

## **YAKIMA COUNTY, WASHINGTON**

### **Special Provisions For Water Main Construction**

The 2018 Standard Specifications for Road, Bridge, and Municipal Construction as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter, are adopted by the Board of County Commissioners of Yakima County as Standard Specifications. These Standard Specifications and the Amendments thereto shall apply to all work to be done under this project except as these Special Provisions expressly alter or modify them. In using said Standard Specifications and Amendments thereto, Secretary of Transportation, Engineer and like terms therein will be construed to mean Yakima County Engineer and where State or Thurston County is used it will mean Yakima County.

The Special Provisions hereinafter contained supersede any conflicting provisions of the 2018 Standard Specifications for Road, Bridge, and Municipal Construction and the Amendments thereto.

#### **1-06 CONTROL OF MATERIAL**

##### **1-06.1 Approval of Materials Prior to Use**

Section 1-06.1 of the Standard Specifications shall be supplemented with the following:

The Contractor shall submit to the County for review shop, catalog, and other appropriate drawings and descriptive information prior to fabrication or ordering of all materials specified. Information shall be submitted in sufficient time to allow the County not less than 10 regular working days for review. The minimum number of copies of such information to be submitted shall be four.

When the submittals have been reviewed by the County, two sets will be returned to the Contractor. If major changes or corrections are necessary, the submittals will be returned to the contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit in the same manner and quantity as specified for the original submittals.

No manufactured items or materials shall be installed until the submittals have been approved and appropriately stamped by the County.

## **7-09 WATER MAINS**

### **7-09.2 Materials**

Section 7-09.2 of the Standard Specifications shall be supplemented with the following:

Bedding material shall meet the requirements of Section 9-03.12(3), except that crushed granular material used for bedding material shall be crushed surfacing top course meeting the requirements of Section 9-03.9(3).

Controlled density fill shall meet the requirements of Section 2-09.3(1)E.

The reference to Blow Off Assemblies in Section 7-09.2 of the Standard Specifications shall be revised to read as follows:

Blow Off Assemblies 9-30.5(7)

### **7-09.3(5) Grade and Alignment**

The first sentence of the third paragraph in Section 7-09.3(5) of the Standard Specifications shall be replaced with the following:

The depth of trenching for water mains shall be such as to give a minimum cover of 48" over the top of the pipe unless otherwise shown in the Plans.

### **7-09.3(6) Existing Utilities**

Section 7-09.3(6) of the Standard Specifications shall be supplemented with the following:

When the horizontal separation between a water line and a sewer line is less than 10-feet, then the water line shall be encased in controlled density fill (CDF). The dimensions of the CDF shall be greater than or equal to the dimensions of the trench bedding material.

When the water line crosses within 18 vertical inches of a sewer line, or when the water line crosses under a sewer line, then the water line shall be encased in CDF a minimum of 10-feet to either side of the crossing.

The special conditions described above apply to both main lines and side services.

### **7-09.3(9) Bedding the Pipe**

Section 7-09.3(9) of the Standard Specifications shall be replaced with the following:

Pipe zone bedding shall be placed to the depths shown on Yakima County Standard Plan W-3.

Pipe bedding below the pipe shall be graded and compacted to form a continuous and uniform bearing for the pipe at every point between bell holes, except that the grade may be disturbed for the removal of lifting tackle. Pipe bedding below the pipe shall be compacted in a single lift to a minimum of 85 percent and a maximum of 95 percent of maximum density prior to laying the pipe.

Pipe bedding from the bottom of the pipe to 6-inches above the pipe shall be placed in even lifts on each side of the pipe and compacted to a minimum of 95 percent of maximum density by approved hand-held tools, so as to provide firm and uniform support for the full length of the pipe, valves, and fittings. Care shall be taken to prevent damage to the pipe or its protective coating. Limit compacted lift thickness to 6-inches.

When controlled density fill is used in place of bedding material, bolted connections shall be wrapped in an 8-mil polyethylene sheet to provide access to the connections.

#### **7-09.3(10) Backfilling Trenches**

Section 7-09.3(10) of the Standard Specifications shall be supplemented with the following:

Materials excavated from the trench may be used for trench backfill, except that organic material, frozen lumps, asphalt or concrete pavement, or rocks larger than eight inches in the greatest dimension shall not be used; and except that materials determined by the Engineer to be unsuitable for backfill at the time of excavation shall be removed and replaced with imported backfill material. Bedding Material shall be used for imported backfill material, except that Bank Run Gravel for Trench Backfill meeting the requirements of Section 9-03.19 may be used in untraveled areas.

#### **7-09.3(11) Compaction of Backfill**

The first paragraph of Section 7-09.3(11) of the Standard Specifications shall be replaced with the following:

Trench backfill shall be compacted to at least 85 percent of maximum density in trenches in untraveled areas, and to at least 95 percent of maximum density in trenches located in streets, roadway shoulders, driveways, or sidewalks, as specified in Section 2-03.3(14)D.

#### **7-09.3(19)A Connections to Existing Mains**

Section 7-09.3(19)A of the Standard Specifications shall be supplemented with the following:

Connections to existing mains shall be made with hot taps unless otherwise directed.

#### **7-09.3(20) Detectable Marking Tape**

The first sentence of Section 7-09.3(20) of the Standard Specifications shall be replaced with the following:

Detectable marking tape shall be installed over all water lines, including service lines.

#### **7-09.3(24) Disinfection of Water Mains**

Section 7-09.3(24) of the Standard Specifications shall be supplemented with the following:

New sections of water main must be separated from the existing system until satisfactory flushing, disinfection, and bacteriological sampling has been completed. Disinfection will not be permitted against a closed valve unless a temporary plate is installed between the valve and the new section of water main. Some new sections of water main will require a piece of connecting pipe to be installed between the new water main and the existing system after satisfactory bacteriological sample results are obtained. Before making any final connections, the interiors of all pipe and fittings used to make the final connection must be disinfected by swabbing or spraying with a chlorine solution.

Disinfection shall be in accordance with AWWA C651 and these Special Provisions. As a minimum, after final flushing and before the new water main is placed in service, two consecutive sets of acceptable samples shall be collected from the new main. Each set shall include as a minimum at least one sample from every 1200-feet of the new water main, plus one sample from the end of the line, and at least one sample from each branch. The first set of samples shall be collected at least 24-hours after flushing, and the second set of samples shall be collected at least 24-hours after the first set of samples.

When dry calcium hypochlorite is used for disinfection of the pipe, the contractor shall fill the pipe in such a manner as to prevent the calcium hypochlorite from being washed to the end of the pipe.

#### **7-09.3(25) Tracer Wire (New Section)**

The Contractor shall install a tracer wire, in addition to the detectable marking tape, over all water lines, including service lines. The tracer wire shall be 12 gauge copper wire with blue coded UF insulation. The tracer wire shall be attached to center of pipe at minimum 6' intervals and at bends with duct tape. Water tight connectors suitable for direct bury shall be used as connectors for splices. Bare wire contact points shall be provided at valve boxes, meter boxes, and air release and blow off assemblies.

### **7-12 VALVES FOR WATER MAINS**

#### **7-12.2 Materials**

The first paragraph in Section 7-12.2 of the Standard Specifications shall be supplemented with the

following:

Valve Stem Extensions	9-30.3(6)
Debris Cap (New Section)	9-30.3(10)

## **7-15 SERVICE CONNECTIONS**

### **7-15.3(1) Flushing and Disinfection**

Section 7-15.3(1) of the Standard Specifications shall be supplemented with the following:

Service lines installed in conjunction with new water mains shall be flushed and disinfected with the water main in accordance with Section 7-09.3(24). Following chlorination, treated water shall be flushed from all service lines until the replacement water shows the absence of chlorine. In the event the supply water is chlorinated, the chlorine residual shall not be in excess of that carried in the water supply system.

### **7-15.3(2) Pressure Testing (New Section)**

Service lines installed in conjunction with new water mains shall be pressure tested with the water main in accordance with Section 7-09.3(23).

## **9-30 WATER DISTRIBUTION MATERIALS**

### **9-30.2(6) Restrained Joints**

Section 9-30.2(6) of the Standard Specifications shall be supplemented with the following:

Joint restraint devices for PVC pipe shall meet the requirements of UNI-B-13-92. Joint restraint devices used on mechanical joints shall allow full joint deflection capabilities of the joint after installation, and shall be as manufactured by The Ford Meter Box Co., or equal.

### **9-30.3(1) Gate Valves (3-inches to 12-inches)**

Section 9-30.3(1) of the Standard Specifications shall be supplemented with the following:

Gate valves shall be as manufactured by Clow Corporation, M&H Valve Co., Mueller, or equal.

Valves larger than 10 inches in size shall be butterfly valves.

### **9-30.3(3) Butterfly Valves**

Section 9-30.3(3) of the Standard Specifications shall be supplemented with the following:

Butterfly valves shall be as manufactured by Pratt, Mueller, American Darling, M&H Valve Co., or approved equal.

#### **9-30.3(4) Valve Boxes**

Section 9-30.3(4) of the Standard Specifications shall be supplemented with the following:

Valve box top sections shall be 18-inches in height and shall be Rich Model 940-B, or equal.

#### **9-30.3(10) Debris Cap (New Section)**

Debris cap shall prevent dirt and debris from entering the top of valve box. Debris cap shall have blue locking handle and shall be Model DC625 as manufactured by SW Services, Inc. Phoenix, Arizona, or equal.

### **9-30.5 Hydrants**

Section 9-30.5 of the Standard Specifications shall be supplemented with the following:

Fire hydrants shall be Mueller Super Centurion 250 Model A-423, M & H 929, Clow Medallion, or approved equal.

#### **9-30.5(2) Hydrant Dimensions**

Section 9-30.5(2) of the Standard Specifications shall be supplemented with the following:

Fire hydrants shall have a main valve opening size of 5-1/4 inches, a 1-1/4 inch pentagon operating nut, one 4-1/2 inch N.S.T. steamer port with storz coupling and two 2-1/2 inch N.S.T. hose connections. Fire hydrants shall be painted with one coat of high visibility yellow paint after installation.

#### **9-30.5(7) Blow-Off Hydrants (New Section)**

Blow-off hydrants shall be suitable for direct burial and shall be of a non-freezing, self draining type. Blow-off hydrants shall have a bronze 2-1/2 inch N.S.T. outlet. All working parts shall be of bronze-to bronze design, and shall be serviceable from above grade with no digging. Blow-off hydrants shall be as Manufactured by Kupferle Foundry Co., St. Louis, MO, or approved equal.

### **9-30.6 Water Service Connections (2 Inches and Smaller)**

#### **9-30.6(2) Corporation Stops**

Section 9-30.6(2) of the Standard Specifications shall be supplemented with the following:

Corporation stops shall be Ballcorp Corporation Stops, as manufactured by the Ford Meter Box Co., Inc. or equal.

### **9-30.6(3) Service Pipes**

Section 9-30.6(3) of the Standard Specifications shall be replaced with the following:

Service line pipe shall be polyethylene tubing meeting the requirements of AWWA C901. Tubing shall have a minimum diameter of 1 inch and shall be high molecular weight with a 200 psi rating. Tubing used for 1 inch service lines shall be SDR 7 (iron pipe size, PE 3408 material). Tubing used for 1½ inch and 2 inch service lines shall be SDR 9 (copper tube size).

### **9-30.6(4) Service Fittings**

Section 9-30.6(4) of the Standard Specifications shall be replaced with the following:

Service fittings shall be pack joint couplings as manufactured by the Ford Meter Box Co., Inc. or equal. Stainless steel stiffeners shall be used with pack joint couplings.

### **9-30.6(5) Meter Setters**

Section 9-30.6(5) of the Standard Specifications shall be supplemented with the following:

Meter setters shall be copper with angle check valve, padlock wings on inlet ball valve (padlock in the off position) and pack joint-type compression fittings. Meter setters shall be as manufactured by the Ford Meter Box Co., Inc., or approved equal. Meter setter for 1-inch service lines and ¾-inch meters shall be Ford Copper Setter Model VBH72-18W-66-44, or equal.

### **9-30.6(7) Meter Boxes**

Section 9-30.6(7) of the Standard Specifications shall be supplemented with the following:

Meter boxes for ¾-inch service meters located in non-traffic areas shall be as manufactured by Carson Industries Series 1324, or equal.

Meter boxes for ¾-inch service meters located in driveways or parking areas shall be Old Castle 1118 H-Series with polymer concrete cover, Old Castle 1118 Synertech with duomold composite cover, or equal.