Standard C509 or C515 for resilient seated gate valves. The manufacture name, model, and year of manufacture are to be cast on each valve.

Valve ends are to be ANSI class 125 flanged, mechanical joint by flanged, or mechanical joint as shown on the plans. Buried service valves shall open left and have a 2" operating nut.

All internal parts shall be accessible without removing the body from the line. The one-piece wedge shall be completely encapsulated with resilient material. The resilient sealing material shall be permanently bonded to the wedge with a rubber tearing bond meeting ASTM D429.

Non-rising stems (NRS) shall be cast bronze with integral collars in compliance with AWWA C509 and C515. The NRS stem shall have two O-ring seals above the thrust collar and one below. The two top O-rings are to be field replaceable (in the full open position) without removing the valve from service. There shall be low friction thrust bearings above and below the stem collar. The stem nut shall be independent of the wedge and of solid bronze.

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Outside screw and yoke (OS&Y) valves shall have a bronze stem attached to the disc assembly. An adjustable follower gland shall be incorporated to compress braided packing to provide stem sealing.

The waterway in the seat area shall be smooth, unobstructed, and free of cavities. The iron body and bonnet shall be fully coated, both interior and exterior, with a fusion bonded heat cured thermo setting material meeting all the application and performance requirements of A.W.W.A. C550.

Each valve shall be hydrostatically shell tested to twice the rated pressure, and seat tested to 250 psi as per the requirements of AWWA C509 and C515, "Production Testing".

Where required, a valve marker post shall be furnished and installed with each valve. Valve marker posts shall be placed at the edge of the right - of-way opposite the valve and be set with a minimum of 48" of the post exposed above grade. The post shall have a blue reflective "water valve" decal placed within 3" of the top of the post. The post shall be carsonite. The post shall face on coming traffic at 4 feet away from the valve.

A concrete collar shall be poured around valve boxes that are to grade. A two headed arrow stamp will be used to stamp the concrete collar to show direction of flow for the water main.

All operators for Butterfly Valves shall be on centerline of street side of the main.

The contractor shall not operate any City valve. The City must be contacted to turn all City valves for all phases of construction.

7-14 HYDRANTS

Construction Requirements 7-14.3

Section 7-14.3(6); Hydrant Extensions

This section is supplemented with the following:

Hydrant extensions will not be allowed for newly constructed hydrants. The large port on the hydrant shall face the road.

7-15 SERVICE CONNECTIONS

Section 7-15.3; Construction Requirements

Paragraph 1 is replaced with the following:

All service connections to water mains shall be made using saddles as specified and be of the size and type suitable for use with the pipe being installed. Service pipelines shall be installed perpendicular to the main, unless otherwise shown in the plans.



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Water meter services shall not conflict with electric/gas services, required 4' horizontal and 12" vertical separation from other utilities.

No meters installed without fee's being paid in full.

Meters larger than 1" will be supplied by the contractor.

- a. Must be delivered to the Water Department shop for accuracy testing at least one week prior to installation date.
- b. Must be installed by the contractor.

All backflow devices must be tested and certified by a stated certified tester prior to the water services being activated.

9-30 WATER DISTRIBUTION MATERIALS

Pipe Section 9-30.1

Section 9 -30.1(1); Ductile Iron Pipe

Item 1 is replaced with the following:

Ductile iron pipe shall be centrifugally cast and meet the requirements of AWWA C151. Ductile iron pipe shall have a cement-mortar lining meeting the requirements of AWWA C104. Ductile iron pipe to be joined using bolted flanged joints shall be Standard Thickness Class 53. All other ductile iron pipe shall be Standard Thickness Class 52 or the thickness class as shown in the Plans.

Valves Section 9-30.3

Section 9-30.3(1); Gate Valves (3 Inches to 10 Inches)

This section is replaced with the following:

Gate valves shall meet the requirements of AWWA C509 or C515 for resilient seated gate valves.

9-30.3(3); Butterfly Valves

This section is replaced with the following:

Butterfly valves 12" and larger shall meet class 350 & shall be suitable for direct burial. Operators shall be per 9-30.3(3).

Section 9 -30.3(5); Valve Marker Posts

This section is replaced with the following:

Posts shall be Carsonite utility markers or equal and shall be of a color approved by the Engineer. Post shall face on-coming traffic.

Section 9-30.5; Hydrants

This section is supplemented with the following:

Hydrants shall be Mueller Centurion, Kennedy K81D Guardian, or Waterous Pacer 90, or Clow Medallion with 16 inch top section.
Large port on hydrant shall face roadway.

Section 9-30.5(2); Hydrant Dimensions

Paragraph 2, last sentence is replaced with the following:

The hydrant shall be factory painted with two coats of yellow paint.

Section 9-30.5(3); Hydrant Extensions

This section is supplemented with the following:

No hydrant extensions are allowed on new fire hydrant installations.

Water Service Connections (2 Inches and Smaller) Section 9-30.6 Service Pipes Section 9-30.6(3)A; Copper Tubing

This section is supplemented with the following:

Water service pipes shall be a minimum of 1" in diameter for 1" meters and smaller.

Water service pipes shall be a minimum of 2" in diameter for 1 ½" & 2" meters.

Water pipes shall be a minimum of 4" in diameter for larger than 2" to 4" services.

Section 9-30.6(3)B; Polyethylene Tubing

This section is deleted from the specifications.

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