APPENDIX G

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July 24, 2001

FOREWORD

Pursuant to Edmonds Community Development Code (ECDC) 18.00.040, these City of Edmonds Construction Standard Details and Specifications, hereinafter referred to as "**Edmonds Standard Details**", shall apply whenever any public or private work is performed within the City of Edmonds, including work performed by private parties at their own expense. City capital improvement projects will be required to meet all the conditions within these standards unless the City Engineer approves an exception from the design standard in effect at the time of construction. Except where these Edmonds Standards Details provide otherwise, design, construction and materials shall conform to the appropriate standards of the most current edition of the following publications produced separately by Washington State Department of Transportation (WSDOT) or jointly by WSDOT and Washington State Chapter of the American Public Works Association (APWA).

- WSDOT/APWA Standard Specifications for Road, Bridge and Municipal Construction, hereinafter referred to as "WSDOT/APWA Standard Specifications".

- WSDOT/APWA Standard Plans for Road, Bridge and Municipal Construction, hereinafter referred to as "WSDOT/APWA Standard Plans".

The City Engineer is hereby delegated the authority to allow minor deviations to these standards after review of evidence submitted by the developer, establishing that such modifications are equal to or better than the requirements in these standards, that they are in the public interest, that they are based upon sound engineering practices and judgment, and that requirements for safety, function, appearance and maintainability are fully met. **Such deviations from the standards must be submitted, reviewed and approved in writing by the City Engineer prior to construction.** The City Engineer will make the decision as to whether a requested deviation or alternative will be allowed.

Revisions to these Edmonds Standard Details may be issued periodically by the City Engineer as necessary to make corrections or clarifications or to conform to current municipal practices, state or federal standards and new technology. Such revisions will be formally issued by the City Engineer in writing, entered into the Standard Details and recorded in the Revision Log.

NOEL MILLER, P.E.
Public Works Director

EDMONDS STANDARD DETAILS

Modifications to Standard Specifications Log

Revision Date	Title
April 2012	Modifications to Division 2 of Technical Specifications (Earthwork)
April 2012	Modifications to Divisions 5 through 7
April 2012	Modifications to Division 9 of Technical Specifications (Materials)
January 2015	Material Modifications to Divisions 7, 8 and 9

CITY OF EDMONDS MODIFICATIONS TO DIVISION 2 - EARTHWORK OF THE STANDARD SPECIFICATIONS:

2-09 STRUCTURE EXCAVATION

2-09.1 Description

Delete this section and replace it with the following section 2-09.1:

2-09.1 Description

This section covers the work necessary for trench excavation and backfill for all pipelines, complete.

A. Trench Excavation

Excavation is unclassified. Complete all excavation regardless of the type of materials encountered. The contractor shall do an estimate of the kind and extent of the various materials that will be encountered in the excavation.

B. Type of Bedding

Bedding consists of pipe base and pipe zone material. Pipe zone material shall be required for all pipe. Pipe base material will be required for pipes except ductile iron pipe. Pipe base material for ductile iron shall be required when, in the opinion of the Engineer, the native trench bottom is not suitable for laying pipe.

C. Types of Backfill

For bidding purpose, the class of backfill to be used above the pipe zone is indicated on the plans or class D if not shown. The City reserves the right to modify the use, location, and quantities of the various types of backfill during construction according to the established bid item prices. The Engineer will designate the type of backfill to be used in each location throughout the construction of the project. The general classifications of backfill are as listed below:

1. Class B

   Class B backfill will be used in unsurfaced areas where compaction and subsequent settlement are not critical.

2. Class C

   Class C backfill will be used in unsurfaced areas or road shoulders where reseeding, sod replacement, or shoulder replacement will be required. Compaction in these applications is important, as the subsequent settlement must be held to a minimum.

3. Class D

   Class D backfill will be used in unsurfaced and surfaced areas where compaction is critical to ensure that no settlement occurs. Pavement replacement and shoulder replacement will be made shortly after backfilling.

D. Water for Trench Compaction

The contractor shall make all arrangements for a source of water. All City water shall be metered and supervised by the City. The contractor shall be responsible for any deposit fees.

2-09.3 Construction Requirements

Supplement this section with the following section 2-09.3(5):

2-09.3(5)A. Surface Preparation for Excavation

Conform to subsection 2.01 Clearing, Grubbing and Roadside Cleanup

2-09.3(5)B. Trench Excavation and Shoring

1. Open Trench Limited

   The length of trench excavated in advance of the pipe laying operation shall be kept to a minimum, and in no case shall it exceed three hundred (300) feet, unless specifically authorized by the Engineer.

2. Trench Width

Contractor shall conform to state and federal laws. Minimum width of unsheeted trench in which pipe is to be laid shall be eighteen (18) inches greater than the outside diameter of the pipe, or as approved. Sheeting requirements on each side shall be independent of trench widths.

The maximum permissible trench width from the bottom of the trench to the crown of the pipe shall be as follows:

15 inch diameter and smaller	40 inches
18 inch diameter and larger	1-1/2 times the inside diameter of the pipe plus 18 inches

If the maximum trench width at the crown of the pipe is exceeded by the contractor without the written authorization of the Engineer, the contractor will be required, at his own expense, to provide pipe of higher strength classification or to provide a higher class of bedding, as approved by the Engineer.

Maximum permissible trench widths shall be as shown on the plans. If the maximum permissible trench width is exceeded, contractor shall be solely responsible for all costs associated with the additional trench width including, but not limited to, backfill and surface restoration.

3. Trench Safety Systems

Safety systems shall be provided in conformance to Washington Industrial Safety and Health Act, Chapter 49.17 RCW.

4. Grade

Excavate the trench to the lines and grades shown or as established by the Engineer (Section 1-05.4) with proper allowance for pipe thickness and for pipe bedding (base) material as required. If the trench is excavated below the required grade, correct any part of the trench excavated below the grade with material of the type specified for pipe bedding at no additional cost to the City.

5. Bell (Joint) Holes

At the location of each joint, the contractor shall dig bell (joint) holes of ample dimensions in the bottom of the trench and at the sides where necessary to permit the joint to be made properly and to permit easy visual inspection of the joint.

6. Disposal of Excess Excavated Material

Contractor shall make arrangements for the disposal of all excess material and bear all costs.

7. Shoring, Sheeting, and Bracing of Trenches

All sheeting, shoring, and bracing of trenches shall conform to the safety requirements of the federal, state, or local public agency having jurisdiction and as required to protect the pipe. The most stringent of these requirements shall apply.

8. Location of Excavated Materials

During trench excavation, contractor shall place the excavated material only within the construction easement, right-of-way, or approved working area in such a manner that it will cause a minimum of inconvenience to the traveling public and provide for merging traffic where necessary. Contractor shall not obstruct both lanes of traffic on any private or public traveled roadways or streets. The contractor shall also take the necessary steps to control erosion of the excavated material.

2-09.3(5)C. Dewatering

The contractor shall furnish, install, operate, and maintain all necessary machinery, appliances, and equipment to keep excavations free from water during construction, and shall dewater and dispose of the water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public.

Disposal options for dewatering water, depending on site constraints, may include:

- Infiltration in an area approved by the Engineer,
- Transport offsite in a vehicle such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters,
- Department of Ecology approved onsite chemical treatment or other suitable treatment technologies,
- Sanitary sewer discharge with City sewer department approval
- Use of sedimentation bag with outfall to a ditch or swale for small volumes of localized dewatering.

2-09.3(5)E. Trench Backfill

1. General

When backfill is placed mechanically, push the backfill material onto the slope of the previously placed and allow the material to slide down into the trench. Do not push backfill into the trench in such a way as to permit free fall until two (2) feet of cover or more is provided over the top of the pipe. Under no circumstances, allow sharp or heavy pieces of material to drop directly onto the pipe or the tamped material around it. All backfill, regardless of class, shall be placed in successive layers not to exceed eight (8) inches in loose thickness and each layer shall be compacted to the density specified herein. At no time shall backfill material be placed in the trench if the moisture content exceeds two percent (2%) of optimum moisture for the approved backfill material. If the moisture content is less than two percent (2%) of the optimum, additional water may be required based on the recommendations of the City's soils testing consultant or approval from the City Engineer.

Backfilled trenches shall be reasonably smooth, free from ruts and material neatly windowed over the trench and excess removed. **If the trench is over driveways, roadways or paved shoulders, the surface shall be temporarily covered with two (2) inches of cold mix per the standard trench detail.** Unpaved surfaces shall have material neatly mounded not more than six (6) inches above the existing ground for the entire width of the trench. Estimate and provide the amount of backfill material required so after normal settlement, the finished surface will meet the existing grade. Any excess or deficiency after normal settlement shall be corrected accordingly.

Screen all boulders and stones from the backfill material that are two (2) inches in diameter or larger in the upper twelve (12) inches of the backfill.

When, in the opinion of the Engineer, selected backfill material is unsatisfactory, the contractor shall furnish imported backfill material as approved by the Engineer.

2. Class B Backfill

Backfill the trench above the pipe zone and compact to ninety percent (90%) of maximum density as determined by ASTM D1557 (see 1-06.2). Determine the type of compaction required to prevent subsequent settlement.

3. Class C Backfill

Backfill the trench above the pipe zone and compact to ninety percent (90%) of the maximum density as determined by ASTM D1557 (see 1-06.2). Determine the type of compaction required to prevent subsequent settlement.

4. Class D Backfill

Backfill the trench above the pipe zone with approved backfill material to a minimum of ninety-five percent (95%) as determined by ASTM D1557 (see 1-06.2).If the native material does not comply with the specifications, the contractor shall use imported material as approved by the Engineer.

5. Maintenance of Trench Backfill

Any subsequent settlement of the finished surface during the warranty period shall be considered a result of improper or insufficient compaction and/or excessive moisture content and shall be promptly repaired by the contractor at no cost to the City.

Maintain the backfilled trench surface until the following applicable operations have been completed and approved by the Engineer:

a. Service connections, installed and backfilled.
b. Valves, valve boxes, and hydrants installed.
c. Pressure testing.
d. Cleaning, flushing, and sterilization.
e. Cleanup and restoration of all physical features.
f. Utilities restored to their original condition or better.
g. All work required between the two valves or manholes accomplished, with the exception of final surfacing.

This maintenance shall include, but not limited to, keeping the surface of backfilled trenches reasonably smooth, free from ruts and potholes, and suitable for normal traffic flow, where applicable.

No additional payment will be made for the maintenance of the trench backfill before completion of the work outlined above, except for cold mix asphalt when directed or requested by the Engineer.

No final pavement replacement shall be undertaken until all items outlined above have been completed and approved by the Engineer.

Maintenance of backfilled trenches is considered to be incidental to this item of work, and payment for such maintenance will be considered as included in payment for class of backfill.

2-09.3(5)F. Compaction of Backfill

Mechanical compaction is generally recommended for trenches. Contractor will supply, operate and maintain the proper equipment to compact the classification of material relative to the field conditions. Water settlement may be used to compact sand, pit run, and gravel type backfills. If the contractor desires to use water settling, he shall submit in detail to the Engineer for approval, the procedure to be used. The contractor, as directed by the Engineer and at no additional cost, shall excavate test holes to review the effectiveness of compaction. If, in the opinion of the Engineer, the specified compaction and densities are not being achieved in accordance with 1-06.2, the contractor shall recompact the backfill material. If required, water saturated material shall be removed, dried, and placed back in lifts or replaced with imported backfill material. The contractor shall be responsible for all costs for labor, materials, and delays resulting from improper compaction and recompaction.

2-09.3(5)G. Embankments

1. Structural Embankment

Construct embankment to support the pipeline in accordance with the details shown on the plans. Spread excess excavated trench material in maximum one (1) foot lifts for the full width of the embankment cross section and compact to a minimum of ninety-five percent (95%) of maximum density for the full depth of the fill as determined by

ASTM D1557 (see 1-06.2). Compact the embankment to its final cross section before the trench excavation for the pipe is made.

2. Additional Pipe Cover

In locations where insufficient pipe cover exists, place selected native material over the pipe as shown or directed to provide a minimum cover of three (3) feet. Slope pipe cover to prevent blockage of surface runoff. No additional payment will be made for furnishing additional pipe cover.

2-09.3(5)H. Drainage Ditch Restoration

Undercrossings of ditches shall be backfilled with imported granular backfill material or as approved to within the top one (1) foot of the ditch bottom. Place approved rock or rip-rap material in the top foot. Correct any ditch damage as a result of contractor's operations at no cost to the City. Payment for ditch restoration will be considered as incidental to the project.

2-09.3(5)I. Cold Mix Asphalt

Cold mix asphalt used for temporary repair of utility trenches or other small areas shall be placed by hand, then raked to a smooth and uniformly dense layer before compacting.

On large areas, which have been determined by the Engineer to be temporarily repaired with cold mix asphalt, the mix shall be spread with mechanical spreading equipment, such as a "Layton Paver," to a smooth and uniformly dense layer before compacting. In areas inaccessible to the mechanical spreading equipment, cold mix shall be placed by hand.

2-09.3(5)J. Resurfacing

Resurfacing, including asphalt patching, graveling, and landscaping shall be performed after the maintenance of trench backfill.

2-09.3(5)K. Settlement

Any settlement observed in the backfill, embankment, or in structures, including pipelines and manholes built over compacted material or embankment within the warranty period will be considered to be caused by improper compaction methods and/or pumping due to excessive moisture and shall be corrected and repaired at no cost to the City. Pipelines and structures which have settled shall be removed and reconstructed to the original condition at time of acceptance at no cost to the City.

2-13 IMPERMEABLE MEMBRANE

Add the following section 2-13:

2-13.1 Description

This section described furnishing and installing an impermeable membrane as part of the subsurface drain.

2-13.1(1) Definitions

Installer: The party responsible for field handling, storing, deploying, and other site aspects of impermeable membrane installations. Also responsible for transportation of these materials to the site. Also called Contractor.

PVC Geomembrane Manufacturer: The party responsible for the production of the PVC geomembrane rolls.

2-13.1(2) Field Quality Control

The Contractor shall inspect each impermeable membrane in its entirety. Any area showing a defect shall be marked and repaired in accordance with these Specifications.

During the construction phase, each impermeable membrane shall be continuously inspected for uniformity, damage, and imperfections (for example, holes, cracks, thin spots, or foreign materials). Immediately after installation, each impermeable membrane shall be inspected to

confirm the absence of tears, punctures, or blisters. Any imperfections shall be immediately repaired and re-inspected.

2-13.1(3) Transportation, Handling, Storage, and Protection

Use all means necessary to protect the material and Work of this Section before, during, and after installation.

Impermeable membranes shall be marked and tagged with the following information:

A. Manufacturer's name.
B. Product identification.

Promptly inspect shipments to assure that materials comply with requirements, quantities are correct, and materials are undamaged. Arrange storage of material to permit access for inspection. Periodically inspect to assure materials are undamaged and are maintained in acceptable conditions.

Store impermeable membranes to protect from puncture, dirt, grease, water, moisture, mud, mechanical abrasions, excessive heat, or other damage.

Store impermeable membrane on prepared flat surface (not on wooden pallets). Use appropriate handling equipment for deployment.

Impermeable membrane damaged during handling shall be repaired to the satisfaction of the Engineer. Impermeable membrane irreparably damaged, as determined by Engineer, shall be immediately removed from the site and replaced. Repair, removal, and replacement shall be solely at Contractor's expense.

2-13.2 Materials

The material supplied under these Specifications shall be first quality industrial grade products designed and manufactured specifically for the purposes of this work, and which have been satisfactorily demonstrated by prior use to be suitable and durable for use intended.

The impermeable membrane material shall be PVC. The impermeable membrane shall conform to the properties detailed below:

Test	Test Designation	Requirement
		30 mil
Thickness	ASTM D 1593	28.5 mil
Density	ASTM D 792	1.20
Tensile Strength	ASTM D 882	70 lbs/in. width
Elongation	ASTM D 882	300%
Tear Resistance	ASTM D 1004, Die C	8 lbs

[1] All specification values are minimum roll values.

The impermeable membranes shall be a homogeneous material uniform in color, thickness and surface texture, free of undispersed raw materials, streaks, foreign material, gels, and any signs of delamination, blisters, cracks, tears or pinholes. Impermeable membrane materials shall be chemically and temperature stable under the conditions in which they will be subjected, and shall contain no additives or filler which can leach out and cause deterioration over time.

The sheeting shall be suitably formulated from a homopolymer vinyl chloride resin of Type GP in accordance with ASTM D 1755 to impart durability (ASTM D 3083). Use of water-soluble compounding ingredients is prohibited. Plasticizers that are resistant to migration, mildew, and bacterial degradation shall be used. The sheeting shall be pigmented to produce a uniform color and UV stabilized with carbon black.

The sheeting shall be capable of being repaired with the use of solvent cement.

2-13.2(1) Local Suppliers

To assist the contractor, the names of the following local suppliers are provided:

A. Northwest Lining and Geotextile Products, Inc., Kent, WA (253) 872-0244
B. Layfield Plastics. Bellevue, WA (800) 796-6868

Other local suppliers may also be available.

2-13.3 Construction Requirements

2-13.3(1) Inspection

The Engineer will inspect the subgrade and give approval that it is suitable.

2-13.3(2) Installation

1. The impermeable membrane panels shall be installed to overlap by 1 foot as necessary.
2. During installation of the impermeable membrane, the following requirements shall be met:
   a. Install impermeable membrane using method that will not damage, stretch, or crimp impermeable membrane and protect underlying surface from damage.
   b. Personnel working on impermeable membranes shall not engage in activities that could damage the impermeable membrane.
   c. Unroll impermeable membrane using method that shall not damage, stretch, or crimp impermeable membrane and protect underlying surface from damage.
3. Membrane shall be laid underneath and on the north side of the subsurface drain trench, as shown on the contract drawings.

2-13.3(3) Visual Inspection

During installation, visually examine all areas of overlap of the impermeable membrane for defects, holes, blister, undispersed raw materials, and any sign of contamination by foreign matter. Clean surface of the impermeable membrane prior to examination. Mark areas suspected of deficiencies. Repair each suspect location.

2-13.3(4) Repair

Repair any portion of the impermeable membrane exhibiting a flaw or failing a visual inspection test in accordance with manufacturer's instructions. Patches shall be made from the same material as the impermeable membrane and shall extend a minimum of 4 inches beyond the defect. Repair, removal, and replacement shall be at Contractor's expense.

2-14 CONCRETE SEGMENTAL BLOCK WALL

Add the following section 2-14:

2-14.1 Description

This section describes a small retaining wall enclosure constructed of concrete segmental blocks to be installed to replace the existing retaining wall on-site.

2-14.1(1) Submittals

A. Submit the following:

1. Product Data: Material description and installation instructions for each manufactured product specified
2. Samples
   a. Furnish one unit in the color and face pattern specified.
3. Test Reports: Independent laboratory reports stating moisture absorption and compressive strength properties of the concrete retaining wall units meet the Project Specifications when tested in accordance with ASTM C140, Sections 6, 8 and 9.

2-14.1(2) Delivery Storage and Handling

A. Deliver, store, and handle materials in accordance with manufacturer's recommendations, in such a manner as to prevent damage. Check the materials upon delivery to assure that proper material has been received. Store above ground on wood pallets or blocking. Remove damaged or otherwise unsuitable material, when so determined, from the site.

1. Exposed faces of concrete wall units shall be free of chips, cracks, stains, and other imperfections detracting from their appearance, when viewed from a distance of 10 feet.
2. Prevent mud, wet cement, adhesives and similar materials which may harm appearance of units, from coming in contact with system components.

2-14.2 Materials

A. Concrete Blocks
   1. Meet requirements of ASTM C1372, except the maximum water absorption shall be limited to 7 percent, and unit height dimensions shall not vary more than plus or minus 1/16 inch from that specified in the ASTM reference, not including textured face.
   2. Unit Face Area: Not less than 0.33 square feet.
   3. Color: Selected by the Engineer from manufacturer's full range of standard colors.
   4. Face Pattern Geometry: Straight or tri-plane
   5. Texture: Split Rock Face.
   6. Include an integral concrete shear connection flange/locator.

B. Construction Adhesive: Exterior grade adhesive as recommended by the retaining wall unit manufacturer.

2-14.3 Construction Requirements

2-14.3(1) Examination

A. Examine the areas and conditions under which the retaining wall system is to be erected, and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

B. Verify the location of existing structure, features and utilities prior to excavation.

2-14.3(2) Excavation

A. Excavate to the lines and grades shown on the Drawings. Over-excavation not approved by the Engineer will not be paid for by the Owner. Replacement of these soils with compacted fill and/or wall system components will be required at the Contractor's expense. Use care in excavating to prevent disturbance of the base beyond the lines shown.

2-14.3(3) Foundation Preparation

A. Excavate foundation soil as required for footing or base dimension shown on the Drawings, or as directed by the Engineer.
B. The Engineer will determine if the foundation soils will require special treatment or correction to control total and differential settlement.
C. Fill over-excavated areas with suitable compacted backfill, as recommended by the Engineer.

2-14.3(4) Base Course Preparation

A. Place base materials to the depths and widths shown on the Drawings.
   1. Extend the leveling pad laterally at least 6 inches in front and behind the lowermost concrete retaining wall blocks.
   2. Provide aggregate base compacted to 6 inches thick (minimum).
   3. The Contractor may at their option, provide a concrete leveling pad, in lieu of the aggregate base.
B. Compact aggregate base material to provide a level, hard surface on which to place the first course of blocks.
C. Prepare base materials to ensure complete contact with retaining wall blocks. Gaps are not allowed.

2-14.3(5) Erection

A. General: Erect units in accordance with manufacturer's instructions and recommendations, and as specified herein.
B. Place first course of concrete wall units on the prepared base material. Check units for level and alignment. Maintain the same elevation at the top of each unit within each section of the base course.
C. Ensure that foundation units are in full contact with the compacted base.
D. Place concrete wall blocks side-by-side for full length of wall alignment. Alignment may be done by using a string line measured from the back of the block. Gaps are not allowed between the foundation concrete wall blocks.
E. Check each course for level and alignment. Adjust units as necessary to maintain level and alignment prior to proceeding with each additional course.
F. Install each succeeding course. Backfill as each course is completed. Pull the units forward until the locating surface of the unit contacts the locating surface of the units in the preceding course.
G. Interlock wall segments that meet at corners by overlapping successive courses. Attach concrete retaining wall units at exterior corners with adhesive specified.

2-14.3(6) Backfill Placement

A. Place fill and compact with only lightweight hand-operated compaction equipment .

2-14.3(7) Cap Unit Installation

A. Apply adhesive to the top surface of the unit below and place the cap unit into desired position.
B. Cut cap units as necessary to obtain the proper fit.

2-14.3(8) Tolerances

A. Site Construction Tolerances
    1. Vertical Alignment: Plus or minus 1-1/2 inches over any 10-foot distance, with a maximum differential of 3 inches over the length of the wall.
    2. Horizontal Location Control from Grading Plan
        a. Straight Lines: Plus or minus 1-1/2 inches over any 10-foot distance.
        b. Corner and Radius Locations: Plus or minus 12 inches.
    3. Immediate Post Construction Wall Batter: Within 2 degrees of the design batter of the concrete retaining wall units.
    4. Bulging: Plus or minus 1-1/4 inches over any 10-foot distance.

2-14.3(9) Adjusting and Cleaning

A. Replace damaged units with new units as the work progresses.
B. Remove debris caused by wall construction and leave adjacent paved areas broom clean.

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CITY OF EDMONDS MODIFICATIONS TO DIVISION 5 - SURFACE TREATMENTS AND PAVEMENTS OF THE STANDARD SPECIFICATIONS

5-04 HOT MIX ASPHALT

Supplement this section with the following:

5-04.3(4) Rollers

Pneumatic tire rollers shall not be used unless specified in the Special Provisions.

5-04.3(17) Paving Under Traffic

Open trenches within the traveled way or auxiliary lane shall have a steel-plate cover placed over them. A wedge of suitable materials, if required, shall be placed for a smooth transition between the pavement and the steel plate at the discretion of the Engineer. Warning signs shall be used to alert motorists of the presence of the steel plates.

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CITY OF EDMONDS MODIFICATIONS TO DIVISION 6 - STRUCTURES OF THE STANDARD SPECIFICATIONS

6-02 CONCRETE STRUCTURES

Supplement this section with the following:

6-02.3(1) Classification of Structural Concrete

Class 3000 concrete, minimum 5 1/2 sack (94 pound sacks) mix, shall be used for all concrete work, including sidewalks, curb and gutter, curbs, retaining walls, and small structures.

6-02.3(6)A Weather and Temperature Limits to Protect Concrete

A clear, not white, curing compound shall be brushed or sprayed on all exposed concrete immediately after the finishing work. Other protective measures for weather constraints are still required, including protection from excessive hot and cold temperatures (including wind chill).

6-02.3(12) Construction Joints

Construction or "dummy" joints shall consist of a tooled 1/4- inch joint into the concrete pour and shall be placed at 10-foot intervals. All work shall be perpendicular and straight.

6-02.3(13) Expansion/Contraction Joints

The following requirements apply to all curb, curb and gutter, and sidewalk work. Full depth expansion joints, consisting of 1/2-inch thick premolded material (AASHO M213), shall be placed perpendicularly when abutting to existing improvements at each side of driveway cuts and at a maximum spacing of ten feet. Curb and gutter installations will require an additional 2-inch cut or the installation of a 1-inch by 4-inch wedge into the heel of the pour. All work shall be perpendicular and straight.

6-02.3(14) Finishing Concrete Surfaces

The finished improvements shall be true to grade, straight with smooth transitions or curves. Grade checked with a ten-foot straight edge placed anywhere on the slab in any direction and shall not deviate more than 1/8 inch, and alignment shall not vary more than 1/4 inch.

The finish shall be a light broom finish as approved by the Engineer in 1-05.6 Inspections. The City will not accept finishes that are non-uniform, overworked, discolored, spalling, damaged by weather, or where a cement layer has formed.

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CITY OF EDMONDS MODIFICATIONS TO DIVISION 7 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS AND CONDUITS OF THE STANDARD SPECIFICATIONS

7-04 STORM SEWERS

Supplement this section with the following:

7-04.2 Materials

See approved material listings MM-1 through MM-4 as contained in City of Edmonds Material Modifications, Divisions 7, 8 and 9.

7-04.3(1) Cleaning and Testing

All pipes shall be tested for exfiltration.

7-04.3(3) Add: Backfilling Storm Sewer Trenches

Storm sewer pipes shall be bedded and backfilled as specified in Section 2-09.

7-05 MANHOLES, INLETS, CATCH BASINS AND DRYWELLS

Supplement this section with the following:

7-05.3(5) Connection to Existing Line, Catch Basin, Curb Inlet or Manhole (New Section)

Where shown on the plans, new stormwater pipes shall be connected to existing lines, catch basins, curb inlets and/or manholes. The Contractor shall not tap directly into stormwater main pipes but shall install a structure to make said connection. The Contractor shall be required to core drill into the structure, shape the new pipe to fit, and regrout the opening in a workmanlike manner. Where directed by the Engineer or where shown on the plans, additional structure channeling may be required.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

Supplement this section with the following:

7-08.3(1)C Bedding the Pipe

Pipe bedding for PVC pipe shall be placed to a depth of 6" below the bottom of the pipe and extending up 6" above the crown on all pipes. The hand-placed bedding around the pipe and to a point 6 inches above the crown shall be rammed and tamped by use of shovels or other approved hand held tools so as to provide firm and uniform support over the full length of all pipes. All other requirements for pipe bedding shall be per Section 9.03.

Pipe bedding shall be considered incidental to the unit price for all pipe and no further compensation shall be made.

7-09 WATER MAINS

Supplement this section with the following:

7-09.2 Materials

See approved material listings MM-1 through MM-4 as contained in City of Edmonds Material Modifications, Division 7, 8 and 9.

7-09.3(11) Compaction of Backfill

See 1-06.2(1) Samples and Tests.

7-12 VALVES FOR WATER MAINS

Supplement this section with the following:

See approved materials list MM-1 through MM-4

7-14 HYDRANTS

Supplement this section with the following:

See approved materials list MM-1 through MM-4.

7-15 SERVICE CONNECTIONS

Supplement this section with the following:

See approved materials list MM-1 through MM-4.

7-17 SANITARY SEWERS

Supplement this section with the following:

7-17.2 Materials

See approved materials list MM-1 through MM-4.

7-17.3(1) Protection of Existing Sewerage Facilities

When extending an existing sewer, the downstream system shall be protected from construction debris by placing a screen or trap in the first existing manhole downstream of the connection. It shall be the Contractor's responsibility to maintain this screen or trap until the new system is placed in service and then to remove it. Any construction debris which enters the existing downstream system shall be removed by the Contractor at his expense, and to the satisfaction of the Engineer. When the first manhole is set, the outlet shall be plugged until acceptance by the Engineer.

7-17.3(2)A General

See Section 1-05.4.

7-17.3(2)E Low Pressure Air Test for Sanitary Sewers Construct of Air Permeable Materials

Section 7-17.3(2)E is supplemented by adding the following:

When air permeable pipe is subjected to a low-pressure air test, all of the provisions of Section 7- 17.3(2) shall apply, except that the time in seconds for the pressure drop shall be equal to or greater than the required time as shown in the table below:

Time in Seconds for Pressure Drop										
Pipe Dia. (in)	**Pipe Length (ft)**									
	50	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
4	5	9	14	18	22	27	31	36	40	45
6	10	20	30	40	50	60	70	80	85	85
8	18	36	54	71	89	107	114	114	114	114
10	28	56	84	111	139	142	142	142	143	159
12	40	80	120	160	170	170	170	183	206	228
15	63	125	188	213	213	214	250	286	320	360
18	90	180	255	255	257	310	360	410	460	520
21	123	245	298	298	350	420	490	560	630	700
24	160	320	340	370	460	550	640	730	830	920
27	203	390	390	460	580	700	810	930	1040	1160
30	250	430	430	570	720	860	1000	1140	1290	1430

All time values listed in the table are in seconds. If a section to be tested includes more than one pipe size, the total time required can be found by adding the time values for each size of pipe and its corresponding length.

Pipe over 30 inches in diameter shall be tested one joint at a time in accordance with ASTM C 1103.

7-17.3(2)F Low Pressure Air Test for Sanitary Sewers Constructed of Non Air Permeable Materials

Delete this section and replace it with the following:

When non air permeable pipe is subjected to a low-pressure air test, all of the provisions of Section 7-17.3(2)E shall apply, except that the time in seconds for the pressure drop shall be equal to or greater than four times the time shown in the table listed in Section 7-17.3(2)E.

Pipe over 30 inches in diameter shall be tested one joint at a time in accordance with ASTM C 1103.

Reaches of thermoplastic pipe containing no joints shall be exempt from testing requirements.

7-17.3(2)H Television Inspection

Section 7-17.3(2)H is supplemented by adding the following:

Before final acceptance, the Inspector shall require all sanitary sewer lines to be inspected by the use of a television camera, utilizing Contracting Agency's approved private inspection services.

After completion of the following, authorization from the Contracting Agency shall be required before the Contractor can perform the initial television camera work:

1. The acceptable placement of applicable pipe, ballast, bedding, and backfill material.
2. The acceptable completion of all applicable channels and grout work.
3. The acceptable debris removal, cleaning, and flushing of all applicable pipes and

structures. The television inspection requirements shall include the provisions of:

1. A color closed circuit television (CCTV) camera with a pan and tilt capacity in order to view all main lines, lateral lines, and structures including channels. CCTV equipment shall include television cameras, a television monitor, cables, power sources, and other equipment. Focal distance shall be adjustable through a range from 150 millimeters (6 inches) to infinity. The CCTV equipment shall include a distance measuring instrument (DMI) to measure the horizontal distance traveled by the camera. The DMI readout shall appear continuously on the videotape produced by the inspection and shall be accurate to less than 1 percent error over the length of the section of pipeline being inspected. For storm or sanitary sewers, the length is measured from the centerline of the manhole or catch basin to the centerline of the next manhole or catch basin. The CCTV inspection system shall be performed utilizing one of the following video camera systems:
   a. Remote-focus stationary lens cameras;
   b. Rotating lens cameras; or
   c. Pan-and-tilt cameras.
2. The camera and television monitor shall produce a minimum of 14 lines per millimeter (350 lines-per-inch) resolution. The video camera shall be mounted on a skid, floatable raft system, or transporter based on the conditions of the pipeline to be televised. Telephones, radios, or other suitable means of communication shall be utilized to ensure communication exists between members of the crew. A description of the system to be utilized shall be included with the submittal package
3. Lateral CCTV inspections shall be completed to the right-of way or as directed by the Engineer.
4. A dye solution to be introduced in sufficient quantity to travel from the structure that is the highest point of inspection to the downstream terminus of the inspection limits. Red or purple dye shall be used for PVC pipe and green dye for ductile iron, HDPE and concrete pipe.
5. A one-inch reference ball to be mounted to the camera in order to drag along the bottom of the pipe during the entire inspection procedure.
6. Linear measure references to be measured from the center of the beginning structure to the center of the next inline structure and include the direction of flow. The locations of lateral pipes and all distinctive pipe conditions shall be referenced to the centerline of the beginning structure. All structure references shall utilize the designated structure reference numbers shown on the plans.

The following television inspection information shall be provided to the Contracting Agency:

1. A clear DVD record of both video and audio in Windows Media Player format, which encompasses the limits of the inspection area and including all reference data as described herein.
2. A written report shall be provided corresponding to the inspection record and including all reference data as described herein. The report shall consist of a written narrative of all distinctive pipe conditions including ponding areas in excess of ¼ inch.

7-17.3(2)I Sewer Line Connections

Unless otherwise approved by the Engineer, all connections of lateral sewers to new ductile iron pipe or existing mains shall be made through a cast iron saddle secured to the sewer main with stainless steel bands. The main shall be core drilled.

Connections to concrete manholes shall be core drilled, and shall have an “O” ring rubber gasket meeting ASTM C-478 in a manhole coupling equal to the Johns-Manville asbestos-cement collar, or use a conical type flexible seal equal to Kor-N-Seal.

CITY OF EDMONDS MODIFICATIONS TO DIVISION 9 - MATERIALS OF THE STANDARD SPECIFICATIONS:

9-03 AGGREGATES

Supplement this section with the following:

9-03.16 Bedding Materials

A. Rigid Pipe

Bedding material for rigid pipe shall be free from wood waste, organic material and other extraneous or objectionable materials. Bedding material shall conform to the following gradations when tested in accordance with ASTM D422. Maximum particle size for ductile iron pipe shall be 1-1/2 inches.

1. Base Material

Select: Selected excavated material for pipe base shall not contain particles larger than 5/8 inches.

Import: Imported base material shall be clean granular sand or sand and gravel mix conforming to the following gradation:

Passing 3/4 inch square opening	100%
Passing 3/8 inch square opening	95% - 100%
Passing U.S. #8 sieve	0% - 10%
Passing U.S. #200 sieve	0% - 3%
Sand equivalent	35 min.

2. Pipe Zone

Pipe zone material shall be crushed, processed or naturally occurring granular material or pea gravel, conforming to the following gradation:

Passing 3/4 inch square opening	100%
Passing 3/8 inch square opening	95% - 100%
Passing U.S. #8 sieve	0% - 10%
Passing U.S. #200 sieve	0% - 3%
Sand equivalent	35 min.

B. Thermoplastic Pipe

Bedding material for thermoplastic pipe shall be free from wood waste, organic material and other extraneous or objectionable materials. Bedding material shall conform to the following gradations when tested in accordance with ASTM D422.

Pipe zone material shall be crushed, processed or naturally occurring granular material or pea gravel conforming to the following gradation:

Passing 3/4 inch square opening	100%
Passing 3/8 inch square opening	95% - 100%
Passing U.S. #8 sieve	0% - 10%
Passing U.S. #200 sieve	0% - 3%
Sand equivalent	35 min.

9-03.19 Bank Run Gravel for Trench Backfill

All backfill material shall be free from wood waste, organic material and other extraneous objectionable materials. Material shall be uniformly graded from coarse to fine and conform to the following gradation when tested in accordance with ASTM D422:

1. Select

Maximum particle size for this material shall be 2½ inches.

2. Import

Particle size for this material shall be 1¼" minus CSBC.

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CITY OF EDMONDS

MATERIAL MODIFICATIONS

DIVISIONS 7, 8 AND 9

CITY OF EDMONDS MODIFICATIONS TO MATERIALS IN DIVISIONS 7, 8 AND 9 OF THE STANDARD SPECIFICATIONS:

The following material specifications shall clarify, supplement and supersede where applicable the WSDOT Standard Specifications.

MATERIALS

A. City of Edmonds approved materials:
*** approved only when shown in the plan, proposal, or Special Provisions.**

1. WATER SYSTEMS

MATERIAL	DESCRIPTION	MANUFACTURER
Pipe	Class 52 ductile iron (AWWA C151) (or class as noted on plans) push on joint pipe	US Pipe, American, Pacific States
Pipe Fittings (MJ/Flanged)	Cement lined ductile iron (AWWA C 153)/C110	
Nuts, bolts (MJ Fitting Accessories)	AWWA C111	
Couplings	Long Body Ductile Iron, MJ, AWWA C153	
Restrained joints for pipe (locking gasket)	Locking Gasket	US Pipe, American, Pacific States
Restrained joints for pipe (mechanical) AWWA C111	Mega-Lug Series 1100HD Uni-Flange Series 1490	EBAA Ford
Restrained joints for MJ fittings AWWA C111	Mega-Lug Series 1100 One-Lok D Slide Uni-Flange Series 1400 StarGrip series 3000 Romagrip	EBAA Sigma Ford Star Pipe Romac
Joint lubricant	ANSI/NSF Standard 61	
Gate valves, resilient wedge (12" & smaller, AWWA C 509 or AWWA C 515)	AVK Series 45/65 Kennedy KS-RW Series 2500 Clow 2639 Mueller 2300	American AVK Co. Kennedy Valve AFC American Flow Control Clow Mueller Co.
Butterfly valves (AWWA C 504)	Groundhog Series 4500 Lineseal III	Pratt Kennedy Valve Mueller Co.
Tapping sleeve	18-8 Type 304 stainless steel with CF8 cast stainless steel flanged end with ANSI 150 pound drilling and tapping valve	Romac, JCM
Valve boxes	Seattle Style 940	Olympic Foundry Inc.
Fire hydrants meeting AWWA C502 w 4" Storz Adapter	AVK Series 2780 Centurion, Super Reliant 929 Medallion Pacer	American AVK Co. Mueller Co. M&H Clow Waterous
Combination air relief/vacuum relief valve (ARV) AWWA C512	Series 140c Model 202c Model Ul-20	APCO Val-Matic Crispin
Automatic Control Valve	AWWA C530	Cla-Val
Valve Insertion	EZ2 System	Advanced Valve Technologies

Cross Connection Assemblies	Cross Connection Assemblies	Current Washington State approved listing
Flex Couplings	Ductile Iron Bolted	Mueller, Romac, Ford, Smith Blair

Water Services and Connections

MATERIAL	DESCRIPTION	MANUFACTURER
Copper pipe	Soft, type K, ASTM B 88	Streamline, Cerro
Service Saddle - 2" IP saddle with stainless steel straps	317 Series Model 202S Model FS202 DR2S	Smith Blair Romac Ford Mueller Co.
Service Saddle – 1" CC saddles with stainless steel straps (up to 12" main)	Model 101s Model FS101 315 Series DR1S	Romac Ford Smith Blair Muller Co.
Ball Corp. stops 1" CCxCTS comp. AWWA C800	FB1000 B-25008 4701-BQ	Ford Mueller Co. A.Y. McDonald
Ball Corp. stops 2" IP	FB 500 B-2969 3131	Ford Mueller Co. A.Y. McDonald
Ball Curb stops 1" MIPxCTS	B-84-444Q B25122 6107Q	Ford Mueller Co. A.Y. McDonald
Fittings - copper ANSI AWWA C800	110 Compression C series quik-joint 4758-Q	Mueller Ford A.Y. McDonald
Meter Setters: • New 1" • Replace Exist 1"	 Ford VBH74-15W-11-44 A.Y. McDonald 20-415-WCDD44 Ford VB74-15W-11-44 A.Y. McDonald 20-415-WXDD44	 Ford A.Y. McDonald Ford A.Y. McDonald
Meter Setters: • New 2" • Replace Exist 2"	 Ford VBH87-12HB-1177 Ford VBB87-12HB-1177	 Ford Ford
1" Meter boxes (Unpaved Areas) 1" Meter boxes (Paved Areas & Driveways)	1324x12 MSBCF with Ductile Iron Cover with Cast Iron Reader Door A6001946PCX12 Box with A6001969RCI Cover with Hinged Reader Lid	Carson Armorcast
2" Meter boxes	Box: A6001641PCX18 Lid: A6001947TRCI-H7	Armorcast

2. SEWER SYSTEM (sewer pipe)

MATERIAL	DESCRIPTION	MANUFACTURER
Pipe	PVC, SDR 35, ASTM D3034	
Fittings and sewer service	Same material as pipe PVC sand collars	
Manholes	Precast ASTM C478, 48" min. at bottom. top concentric to 24" opening	

Manhole steps	Polypropylene, ASTM D-4101 material over ASTM A-615, grade 60 steel reinforcing bar, step to comply with ASTM C-478	Lane, MA Industries
Frames and covers	ASTM A48, class 35, cast iron, bituminous coated,	East Jordan Ironworks
Transition couplings	Longitudinally bolted coupling with gasketed joints	Romac, Dresser, Rockwell

3. STORM DRAIN SYSTEM

MATERIAL	DESCRIPTION	MANUFACTURER
Pipe	*Concrete, reinforced, ASTM C76 or AASHTO M 170 Concrete (non-reinforced) ASTM C14 or AASHTO M86, class 2	
	Aluminum CMP, AASHTO M196, 16 ga. or as shown on plans, gasketed and coupling banded	
	*Aluminum smooth wall pipe, l6 ga. or as shown on plans, recorrugated ends with annular bands and gaskets	Cascade Culvert, Kaiser Aluminum
	*PVC, SDR 35, ASTM D3034	
	Ductile iron, class 50	
	Perma-loc series 46	J.M. Manufacturing Co.
	HDPE; smooth interior pipe, watertight AASHTO M252, M294 Type S ASTM D 2321 ASTM D 1248 Type III Category 4 Grade P33 Class C ASTM D 3350 (2' Minimum cover under pavement areas)	ADS Hancor
Fitting	Same as pipe material PVC sand collars	
Manholes	Precast ASTM C478, 48" min. at bottom, flat slab top, 8" min. thickness, 24" opening,	
Manhole steps	Polypropylene, ASTM D-4101 material over ASTM A-615, grade 60 steel reinforcing bar, step to comply with ASTM C-478	Lane, MA Industries
Frames and covers	ASTM A48, class 35, cast iron, bituminous coated,	East Jordan Ironworks
Transition couplings	Longitudinally bolted coupling with gasketed joints	Romac, Dresser, Rockwell

B. SUBSTITUTIONS

MATERIAL	DESCRIPTION	MANUFACTURER
	Provide submittals for substitute materials to the Engineer for approval in accordance with the Special Provisions and the Standard Specifications	

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#E86

city of edmonds
development information

Inc. 1890

WATER SERVICE LINE SPECIFICATIONS

I. DEFINITION: **The Water service line is defined as that pipe installed from the water meter to the building.**

II. MATERIALS Per Section 604.0, Chapter 6 of the IAPMO/ANSI UPC 1-2003 Uniform Plumbing Code and WAC amendment #, the following types of water service line materials are recognized and shall meet the ASTM requirements as outlined in Table 14-1of the above Code:

1. Copper piping no less than type "L".
2. Polyethylene piping with iron pipe O.D. size and ASTM-D2239-SIDR#7-PE3406 markings.
3. Plastic, PVC, CPVC, PEX
4. Galvanized malleable iron., galvanized wrought iron, galvanized steel
5. Asbestos cement, PE, PVC, PEX-AL-PEX or PEX-AL-PE water pipe manufactured to recognized standards for water supply outside the building supply distribution can also be used.
6. All materials used in the water supply system, except valves and similar devices, shall be of like material, except where otherwise approved by the City.
7. Per City policy, minimum pipe size from meter to house is 1".

III. MARKINGS Piping shall be marked on the material at intervals of not more than 5' for: poly, pvc, and pex, cpvc, plastic pipe, etc. with manufacturer's name, size and pressure rating. The pressure rating shall be a minimum of 160 P.S.I.

IV INSTALLATION

1. The water service pipe line shall be bedded on a firm, undisturbed base that is smoothly graded and free of large materials. If materials for backfill are larger than ½" diameter rock, a proper sandy soil shall be on site to backfill to 2 inches above the water pipe at time of inspection. If soil is disturbed, it shall be compacted to provide a stable base.

2. The pipe depth shall be a minimum of 18 inches from finished grade to top of service pipe and an 18 inch depth at the meter box.

3. When polyethylene pipe or other non traceable pipe is used, it must be buried with 12-gauge solid core tracer wire with vinyl coating. The run must be continuous, grounded at the meter and house and taped every 10 feet to the water pipe.

4. Polyethylene Pipe connections at the meter must be made with brass compression fittings. In addition, brass fittings shall be used to connect sections of pipe together. All connections shall be double-clamped with stainless steel clamps and shall be secured in opposite directions

5. **Proper pipe connection fittings to the water meter, for all other material shall be approved by the City prior to connection**

5. Piping shall be flushed out and under pressure with no leaks at the time of inspection.

6. The water service line shall not be buried with the sanitary sewer or drainage pipe.
   a) Minimum horizontal separation between sewer and water shall be 10 feet.
   b) Minimum vertical separation between sewer and water shall be 18 inches.

When the minimum 10 foot separation is not possible, due to lack of space, the waterline shall be placed on a solid shelf excavated at one side of the common trench line 18" above the top of the sewerline and at least 18" from edge of waterline to edge of sewer line (see figure 1 below). If the waterline must cross the sewer, it must be at least 18" above the top of the sewer pipe at all points.

V. INSPECTIONS

Water service line and all connections shall be inspected prior the backfill and the preceding criteria must be met, or inspection will not be performed. Call the Engineering Inspection line at 425-771-0220, Ext. 1326, 24 hours in advance to schedule the required inspection. You may state your preference for morning or afternoon. Approved permit and/or job card must be on site at time of inspection.

#E86

WATER SERVICE WITH LESS THAN 10 FOOT SEPARATION

Horizontal Separation Notes

(For Parallel Construction)

The parallel separation detail on figure 1 refers to side sewers only. Side sewers (gravity or pressure) shall be installed lower than the water service with a minimum vertical clearance of 18" from the bottom of the water service line to the top of the side sewer line.

Vertical Separation Notes

(For Perpendicular Construction)

Side sewer lines that must cross water service lines shall be laid below the water lines to provide a separation of at least 18" between the invert of the water pipe and the crown of the sewer, whenever possible. When local conditions prevent this vertical separation, the following construction shall be used:

A. Side sewers, passing over or under water lines, shall be:

1. Constructed of water main standard pipe material as shown in the Table. One segment of the maximum standard length of pipe, (but no less than 18' long) shall be used with the pipes centered to maximize joint separation.

OR

2. Standard gravity sewer material encased in 1 sack mix control density fill (CDF) or in a ¼" thick continuous steel casing with all voids pressure-grouted with sand-cement grout. The length of sewer pipe shall be centered at the point of crossing so the joints will be equidistant and as far as possible from the water line. The sewer pipe shall be the longest standard length available from the manufacturer.

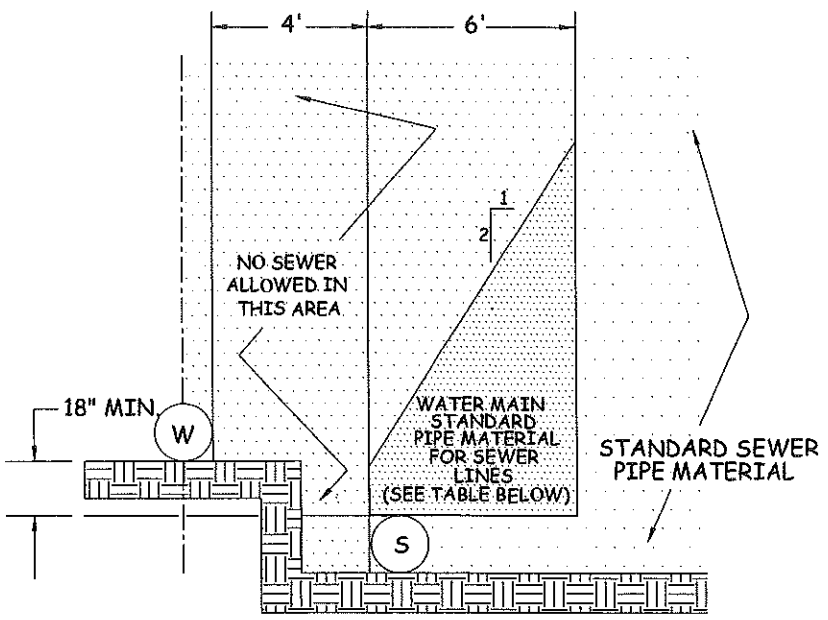


FIGURE 1

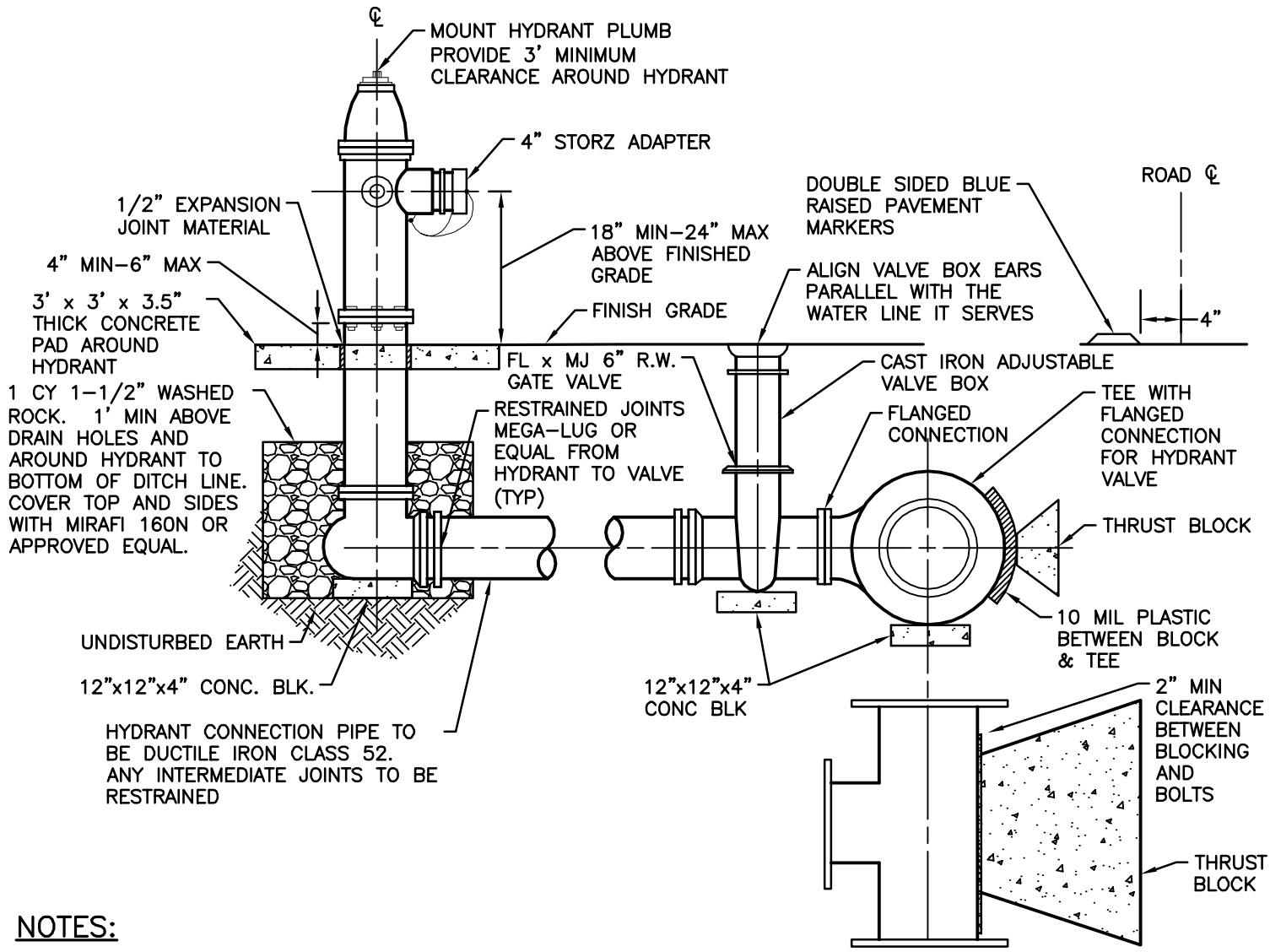
WATER SERVICE PARALLEL TO GRAVITY SEWER WITH LESS THAN 10 FOOT SEPARATION

WATER MAIN STANDARD PIPE MATERIAL FOR SEWER LINES			
TYPE OF PIPE	AWWA (ASTM) STANDARD		
	PIPE	JOINT	FITTINGS
Ductile Iron	C 151 & C 104	C 111	C 110
Polyvinyl-Chloride	C 900	(D3139 & F 477)	C 110
Concrete Cylinder	C 303		

B. Water lines passing under gravity sewer, in addition, shall be protected by providing:

1. A vertical separation of at least 18 inches between the invert of the sewer and the crown of the water line.
2. Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking of the water line.

C. Pressure sewers shall only be constructed under water lines with ductile iron pipe or standard sewer pipe in a steel casing for a distance of at least ten feet on each side of the crossing.



NOTES:

1. HYDRANTS AND ALL MATERIALS TO BE IN ACCORDANCE WITH CITY OF EDMONDS APPROVED MATERIAL MODIFICATIONS LISTINGS.
2. CONSTRUCT 3' X 3' X 3.5" THICK CONCRETE PAD AROUND HYDRANT PIPE. HYDRANTS SET IN CONCRETE REQUIRES AN EXPANSION STRIP AROUND HYDRANT BARREL. IN ADDITION, THE INSTALLATION OF THE HYDRANT ON PRIVATE PROPERTY SHALL EQUAL OR EXCEED STANDARDS SET FORTH FOR THE INSTALLATION OF PUBLIC FIRE HYDRANTS IN THE CITY OF EDMONDS.
3. ALL HYDRANTS SHALL HAVE A 6" MECHANICAL JOINT (MJ) BASE. TRAFFIC MODEL PROVIDED WITH (2) 2–1/2" HOSE NOZZLES AND (1) 4–1/2" NATIONAL STANDARD THREAD (NST) PUMPER NOZZLE WITH 4" STORZ QUICK COUPLING ADAPTER.
4. PUMPER PORT SHALL FACE THE STREET OR ROADWAY FOR FIRE ENGINE ACCESS.
5. THREE FOOT MINIMUM LEVEL CLEARANCE SHALL BE MAINTAINED AROUND HYDRANT WHEN PLACING LANDSCAPING.
6. FIRE HYDRANTS SHALL BE PAINTED SAFETY YELLOW BRAND: KELLY MOORE (1700–63 SUNBURST YELLOW).
7. RAISED PAVEMENT MARKER TO BE PLACED 4" FROM PAVEMENT C/L OR PAINTED LINE ON HYDRANT SIDE OF ROAD.
8. FIRE HYDRANT LOCATION SHALL BE SHOWN ON THE PLANS AT A LOCATION APPROVED BY THE CITY ENGINEER.

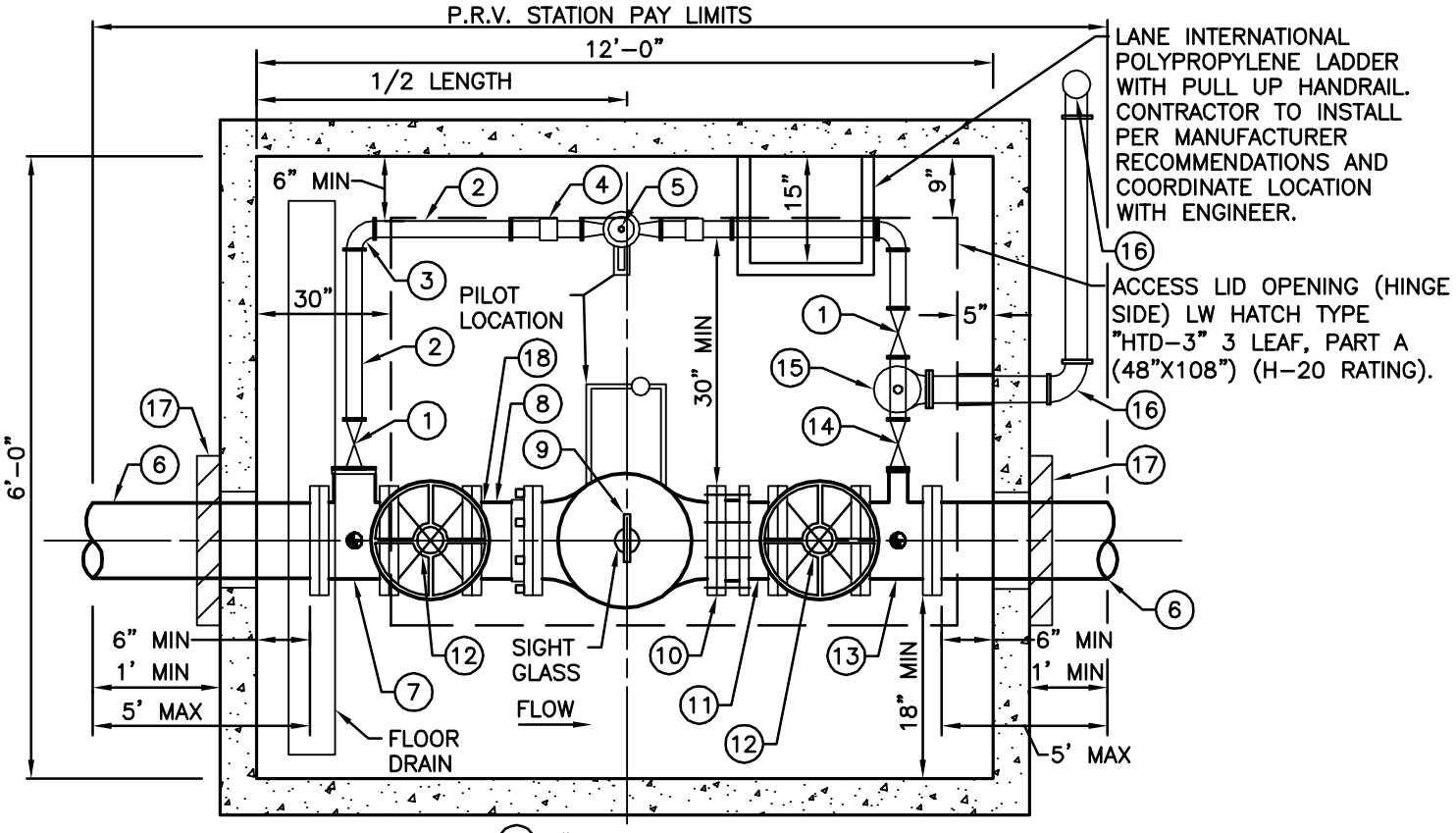
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

FIRE HYDRANT ASSEMBLY

REVISION DATE
OCTOBER 2015

STANDARD
DETAIL
E7.1

APPROVED BY: **R. ENGLISH**



1. 2" BRASS BALL VALVE
2. 2" THREADED BRASS PIPE
3. 2" BRASS 90° BEND
4. 3 PIECE UNION
5. 2" THREADED CLA-VAL 90G-01BCSYKC W/VALVE POSITION INDICATOR
6. 6" DI SPOOL WITH FL X PE LENGTH TO FIT. (5' LENGTH MAXIMUM.)
7. 6" DI FL TEE WITH 2" TAPPED BLIND FLANGE SEE COE STD DETAIL 7.2.1 FOR APPURTENANCES SHOWN IN SECTION VIEW
8. 6" FL STRAINER CLA-VAL MODEL X43H
9. 6" CLA-VAL 90G-01BCSYKC W/VALVE POSITION INDICATOR (SEE NOTE #2) EPOXY LINING
10. 6" FLANGE COUPLING ADAPTER
11. 6" DI FL SPOOL. LENGTH TO FIT
12. 6" FL RSGV WITH HAND WHEEL
13. 6"x3" DI FL TEE SEE COE DETAIL 7.2.1 FOR APPURTENANCES SHOWN IN SECTION VIEW
14. 3" FL RSGV WITH HAND WHEEL
15. 3"x3"x2" REDUCING RUN TEE WITH 3" CLA-VAL 650A-01 & SIGHT GLASS SEE COE STD DETAIL 7.2.1 FOR APPURTENANCES SHOWN IN SECTION VIEW
16. 3" STEEL DISCHARGE PIPE & 90° BEND, FIELD LOCATE PER ENGINEER
17. MEGA-LUG MID SPAN RESTRAINT AND THRUST BLOCK AND VAULT SEAL SEE COE STD DETAIL E7.2.2
18. MIPxFIP 1-1/4" BALL VALVE @ BOTTOM OF STRAINER

NOTES:

1. VAULT SHALL BE UTILITY VAULT 612-LA WITH TOP SECTION MODIFIED TO ALLOW INSTALLATION OF LW HATCH TYPE "HTD-3" 3 LEAF, PART A (48"X108")
2. VALVE INCLUDES:
   - ISOLATION COCKS
   - OPEN/CLOSE SPEED CONTROLS
   - "H" STRAINER
   - RESTRICTION FITTING
   - CRD PILOT
   - EPOXY COATING
2. INSIDE VAULT HEIGHT: 6.5' MIN
3. ACCESS LID BY LW. GUTTER DRAIN SHALL BE CONNECTED TO STRUCTURE SUMP.
4. VAULT HATCH OPENING LOCATION SHALL BE COORDINATED WITH ENGINEER PRIOR TO CONSTRUCTION TO ENSURE THAT ANY SITE SPECIFIC ACCESS ISSUES ARE ADDRESSED
5. ALL 3" STEEL PIPE FOR THE PRESSURE RELIEF DISCHARGE LINE SHALL BE SCHEDULE 40, SANDBLASTED, EPOXY LINED AND COATED

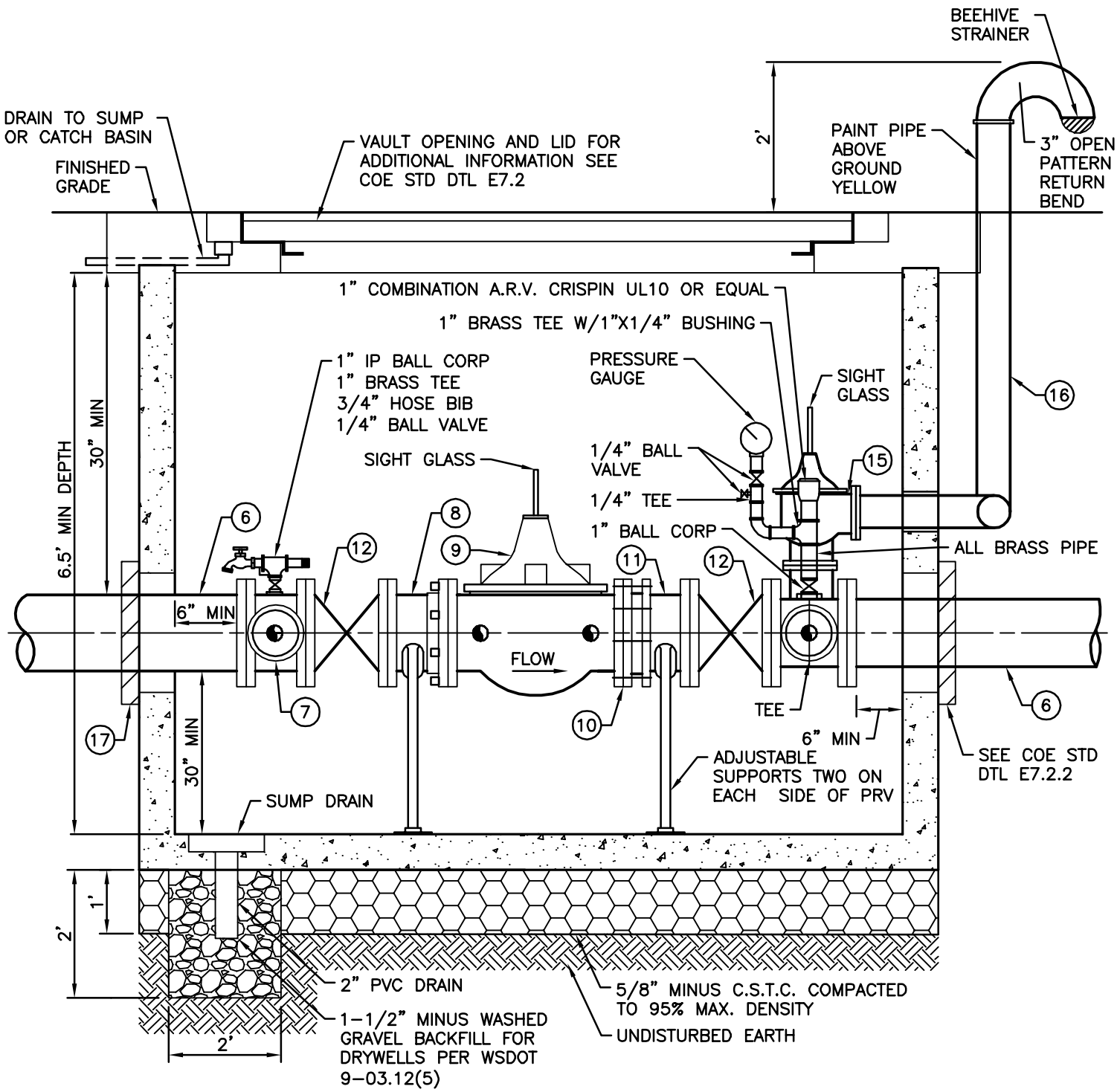
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

6" PRV (PLAN VIEW)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.2

APPROVED BY: **R. ENGLISH**



NOTES:

SEE STANDARD DETAIL E7.2 FOR NOTE CALL OUTS.

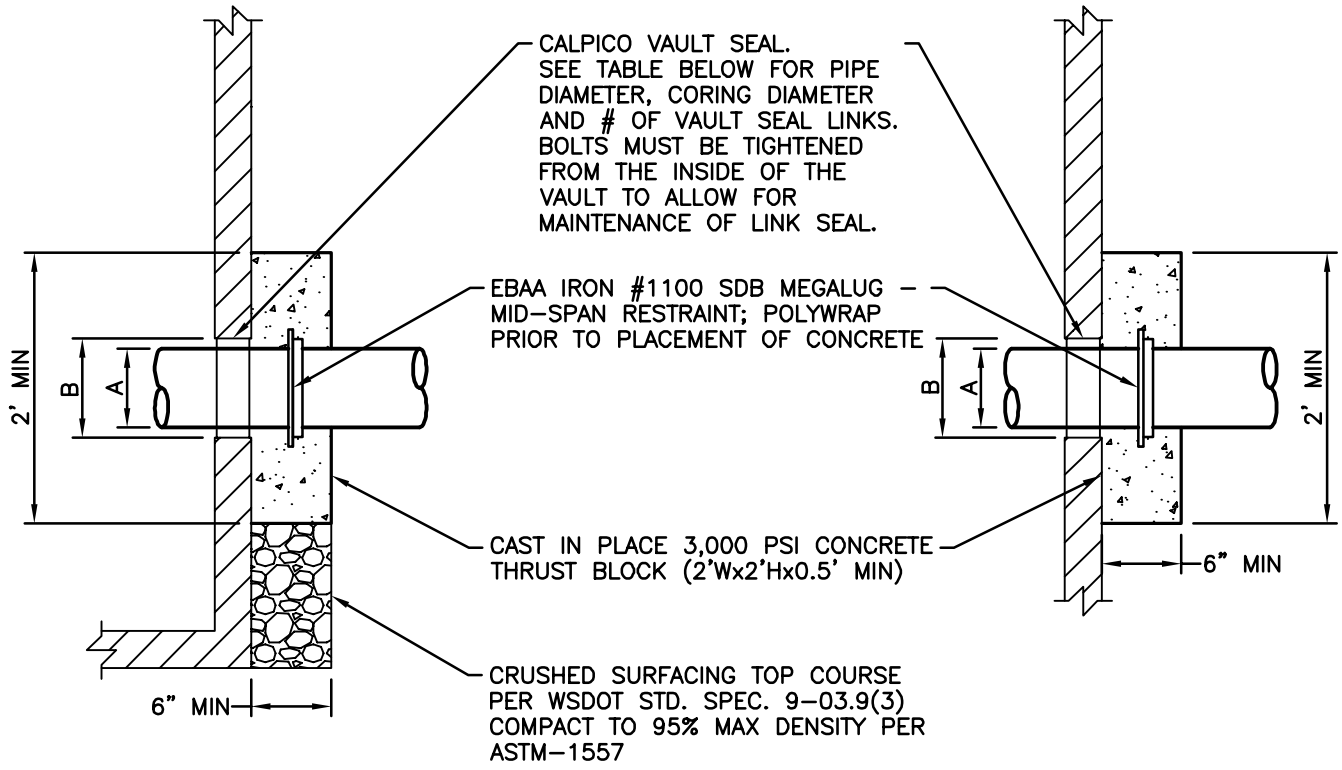
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

6" PRV (SECTION VIEW)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.2.1

APPROVED BY: **R. ENGLISH**



PIPE DIAMETER A	CORE DRILL DIAMETER B	CALPICO CSL#	QTY OF CALPICO CSL
3"	6"	32	5
4"	8"	40	5
6"	10"	40	7
8"	12"	40	9

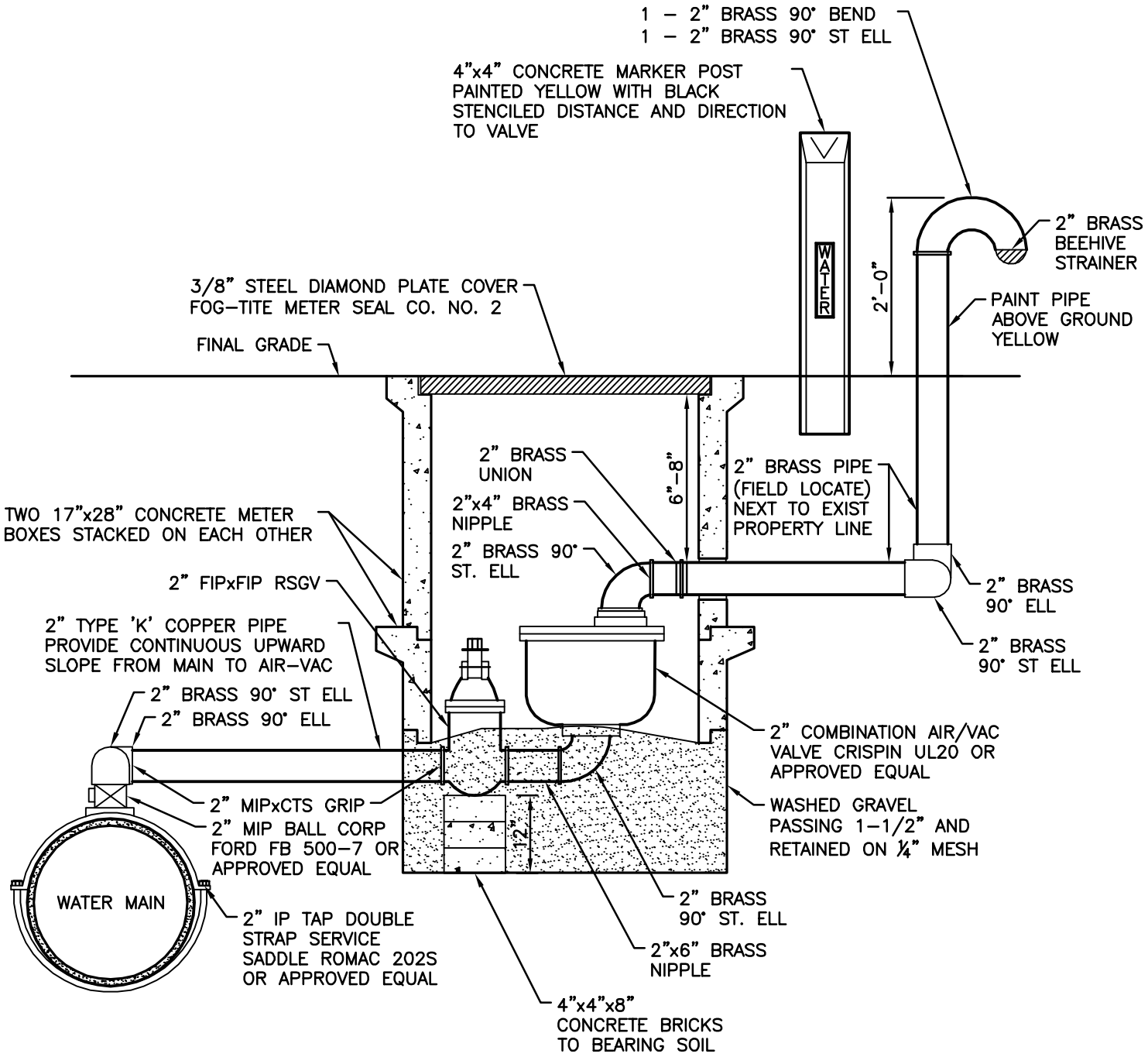
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

VAULT THRUST BLOCK & VAULT SEAL

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.2.2

APPROVED BY: **R. ENGLISH**



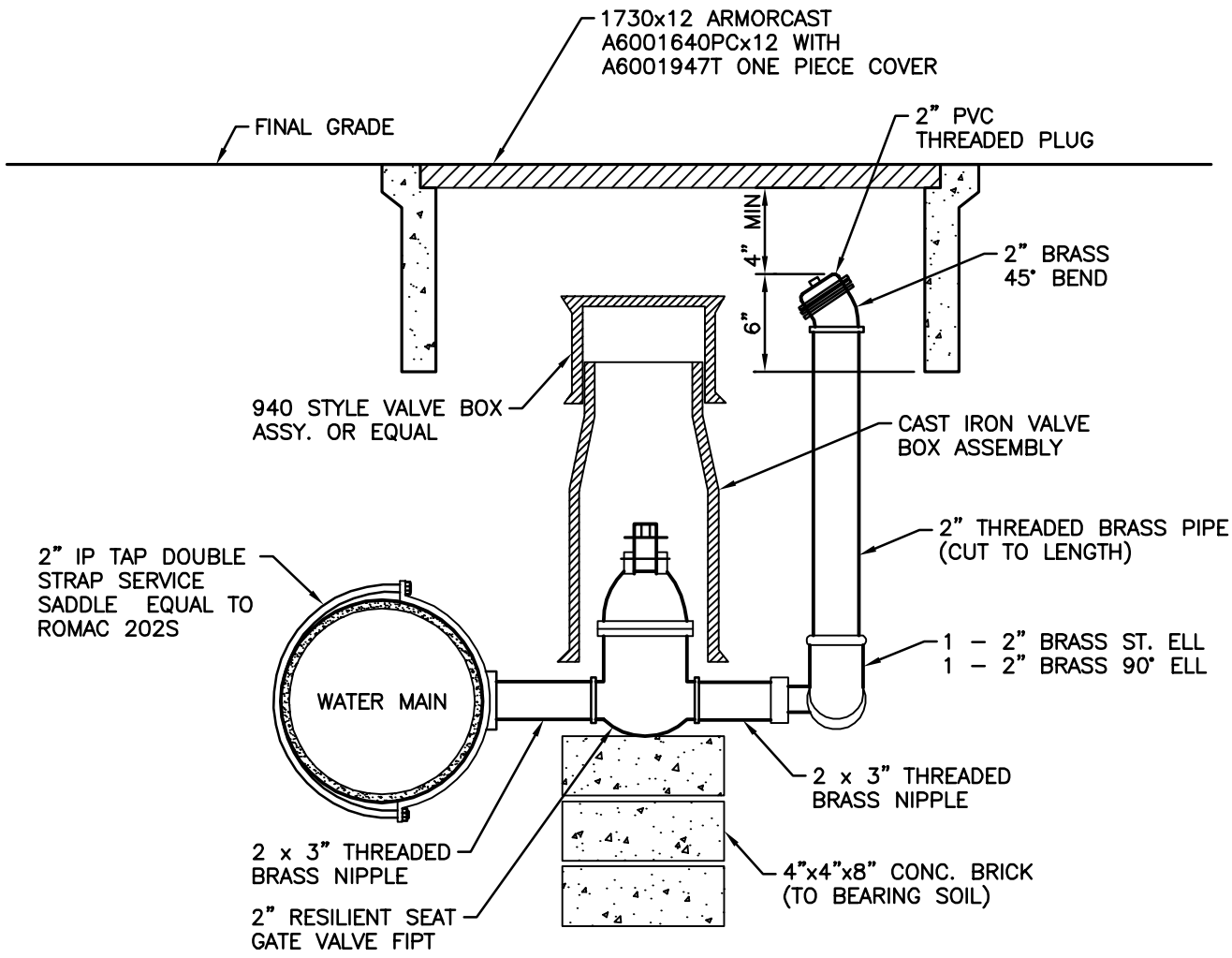
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

ARV ASSEMBLY

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.3

APPROVED BY: **R. ENGLISH**



NOTE:

PLACE BLOW–OFF ASSY. WITHIN 3' OF END OF MAIN

CITY OF EDMONDS

PUBLIC WORKS DEPARTMENT

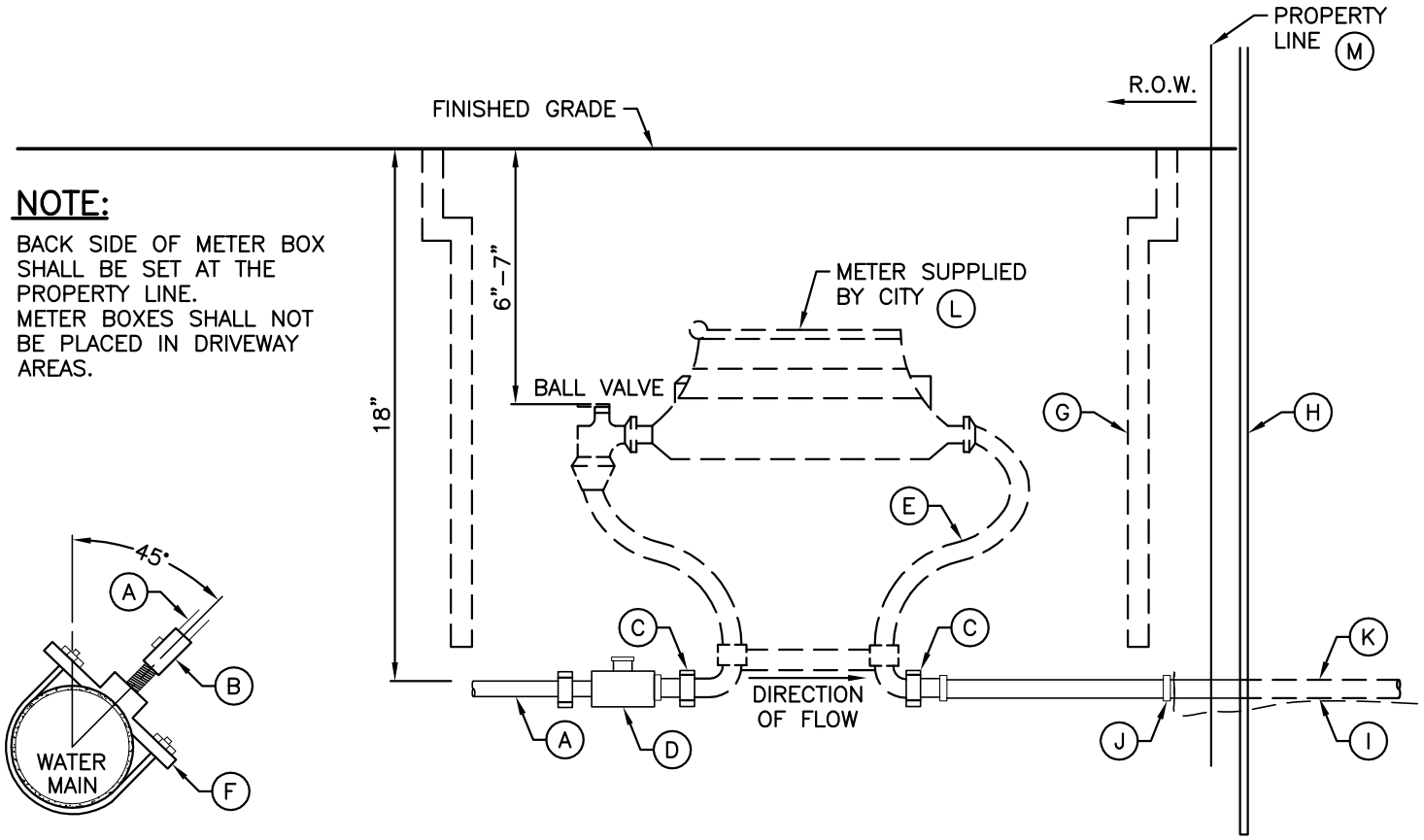
Est. 1890

BLOW–OFF ASSEMBLY

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.5

APPROVED BY: **R. ENGLISH**



NOTE:

BACK SIDE OF METER BOX SHALL BE SET AT THE PROPERTY LINE.
METER BOXES SHALL NOT BE PLACED IN DRIVEWAY AREAS.

MATERIAL LIST:

(A) ALL 1" SERVICES TO BE TYPE "K" SOFT COPPER TUBING

(B) 1" BALL CORP. STOP WITH CC THREAD INLET AND COPPER (CTS) GRIP OUTLET (FORD OR MUELLER)

(C) DUAL PURPOSE UNION

(D) MIPT X CTS GRIP BALL VALVE CURB STOP EQUAL TO FORD B84–444Q FOR 1"

(E) **WHEN REPLACING EXISTING SERVICES:** 1" METER SETTER WITH ANGLE BALL METER VALVE 15" HIGH WITH DUAL PURPOSE UNIONS ON INLET AND OUTLET, HORIZONTAL IN HORIZONTAL OUTLET, EQUAL TO FORD VB74–15W–11–44
WHEN PLACING NEW SERVICES: USE SAME AS ABOVE AND ADD A SINGLE CHECK, EQUAL TO FORD VBH74–15W–11–44

(F) 1" CC TAP SERVICE SADDLE EQUAL TO ROMAC 101S

(G) CARSON 1324 MSBCF WITH DUCTILE IRON COVER AND CAST IRON READER DOOR

(H) FOR VACANT LOT (FUTURE USE) LOCATION MARKED WITH PAINTED 2" X 4" STAKE WITH "WATER" STENCILED ON IT

(I) 14 GA. VINYL COATED WIRE TRACER (TAPED TO PLASTIC PIPE EVERY 10') TO BE GROUNDED AT METER AND HOUSE

(J) SCHEDULE 40 3/4" OR 1' PLUG, REMOVE WHEN CONNECTION IS MADE TO CUSTOMER LINE

(K) WATER SERVICE TO HOUSE, INSTALLED BY OWNER/CONTRACTOR

(L) PROPERTY OWNER RESPONSIBLE FOR PURCHASING 3/4" OR 1" METER THROUGH THE CITY
CITY WILL SUPPLY METER AFTER PURCHASE
IF USING 3/4" METER, CONTRACTOR WILL PROVIDE REDUCERS

(M) BACK SIDE OF METER BOX SHALL BE SET AT THE PROPERTY LINE UNLESS APPROVED BY THE CITY ENGINEER.
METER BOXES SHALL NOT BE SET IN DRIVEWAY AREAS UNLESS TRAFFIC RATED BOX IS APPROVED BY CITY ENGINEER.

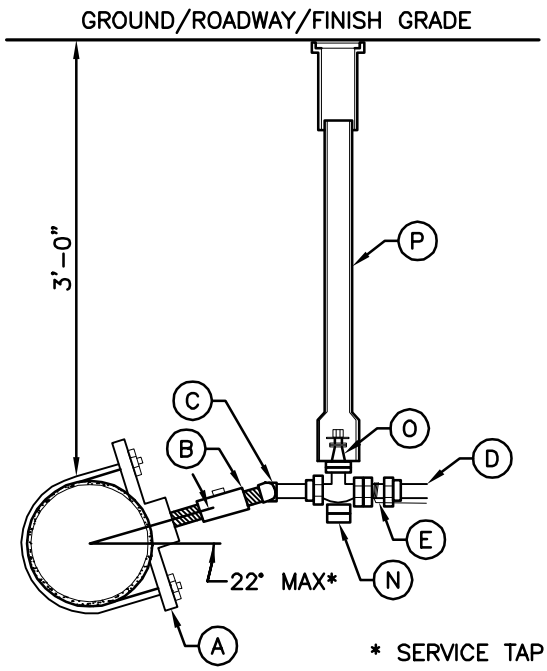
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

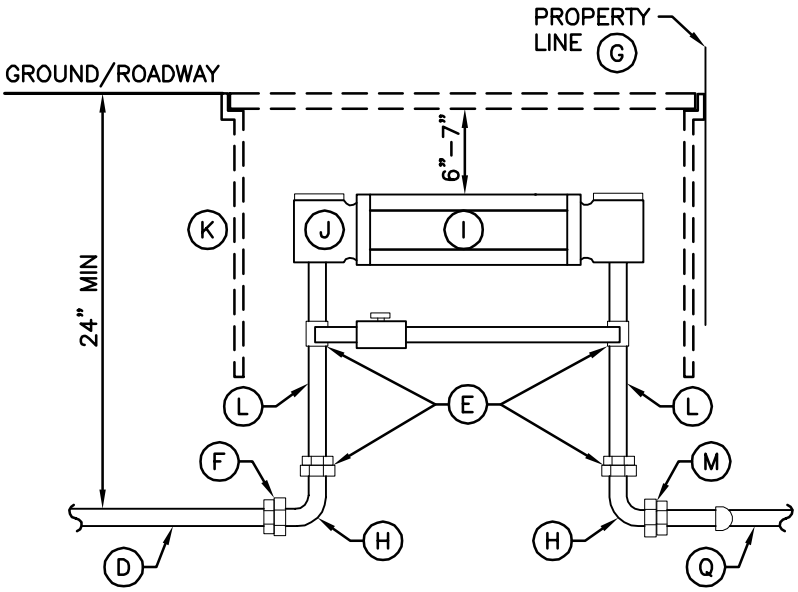
1" WATER SERVICE FOR 3/4" OR 1" METER INSTALLATION

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.6

APPROVED BY: **R. ENGLISH**





* SERVICE TAP TO MAIN SHALL BE ANGLED AND NOT EXCEED 22 DEGREES

MATERIAL LIST:

(A) 2" (IP TAP) DOUBLE STRAP SADDLE EQUAL TO ROMAC STYLE 202'S

(B) 2" BRASS IP BALL CORP

(C) 2 – 2" BRASS STREET ELLS FOR SWING JOINT

(D) COPPER TYPE K SOFT PIPE (2")

(E) 2" MIPT X CTS GRIP FITTING

(F) 2" FIPT X CTS GRIP FITTING

(G) BACK SIDE OF METER BOX SHALL BE SET AT THE PROPERTY LINE UNLESS APPROVED BY THE CITY ENGINEER. METER BOXES SHALL NOT BE SET IN DRIVEWAY AREAS UNLESS TRAFFIC RATED BOX IS APPROVED BY CITY ENGINEER.

(H) 2" BRASS ST ELL

(I) METER SPACER TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. SPACER MUST HAVE A MINIMUM OF 8 – 1/4" HOLES DRILLED IN SPACER BODY.
NOTE: PROPERTY OWNER RESPONSIBLE FOR PURCHASING 1–1/2" OR 2" METER THROUGH THE CITY. THE CITY WILL SUPPLY METER AFTER PURCHASE FOR CONTRACTOR INSTALL. IF 1–1/2" METER IS USED CONTRACTOR WILL SUPPLY REDUCERS TO CONNECT METER.

(J) **WHEN REPLACING EXISTING SERVICES:**
EQUAL TO FORD VBB87–12HB–1177
WHEN PLACING NEW SERVICES (HIGH BYPASS):
EQUAL TO FORD VBH87–12HB–1177

(K) METER BOX ARMORCAST A6001640PCX18, WITH ARMORCAST LID A6001947TRCI–H7 OR APPROVED EQUAL STRAIGHT WALL POLYMER BOX (NO MOUSEHOLES) WITH 20K COVER WITH HINGED CI READER

(L) 2" TYPE "K" HARD COPPER

(M) SCHEDULE 40 2" PVC CAP OR PLUG REMOVED WHEN CONNECTION MADE TO CUSTOMER

(N) 4"x4"x8" CONCRETE BLOCK SUPPORTS

(O) 2" RESILIENT WEDGE GATE VALVE (FIP x FIP) WITH 2" AWWA OPERATING NUT

(P) 2 PIECE VALVE BOX – TOP SECTION TO BE RICH 940 STYLE 18" WITH REGULAR BASE SECTION LENGTH TO FIT

(Q) WATER SERVICE TO BUILDING INSTALLED AND CONNECTED TO SERVICE BY OWNER/CONTRACTOR

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

2" WATER SERVICE FOR 1–1/2" OR 2" METER INSTALLATION

REVISION DATE
OCTOBER 2015

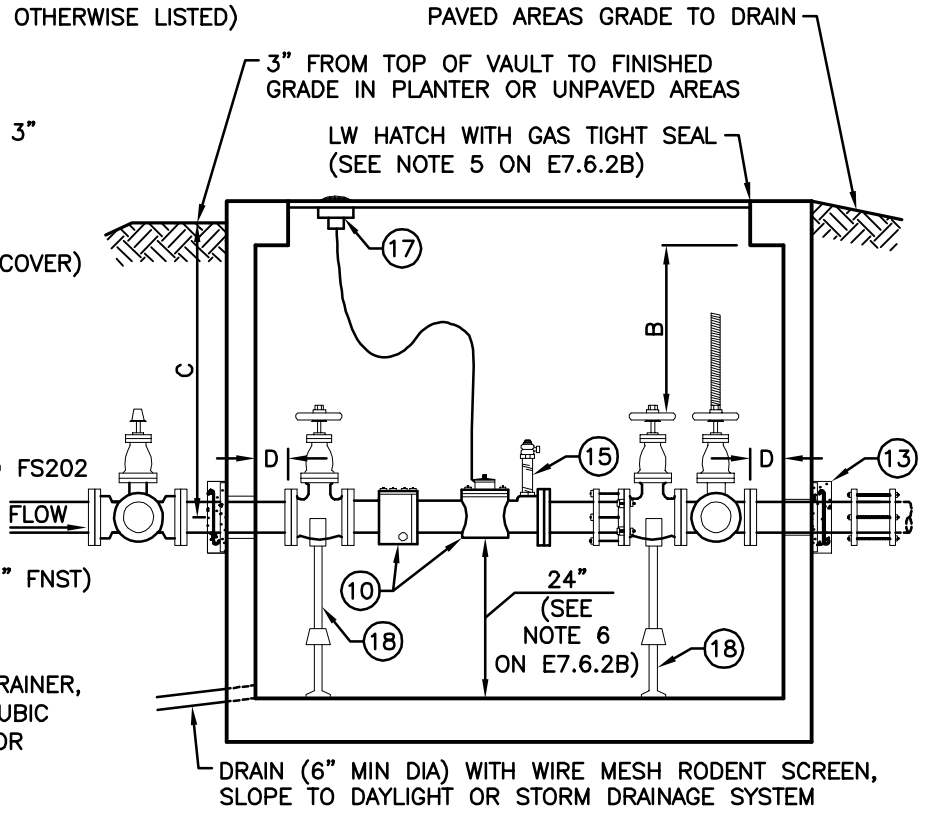
STANDARD DETAIL
E7.6.1

APPROVED BY: **R. ENGLISH**

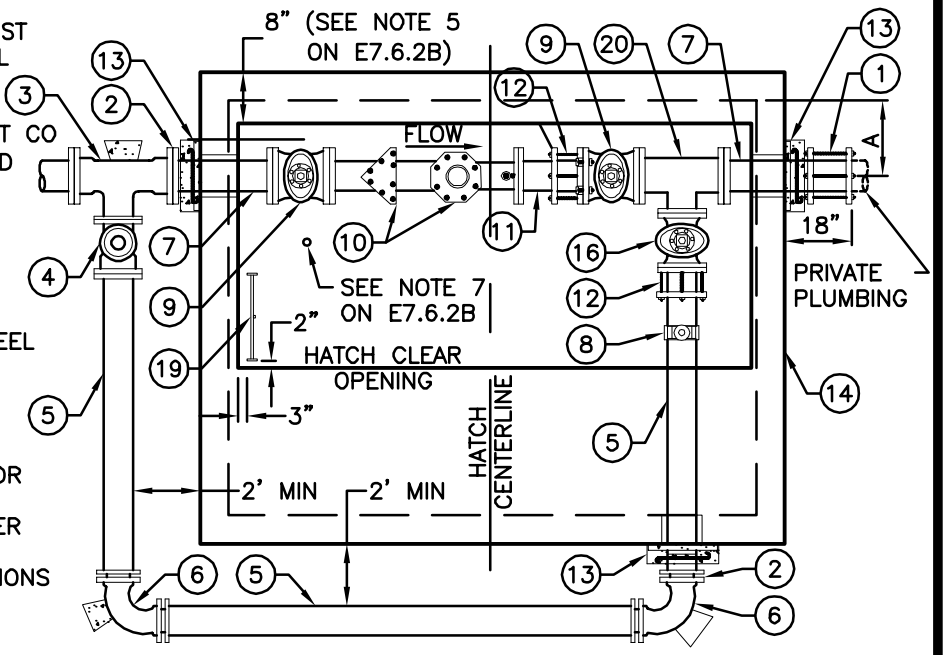
MATERIAL LIST

(ALL SIZES ARE SAME AS METER UNLESS OTHERWISE LISTED)

1. 1–MECHANICAL LONG BODY CPLG
2. 2–4"x3" REDUCER, MJ & 3' SPOOL FOR 3" SERVICE ONLY
3. 1–TEE, MJxFL
4. 1–GATE VALVE, FLxMJ (W/VALVE BOX & COVER)
5. 3–DI PIPE, PE, LENGTH TO FIT
6. 2–90° BEND, MJ
7. 2–DI PIPE, PExFL LENGTH TO FIT
8. 1–EPOXY COATED SERVICE SADDLE, FORD FS202 (TAP POINTED UP AT 12–O'CLOCK) OR EQUAL, 1–CORP STOP, MIPT, FORD FB500–7 OR APPROVED EQUAL, WITH 2" FIPTx2" MNST ADAPTER AND CAP (2–1/2" FNST)
9. 2–GATE VALVES, FL WITH HAND WHEEL
10. SENSUS OMNI C2 METER W/INTERNAL STRAINER, W/ELECTRONIC RESOLUTION (100'S OF CUBIC FEET FOR 3" METER, 500 CUBIC FEET FOR 4–6" METER)
11. 1–DI ADAPTER FL.xPE, LENGTH TO FIT
12. 2–FLANGED COUPLING ADAPTER, EQUAL TO ROMAC FCG
13. MEGA–LUG MID–SPAN RESTRAINT AND THRUST BLOCK & VAULT SEAL. SEE COE STD DETAIL E7.2.2
14. PRECAST CONCRETE VAULT BY UTILITY VAULT CO (SEE TABLE FOR MODEL #) W/TWO DIAMOND PLATE DOORS RATED FOR HS–30 LOADING
15. 1–FORD MIPT BALL CORP WITH THREADED END CAP SIZED TO FIT OMNI C2 TESTPORT SEE TABLE**
16. 1–OS & Y GATE VALVE, FL WITH HAND WHEEL
17. TR/PL SENSOR (TO MOUNT IN VAULT ACCESS DOOR)
18. 2–ADJUSTABLE STANCHION BOLTED TO FLOOR
19. LANE INTERNATIONAL POLYPROPYLENE LADDER WITH PULL UP HANDRAIL. CONTRACTOR TO INSTALL PER MANUFACTURER RECOMMENDATIONS AND COORDINATE LOCATION WITH ENGINEER.
20. 1–TEE, FL



ELEVATION VIEW



PLAN VIEW

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

3", 4", 6" WATER SERVICE & METER

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.6.2A

APPROVED BY: **R. ENGLISH**

NOTES:

1. ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED BY THE CONTRACTOR.
2. ALL PIPE & FITTINGS 3" & LARGER SHALL BE CEMENT LINED D.I.P. CL 52.
3. TEE WITH (3) GATE VALVES IS REQUIRED AT DISTRIBUTION MAIN.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS SUBJECT TO VEHICULAR TRAFFIC.
5. VAULT COVER SHALL INCLUDE TWO LOCKING ALUMINUM LW TYPE HATCH DOORS (PART NO. HHD-1D (36"x72") DOORS SHALL HAVE SLIP RESISTANT TREATMENT. DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN. COVER TO READ "WATER".
6. PROVIDE 24" CLEARANCE BETWEEN VAULT FLOOR & BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR TO STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12". SUBSTITUTION OF A SHORTER VAULT TO ALLOW FLOOR TO DRAIN BY GRAVITY SHALL BE SUBJECT TO APPROVAL OF THE CITY ENGINEER. SUBSTITUTE VAULTS ARE AS FOLLOWS:
   3" 575-LA WITH 57TL-2-332P COVER (WITH SPECIAL OFFSET+LW ALUMINUM HATCH).
   4" 675-WA WITH 675-TW-2-332P COVER (WITH SPECIAL OFFSET+LW ALUMINUM HATCH).
7. PROVIDE 2-1/4" DIAMETER OPENING IN ALUMINUM DOOR FOR TR/PL SENSOR.
8. ALL FITTINGS OUTSIDE VAULT SHALL INCLUDE THRUST BLOCKING AND JOINT RESTRAINT DEVICES (MEGALUGS OR APPROVED EQUAL).
9. PIPE, FITTINGS, AND VALVES OUTSIDE VAULT SHALL BE 4" FOR 3" SERVICE INSTALLATIONS.
10. A MINIMUM 2 FEET OF LEVEL UNOBSTRUCTED AREA IS REQUIRED AROUND HATCHES.

METER SIZE***	MAIN SIZE OUT OF VAULT	BYPASS	CORP STOP FOR FLUSH PORT SIZE	MIN. CLEARANCES				VAULT MODEL	VAULT COVER * (W/SPECIAL OFFSET)	M.I.P.T. BALL CORP**
				A	B	C	D			
3"	4"D.I.	4" D.I.	2"	10"	16"	2'-8"	6"	577-LA	57TL-2-332P	FB500-4
4"	4"D.I.	4" D.I.	2"	12"	16"	2'-8"	6"	676-WA	676-TW-2-332P	FB500-6
6"	6"D.I.	6" D.I.	2"	12"	16"	3'-2"	6"	4484-LA	4484-TL2-332P	FB500-6

* COVER MODIFIED PER NOTE 5

** MIPT CORP PER KEYED NOTE (15)

*** VALVE, PIPE & FITTINGS INSIDE VAULT SHALL MATCH METER SIZE

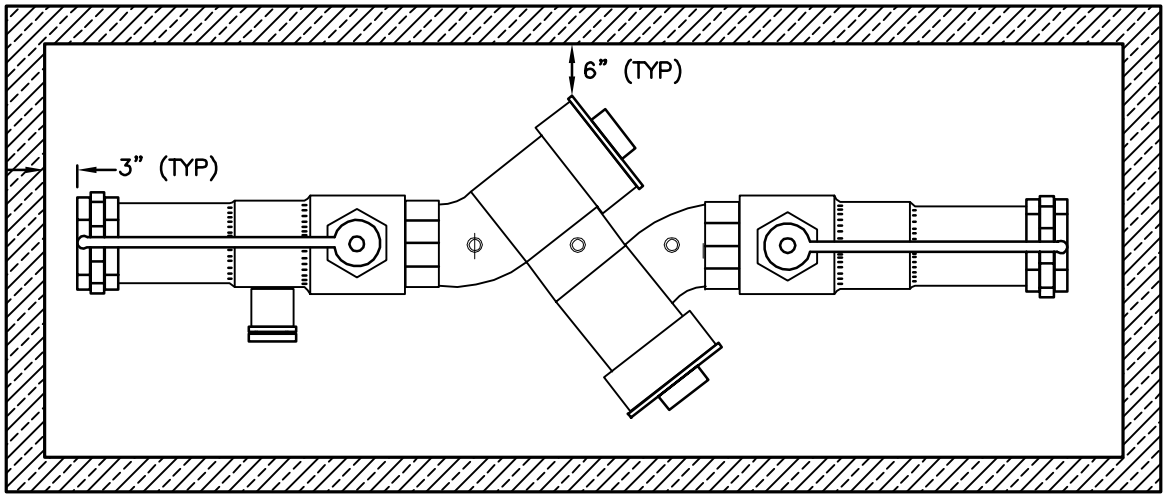
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

3", 4", 6" WATER SERVICE & METER NOTES

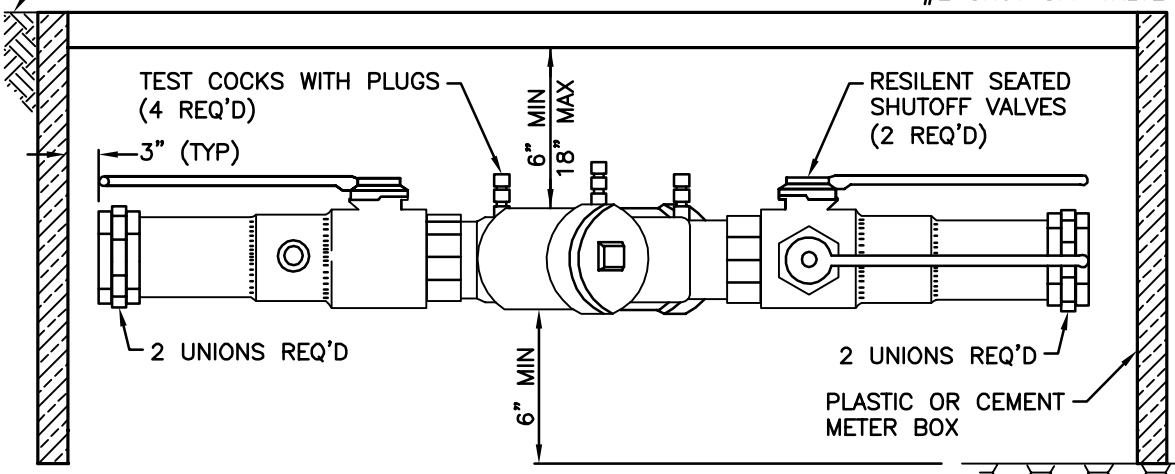
APPROVED BY: **R. ENGLISH**

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.6.2B

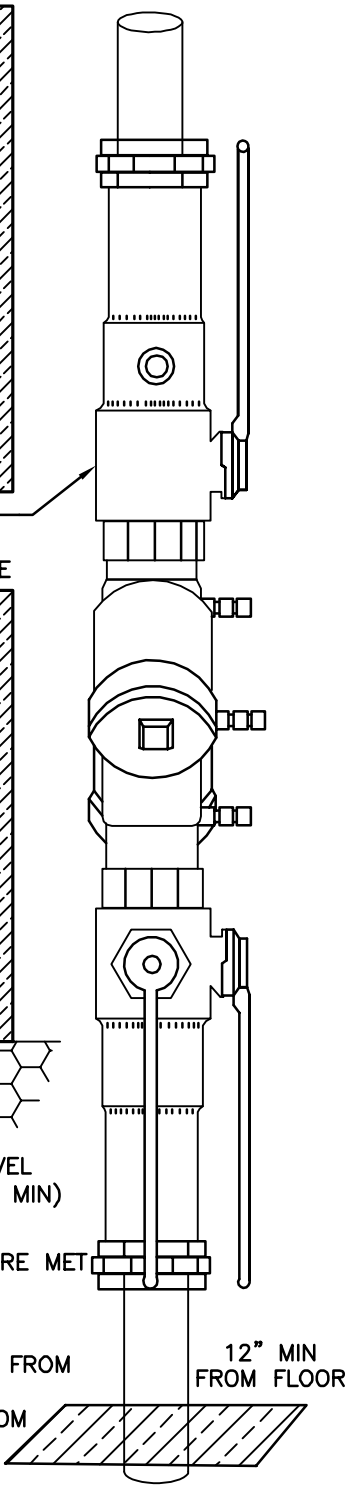


TOP VIEW



SIDE VIEW

VERTICAL INSTALLATION



NOTES:

1. APPROVED DOUBLE CHECK VALVE ASSEMBLY TO LAY HORIZONTAL WITH GROUND
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE
3. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY
4. ALL TEST COCKS MUST BE PROVIDED WITH PVC PLUGS
5. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACK FLOW PREVENTER
6. THE DCVA CAN BE INSTALLED ABOVE OR BELOW THE GROUND PROVIDED ALL CLEARANCES ARE MET
7. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
8. MUST BE PROTECTED FROM FREEZING CONDITIONS
9. THE BACK FLOW PREVENTION ASSEMBLY MUST BE A WASHINGTON STATE APPROVED MODEL
10. IF INSTALLED INSIDE A BUILDING THE DCVA SHALL BE INSTALLED NO HIGHER THAN 5 FEET FROM FLOOR TO C/L OF ASSY AND A MIN OF 12 INCHES FROM FLOOR TO BOTTOM OF ASSY
    IF INSTALLED IN A VERTICAL CONFIGURATION, ASSY MUST BE A MINIMUM OF 12 INCHES FROM FLOOR, AND NO HIGHER THAN 5 FEET FROM FLOOR TO C/L OF #2 SHUT OFF VALVE
    *ONLY ASSY WITH APPROVAL FROM WADOH

MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. THE TEST REPORT MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION

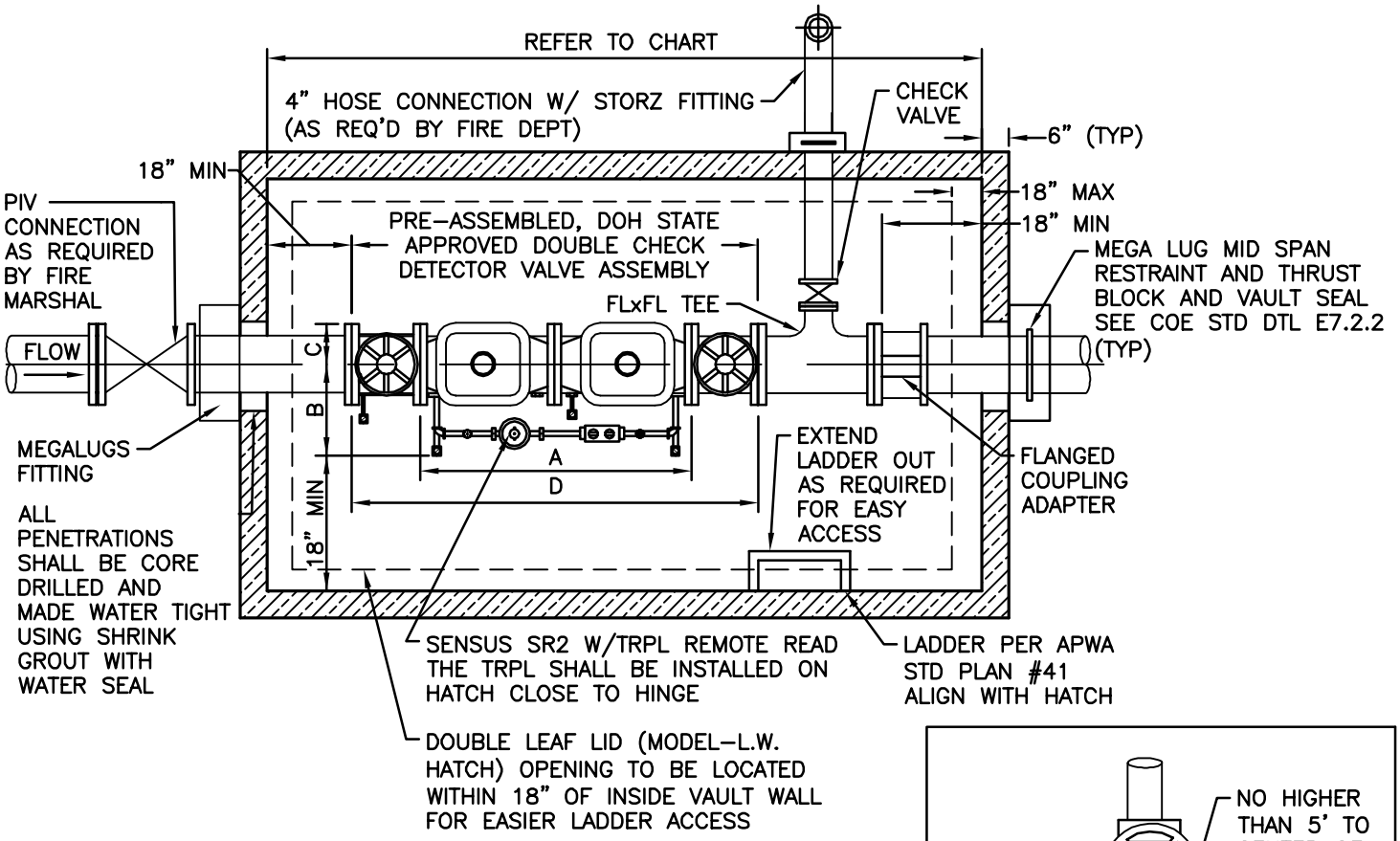
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

RESIDENTIAL DOUBLE CHECK VALVE ASSEMBLY
(DCVA)
(STANDARD DCVA 2" & SMALLER)

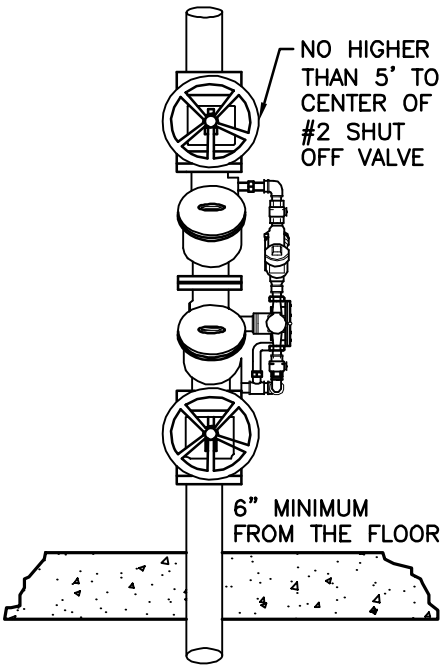
APPROVED BY: **R. ENGLISH**

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.7



EXTERIOR PLAN VIEW



SENSUS SR2 WITH ECR/WP REMOTE READ THE ECR/WP SHALL BE INSTALLED ON AN OUTSIDE WALL FOR EASY METER READING

INDOOR VERTICAL INSTALLATION

NOTES:

1. ACCESSES BY L.W. HATCH: TYPE "D" (HD-10 PEDESTRIAN LOAD; H-30 TRAFFIC LOAD) WITH SIDE OUTLET GUTTER DRAIN.
2. DCDA MUST BE TESTED BY A CERTIFIED BACKFLOW ASSEMBLY TESTER.
3. ALL TEST COCKS MUST BE PROVIDED WITH PCV PLUGS.
4. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
5. SEE COE STD DTLS E7.19 AND E7.20 FOR DCDA LOCATION AND CONNECTION REQUIREMENTS.

VAULT SIZES

METER SIZE AND TYPE	APPROXIMATE EQUIPMENT DIMENSIONS				MINIMUM INSIDE VAULT DIMENSIONS (EXCLUDES SIAMESE CONNECTION)		
	A	B	C	D	LENGTH	WIDTH	HEIGHT
4" x 3/4"	2'-9"	1'-1"	0'-6"	4'-3"	10'-0"	5'-0"	6'-6"
6" x 3/4"	3'-9"	1'-2"	0'-8"	5'-6"	11'-0"	6'-0"	6'-6"
8" x 3/4"	4'-5"	1'-4"	0'-9"	6'-4"	12'-0"	6'-0"	6'-6"
10" x 1"	6'-0"	1'-8"	0'-11"	8'-6"	14'-6"	7'-0"	6'-6"

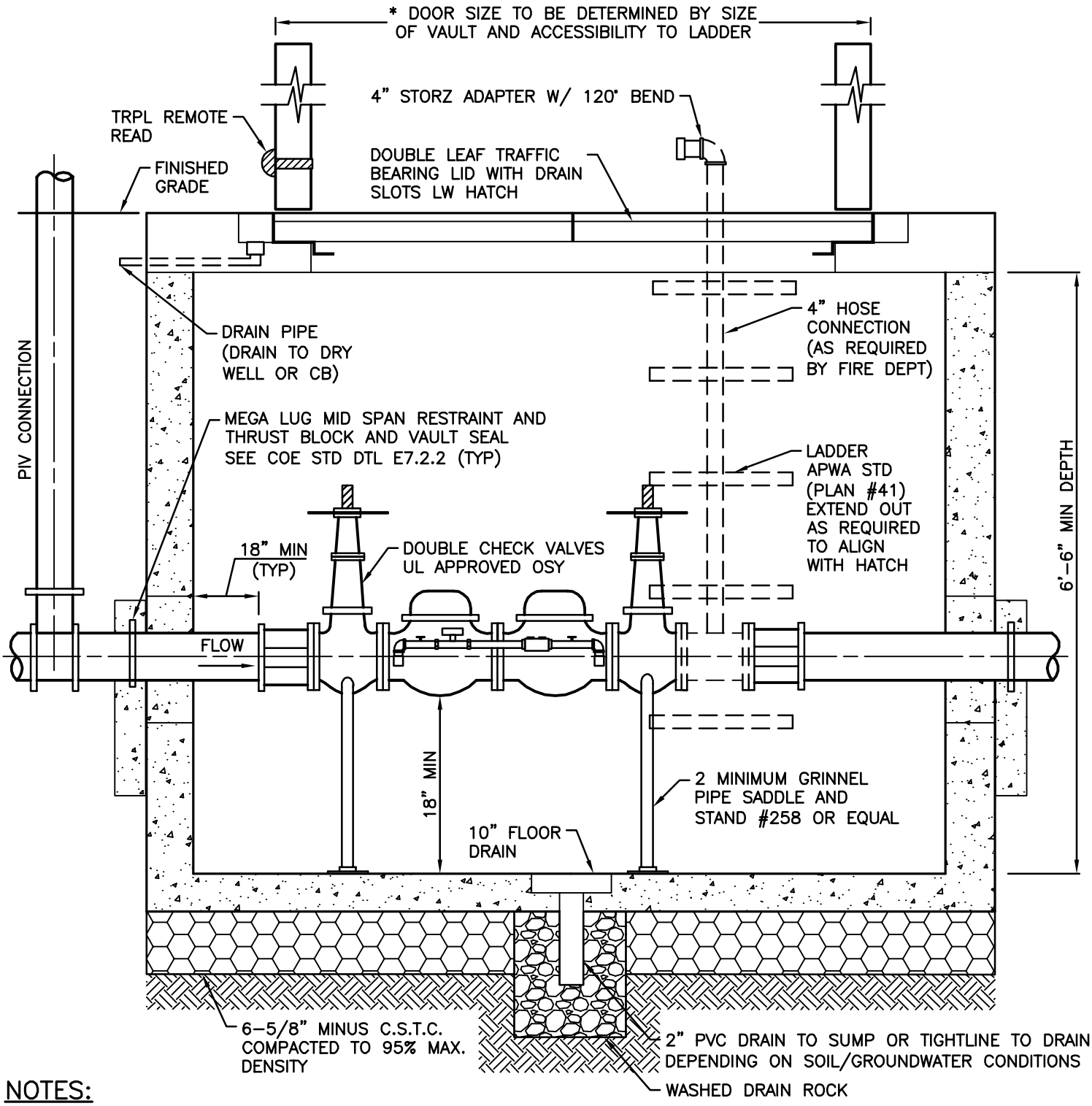
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) PLAN (COMMERCIAL/MULTI-FAMILY)

REVISION DATE
OCTOBER 2015

APPROVED BY: **R. ENGLISH**

STANDARD DETAIL
E7.8



NOTES:

1. ACCESSES BY LW HATCH: TYPE "D" (HD-10 PEDESTRIAN LOAD; H-30 TRAFFIC LOAD) WITH SIDE OUTLET GUTTER DRAIN.
2. VAULT COVER GUTTER DRAIN SHALL CONNECT TO A DRY WELL OR CATCH BASIN.
3. SEE COE STD DTLS E7.19 AND E7.20 FOR DCDA LOCATION AND CONNECTION REQUIREMENTS.

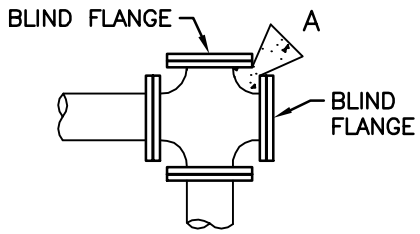
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) PROFILE (COMMERCIAL MULTI-FAMILY)

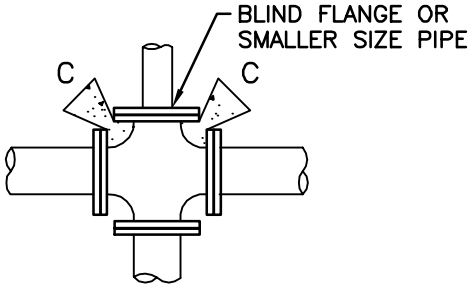
REVISION DATE
OCTOBER 2015

APPROVED BY: **R. ENGLISH**

STANDARD DETAIL
E7.8.1



CAPPED CROSS



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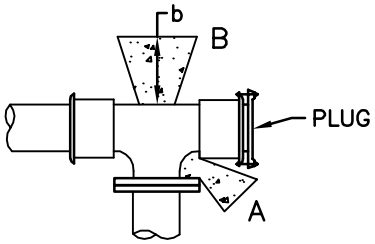
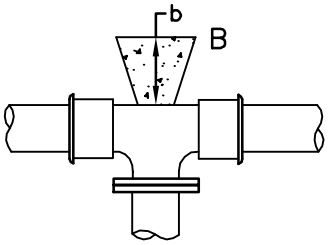
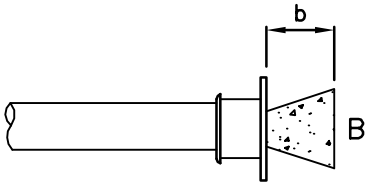


TEE W/ PLUG



TEE



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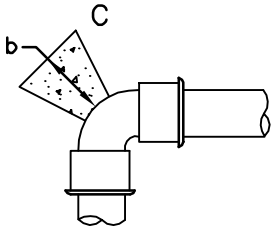
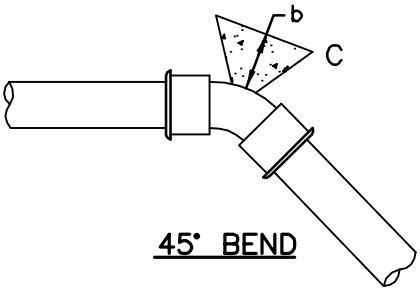
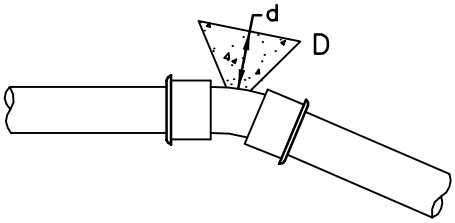


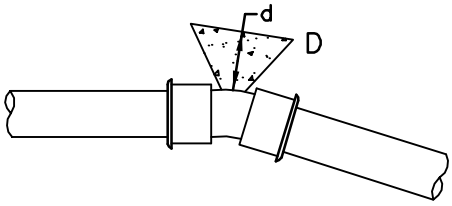
90° BEND



45° BEND



22-1/2° BEND



11-1/4° BEND

NOTES:

1. BEARING AREA OF CONCRETE THRUST BASED ON 200 PSI PRESSURE AND SAFE SOIL. BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES, AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. THRUST BLOCK SHALL BEAR AGAINST FITTINGS AND UNDISTURBED SOIL. FITTING SHALL BE WRAPPED IN POLYETHYLENE FILM BEFORE PLACING CONCRETE.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATIONAL PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. BLOCKING MAY BE REDUCED WITH USE OF RESTRAINED JOINTS ADJACENT TO FITTINGS.
7. CONCRETE SHALL NOT COVER FITTING BOLT AND NUTS.

THRUST BLOCK TABLE
MIN BEARING AREA AGAINST UNDISTURBED SOIL

	SQUARE FEET					MIN DIST (IN FEET)	
PIPE SIZE	A	B	C	D	E	b	d
4"	3	1	1	1	1	1	0.5
6"	4	4	2	1	1	1	0.5
8"	7	6	4	2	1	1.3	0.7
10"	11	10	6	3	2	1.6	0.9
12"	16	14	9	5	3	1.9	1.1
16"	29	25	16	8	4	2.6	1.4

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

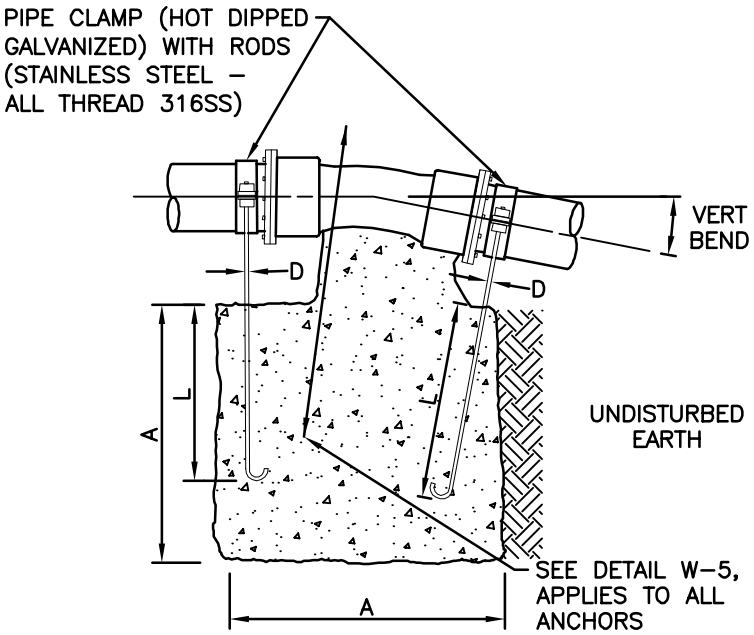
CONCRETE THRUST BLOCKING

REVISION DATE
OCTOBER 2015

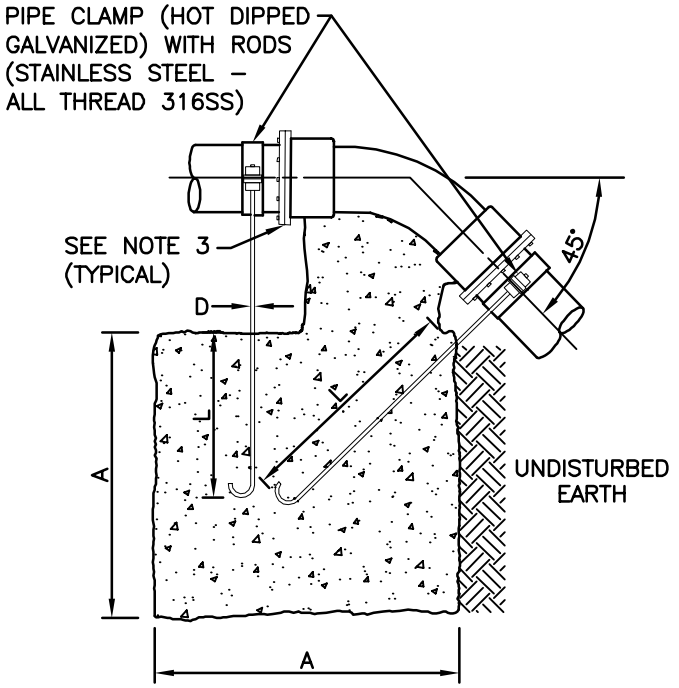
STANDARD DETAIL
E7.9

APPROVED BY: **R. ENGLISH**

VERTICAL BLOCKING FOR 11 1/4°–22 1/2°–30° BENDS					
PIPE SIZE	V B	CU FT	A	D	L
4"	11 1/4°	8	2.0'	3/4"	1.5'
	22 1/2°	11	2.2'		2.0'
	30°	17	2.6'		
6"	11 1/4°	11	2.2'	3/4"	2.0'
	22 1/2°	25	2.9'		
	30°	41	3.5'		
8"	11 1/4°	16	2.5'	3/4"	2.0'
	22 1/2°	47	3.6'		
	30°	70	4.1'	3/4"	2.5'
12"	11 1/4°	32	3.2'	3/4"	2.0'
	22 1/2°	88	4.5'	7/8"	3.0'
	30°	132	5.1'		
16"	11 1/4°	70	4.1'	7/8"	3.0'
	22 1/2°	184	5.7'	1 1/8"	4.0'
	30°	275	6.5'	1 1/4"	
20"	11 1/4°	91	4.5'	7/8"	3.0'
	22 1/2°	225	6.1'	1 1/4"	4.0'
	30°	330	6.9'	1 3/8"	4.5'
24"	11 1/4°	128	5.0'	1"	3.5'
	22 1/2°	320	6.8'	1 3/8"	4.5'
	30°	480	7.9'	1 5/8"	5.5'
VERTICAL BLOCKING FOR 45° BENDS					
4"	45°	30	3.1'	3/4"	2.0'
6"		68	4.1'		
8"		123	5.0'		
12"		232	6.1'	3/4"	2.5'
16"		478	7.8'	1 1/8"	4.0'
20"		560	8.2'	1 1/4"	
24"		820	9.4'	1 3/8"	4.5'



VERTICAL BLOCKING
FOR 11 1/4°, 22 1/2°, & 30° BENDS



VERTICAL BLOCKING
FOR 45° BENDS

NOTES:

1. CONCRETE BLOCKING BASED ON 200 PSI PRESSURE AND 2500 PSI CONCRETE.
2. LEAVE BLOCK OPEN OR SHEETED 24 HOURS MINIMUM.
3. MEGA–LUG FITTINGS.

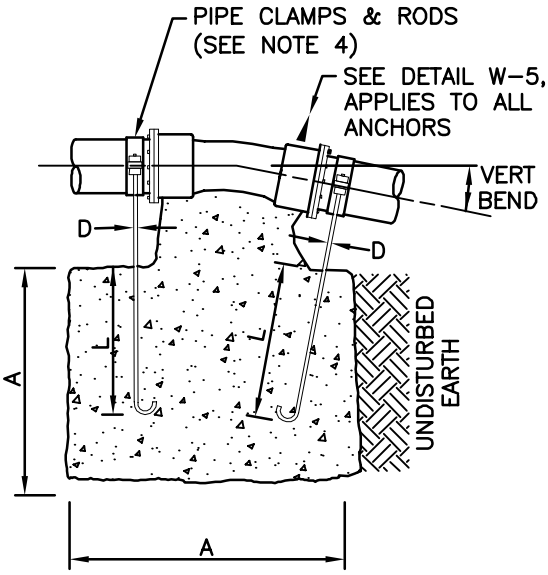
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

VERTICAL BLOCKING FOR CONNECTION TO EXISTING MAIN

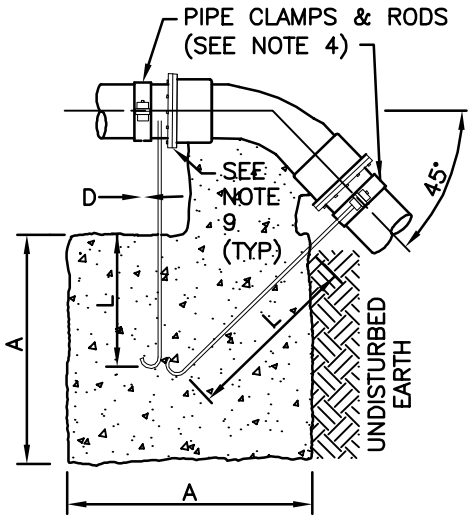
REVISION DATE
OCTOBER 2015

APPROVED BY: **R. ENGLISH**

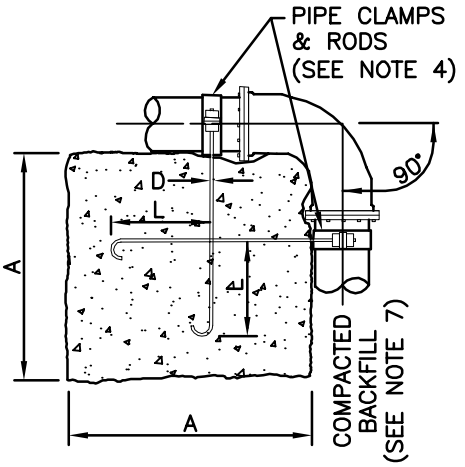
STANDARD DETAIL
E7.9.1



VERTICAL BLOCKING
FOR 11 1/4° & 22 1/2°



VERTICAL BLOCKING
FOR 45° BENDS



VERTICAL BLOCKING
FOR 90° BENDS
(SEE NOTE 6)

NOTES:

1. NO CHANGE IN PIPE DIRECTION OR DIAMETER SHALL OCCUR WITHIN 36 FEET OF THE VERTICAL BEND. BENDS, TEES, REDUCERS, ETC. BEYOND THE 36 FOOT LIMIT SHALL BE RESTRAINED BY STANDARD CONCRETE BLOCKING PER STD. DTL. E7.9 & E7.9.1.
2. CONCRETE BLOCKING SIZES BASED ON:
   - 36 FEET OF PIPE RESTRAINED EACH SIDE OF BEND.
   - THRUST BLOCK AREAS BASED ON SAFE BEARING LOAD OF 1,000 PSF.
   - 2,500 PSI CONCRETE.
   - MINIMUM 3 FEET OF COVER.
   - PIPE THRUST BASED ON 200 PSI PRESSURE.
   - PIPE ENCASED IN POLYETHYLENE.
   - VERTICAL BLOCK SIZE BASED ON CONCRETE WEIGHT OF 150 POUNDS PER CUBIC FOOT.
   - TRENCH CONDITIONS BASED ON TYPE 2, FLAT BOTTOM TRENCH WITH LIGHTLY CONSOLIDATED BACKFILL, PER ANSI/AWWA C150/A21.50.
   - FACTOR OF SAFETY IS 1.5.
   - SOIL FRICTIONAL RESISTANCE BASED ON COHESIVE GRANULAR SOIL TYPE (GC+SC). SAND, GRAVEL, CLAY MIXTURE.
3. BLOCKING DESIGN MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES AND SOIL CONDITIONS.
4. PIPE CLAMP (HOT DIPPED GALVANIZED). RODS (STAINLESS STEEL ALL-THREAD 316SS)
5. LINE SHALL NOT BE PRESSURIZED UNTIL ALL TRENCHING 5. WITHIN 100 FEET OF VERTICAL BEND IS BACKFILLED AND COMPACTED TO MINIMUM COVER OF 3 FEET OVER PIPE.
6. 90° VERTICAL BENDS SHALL ONLY BE INSTALLED WHERE GIVEN PRIOR APPROVAL BY THE UTILITY.
7. BACKFILL TRENCH BEYOND 90° VERTICAL BLOCK WITH CRUSHED SURFACING TOP COURSE MATERIAL COMPACTED TO 95% MAXIMUM DENSITY. CRUSHED BACKFILL SHALL EXTEND 20 FEET BEYOND BLOCK OR TO FIRM BEARING TRENCH WALL, WHICHEVER IS LESS.
8. LEAVE BLOCK OPEN OR SHEETED 24 HOURS MINIMUM.
9. MEGA-LUG FITTINGS.

VERTICAL BLOCKING SIZE
W/RESTRAINED JOINTS
SOIL TYPE = COHESIVE GRANULAR [GC+SC]
SAND, GRAVEL, CLAY MIXTURE

PIPE SIZE	V B	CU FT	A	D	L
4"	11 1/4°	*			
	22 1/2°	*			
	45°	*			
	90°	16	2.5'	3/4"	2.0'
6"	11 1/4°	*			
	22 1/2°	*			
	45°	13	2.3'	3/4"	2.0'
	90°	43	3.5'	3/4"	2.0'
8"	11 1/4°	*			
	22 1/2°	*			
	45°	33	3.2'	3/4"	2.0'
	90°	86	4.4'	3/4"	2.0'
10"	11 1/4°	*			
	22 1/2°	13	2.3'	3/4"	2.0'
	45°	64	4.0'	3/4"	2.0'
	90°	141	5.2'	1"	3.5'
12"	11 1/4°	*			
	22 1/2°	20	2.7'	3/4"	2.0'
	45°	111	4.8'	3/4"	2.0'
	90°	206	5.9'	1 1/8"	4.0'

* BLOCKING NOT REQUIRED IF 36 FEET OF PIPE IS RESTRAINED ON EACH SIDE OF BEND

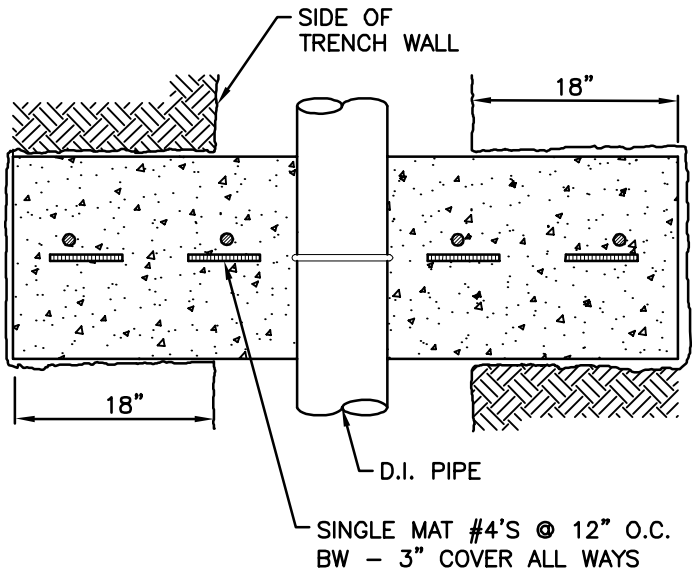
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

VERTICAL BLOCKING WITH RESTRAINED JOINTS FOR NEW LINES

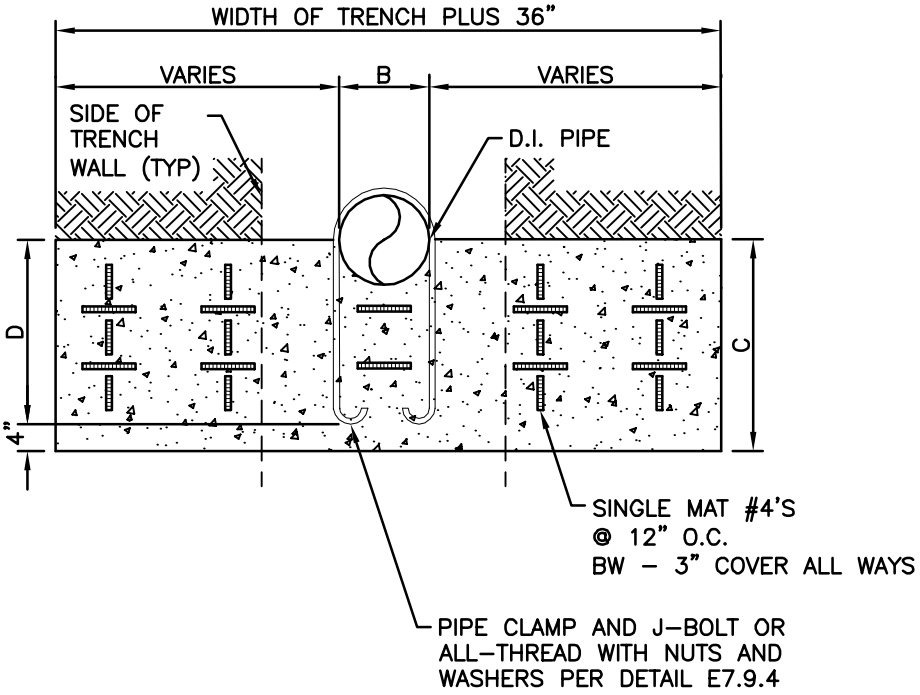
REVISION DATE
OCTOBER 2015

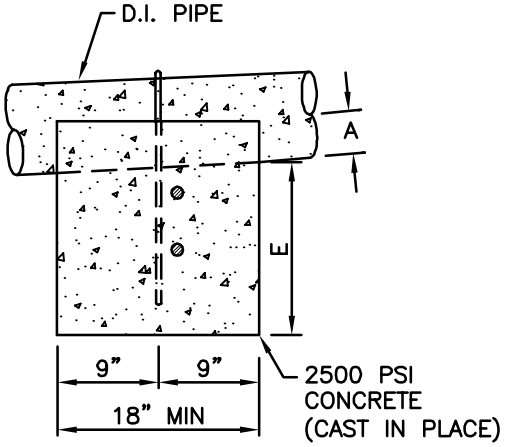
APPROVED BY: **R. ENGLISH**

STANDARD DETAIL
E7.9.2



PIPE SIZE	DIMENSIONS				
	A	B	C	D	E
4"	2.4	4.8	17	13	14.6
6"	3.5	6.9	18	14	14.5
8"	4.5	9.1	19	15	14.5
10"	5.6	11.1	20	16	14.4
12"	6.6	13.2	21	17	14.4
14"	7.7	15.3	22	18	14.3
16"	8.7	17.4	23	19	14.3
18"	9.8	19.5	24	20	14.2





NOTES:

SLOPES > 20% – PROVIDE CONCRETE SLOPE ANCHORS (20' TO 25' ON CENTER)

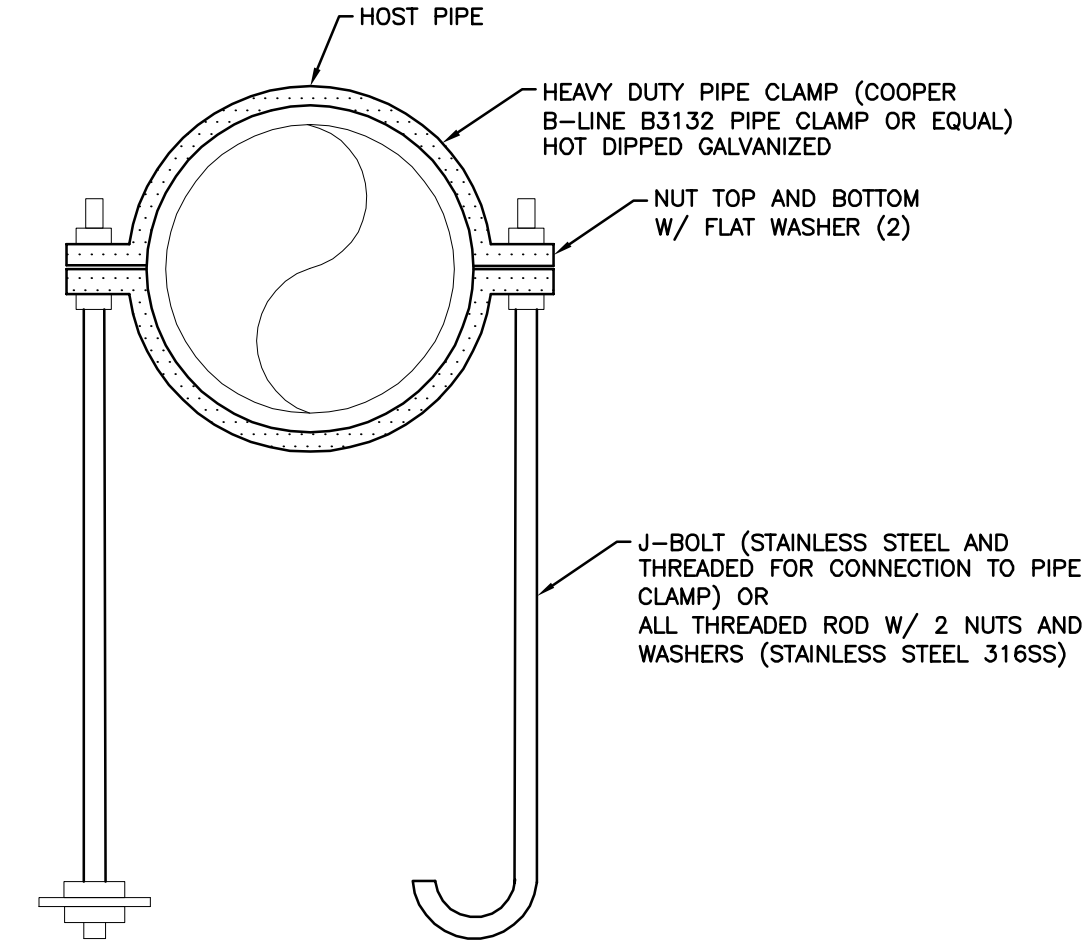
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

CONCRETE SLOPE ANCHOR

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.9.3

APPROVED BY: **R. ENGLISH**



NOTES:

1. J-BOLT DIAMETER:
   - PIPE DIAMETER LESS THAN OR EQUAL TO 6": 7/8", 6" & 8" PIPE: 1", 10" = 1-1/4"
   - PIPE DIAMETER GREATER THAN 12": 1-1/2"
2. TIGHTEN TOP NUTS TO TENSION BOLTS
3. TIGHTEN LOWER NUTS TO COMPRESS CLAMP SNUG

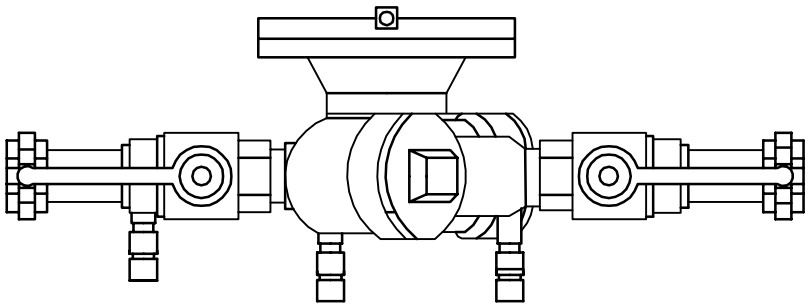
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

PIPE CLAMP AND ANCHOR RODS FOR CONCRETE BLOCKING

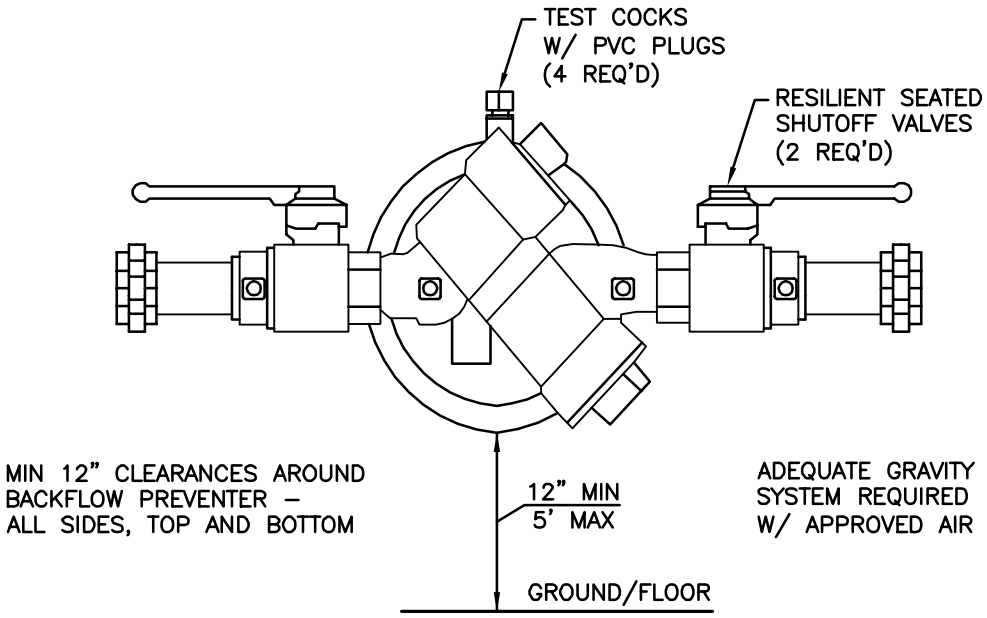
REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.9.4

APPROVED BY: **R. ENGLISH**



TOP VIEW



SIDE VIEW

NOTES:

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
4. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
5. MUST BE ACCESSIBLE.
6. MUST BE PROTECTED FROM FREEZING CONDITIONS.
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL.
8. A PLUMBING PERMIT IS REQUIRED– PLEASE CONTACT LOCAL PLUMBING PERMIT CENTER.
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.

(ABOVE GROUND INSTALLATION ONLY)

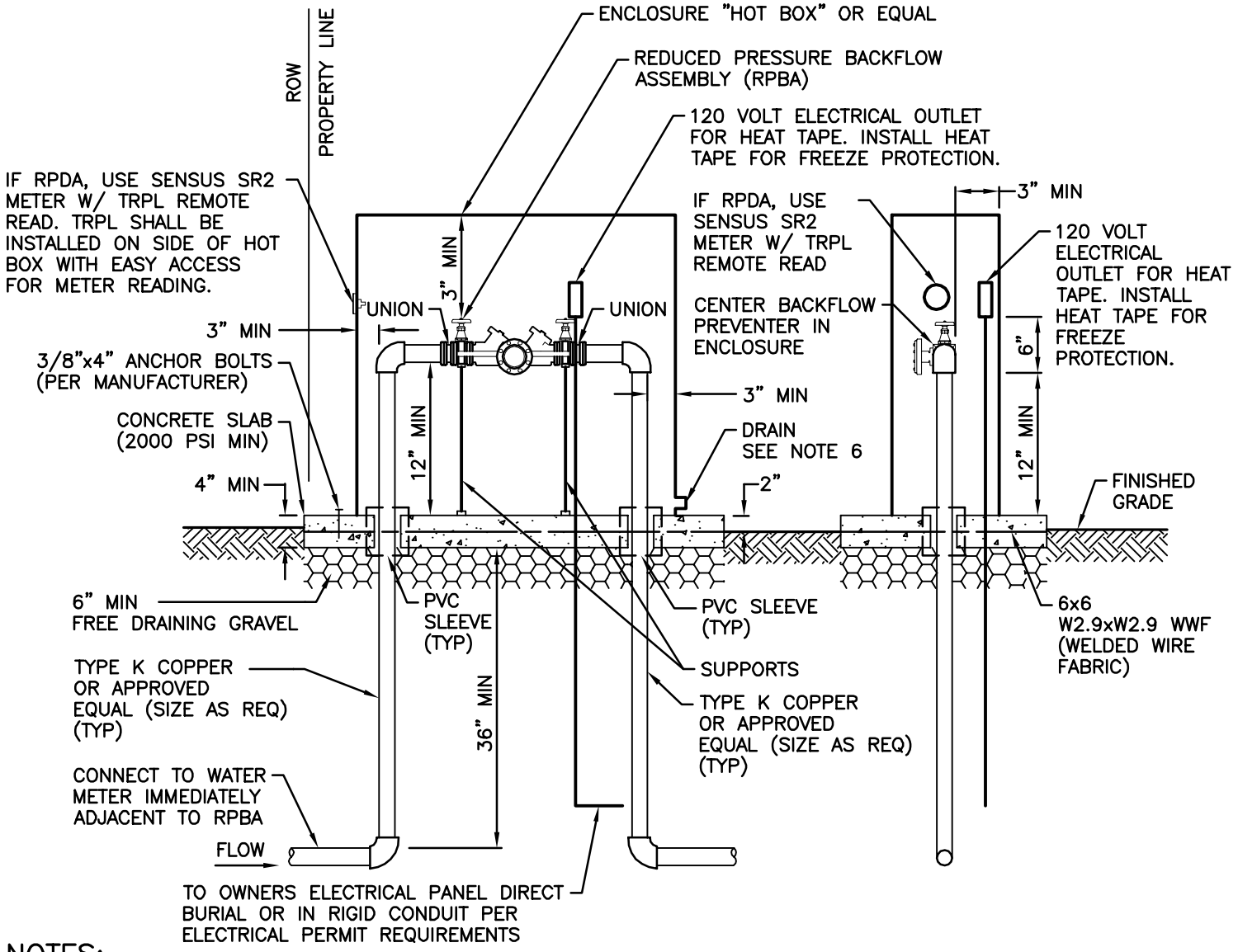
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

REDUCED PRESSURE BACKFLOW ASSEMBLY 2" AND SMALLER (RPBA)

REVISION DATE
OCTOBER 2015

APPROVED BY: **R. ENGLISH**

STANDARD DETAIL
E7.10



SIDE VIEW

FRONT VIEW (METER SIDE)

NOTES:

1. PROVIDE CITY APPROVED SUPPORT FOR DEVICES LARGER THAN 1" DIAMETER.
2. OWNER SHALL FURNISH, INSTALL AND MAINTAIN THE RPBA OR RPDA AND ALL PIPING AND APPURTENANCES SHOWN ON THIS PLAN.
3. CITY WILL PROVIDE INSPECTION. INITIAL TEST OF THE RPBA OR RPDA PRIOR TO ESTABLISHMENT OF WATER SERVICE WILL BE DONE BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER.
4. REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE STATE APPROVED DEVICES.
5. ANNUAL TESTING OF RPBA AND RPDA REQUIRED BY OWNER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.
6. DRAIN SHALL BE SIZED IN ACCORDANCE WITH AWWA CROSS CONNECTION CONTROL FIGURE 6–8 (SEE STD DETAIL SHEET E 7.11.1).
7. ENCLOSURES SHALL BE LOCATED ON PRIVATE PROPERTY.
8. SLEEVE SHALL BE ONE NOMINAL SIZE DIAMETER LARGER THAN PIPE BEING SLEEVED.

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

HOT BOX ASSEMBLY FOR REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA AND RPDA)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.11

APPROVED BY: **R. ENGLISH**

AWWA CROSS CONNECTION
CONTROL MANUAL

RPBA DISCHARGE RATES

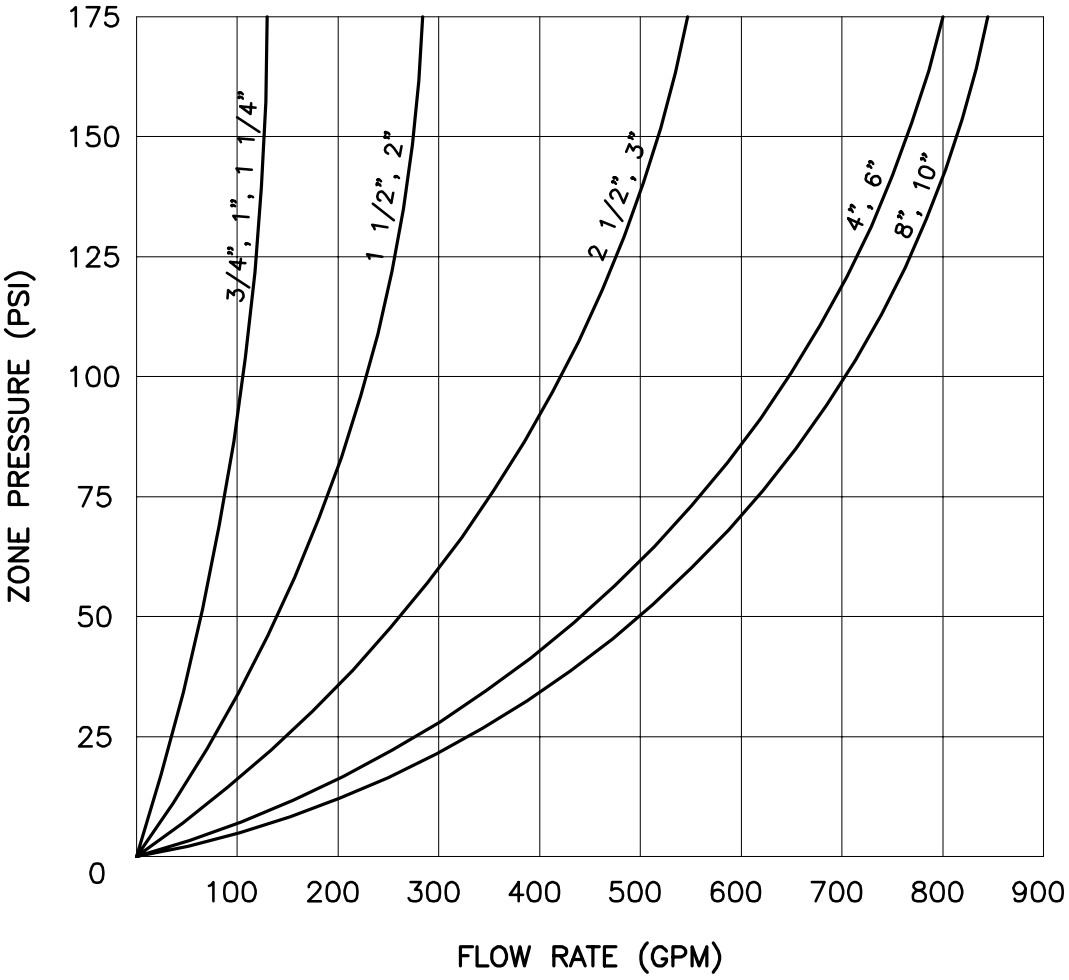


FIGURE 6–8
APPROXIMATE RELIEF VALVE DISCHARGE RATES
FOR REDUCED PRESSURE BACKFLOW ASSEMBLIES

CARE SHOULD BE TAKEN TO ENSURE THAT THE ENTIRE DRAINAGE SYSTEM HAS ADEQUATE CAPACITY TO CARRY THE CONTINUOUS DISCHARGE RATES SHOWN ABOVE. THE FOLLOWING ARE TYPICAL FLOW RATES AS SIZED BY ONE FLOOR DRAIN MANUFACTURER AND REPRESENT ONLY THE FLOOR DRAIN CAPACITY:

SIZE:	2"	3"	4"	6"	8"
CAPACITY (GPM):	55	112	170	450	760

FOR PARALLEL ASSEMBLIES, THE DRAINAGE SYSTEM SHOULD BE DESIGNED FOR THE DISCHARGE FROM BOTH ASSEMBLIES.

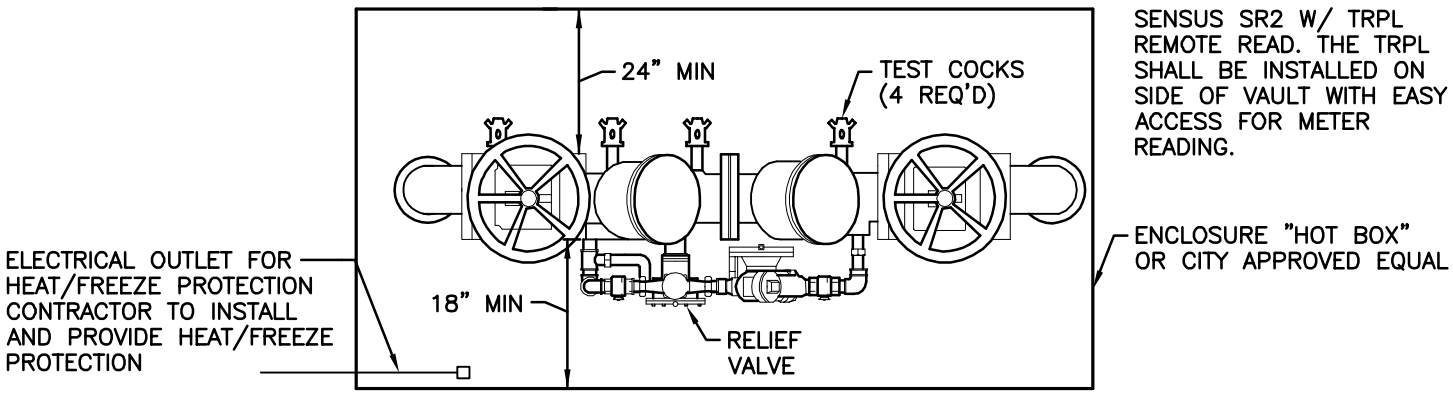
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

RPBA DISCHARGE RATES (FIGURE 6–8)

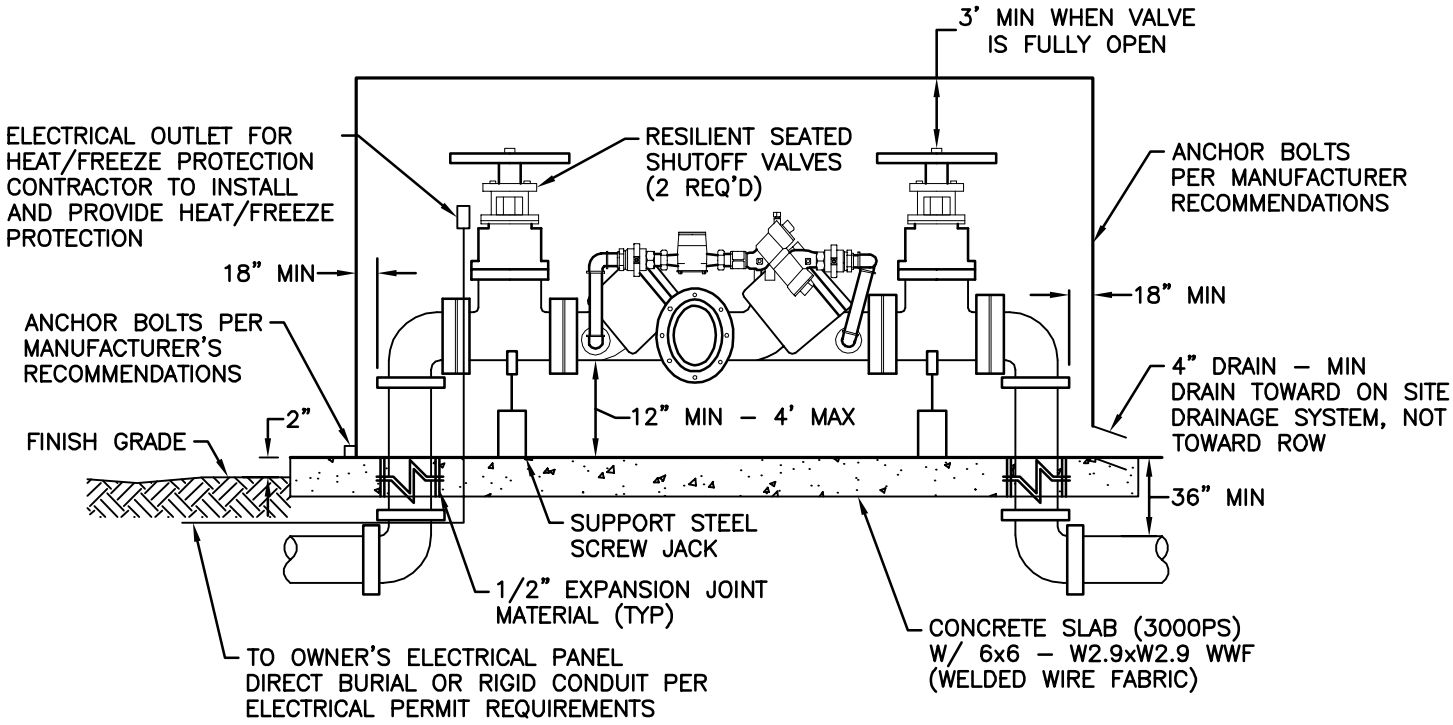
REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.11.1

APPROVED BY: **R. ENGLISH**



PLAN VIEW



SIDE VIEW

NOTES:

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THE WATER LINE SHALL BE DISINFECTED, FLUSHED, AND PRESSURE TESTED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY. THE BACKFLOW ASSEMBLY SHALL BE PROTECTED FROM FREEZING AND FLOODING.
4. ALL PIPE, VALVES, AND FITTING JOINTS, FROM SUPPLY MAIN, SHALL BE FLANGED AND RESTRAINED.
5. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
6. HOT BOX SHALL BE INSTALLED AT PROPERTY LINE OR EASEMENT LINE.
7. HOT BOX SHALL HAVE A MINIMUM OF 3' CLEARANCE FROM ALL STRUCTURES.
8. THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO YEARLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.
9. MECHANICALLY RESTRAIN ALL FITTINGS AND JOINTS BETWEEN CITY MAIN AND ASSEMBLY.

(ABOVE GROUND INSTALLATION ONLY)

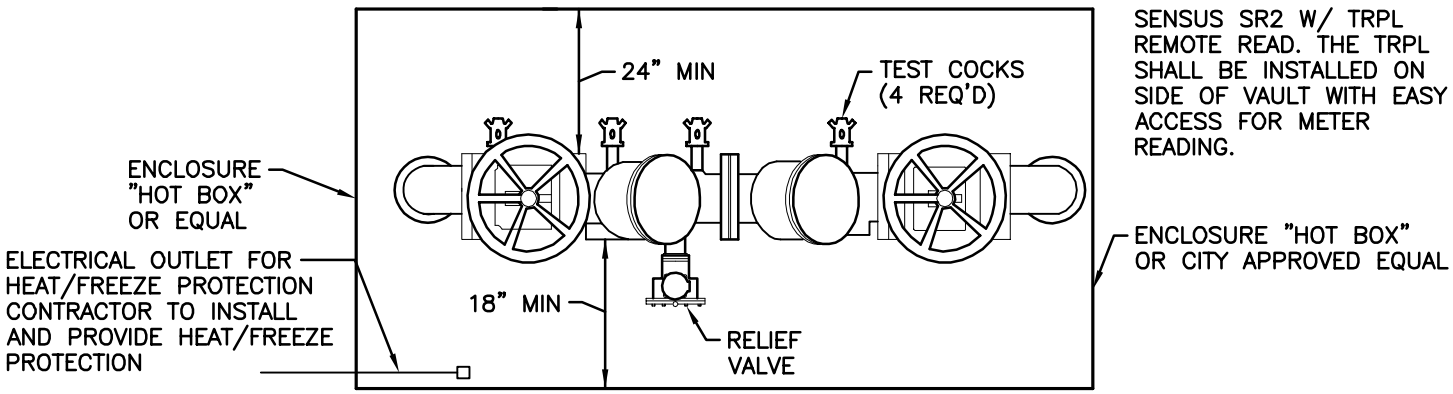
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) 2.5" AND LARGER

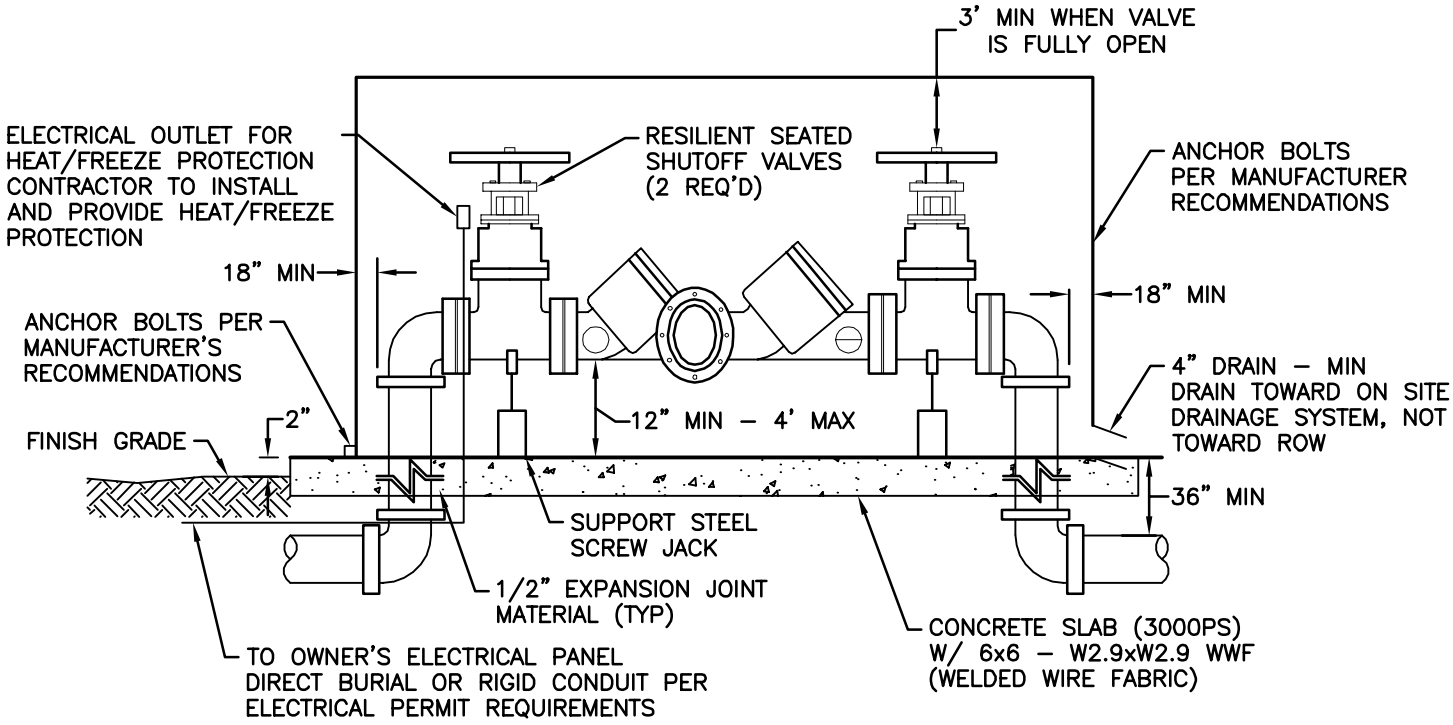
REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.12

APPROVED BY: **R. ENGLISH**



PLAN VIEW



SIDE VIEW

NOTES:

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THE WATER LINE SHALL BE DISINFECTED, FLUSHED, AND PRESSURE TESTED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY. THE BACKFLOW ASSEMBLY SHALL BE PROTECTED FROM FREEZING AND FLOODING.
4. ALL PIPE, VALVES, AND FITTING JOINTS, FROM SUPPLY MAIN, SHALL BE FLANGED AND RESTRAINED.
5. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
6. HOT BOX SHALL BE INSTALLED AT PROPERTY LINE OR EASEMENT LINE.
7. HOT BOX SHALL HAVE A MINIMUM OF 3' CLEARANCE FROM ALL STRUCTURES.
8. THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO YEARLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.
9. MECHANICALLY RESTRAIN ALL FITTINGS AND JOINTS BETWEEN CITY MAIN AND ASSEMBLY.

(ABOVE GROUND INSTALLATION ONLY)

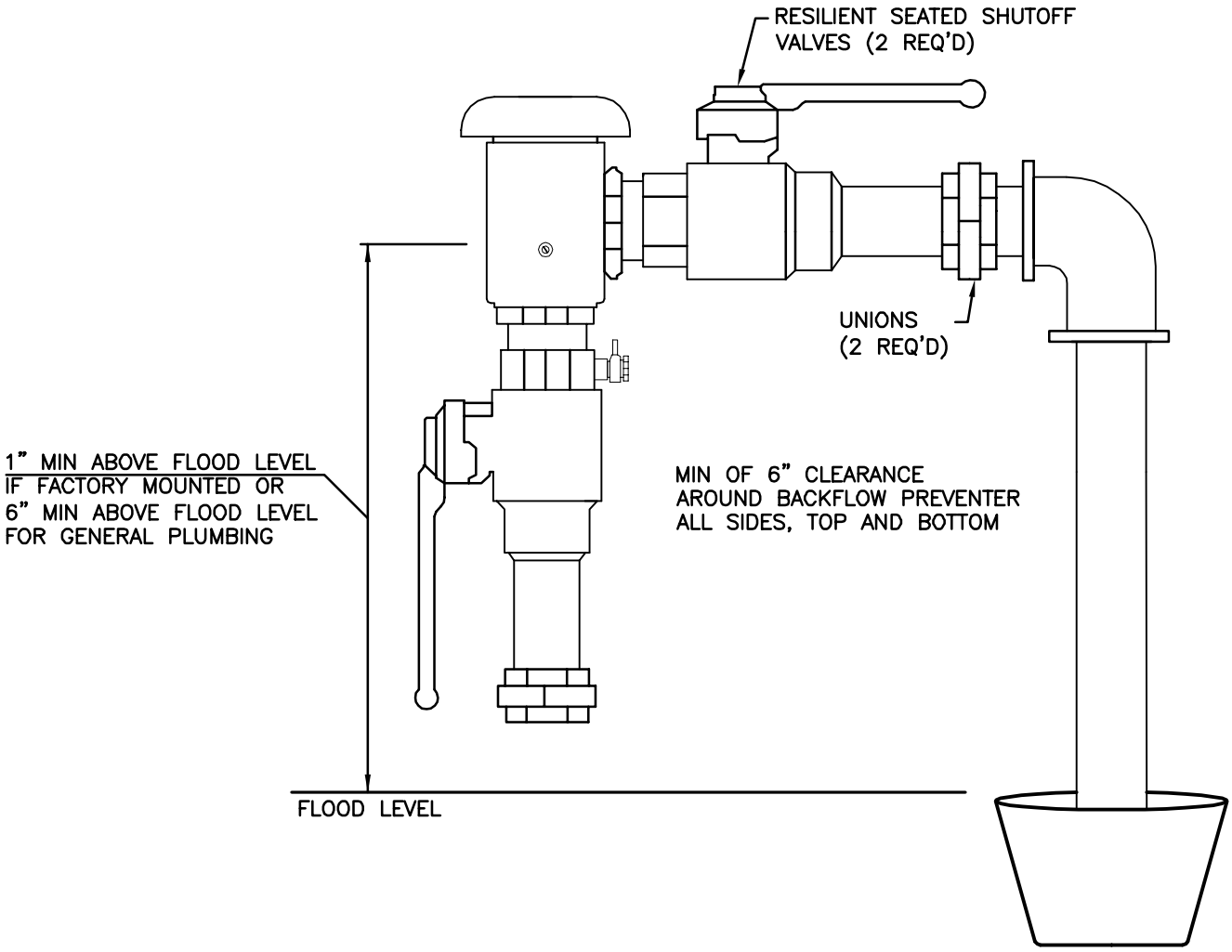
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) 2.5" AND LARGER

REVISION DATE
AUGUST 2015

STANDARD DETAIL
E7.13

APPROVED BY: **R. ENGLISH**



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 1" MIN ABOVE FLOOD LEVEL IF FACTORY MOUNTED OR 6" MIN ABOVE FLOOD LEVEL FOR GENERAL PLUMBING
2. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER
4. IF A SVBA IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE)
5. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
6. MUST BE PROTECTED FROM FREEZING CONDITIONS
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL
8. A PLUMBING PERMIT IS REQUIRED– PLEASE CONTACT LOCAL PLUMBING PERMIT CENTER
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER
   TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS

(ABOVE GROUND INSTALLATION ONLY)

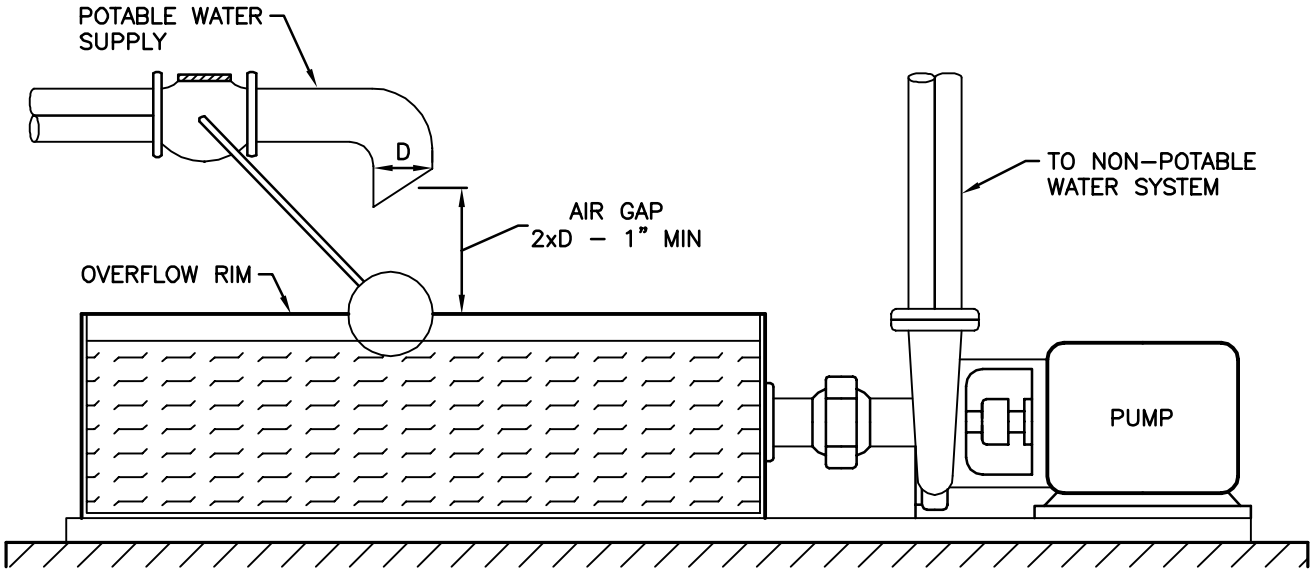
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

SPILL–RESISTANT PRESSURE VACUUM BREAKER (SVBA)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.14

APPROVED BY: **R. ENGLISH**



APPROVED AIR GAP SEPARATION:

AN APPROVED AIR GAP IS A PHYSICAL SEPARATION BETWEEN THE FREE FLOWING DISCHARGE END OF A POTABLE WATER SUPPLY PIPELINE AND THE OVERFLOW RIM OF AN OPEN OR NON–PRESSURE RECEIVING VESSEL. THESE VERTICAL, PHYSICAL SEPARATIONS MUST BE AT LEAST TWICE THE DIAMETER OF THE INLET PIPE BUT NEVER LESS THAN ONE INCH. IF SPLASHING IS A PROBLEM, TUBULAR SCREENS MAY BE ATTACHED OR THE SUPPLY LINE OUTLET MAY BE CUT AT A 45 DEGREE ANGLE. IF SUPPLY LINE IS CUT AT A 45 DEGREE ANGLE THE AIR GAP DISTANCE IS MEASURED FROM THE CENTER OF THE ANGLE. HOSES ARE NOT ALLOWED. BYPASSES ARE NOT ALLOWED. THE INSPECTION OF AIR GAPS SHALL BE INCLUDED IN THE YEARLY TESTING PROGRAM FOR BACKFLOW DEVICES.

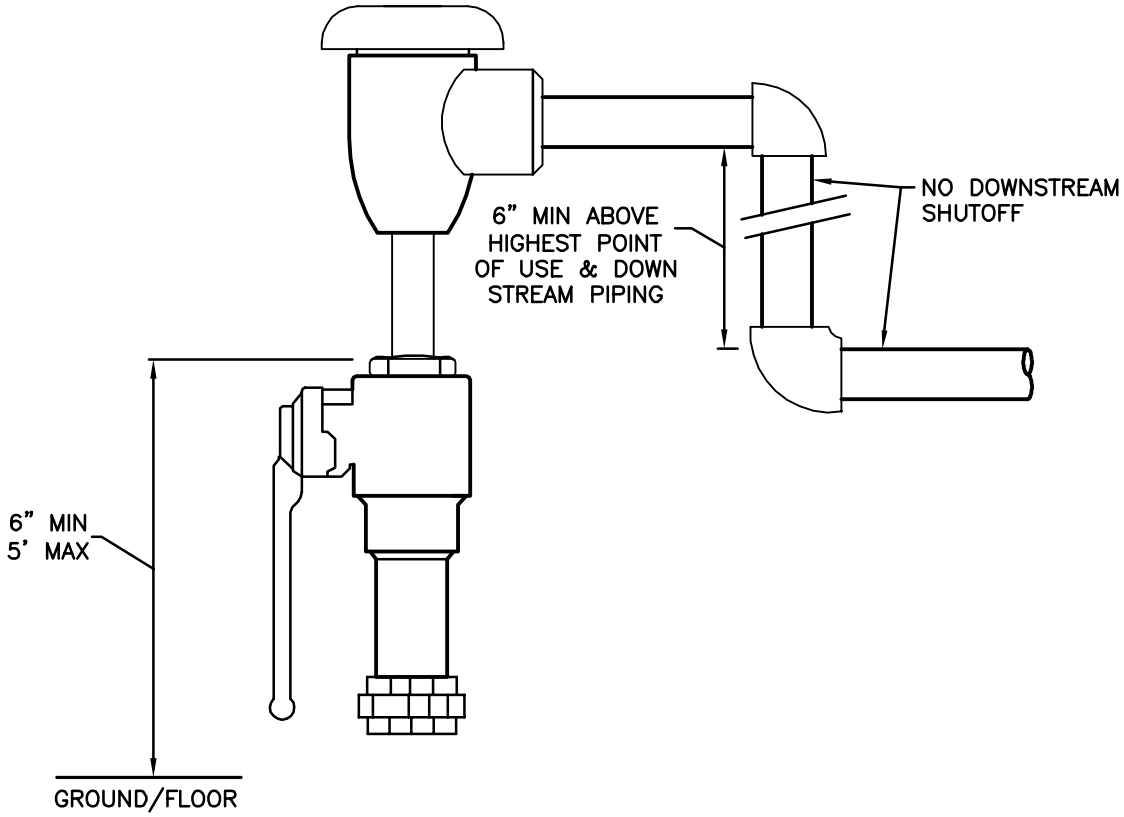
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

AIR GAP FOR MAKEUP TANK (AG)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.15

APPROVED BY: **R. ENGLISH**



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 6" MIN ABOVE THE HIGHEST POINT OF USE AND ALL DOWN STREAM PIPING
2. 6" MIN ABOVE FLOOD LEVEL FOR GENERAL PLUMBING
3. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE
4. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER
5. IF AVB IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE)
6. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
7. MUST BE PROTECTED FROM FREEZING CONDITIONS
8. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL
9. A PLUMBING PERMIT IS REQUIRED– OBTAIN PERMIT FROM CITY OF EDMONDS DEVELOPMENT SERVICES
10. NO DOWNSTREAM VALVES ARE ALLOWED
11. THIS DEVICE DOES NOT REQUIRE TESTING BY A BACKFLOW ASSEMBLY TESTER

(ABOVE GROUND INSTALLATION ONLY)

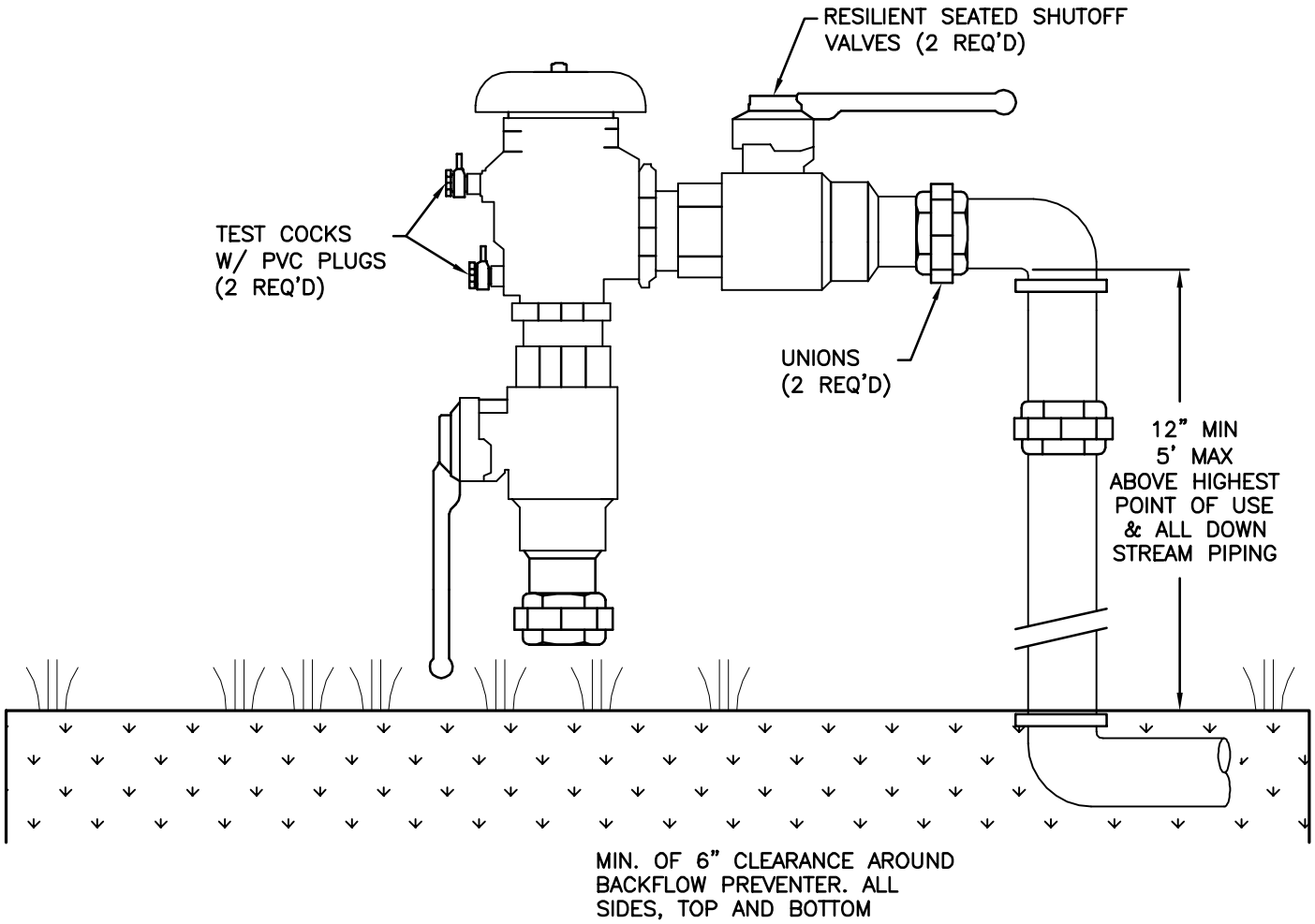
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

ATMOSPHERIC/ANTI–SIPHON VACUUM BREAKER ASSEMBLY 2" & SMALLER (AVB)

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.16

APPROVED BY: **R. ENGLISH**



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 12" MIN. – 5' MAX ABOVE THE HIGHEST POINT OF USE AND ALL DOWN STREAM PIPING.
2. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE.
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
4. IF A PVBA IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE).
5. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
6. MUST BE PROTECTED FROM FREEZING CONDITIONS.
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL.
8. A PLUMBING PERMIT IS REQUIRED– PLEASE CONTACT LOCAL PLUMBING PERMIT CENTER.
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.

(ABOVE GROUND INSTALLATION ONLY)

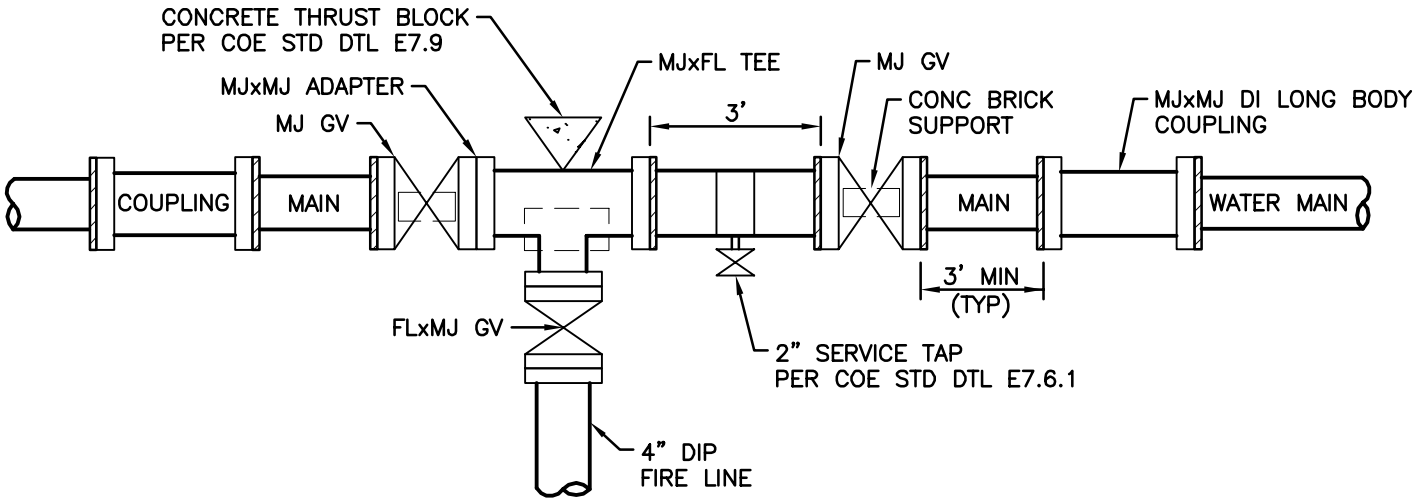
CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

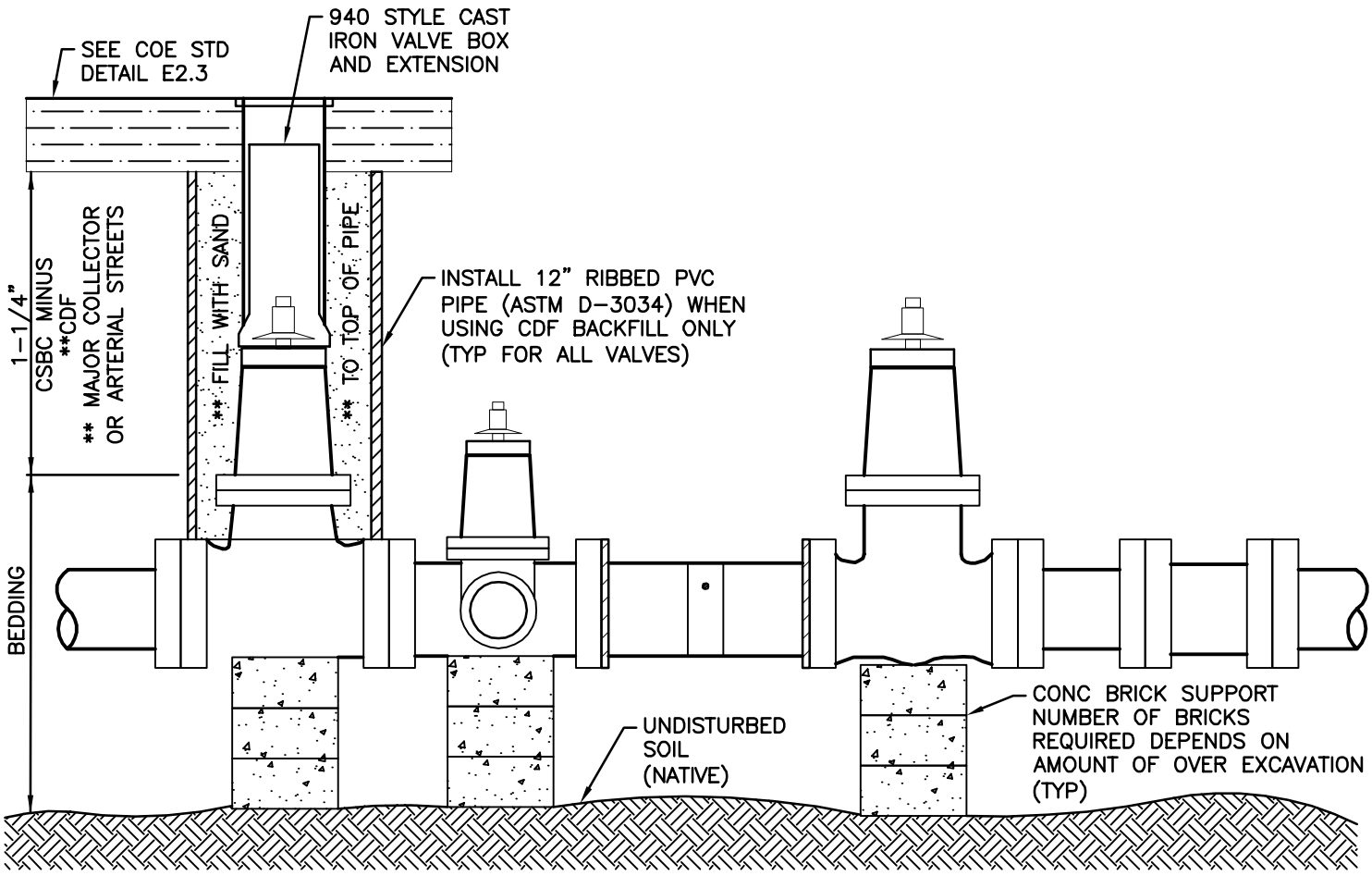
PRESSURE VACUUM BREAKER ASSEMBLY (PVBA) 2" AND SMALLER

REVISION DATE
OCTOBER 2015

STANDARD DETAIL
E7.17

APPROVED BY: **R. ENGLISH**





NOTES:

1. CDF SHALL BE 3/4 SACK MIX DESIGN PER WSDOT STANDARDS.
2. BACKFILL SHALL BE PER COE STD DTL E4.2.

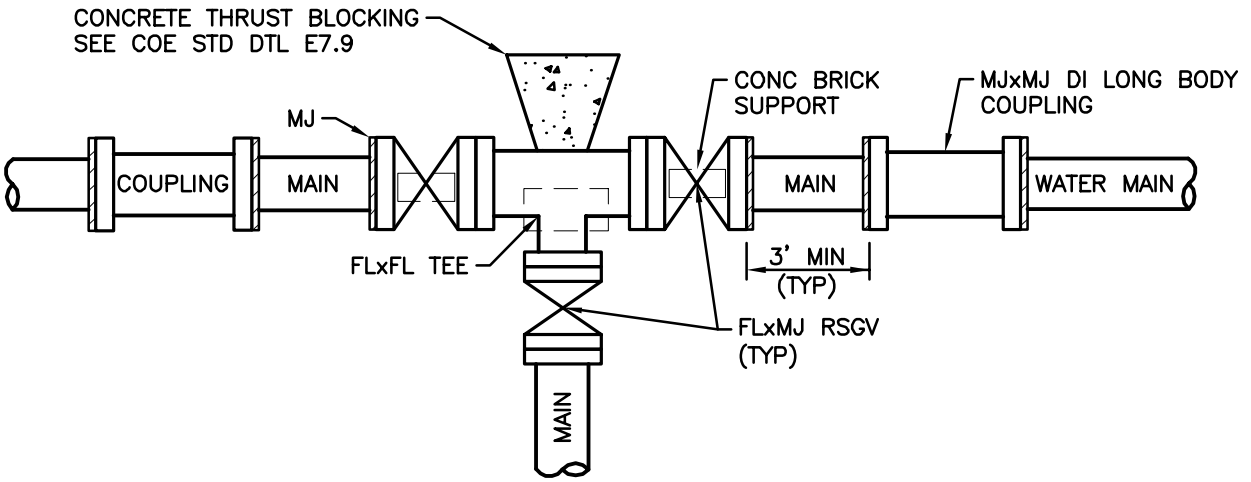
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

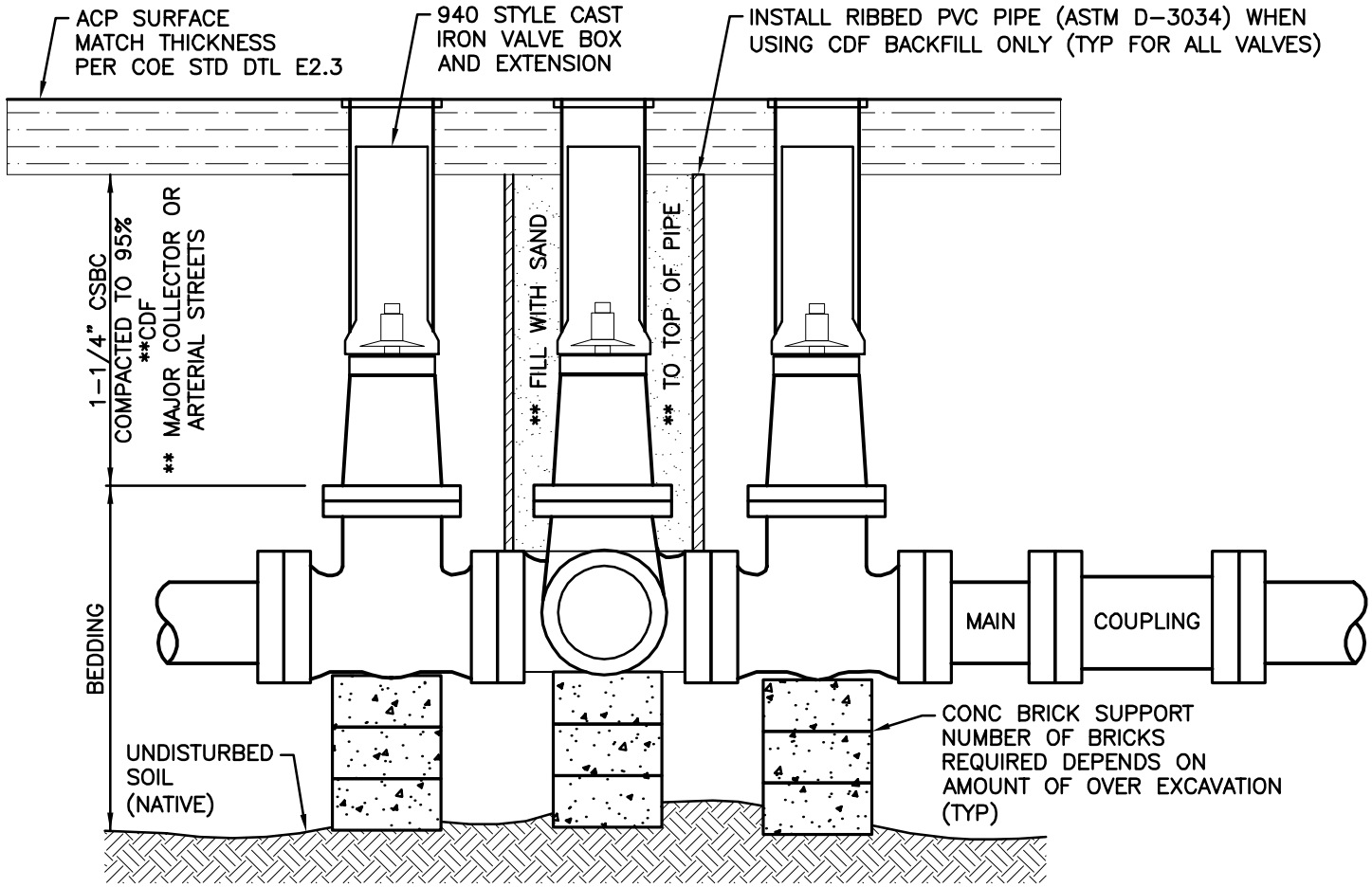
FIRE AND 2" DOMESTIC SERVICE CONNECTIONS

REVISION DATE
OCTOBER 2015

STANDARD
DETAIL
E7.18

APPROVED BY: **R. ENGLISH**





NOTE:

1. BACKFILL SHALL BE PER COE STD DTL E4.2.

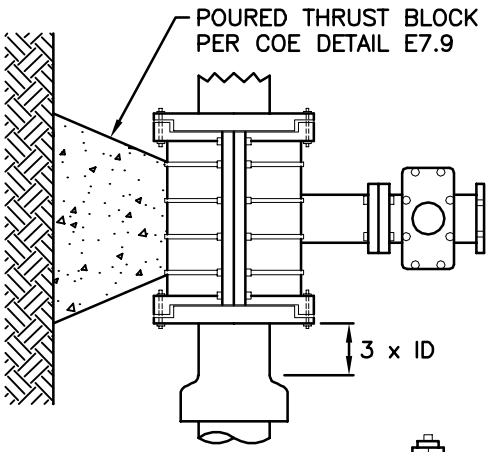
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

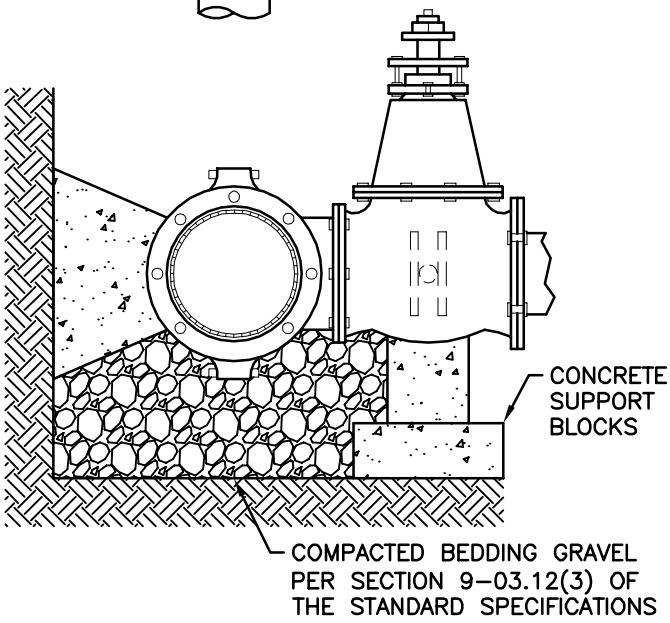
TYPICAL WATER VALVE CLUSTER CONNECTION

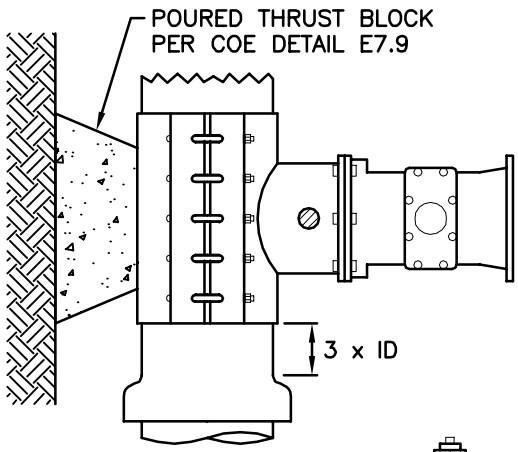
REVISION DATE
OCTOBER 2015

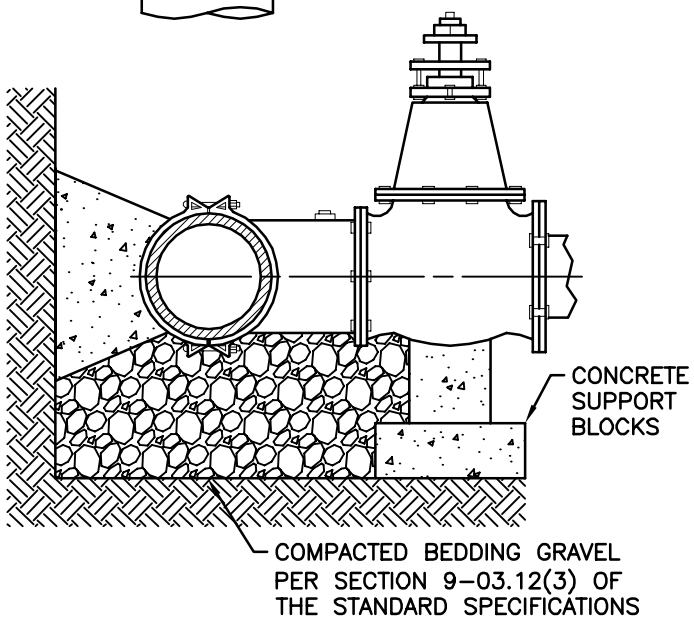
STANDARD
DETAIL
E7.18.1

APPROVED BY: **R. ENGLISH**









DUCTILE IRON TAPPING TEE MECHANICAL JOINT SLEEVE

INSTALLED ON CAST IRON
PIPE AND DUCTILE IRON PIPE

STAINLESS STEEL OR STEEL TAPPING TEE

STAINLESS STEEL TAPPING TEE

INSTALLED ON CAST IRON PIPE AND
DUCTILE IRON PIPE

STEEL TAPPING TEE

INSTALLED ON DUCTILE IRON PIPE ONLY

NOTES:

1 STAINLESS STEEL TAPPING TEES SHALL HAVE FULL CIRCLE SEAL. BOLTS AND NUTS SHALL BE STAINLESS STEEL.

2. STEEL TAPPING TEES SHALL BE EPOXY COATED. BOLTS AND NUTS SHALL BE COR-TEN, OR STAINLESS STEEL.

3. ALL TEES AND VALVES TO BE WATER TESTED BEFORE TAP.

4. TAPPING TEE MAY NOT BE SIZE ON SIZE. TAP SHALL BE AT LEAST 2" SMALLER DIAMETER THAN THE EXISTING MAIN.

CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

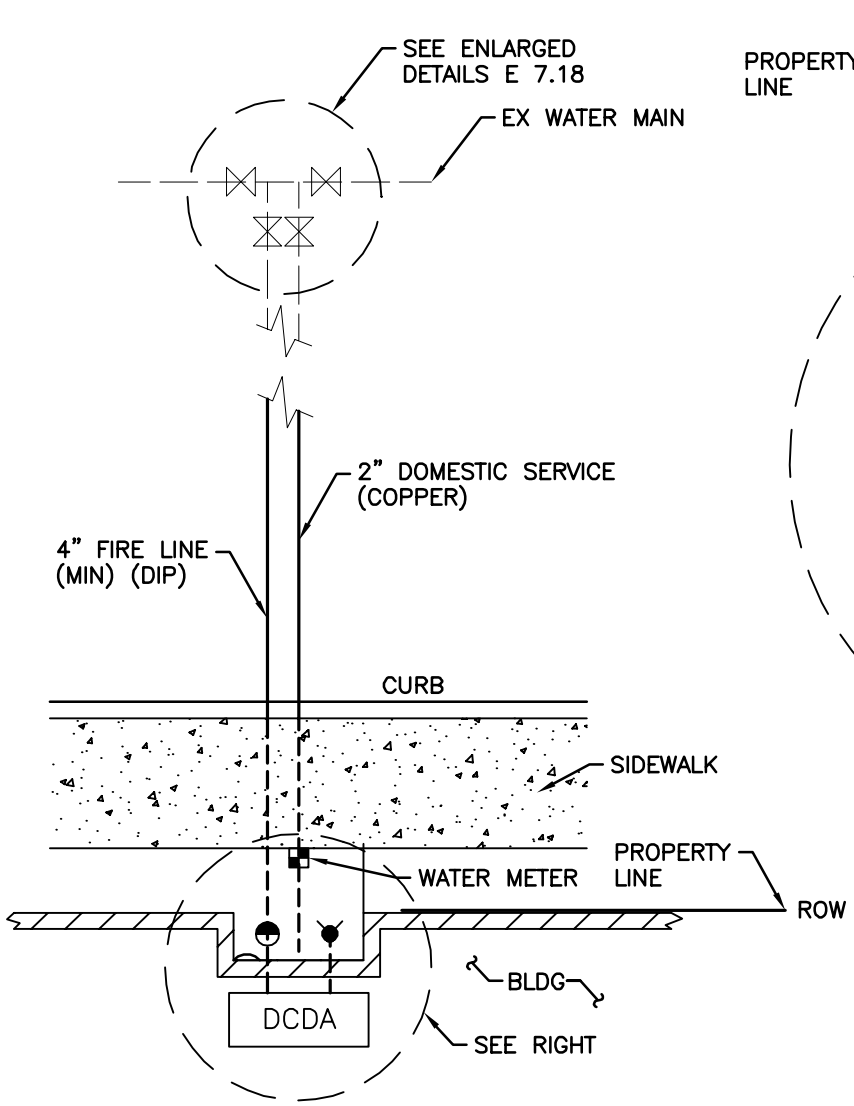
Est. 1890

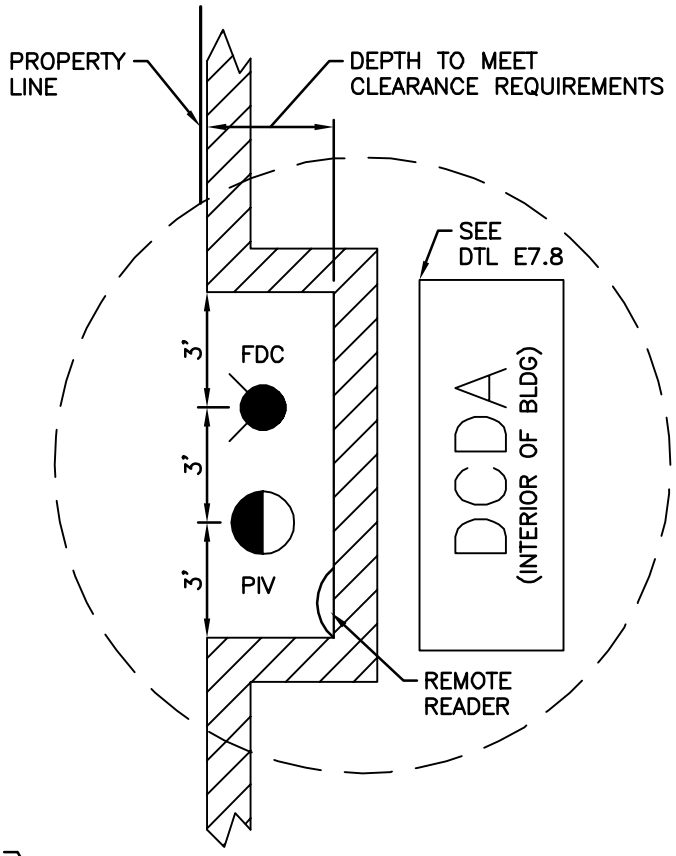
TAPPING TEES

REVISION DATE
OCTOBER 2015

STANDARD
DETAIL
E7.18.2

APPROVED BY: **R. ENGLISH**





NOTES (BLDGS WITHOUT SETBACKS):

1. THE PIV AND FDC SHALL BE LOCATED LOCATED ON THE EXTERIOR WALL OF THE BUILDING OR IN A LANDSCAPED AREA. AT NO TIME SHALL THE PIV OR FDC BE LOCATED IN THE PUBLIC SIDEWALK.
2. THE DCDA SHALL BE LOCATED ON THE INTERIOR WALL OR IN A ROOM ADJACENT TO THE RIGHT-OF-WAY WHERE THE FIRELINE TIES INTO THE CITY MAIN.
3. THE PIV AND FDC SHALL HAVE A 3' MINIMUM CLEARANCE BETWEEN AND AROUND THEM.
4. THE SENSUS ECR/WP REMOTE READER SHALL BE PLACED ON THE EXTERIOR WALL OF THE BUILDING 4' ABOVE FINISHED GRADE.
5. THE FDC SHALL BE 4" PIPE AND HAVE A 22° BEND WITH 4" STORZ ADAPTER ON THE END.
6. THE WATER METER SHALL BE LOCATED AT THE PROPERTY LINE WHENEVER POSSIBLE. LOCATION OTHER THAN THE PROPERTY LINE, SHALL BE DETERMINED BY THE CITY INSPECTOR.

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT

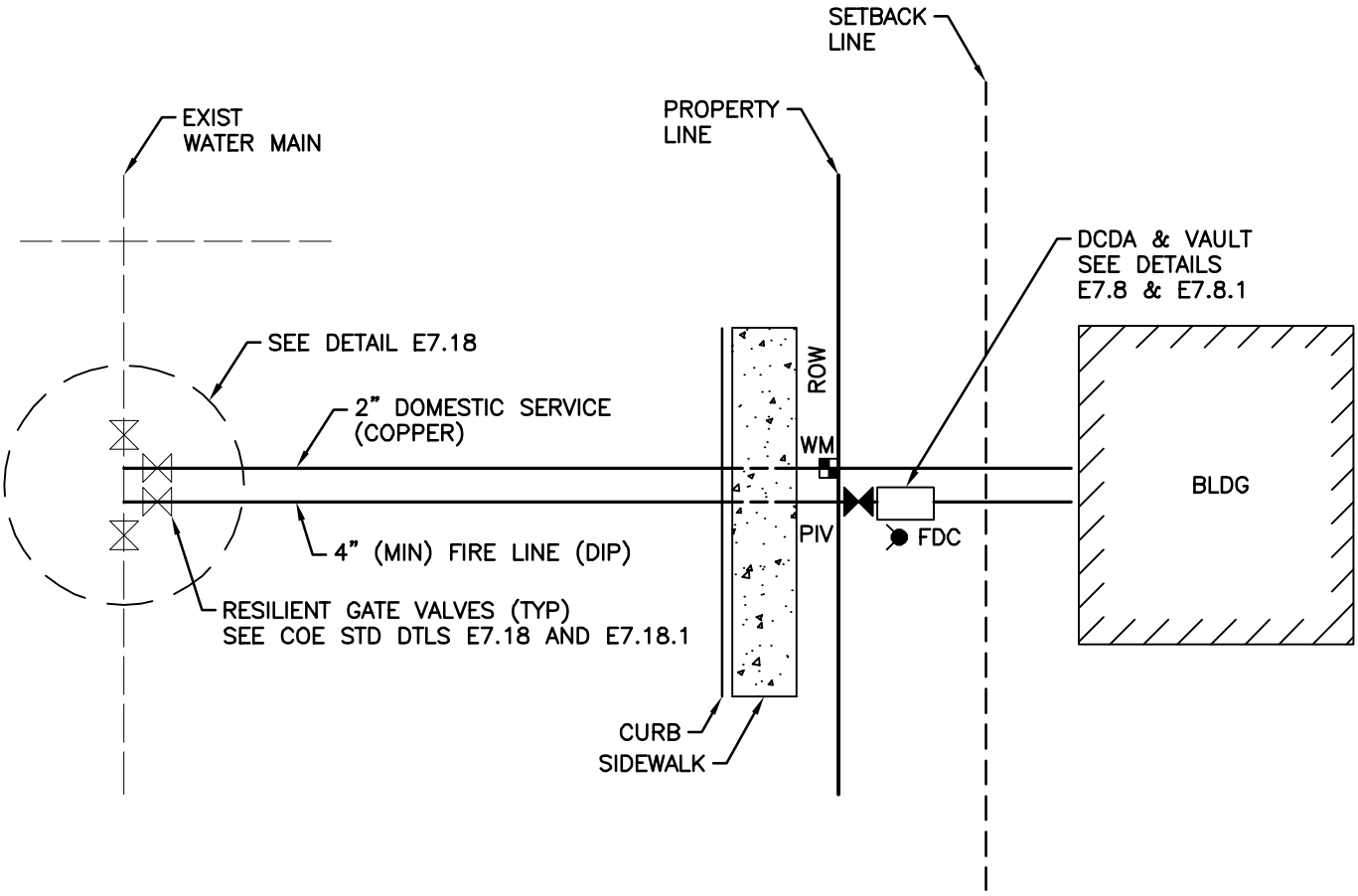
FIRE LINE & 2" DOMESTIC SERVICE CONNECTIONS (PLAN VIEW)

(PLAN VIEW) ZERO-SETBACK BUSINESS/COMMERCIAL ZONE

APPROVED BY: **R. ENGLISH**

REVISION DATE **OCTOBER, 2015**

STANDARD DETAIL **E7.19**



NOTES (BLDGS WITH SETBACKS):

1. THE DCDA AND VAULT SHALL BE LOCATED ON PRIVATE PROPERTY AND NEXT TO THE RIGHT-OF-WAY LINE.
2. THE PIV AND FDC SHALL BE LOCATED ON PRIVATE PROPERTY AND SHALL BE NEAR THE DCDA.
3. THE PIV AND FDC SHALL HAVE A 3' MINIMUM CLEARANCE BETWEEN AND AROUND THEM.
4. THE FDC SHALL HAVE A 22° BEND WITH 4" STORZ ADAPTER ON THE END.

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

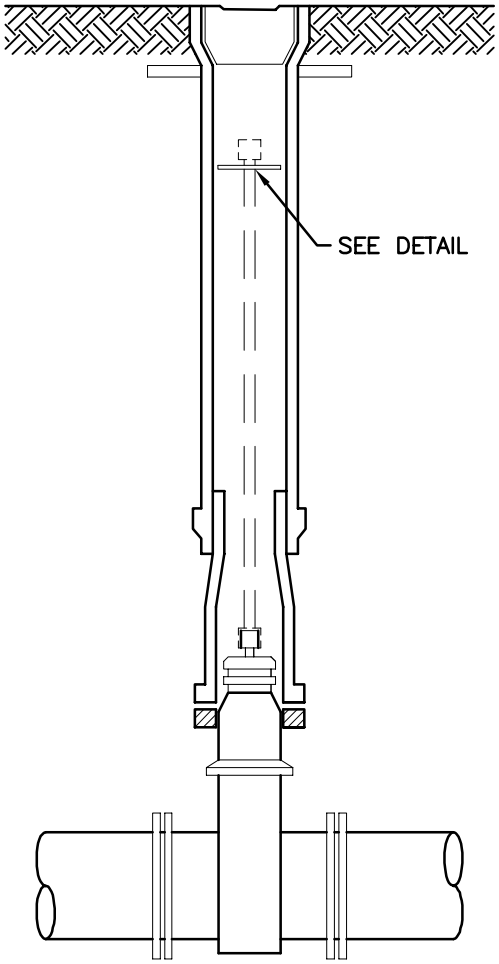
FIRE LINE AND 2" DOMESTIC SERVICE CONNECTION (PLAN VIEW)

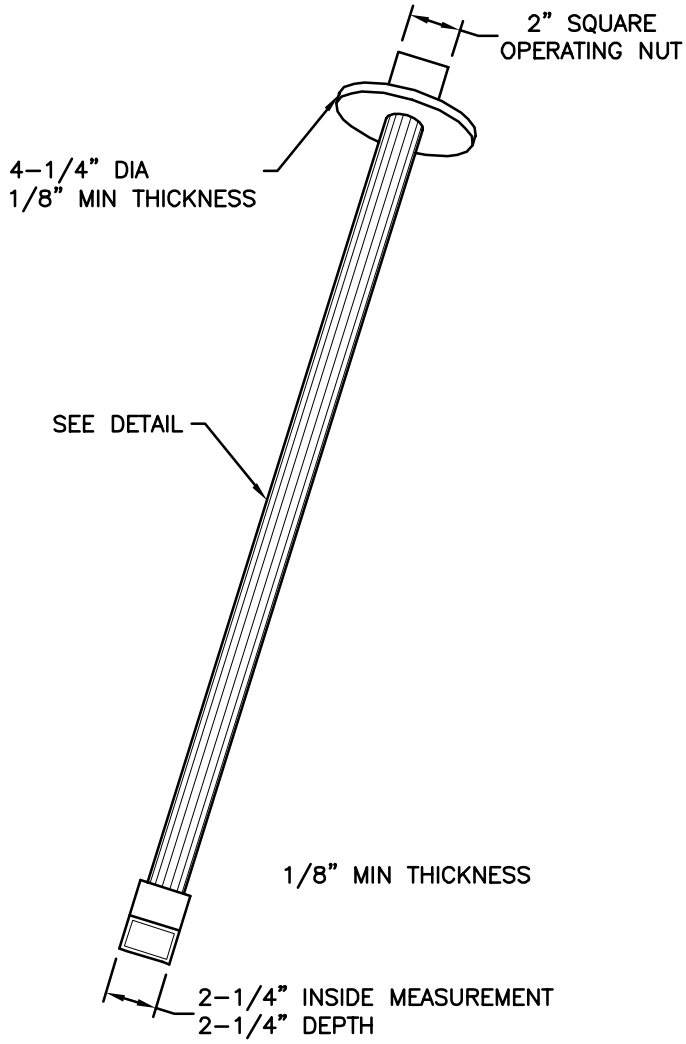
ALL ZONES EXCEPT ZERO-SETBACK BUSINESS/COMMERCIAL

APPROVED BY: **R. ENGLISH**

REVISION DATE **OCTOBER 2015**

STANDARD DETAIL **E7.20**





VALVE OPERATING NUT EXTENSION

EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE.

EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG. ONLY ONE EXTENSION TO BE USED PER VALVE.

NOTES:

1. ALL EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND HOT DIPPED GALVANIZED.
2. INSTALL EXTENSIONS PERPENDICULAR TO THE WATER LINE VERTICAL ALIGNMENT.

CITY OF EDMONDS
PUBLIC WORKS DEPARTMENT
Est. 1890

VALVE OPERATING EXTENSION

REVISION DATE
OCTOBER 2015

APPROVED BY: **R. ENGLISH**

STANDARD DETAIL
E7.21

APPENDIX H

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CITY OF EDMONDS

Cross Connection Control Program

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    H. Backflow Prevention Test Report
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CITY OF EDMONDS
CROSS-CONNECTION CONTROL PROGRAM

1. INTRODUCTION

The City's Cross Connection Control Program is periodically evaluated and updated as needed. As of October 2017, the City's water system has 276 Table 9 hazards. The City requires that all hazards are protected with devices that are inspected and tested annually. The City surveys high hazard areas to confirm hazards are protected.

Congress passed the "Safe Drinking Water Act" with the intent of protecting the public health and welfare of all public water supply users in the United States. The Environmental Protection Agency (EPA) interpreted this mandate to mean that certain contaminants should not be found in water "delivered to the free flowing outlet of the ultimate user." Thus, these contaminants became the responsibility of the water purveyor (City of Edmonds). The EPA specifically exempted contaminants added to the water under circumstances controlled by the user (except for plumbing corrosion by-products). This was not, however, intended to absolve the purveyor of a responsibility to conduct an aggressive cross connection control program.

In cross connection control, the City of Edmonds responsibility is to protect the water distribution system from contamination. The greatest public health risk lies in the introduction of a contaminant into the public water supply system because the water distribution system can provide the conduit for the spread of the contaminant to a large population. Cross connections within the customer's plumbing system and within the purveyor's distribution system pose a potential source for the contamination of the public water supply.

Once water leaves the control of the water purveyor (i.e., leaves the distribution system), the water purveyor must consider the possibility that the water could become contaminated. Accordingly, the water purveyor must consider the plumbing systems of all customers to be a potential health hazard. The hazard, and thus the health risk, may vary from minor to severe. The purveyor's cross connection control program should be based on the supposition that all customer's should be isolated at the property line (meter) with an approved air gap, unless the purveyor is satisfied with the level of protection provided by the customer. This supposition should be expressed in the form of a service policy or service contract with the customer. Notwithstanding this basic supposition, the water purveyor should recognize the practical deeds of the customer, and the responsibility of other regulatory agencies to protect the customer's plumbing system from becoming contaminated.

The water purveyor's degree of satisfaction in the customer's reduction of their cross connection risk, is a factor in the determination by the purveyor that the purveyor's requirement for premises isolation may be reduced from an approved air gap, to a reduced pressure backflow assembly, double check valve assembly, or no premises isolation.

To protect occupants of the customer's premises, it is necessary to isolate areas of the premises and/or each outlet rather than to install backflow protection at the meter. Generally, the prevention of contamination of a water distribution system or potable water system in a building is of concern to the following:

The water purveyor (City of Edmonds)
The plumbing inspector (City of Edmonds)
The Local health inspector (Dept. of Health)
The Dept. of Labor & Industries (worker safety regulations)

A Cross connection program may be administered by any or all of the above. To avoid confusion, it is desirable for the water purveyor to have a joint or cooperative program with the other agencies having jurisdiction. Unfortunately, although each has the same overall goal of preventing contamination, each has a different enforcement criteria, authority and responsibility that may prevent a subordination of its authority to another agency.

The need to eliminate cross connections as a source of potential contamination has been long recognized in plumbing design and plumbing code enforcement. However, plumbing codes handled cross connections only in very general terms. Few details are provided to specify methods of identifying and preventing cross connections. This is because it is impractical to cover in a plumbing code all of the information needed to control cross connections.

The plumbing code addresses the plumbing design and installation in new buildings. Generally, once a building occupancy permit is given, plumbing code jurisdiction effectively ceases until a permit is requested to modify the plumbing system. Changes to a plumbing system are often made without a permit. New equipment may be added. Piping, fixtures and appliances may wear out, malfunction, or be relocated. New cross connections may then be created. Backflow prevention assemblies and devises installed under the plumbing code to protect the public could be removed, bypassed or fail to operate due to the lack of maintenance. For these reasons, it is recommended that a water purveyor not place full reliance on the enforcement of the plumbing code to protect the water distribution system from contamination through cross connections.

The history of cross connection control has provided regulatory authorities with sufficient information to establish a list of those premises where high health hazard cross connections exist, or where the potential hazard is so great that these premises must be isolated from the water purveyor's system. Some states and provinces have established mandatory protection for these premises. However, it is important that each premises be surveyed individually to assess the degree of hazard and what corresponding backflow prevention assembly is required. Never assume that all premises of the same kind will require the same type of backflow protection.

Experience has shown that the water purveyor is in a unique position to implement and administer a cross connection control program. The water purveyor has authority to supply water to a customer and 0to establish standards and remedies for a breach of those standards. The City of Edmonds cross connection control program is needed to effectively deal with all aspects of the public health risk posed by cross connections.

A. Purpose

The purpose of the City of Edmonds (COE) cross-connection control program (CCP) is to protect the public water system from contamination via cross-connection. Ordinance gives the COE the authority to operate the CCP, which meets the requirements of the State of Washington regulation WAC 246-290-490.

B. Policy

The COE will ensure that cross-connections between the distribution system and a customer's premises are eliminated or controlled by the installation of a State of Washington approved backflow preventer that is equal to the degree of hazard. The COE will operate a combination program whereby premises isolation requires backflow protection with an Air Gap (AG) or a Reduced Pressure Backflow Assembly (RPBA). In-premises isolation backflow protection (within the customer's property lines) will be permitted if there is no high health hazard and the CCS coordinates with the Local Administrative Authority (LAA).

The customer is responsible for the expense to protect the public water system from backflow contamination by installing, maintaining and testing backflow assemblies in accordance with the COE Cross-Connection Program (section III). Failure of the customer to cooperate in the installation, maintenance, repair, inspection or testing of backflow prevention assemblies required by COE shall be grounds for termination of water service to the premises.

The COE will refer to the Pacific Northwest Section AWWA Cross-Connection Control Manual Accepted Procedure and Practice most current addition and the current Manual of Cross-Connection Control (USC Manual) on issues concerning cross-connection control.

The COE will ensure that at least one person certified as a Cross-Connection Specialist (CCS) is provided to develop and implement the cross-connection control program. Responsibilities include:

1. Administer Cross-Connection Control Program (CCP).
2. Evaluate service connection for backflow hazards.
3. Reporting on the annual progress of the CCP.
4. Public Education.
5. Investigate water quality concerns where backflow is suspected.
6. Keep current records of all backflow preventer testing, air gaps installed in-lieu of approved backflow preventer, test kit calibration, and tester certification.
7. Responsible to eliminate or control cross-connections between the distribution system and the customer's premise.
8. Ensure quality control for backflow testing.

C. Responsibilities

The COE will not be responsible or any loss or damage caused by any negligence or wrongful act of a customer or his authorized representative in installing, maintaining, operating or using and or all appliances, facilities, or equipment for which water service is supplied. The customer will be held responsible for damage to COE facilities and other property resulting from the use and operation of appliances and facilities on the customer's premises, including damage caused by steam, hot water, chemical, etc.

D. Organization

The COE has nearly 9,000 residential service connections and 700 commercial connections. There are approximately 275 reduced pressure backflow assemblies (RPBA) and 700 double check valve assemblies in the COE.

2. SERVICE CONNECTIONS

Water service connections to the COE public water system must meet the state of Washington Cross-connection Control requirements WAC-246-290-490. The COE shall ensure that the customer installs a State of Washington approved backflow preventer that equal with the degree of hazard. All service connections to the COE public water system are required to have premises isolation backflow protection that shall be a CCS approved air gap (AG) or a State of Washington approved RPBA directly behind the COE water meter installed by the customer at the customer's expense. The RPBA shall be installed to the COE specifications and the customer is responsible to have the RPBA tested in accordance with the COE cross-connection control test schedule (section (III). In-premises isolation will be permitted if the criteria for premises isolation is met and the CCS and LAA agree that the level of backflow protection is equal to the hazard.

The COE shall ensure that the customer installs approved backflow preventers that equal the degree of hazard in accordance with the following time frame:

- For a cross-connection that poses an **immediate** high hazard, the COE will terminate water service immediately and will not restore service until the cross-connection is protected the CCS's satisfaction.

- High health cross-connections hazards within 30 days of the COE notifying the customer of the high health cross-connection hazard, or to the CCS's discretion.

- Low health cross-connection hazards within 30 days of the COE notifying the customer of the cross-connection hazard or to the CCS's discretion.

Schedule for Evaluation and Continued Reevaluation :

a. Facilities that pose an immediate high health hazard cross-connection have priority.
b. Facilities and severe or high hazard cross-connections.
c. Facilities with high hazard equipment (see high hazard equipment list) will be evaluated before facilities with no high hazard equipment.
d. Annually when backflow assembly testing is due.
e. When there is a history of backflow incidents.

f. When there is a history of failed backflow test reports.
g. When there is a change in the use of the premises.
h. When a plumbing permit is issued.
i. When there is a backflow incident.
j. Known sites with high or severe hazards will have a routine evaluation once a year as time and resources allow.

A. New Connections

The COE representative will review all pre-application documents, new construction plans submitted to the City, all water service applications, City business license applications and any other documents which may indicate that a requirement for cross-connection control exists. Consultations prior to service installation will be conducted to assist the customer meets State Regulations and the COE Cross-Connection Control Ordinance to minimize retrofits and revisions.

Note: Water service will not be provided to new construction until the cross-connection control requirements are addressed satisfactorily.

Installation Procedures for New Connections:

a. Customer purchases the COE water meter.
b. The COE sets water meter and locks it off.
c. Customer purchases and installs a State of Washington approved backflow preventer that commensurate to the degree of hazard to the COE specifications. Customer's plumbing must be connected to water meter before backflow testing.
d. Customer calls the COE Cross-Connection Department for installation inspection.
e. Customer hires a State Certified BAT to test the backflow assembly.
f. Meter will be left unlocked and ready for service once an installation inspection and a passing test report have been performed to COE satisfaction.
g. The COE keeps records of test reports and will notify customer when backflow tests are needed.
h. Customer agrees to follow the COE cross-connection program that includes backflow assembly testing at least annually by a State of Washington certified tester.

B. Existing Connections

The COE CCS will survey the premises to determine whether the requirement for cross-connection control exists.

Facilities not found on the list below will be evaluated for appropriate premises or in-premises protection based upon potential or actual cross-connection(s) found. The COE CCS will coordinate with the Local Administrative Authority (LAA) regarding in-premises protection.

C. All Service Connections

Premises Isolation:

The minimum criteria required for backflow prevention stated below shall be used during the above mentioned evaluations.

The COE will have a CCS assess the degree or hazard posed by the customers water system upon the city's distribution system. The CCS will determine the appropriate method of backflow protection by the following table.

Appropriate Methods of
Backflow Protection for Premises Isolation

Degree of Hazard	Application Conditions	Appropriate Approved Backflow Preventer
High health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, or RPDA
Low health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, RPDA, DCVA, DCDA

The following facilities shall have an Air Gap (AG) or a RPBA unless there is no immediate potential for a cross-connection. In that case, a waiver form must be filled out and document why that facility does not need backflow prevention. Such a facility will be kept on record.

Agricultural (farms and dairies)
Beverage bottling plants
Car washes
Chemical plants
Commercial laundries and dry cleaners
Premises where both reclaimed water and potable water are provided.
Film process facilities

Food processing plants
Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers.
Premises with separate irrigation systems using the COE water supply and with chemical addition such as parks, playgrounds, golf courses, cemeteries, estates, etc.
Laboratories
Metal plating industries
Mortuaries
Petroleum processing or storage plants
Piers and docks
Survey access denied or restricted
Wastewater lift stations and pumping stations.
Wastewater treatment plants, radioactive material processing plants or nuclear reactors. May use RPBA's only when used in combination with an in-plant approved air gap, otherwise an air gap behind the meter shall be used.
Premises with an unapproved auxiliary water supply interconnected with the potable water supply.

In-Premises Isolation:

The COE will have a CCS assess the level of protection equal with the degree of hazard.

If the hazard does not need premises isolation as described above and in WAC 246-290-490 then backflow protection provided at the point of hazard in accordance with WAC 51-46-0603 of the UPC for hazards such as, but not limited to: irrigation systems, swimming pools or spas, ponds and boilers may be used.

For example, the COE may accept an approved AVB on a residential irrigation system, if the AVB is properly installed in accordance with the UPC.

D. Fire Connections

Backflow Protection for Fire Systems:

Backflow protection is not required for flow-through or combination fire protection systems constructed of potable water piping and materials.

For service connections with fire protection systems other than flow-through or combination systems, the COE shall ensure that backflow protection consistent with WAC 51-46-0603 of the UPC is installed. The UPC requires minimum protection as follows: A RPBA or RPDA shall be used for fire protection systems with chemical addition or using unapproved auxiliary water supply. A DCVA or DCDA shall be used for all other fire protection systems.

New Fire Connections:

For new connections made on or after the effective date of these regulations, the COE shall ensure that backflow protection is installed before water service is provided.

Existing Fire Connections:

With chemical addition or using unapproved auxiliary supplies, the COE shall ensure that backflow protection is installed within thirty days of the COE notifying the customer of the high health cross-connection hazard or in accordance with an alternate schedule acceptable to the COE.

Without chemical addition, without on-site storage, and using only the COE water (i.e., no unapproved auxiliary supplies on or available to the premises), the COE shall ensure that backflow protection is installed within thirty days of the COE notifying the customer of the cross-connection hazard or in accordance with a schedule acceptable to the COE or at an earlier date if required by the agency administering the Uniform Building Code as adopted under chapter 19.27 RCW.

When establishing backflow protection retrofitting schedules for fire protection systems that have the characteristics listed above the COE may consider factors such as, but not limited to, impacts of assembly installation on sprinkler performance, cost of retrofitting, and difficulty of assembly installation.

The COE may require backflow preventers equal with the degree of hazard determined by the COE to be installed for premises isolation for connections serving premises that have characteristics such as, but not limited to, the following:

- Complex plumbing arrangements or plumbing potentially subject to frequent changes that make it impracticable to assess whether cross-connection hazards exist;

- A repeated history of cross-connections being established or reestablished; or

- Cross-connection hazards that are unavoidable or not correctable, such as, but not limited to tall buildings.

- Facilities not found on the above list and above special cases will be evaluated forappropriate premises or in-premises protection based upon potential or actual cross-connection(s) found. The CCS will coordinate with the LAA personnel regarding in-premises protection.

E. Procedures for Field Evaluation (Surveying)

The customer's water system shall be open for a "Field Evaluation" at a reasonable time to the COE to determine whether cross-connections or other structural or sanitary hazard including violations of these regulations exist.

The initial inspection shall proceed according to the following steps:

1. Contact (form letter, or phone call) each commercially metered customer explaining the need for a water system inspection, and requesting a convenient date and time for the inspection. Request that someone familiar with the plumbing system be on hand to answer questions, if possible.

2. On the appointed date, the CCS and LAA will meet with the customer/manager (and/or individual from the facility that is knowledgeable with the plumbing system). The CCS will inspect any blueprints or drawings of the “In-plant” system that are available, discuss any questions or other problems that arise, and conduct the inspection. The CCS will make a complete physical survey of all exposed piping, the underground system is to be checked as accurately as possible. All lines will be sketched on a field drawing except where intricate plumbing arrangements make it impractical. In this case, an “as-built” drawing will be requested. Each line shall be followed to its end and a survey made to determine whether there are any actual or potential cross-connections or any conditions that might tend to pollute the potable water system.

3. Immediately upon completion of the survey, the inspector will orally brief the customer/manage (or representative) of the findings, if desired.

4. The Cross-Connection Specialist will prepare a written report that will include, but is not limited to, the following:

    a. A list of all cross-connection found in their location, and any optional methods of control.
    b. Any applicable drawings, sketches, blueprints, etc.
    c. A summary of the findings, and the recommendations or requirements for corrective actions, and a time (normally 30 days) in which the corrective action must be completed.

5. The Cross Connection specialist shall mail one copy of the completed report and a copy of the COE installation specification requirements to the customer. The completed report shall include the recommendations and requirements for corrective actions and a corrective action completion date. One copy of the completed report shall reside in the CCS’s permanent cross-connection file for the facility.

6. On the corrective action completion date, the CCS shall contact the customer and ask if the corrective actions have been completed. If the corrective actions have been completed, the CCS shall make a re-inspection of the facility. If the corrective actions have not been completed, a new completion date will be set.

7. When all required actions have been completed, the file copy of the completed actions shall be placed in the cross-connection control file for the facility, together with any completed backflow assembly test report forms.

8. Re-inspection of each premise found to be subject to this procedure shall be accomplished annually or more often if the degree of hazard so indicates.

3. BACKFLOW PREVENTERS

The COE will eliminate cross-connections whenever possible. When cross-connections cannot be eliminated, they will be controlled by installation of approved backflow preventers equal with the degree of hazard. The following table will be used to determine the appropriate method of backflow protection.

Appropriate Methods of
Backflow Protection for Premises Isolation

Degree of Hazard	Application Conditions	Appropriate Approved Backflow Preventer
High health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, or RPDA
Low health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, RPDA, DCVA, DCDA

Approved backflow preventers will be selected and installed in accordance with the following requirements:

WAC 246-290-490, the most current edition of the Accepted Procedure and Practice in Cross-Connection Control, Prepared by the Cross-Connection Control Committee of the Pacific northwest Section, American Water Works Association which shall be used as a guideline, the USC manual, and the UPC.

The COE will only monitor backflow assemblies that protect the public water system. These assemblies are required to have a backflow assembly test performed at least annually and the COE CCS may require backflow assembly testing more frequently in cases such as:

a. Failed backflow assembly tests.
b. Backflow contamination incident.
c. High hazards.
d. Required by CCS

A. Selection of Backflow Preventers

The COE requires backflow preventers protecting the public water systems to be on the current State of Washington approved list (unless 3 applies).

The COE may rely on testable backflow prevention assemblies that are not currently approved by the State of Washington, if the assemblies:

a. Were included on the department and/or USC list of approved backflow prevention assemblies at the time of installation.
b. Have been properly maintained.
c. Are commensurate with the COE assessed degree of hazard.
d. Have been inspected and tested at least annually and have successfully passed the annual tests.

The COE shall ensure that an unlisted backflow assembly is replaced by an approved assembly equal with the degree of hazard, when the unlisted assembly:

a. Does not meet the conditions of (B,4) of this section.
b. Is moved.
c. Cannot be repaired using spare parts from the original manufacturer.

B. Installation of Backflow Preventers

The COE shall ensure that approved backflow preventers are installed in the orientation for which they are approved (if applicable).

The COE shall ensure that approved backflow preventers are installed in a manner that:

Facilitates their proper operation, maintenance, inspection, and/or in-line testing (asapplicable) using standard installation procedures acceptable to the department such as those in the USC Manual or PNWS-AWWA Manual; ensures that the assembly will not become submerged due to weather-related conditions such as flooding; and ensures compliance with all applicable safety regulations.

The COE shall ensure that approved backflow assemblies for premises isolation are installed at a location adjacent to the meter or property line or an alternate location acceptable to the COE.

When premises isolation assemblies are installed at an alternate location acceptable to the COE, the COE shall ensure that there are no connections between the point of delivery from the public water system and the approved backflow assembly, unless the installation of such a connection meets the COE cross-connection control requirements and is specifically approved by the COE.

The COE shall ensure that approved backflow preventers are installed in accordance with the following time frames:

For new connections made on or after the effective date of these regulations, thefollowing conditions shall be met before service is provided; they shall be controlled by eliminating the cross-connection or by installation of approved backflow preventers equal with the degree of hazard. And a satisfactory completion of a test by a backflow assembly tester (BAT) must be submitted to the COE in accordance with the description of backflow preventer inspection and testing.

For existing connections where the COE identifies a high health cross-connection hazard, they shall be controlled by installation of approved backflow preventers equal with the degree of hazard.

They shall be installed within thirty days of the COE notifying the consumer of the high health cross-connection hazard; or in accordance with an alternate schedule acceptable to the COE.

For existing connections where the COE identifies a low health cross-connection hazard, they shall be controlled by installation of approved backflow preventers equal with the degree of hazard with a schedule acceptable to the COE.

The COE shall ensure that by-pass piping installed around any approved backflow preventer is equipped with an approved backflow preventer that affords at least the same level of protection as the approved backflow preventer that is being bypassed and complies with all applicable requirements of this section.

Backflow preventers shall be installed to the COE specifications and in compliance with the LAA. The COE requires that when a backflow assembly of AVB that protects the public water system is improperly installed, defective, an unapproved assembly, or does not equal the degree of hazard, it shall be properly reinstalled, repaired, overhauled, or replaced.

The COE requires that when by-passing piping is installed around an approved backflow preventer that protects the public water system it is equipped with an approved backflow preventer that affords the same level of protection and complies with all applicable requirements.

The COE requires that when an approved air gap that protects the public water system, whenever found to be altered, or improperly installed is properly replumbed or, if equal with the degree of hazard is replaced by a state of Washington approved RPBA.

The COE requires a Cross-Connection Specialist (CCS) to inspect new installations of Reduced Pressure Backflow Assemblies (RPBA's), Reduced Pressure Detector Assemblies (RPDA's), Double Check Valve Assemblies (DCVA's), Double Check Detector Checks (DCDC's), and Pressure Vacuum Breaker Assemblies (PVBA's) that protect the public water system to ensure that protection is equal with the degree of hazard. These assemblies are required to be tested:

a. At the time of installation.
b. Annually after installation, or more frequently, if required by the COE for facilities that pose a high health cross-connection hazard or for assemblies that repeatedly fail.
c. After a backflow incident.
d. After an assembly is repaired, reinstalled, or relocated.

C. Inspection and/or Testing of Backflow Preventers

A CCS inspects backflow preventer installations to ensure that protection is provided equal with the assessed degree of hazard.

1. The Backflow Assembly Tester (BAT) or a Cross-Connection Specialist (CCS) inspects:

    a. Air gaps installed in-lieu of approved backflow prevention assemblies for compliance with the approved air gap definition.
    b. Backflow prevention assemblies for proper operation.

2. The COE shall ensure that inspections and/or tests of approved air gaps and approved backflow assemblies are conducted:

    a. At the time of installation.
    b. Annually after installation or more frequently, if required by the COE for facilities that pose a high health cross- connection hazard, or for assemblies that repeatedly fail;
    c. After a backflow incident, after an assembly is repaired, reinstalled, or relocated or an air gap is replumbed. We will notify customers annually on their due date informing them that this backflow preventer is due to be tested.

3. The COE shall ensure that inspections of Atmospheric Vacuum Breakers (AVB's) that protect the public water system installed on irrigation systems are conducted:

    a. At the time of installation;
    b. After a backflow incident; and
    c. After repair, reinstallation, or relocation

The COE shall ensure that approved backflow prevention assemblies are tested using procedures acceptable to the department, such as those specified in the most recently published edition of the USC Manual. When circumstances, such as, but not limited to, configuration or location of the assembly, preclude the use of USC test procedures, the COE may allow, on a case-by case basis, the use of alternate (non-USC) test procedures acceptable to the department.

The COE shall ensure that results of backflow prevention assembly inspections and tests re documented and reported in a manner acceptable to the COE.

The COE shall ensure that an approved backflow prevention assembly of AVB, whenever found to be improperly installed, defective, no equal with the degree of hazard, or failing a test (if applicable) is properly reinstalled, repaired, overhauled, or replaced.

The COE shall ensure that an approved air gap, whenever found to be altered or improperly installed, is properly replumbed or, if equal with the degree of hazard, is replaced by an approved RPBA.

D. Backflow Hazard Assessment

Appropriate Methods of
Backflow Protection for Premises Isolation

Degree of Hazard	Application Conditions	Appropriate Approved Backflow Preventer
High health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, or RPDA
Low health cross-connection hazard	Back siphonage or back pressure backflow	AG, RPBA, RPDA, DCVA, DCDA

4. BACKFLOW ASSEMBLY TESTING QUALITY CONTROL ASSURANCE

The COE is required to develop and implement a backflow assembly testing quality control assurance. To meet the WAC requirements the COE requires the following:

1. All backflow assemblies that protect the public water system a backflow assembly test by a State of Washington certified tester in accordance with the COE Cross-Connection Program (section V) and provide those test reports to the COE.

2. The COE will only accept backflow assembly test reports from current State of Washington certified Backflow Assembly Tester (BAT's).

3. Each test kit current calibration with model and serial number must be on file with the COE.

4. Each tester is required to have current BAT certification and test kit calibration on file with the City of Edmonds.

5. It is the customer's responsibility to ensure that the backflow test reports are submitted to the COE, test reports submitted 30 days after the test has been performed may not be accepted (unless approved by the COE).

6. All test report forms must be filled out with:

    a. Customer's name.
    b. Address.
    c. Location of he device.
    d. Phone number.
    e. Device manufacturer.
    f. Model.
    g. Size.
    h. Serial number.
    i. Test kit calibration date.

j. BAT certification number
k. Method of test.
l. Date of test.
m. Line pressure.
n. Pressure that the check valves held at.
o. RPBA's opening pressure of he relief valve and check of the minimum air gap.
p. Results of the test, did the assembly pass or fail.

7. The COE will only except tests that have been performed using most recent State approved (U.S.C.) test procedures. When circumstances preclude, the use of State approved test procedures the COE may allow, on case by case basis, the use of alternate test procedures acceptable to the COE.

5. BACKFLOW INCIDENT RESPONSE PROCDURE

When a water quality problem occurs where backflow is the suspected cause the COE will ensue that:

1. Cross-Connection Specialist will investigate the water quality problem.

2. The COE shall notify the Local Administration Authority (LAA) and the Department of Health as soon as possible, but no later than the end of the next business day when a backflow incident is known by the COE to have contaminated the public water system or occurred within the premises of a customer served by the COE.

3. The COE will document details of backflow incidents on a DOH approved form (such as the most recent edition of the PNWS-AWWA Manual, see appendix).

4. Include all backflow incident report(s) in the annual cross-connection program summary report.

5. Isolate contamination and flush.

6. Refer to the COE Emergency Response Plan for more information.

6. CROSS CONNECTION EDUCATION

The COE shall implement an education program for the city's customer. The education program will consist of but not limited to:

1. Sharing knowledge and training with engineers, architects, plumbing contracts, suppliers and inspectors, irrigation contractors and suppliers, fire protection contractors, wastewater personnel and the customer.

2. Public speaking at schools, homeowner association meetings, supermarkets, chamber of commerce meetings, and other public events.

3. Educating the staff of the COE is important. Utilize locators, meter readers, utility workers, Building Official and Engineering staff to assist in identifying cross-connections.

4. Public education using billing inserts, newspapers, newsletters, and brochures.

5. The COE will refer to the Public Education Program, Methods Used for Public Education Target Group, by Denny Lopp (see appendix).

6. Have education information available for community events.

7. RECORDS & REPORTS

The COE shall develop and maintain cross-connection control records that include:

A. Service Connection Master List

A master list of service connections where the COE relies upon approved backflow preventers to protect the public water system from contamination by premises isolation and/or in-premises protection, the assessed hazard level of each. The required backflow preventer(s) records shall be kept as long as the premises pose a cross-connection hazard to the COE distribution system.

1. The Cross-Connection Department shall establish a separate jacket file, for each individual customer that requires the installation of a backflow prevention assembly. Jacket files shall be filed in alphabetical sequence by customer's name (last name first). The following information shall be maintained in each individual jacket file:

    a. Copies of all correspondence with customer relative to cross-connection control.
    b. Copes of inspection reports complete with field drawings.
    c. Copy of application and completed installation order.
    d. Copies of maintenance inspection reports on all assemblies.

2. All backflow assembly test report forms shall be entered into a computer program that tracks backflow testing and dates of tests. A database using CHS Software will track the items DOH requires for the annual summary report.

B. Inventory Information

Records regarding inventory information shall be kept for five years or the life of the approved backflow preventer whichever is shorter. Inventory information will be kept on:

1. Approved air gaps installed in-lieu of approved assemblies:

    a. Exact air gap location.
    b. Assessed degree of hazard.
    c. Installation date.
    d. History of inspections.
    e. Inspection results.
    f. Person conducting inspection.

2. Approved backflow assemblies including:

    a. Exact assembly location.
    b. Type of assembly.
    c. Manufacturer.
    d. Model.
    e. Size.
    f. Serial number.
    g. Assessed degree of hazard.
    h. Installation date.
    i. History of inspections, tests, and repairs.
    j. Test results.
    k. Person performing test.

3. Approved AVB’s used for irrigation systems including:

    a. Location.
    b. Manufacturer.
    c. Model.
    d. Size.
    e. Installation date.
    f. History of inspections(s).
    g. Person performing inspection.

C. Annual Summary Report

The COE will complete an annual summary report and all records will be kept on file for at least five years. Records will include:

1. Types of connections:

    a. Residential.
    b. Commercial.

2. High health hazard facilities that the water system serves:

    a. Number of facilities served.
    b. The number currently protected by an AG or RPBA installed for premise isolation.
    c. The number exempted from premise isolation. The COE shall document reasons for not applying premise isolation for facilities that are considered high hazard facilities on table 9.

3. AG and AVB's used for irrigation systems that are:

    a. Installed in the system (total).
    b. New installations for reporting year.
    c. Inspected.
    d. Failing initial inspection, including incorrect installations.
    e. Re-plumbed or reinstalled correctly.
    f. Replaced by assembly.
    g. Replaced by new AVB.
    h. Re-inspected.

4. All assemblies (RPBA, RPDA, DCVA, PVBA, SVBA):

    a. Installed in system.
    b. New installations during year.
    c. Inspected and tested.
    d. Installed incorrectly.
    e. Failing initial test.
    f. Repaired.
    g. Replaced.
    h. Replaced with different assembly type.
    i. Re-tested.

5. The COE will record test report information that includes:

    a. Customer's name.
    b. Address.
    c. Location of the device.
    d. Phone number.
    e. Device manufacturer.
    f. Model.
    g. Size.
    h. Serial number.
    i. Test kit calibration date.
    j. BAT certification number and signature.
    k. Date of test.
    l. Line pressure
    m. Pressure that the check valve held at.
    n. RPBA's opening relief valve pressure and check of the minimum air gap
    o. Results of the test, did the assembly pass or fail.

8. RECLAIMED AND RAIN HARVESTING WATER

The COE who distribute and/or have facilities that receive reclaimed or rain harvesting water within their water service area shall meet any additional cross-connection control requirements imposed by the department under a permit issued in accordance with chapter 90-46 RCW.

Any facility that uses reclaimed or rain harvesting water and which is also supplied by the COE water supply shall have an A/G or RPBA protecting the COE water distribution from that premises.

Any facility that is using Harvested Rain Water for human consumption must comply with Washington State Department of Health regulations regarding Drinking Water Standards.

All Reclaimed or Rain Harvesting Systems shall also comply with the current edition of the State adopted Plumbing Code or provisions that have been adopted within the Edmonds Community Development Code.

The applicant shall provide the COE Purveyor with an original letter of certification testing from Snohomish County Health District that certifies that the Harvested Rainwater System has been properly tested and complies with Snohomish County Health District Sanitary Code Chapter 9.1 governing minimum standards, policies and procedures for individual systems.

The applicant is solely responsible for maintenance and testing of the private Rainwater Harvesting Systems for continued potability and shall provide the COE Purveyor with a yearly test results from an accredited testing lab showing potability compliance.

Failure to provide yearly test results shall result in the start of code enforcement action as provided in ECDC Chapter 20.110. The COE Purveyor shall inform the City Building Official of yearly reporting violations.

10. NOTIFICATION PROCEDURES FOR BACKFLOW ASSEMBLY TESTING

1. Customers with backflow assemblies that protect the public water system will be required to have these assemblies tested in accordance with the COE Cross-Connection Program (section III) at the owner's expense.

2. A first letter will be sent to the customer annually.

3. If there is no response from the first letter, a second letter will be sent notifying the customer that the COE may shut their water off.

4. If there is no response from the second letter, a door hanger will be hung at the property (and the property owner will be notified of rental property) notifying them that the water may be shut off. The COE may elect to use other methods of enforcement, such as:

    a. Requiring "premise isolation" at the customer's water meter.

11. TANKER TRUCK & TRAILER REQUIREMENTS

1. Tanker trucks and trailers require a cross-connection inspection in accordance with the COE Cross-Connection Program (section III).

2. Tanker trucks and trailers will be assessed the same risk as an unapproved auxiliary supply, a high health hazard.

3. Air Gap or Reduced Pressure Backflow Assembly is the required protection for all tanker trucks and trailers (unless approved by the COE).

4. The COE will record inspection information for the annual summary report which includes:

    a. Name of company.
    b. Driver's name.
    c. License plate number.
    d. Billing address.
    e. Location of backflow protection on the vehicle.
    f. Date of inspection.

12. HYDRANT USE REQUIREMENTS

Authorization must be obtained to use a COE hydrant. Permits can be obtained at the COE office.

1. Any portable pressure spray or cleaning unit that is connected to a hydrant shall be fitted with a double check valve assembly if it does not contain an approved air gap. If chemicals are used, a RPBA must be used in place of the DCVA and testing must be in accordance with the COE Cross-Connection Program (section III)

2. Flushing storm drains and sanitary sewers from a hydrant is prohibited, unless approved by the CCS. A tanker truck that meets the requirements in Section X is required for flushing storm drains and sanitary sewers.

3. Filling tanker trucks and trailers from a hydrant is assessed the same risk as an unapproved auxiliary supply; a high health hazard.

4. When using a hydrant to flush new water mains a double check valve assembly is required.

5. All hydrant meters are required to have backflow protection with a minimum of a DCVA.

13. PRIVATE WELLS OR AUXILIARY WATER SUPPLIES

The COE strictly prohibits interconnection of other water supplies with the COE distribution system. Auxiliary water supplies (private wells) are a major Cross-Connection control hazard and therefore must be effectively isolated from the COE water supply.

The COE Cross-Connection policies and requirements for customers with private wells are as follows:

1. No backflow protection is required if the source is verified to be permanently inactive and abandoned in accordance with the requirements of the Department of Health.

2. If the well remains active, a State approved double-check valve assembly is required at the service connection to provide a measure of protection against inadvertent interconnection of the supplies.

3. The backflow device must be tested by a State certified BAT before receiving service.

New services will be locked off until the COE verifies compliance. Visual inspection of the piping is required for premises retaining active well systems.

APPENDIX

A. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

B. ORDINANCE#_____

C. AGREEMENT BETWEEN CITY OF EDMONDS PURVEYOR AND LAA

D. WAC 246-290-490

E. WAC 51-46-0603 OF THE UPC

F. IN PREMISES AND PREMISES ISOLATION AGREEMENT

G. INCIDENT RESPONSE FORM

H. BACKFLOW PREVENTION TEST REPORT

I. WASHINGTON STATE TEST PROCEDURES

J. WASHINGTON STATE APPROVED ASSEMBLIES

K. EDMONDS MASTER LIST OF BACKFLOW PREVENTERS

L. CITY OF EDMONDS SPECIFICATIONS

M. 10 ELEMENTS OF THE CROSS CONNECTION CONTROL PROGRAM

Washington State Department of Health
Environmental Public Health
Office of Drinking Water

Cross-Connection Control Activities (Blue) Annual Summary Report (ASR) for 2016

PWS ID: **22500U** PWS Name: **EDMONDS, CITY OF** County: **SNOHOMISH**

Part 1: Designated Cross-Connection Control Specialist (CCS) Information

CCS Name	Jeffrey John Kobylk	CCS Phone	425-275-4514 ext- 1644	CCS Cert. #	011735	BAT Cert. #	B6349
CCS is: PWS owner or employee							

Part 2: Status of Cross-Connection Control (CCC) Program at End of 2016

Provide information about the status of your CCC Program at the end of the reporting year.

PWS has:	**A written CCC Program Plan**[1] ◉ Yes ○ No **CCC implementation activities**[2] ◉ Yes ○ No	**Program Plan Last Updated**[3] 12/02/2010

[1] Enter "Yes" if PWS has any type of written CCC Program Plan, policies, or procedures. Written CCC Program Plan must be part of a Water System Plan (WSP) or Small Water System Management Program (SWSMP).

[2] Enter "Yes" if PWS implemented any CCC Program activities during the reporting year, such as establishing legal authority, conducting hazard evaluations, requiring installation of backflow assemblies to protect the PWS, requiring assembly testing, maintaining CCC records, or enforcing the PWS's or CCC Program requirements.

[3] PWS can update the CCC Program Plan at any time (independent of WSP or SWSMP update).

Provide information regarding PWS's specific CCC Program Elements

Program Element Number	Description of Element [See WAC 246-290-490(3)]	This Program Element is: Included in Written Program Plan	This Program Element is: Being Implemented or Is Completed
1	**Legal Authority Established**	◉ Yes ○ No	◉ Yes ○ No
2	**Hazard Evaluation Procedures and Schedules**	◉ Yes ○ No	◉ Yes ○ No
3	**Procedures/Schedules for Ensuring Installation of Backflow Preventers**	◉ Yes ○ No	◉ Yes ○ No
4	**Certified CCS Provided**	◉ Yes ○ No	◉ Yes ○ No
5	**Backflow Preventer Inspection and Testing**	◉ Yes ○ No	◉ Yes ○ No
6	**Assembly Testing Quality Assurance/Quality Control (QA/QC) Program**	◉ Yes ○ No	◉ Yes ○ No
7	**Backflow Incident Response Procedures**	◉ Yes ○ No	◉ Yes ○ No
8	**Public Education Program**	◉ Yes ○ No	◉ Yes ○ No
9	**CCC Records**	◉ Yes ○ No	◉ Yes ○ No
10	**Reclaimed Water Permit**	○ Yes ○ No ◉ N/A	○ Yes ○ No ◉ N/A

Part 3A: PWS Characteristics at End of 2016

Enter the number of connections (new and existing) served by the PWS by type.

Type of Service Connection	Number
Residential (As defined by PWS)	9437
All Other (include dedicated fire lines, dedicated irrigation lines, and PWS-owned facilities such as water and wastewater treatment plants and pumping stations, parks, piers, and docks)	792
Total Number of Connections	10229

Part 3B: Cross-Connection Control for Severe and High-Hazard Premises and High-Hazard Dedicated Lines Served by the PWS

Answer the following questions carefully. These answers control your access to pages 2 and 3 for data entry.

1. Does your PWS serve any severe or high-hazard premises or any high-hazard dedicated fire or irrigation lines? ◉ Yes ○ No

2. Does PWS serve any high-hazard medical premises? ◉ Yes ○ No

- If you answer Yes to both questions, you must enter data in at least one row on page 2 and one row on page 3.
- If you answer Yes to Question 1 and No to Question 2, you must enter data on page 2 only.
- If you answer No to both questions, pages 2 and 3 will be grayed out to prevent data entry.

- Count only premises PWS serves water to.
- Report data as accurately as possible. **DOH currently bases CCC compliance actions on this information.**

Type of Severe or High-Hazard Premises or Dedicated Lines [WAC 246-290-490(4)(b)]	Number of Connections at end of 2016			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP[2]	C. With Column B AG Inspected or RP Tested[3]	D. Granted Exception from Premises Isolation
Agricultural (farms and dairies)	0	0	0	0
Beverage bottling plants (including breweries)	4	4	4	0
Car washes	2	2	2	0
Chemical plants	0	0	0	0
Commercial laundries and dry cleaners	1	1	1	0
Both reclaimed water and potable water provided	0	0	0	0
Film processing facilities	0	0	0	0
Dedicated fire lines with chemical addition or using unapproved auxiliary supplies	1	1	1	0
Food processing plants (including canneries, slaughter houses, rendering plants)	0	0	0	0
Hospitals, medical centers, medical, dental and veterinary clinics, mortuaries, nursing homes, etc., reported on Part 3C page 3 (totals imported from page 3)	85	85	85	0
Dedicated irrigation systems using purveyor's water supply and chemical addition[4]	0	0	0	0
Laboratories	0	0	0	0
Metal plating industries	0	0	0	0
Petroleum processing or storage plants	0	0	0	0
Piers and docks	6	6	6	0
Radioactive material processing plants or nuclear reactors	0	0	0	
Survey access denied or restricted	0	0	0	0
Wastewater lift/pump stations (non-residential only)	14	14	14	0
Wastewater treatment plants	2	2	2	
Unapproved auxiliary water supply interconnected with potable water supply	0	0	0	0
Totals	115	115	115	0

[1] Count multiple connections or parallel installations to the same premises as **separate** connections.

[2] Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

[3] Count only connections whose premises isolation preventers were inspected (AGs) or tested (RPs) during the reporting year.

[4] For example, dedicated irrigation lines to parks, playgrounds, golf courses, cemeteries, estates, etc.

[5] Premises with hazardous materials or processes (requiring Isolation by AG or RP), such as aircraft and automotive manufacturers, pulp and paper mills, metal manufacturers, military bases, and wholesale customers that pose a high hazard to the PWS. May be grouped together in categories, for example:"Other manufacturing" or "Other commercial".

Part 3C: Cross-Connection Control for High-Hazard Medical Premises Served by the PWS

- Count only medical premises PWS serves water to.
- Don't count the same premises more than once. If you serve different medical category premises through a single connection, count the connection under the medical category you consider to pose the highest hazard to PWS.
- Report data as accurately as possible. **DOH currently bases CCC compliance actions on this information**

Type of High-Hazard Medical Premises [WAC 246-290-490(4)(b)]	Number of Connections at end of 2016			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP[2]	C. With Column B AG Inspected or RP Tested[3]	D. Granted Exception from Premises Isolation
Hospitals				
Hospitals (include psychiatric hospitals and alcohol and drug treatment centers)	1	1	1	0
Facilities for Treatment and Care of Patients Not Located in Hospitals Counted Above				
Same day surgery centers	9	9	9	0
Out-patient clinics and offices	24	24	24	0
Alternative health out-patient clinics and offices	1	1	1	0
Psychiatric out-patient clinics and offices	0	0	0	0
Chiropractors with water-connected X-ray equipment	3	3	3	0
Hospice care centers	0	0	0	0
Childbirth centers	1	1	1	0
Kidney dialysis centers	0	0	0	0
Blood centers	0	0	0	0
Dental clinics and offices	13	13	13	0
Facilities for Housing Patients				
Nursing homes	4	4	4	0
Assisted Living Facilities (formerly Boarding Homes)	24	24	24	350
Residential treatment centers	1	1	1	0
Other Medical-Related Facilities				
Mortuaries with embalming equipment	1	1	1	0
Morgues and autopsy facilities (not in hospitals)	0	0	0	0
Veterinarian offices, clinics and hospitals	3	3	3	0
Totals	85	85	85	0

[1] Count multiple connections or parallel installations to the same premises as **separate** connections.

[2] Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

[3] Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises backflow preventers only or connections with premises isolation DCVAs or DCDAs isolation.

Part 4A: Backflow Preventer Inventory and Testing Information for 2016

- Complete all fields. Enter **zero (0)**, if no backflow preventers in a specific category.
- Count only backflow preventers relied on to protect the PWS.
- Count AVBs on *irrigation systems only*. Select No to AVB question above Table 2 if PWS doesn't track AVBs.
- Count multiple tests (or failures) for the same backflow preventer as one test (or failure) for that backflow preventer.
- For multiple service connections or parallel installations, count each assembly separately.
- Count RPDAs and DCDAs as ***single*** assemblies. Count the tests of the mainline assembly and bypass assembly as ***one test***. Count the failure of either the mainline or bypass assembly (or the failure of both) as ***one failure***. Count an entire detector assembly taken out of service as ***one assembly removed from service***.
- Count assemblies installed on dedicated fire or irrigation lines as **Premises Isolation Assemblies** in Table 1.

	Backflow Preventer Category and Inspection/Testing Information	Air Gap	RPBA	RPDA	DCVA	DCDA	PVBA	SVBA	AVB
Table 1: Premises Isolation Preventers (include preventers isolating PWS-owned facilities)									
Existing Premises Isolation Backflow Preventers									
1	In service at beginning of 2016	0	148	1	155	114			
2	Inspected and/or tested in 2016[1]	0	148	1	155	111			
3	Failed inspection or test in 2016	0	7	1	2	2			
New Premises Isolation Backflow Preventers									
4	Installed in 2016[2]	0	5	0	3	0			
5	Inspected and/or tested in 2016[1]	0	5	0	3	0			
6	Failed inspection or test in 2016	0	0	0	0	0			
Premises Isolation Backflow Preventers (existing or new)									
7	Removed from service in 2016[3]	0	0	0	0	0			
Total Premises Isolation Preventers at End of 2016		0	153	1	158	114	0	0	0

Does PWS track AVBs on irrigation systems? ○ Yes ◉ No

	Table 2: In-Premises Preventers (include preventers within PWS-owned facilities)								
Existing In-Premises Backflow Preventers									
8	In service at beginning of 2016	0	486	0	1337	12	12	0	unk
9	Inspected and/or tested in 2016[1]	0	486	0	1337	12	12	0	unk
10	Failed inspection or test in 2016	0	33	0	35	1	1	0	unk
New In-Premises Backflow Preventers									
11	Installed in 2016[2]	0	29	0	40	1	0	0	unk
12	Inspected and/or tested in 2016[1]	0	29	0	40	1	0	0	unk
13	Failed inspection or test in 2016	0	0	0	0	0	0	0	unk
In-Premises Backflow Preventers (existing or new)									
14	Removed from service in 2016[3]	0	0	0	0	0	0	0	unk
Total In-Premises Preventers at End of 2016[4]		0	515	0	1377	13	12	0	0
Grand Totals at End of 2016		0	668	1	1535	127	12	0	0

[1] Initial and/or routine annual inspection (for proper installation and approval status) and/or test (for testable assemblies only, using DOH-approved USC field test procedures).

[2] Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced those in service at the beginning of the reporting year. Replacement preventers may be of a different type than the originals.

[3] Existing or new preventers taken out of service, whether or not they were replaced by the same or a different type of preventer.

Part 4B: Other Implementation Activities in 2016

Complete all cells. Enter zero if not applicable.

Water Use Questionnaires	
Did your PWS send any water use questionnaires to customers during 2016?	○ Yes ◉ No

On-site Hazard Surveys			
Did your CCS conduct any on-site hazard surveys during 2016?			◉ Yes ○ No Number 3
	Service Connection Type		
	New	**Existing**	**Total**
1. Number of connections surveyed for cross-connection hazards to PWS.	9	14	23
2. Number of connections requiring backflow prevention to protect PWS.[1,2]	9	14	23

New Exceptions to Premises Isolation	
Did your CCS grant any new premises isolation exceptions in 2016 to high-hazard premises?[3]	○ Yes ◉ No

CCC Enforcement Actions	
Did your PWS take any enforcement actions during 2016?[4]	○ Yes ◉ No

[1] Include services where either premises isolation or in-premises preventers were required to protect the PWS.

[2] Include existing services that need new, additional or higher level backflow prevention.

[3] Submit a completed DOH Exception Form (green) for each new exception granted in the reporting year.

[4] "Enforcement actions" means actions taken by the PWS (such as water shut-off, PWS installation or testing of backflow preventer, assessment of fines, etc.) when the customer fails to comply with the PWS's CCC requirements.

Part 5: Backflow Incidents and "Off-Normal" Events in 2016

	Backflow Incidents, Risk Factors, and Indicators during 2016	Number
Backflow Incidents during 2016		
1	Backflow incidents that contaminated the PWS[5].	0
2	Backflow incidents that contaminated the customer's drinking water system ***only***[5].	0
Risk Factors for Backflow during 2016		
3	Distribution main breaks per 100 miles of pipe.	8.00
4	Low pressure events (<20 psi in PWS distribution system).	0
5	Water outage events.	0
Indicators of Possible Backflow during 2016		
6	Total health-related complaints received by PWS.[6]	0
7	Received during BWA or PN events.[7]	0
8	Received during low pressure or water outage events.	0
9	Total aesthetic complaints (color, taste, odor, air in lines, etc.).	19
10	Received during BWA or PN events.[7]	0
11	Number of these complaints received during low pressure or water outage events.	0

[5] Purveyors must submit a Backflow Incident Report form for each backflow incident known to have contaminated the public water system. DOH is also interested in receiving incident report forms for backflow incidents that contaminated the customer's drinking water system only.

[6] Such as stomach ache, headache, vomiting, diarrhea, skin rashes, etc.

[7] **"BWA"** means **Boil Water Advisory** and **"PN"** means **Public Notification** for water quality reasons.

Part 6: Comments and Clarifications

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe challenges faced or accomplishments made in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

Part No.	Date Added	Comments
Pt 1	04-19-2017	Not sure how numbers were done last year.

Part 7: Report Certification and Contact Information

I, [Certified by] , certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/19/2017	**All ASR Forms Certified/Submitted**	

Designated CCS/CCC Program Manager[1]					
Name	Jeffrey John Kobylk	**Title**	Water Quality Technician	**CCS Cert #**	011735
Email Address	jeff.kobylk@edmondswa.gov	**Phone**	425-275-4514	**Phone Ext**	1644

PWS Manager[2]					
Name	Jim Waite	**Title**	Water/Sewer Manager	**Operator Cert #**	3763
Email Address	jim.waite@edmondswa.gov	**Phone**	425-771-0235	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).
[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

Washington State Department of Health
Environmental Public Health
Office of Drinking Water

Backflow Prevention for Severe Health Hazard Facilities (Gray)
Annual Summary Report (ASR) for 2016

PWS ID: **22500U** PWS Name: **EDMONDS, CITY OF** County: **SNOHOMISH**

Part 1: Backflow Prevention Status

- Describe the backflow prevention status at the end of the reporting year for each wastewater treatment plant and nuclear facility your system serves.
- If you serve more than one severe health hazard facility, click the "Add Facility" button to display another facility data entry box.
- If you serve more than one connection to the same facility, click the "Add Connection" button to display another connection row for that facility.
- You may add as many facilities and connections as needed.
- To update this form, you may delete facilities and connections which are no longer served.

Facility 1 of 2

Facility Name	City Of Edmonds
Physical Address	7110 210th St SW
City	Edmonds
Zip	98026
NPDES Permit#	
Facility Type	Wastewater Treatment Plant (WWTP)
Facility Comments	

Facility 1 Connection 1 of 1

Connection Name	City Of Edmonds
Backflow Prevention Status	Premises Isolation RP but No In-Plant Air Gap
Connection Comments	

Facility 2 of 2

Facility Name	City Of Lynnwood
Physical Address	17000 76th ave w
City	Edmonds
Zip	98026
NPDES Permit#	
Facility Type	Wastewater Treatment Plant (WWTP)
Facility Comments	

Facility 2 Connection 1 of 1

Connection Name	City Of Edmonds
Backflow Prevention Status	Premises Isolation RP but No In-Plant Air Gap
Connection Comments	

Part 2: Report Certification and Contact Information

)[Certified by], certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/19/2017	**All ASR Forms Certified/Submitted**	

Designated CCS/CCC Program Manager[1]

Name	Jeffrey John Kobylk	**Title**	Water Quality Technician	**CCS Cert #**	011735
Email Address	jeff.kobylk@edmondswa.gov	**Phone**	425-275-4514	**Phone Ext**	1644

PWS Manager[2]

Name	Jim Waite	**Title**	Water/Sewer Manager	**Operator Cert #**	3763
Email Address	jim.waite@edmondswa.gov	**Phone**	425-771-0235	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).
[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

Washington State Department of Health
Environmental Public Health
Office of Drinking Water

Cross-Connection Control Program Summary (Cream)
Annual Summary Report (ASR) for 2016

PWS ID: **22500U** PWS Name: **EDMONDS, CITY OF** County: **SNOHOMISH**

Describe the characteristics of the PWS's Cross-Connection Control (CCC) Program at the end of 2016.

Part 1: CCC Program Characteristics

A. Type of Program Implemented

Type of Program	Check One
Premises isolation only.	○
Combination program: reliance on both premises isolation and in-premises prevention.	◉
In transition from a combination program to a premises isolation only program.	○

B. Coordination with Authority Having Jurisdiction (AHJ) on CCC Issues

Indicate the status of coordination with AHJs in your service area. The AHJ is the entity that enforces the Uniform Plumbing Code at the local level. The AHJ is usually your county or city building department. Don't list DOH as an AHJ.

AHJ #	Name of AHJ (City or County Building Department)[1]	PWS		AHJ Declined to Coordinate
		Coordinates with AHJ	Has Written Agreement with AHJ	
1	City Of Edmonds Building Department	Yes ◉ No ○	Yes ○ No ◉	Yes ○ No ○

[1] Do not enter an individual's name.

C. Corrective/Enforcement Actions Available to the Purveyor

Type of Corrective Action/Enforcement Action	Indicate Whether Available	Most Often Used (Check One)
Purveyor denies or discontinues water service.	Yes ◉ No ○	○
Purveyor installs backflow assembly and bills customer.	Yes ○ No ◉	○
Purveyor assesses fines (in addition to eliminating or controlling cross connection).	Yes ◉ No ○	○
Purveyor tests backflow assembly and bills customer.	Yes ○ No ◉	○
Other corrective actions (describe)[1] :Shut off water	Yes ◉ No ○	◉

[1] Enter detailed description of other enforcement actions available to PWS. Don't enter "None", "Not Applicable", or "Not Available."

D. CCC Program Responsibilities
Do not include enforcement action related procedures or circumstances.

CCC Program Activity	Responsible Party (Check one per row)	
	Customer	Purveyor
Hazard Evaluation by DOH-certified CCS	○	◉
Backflow preventer (BP) ownership	◉	○
BP installation	◉	○
BP *initial* inspection (for proper installation - all BPs)	○	◉
BP *initial* test (for testable assemblies)	◉	○
BP *annual* inspection (Air Gaps and AVBs)	○	◉
BP *annual* test (for testable assemblies)	◉	○
BP maintenance and repair	◉	○

E. Backflow Prevention for Fire Protection Systems
Please remember to enter number of days allowed if you require retrofitting.

PWS coordinates with *AHJ* on CCC issues for fire sprinkler systems (FSSs)	Yes ◉ No ○ N/A ○
PWS coordinates with *local Fire Marshal* on CCC issues for FSSs.	Yes ◉ No ○ N/A ○
PWS ensures backflow prevention is installed before serving *new* connections with FSSs.	Yes ◉ No ○
PWS requires retrofits to *high*-hazard FSSs.	Yes ◉ No. of days allowed: 30 No ○ N/A ○
PWS requires retrofits to *low*-hazard FSSs.	Yes ◉ No. of days allowed: 60 No ○ N/A ○

F. Backflow Prevention for Irrigation Systems

Minimum level of backflow prevention required on irrigation systems *without* chemical addition.	Not Addressed ○ AVB ◉ PV/SVBA ○ DCVA ○ RPBA ○
PWS currently inspects AVBs upon *initial* installation.	Yes ◉ No ○ N/A ○
PWS currently inspects AVBs upon repair, reinstallation or relocation.	Yes ◉ No ○ N/A ○

G. Used Water

Does PWS prohibit, by ordinance, rules, policy, by-laws or agreement, the intentional return of used water (e.g. for heating or cooling) into the distribution system?	Yes ◉ No ○
If not prohibited at present, date plan to prohibit use.	N/A
Current number of service connections returning used water to distribution system.	0

H. Backflow Prevention for Unapproved Auxiliary Water Supplies[1] NOT Interconnected with PWS
Show the **minimum** backflow preventer and type of protection required for service connections having unapproved auxiliary water supplies *when they are NOT interconnected to the PWS.*

Existing **service connections.**	None ○ DCVA ◉ RPBA ○ AG ○
Type of protection required.	N/A ○ In-premises prevention ◉ Premises isolation ○
New **service connections.**	None ○ DCVA ○ RPBA ◉ AG ○
Type of protection required.	N/A ○ In-premises prevention ○ Premises isolation ◉

[1] An auxiliary water supply is any water supply on or available to customer's premises in addition to the purveyor's potable water supply.

I. Backflow Prevention for Tanker Trucks and Temporary Water Connections

Minimum **level of backflow prevention (installed on or associated with the truck) required for tanker trucks taking water from PWS.**	AG ○ DCVA ○ RPBA ◉ Not Specified ○ Tanker trucks not allowed ○
PWS requires tanker trucks to obtain water at designated fill sites each equipped with permanently installed backflow preventer(s).	Yes ○ (Minimum preventer: DCVA ○ RPBA ○) No ◉ N/A ○ No sites provided ○
PWS currently accepts tanker trucks approved by other PWSs without further inspection or testing.	Yes ○ No ◉ N/A ○
Minimum **level of backflow prevention required for temporary water connections (e.g., for construction sites).**	AG ○ DCVA ◉ RPBA ○ Not specified ○ Temp. connections not allowed ○
PWS provides approved backflow preventer for temporary connections.	Yes ◉ No ○ N/A ○ (Temp. connections not allowed)
PWS requires testing each time the temporary connection backflow preventer is relocated.	Yes ◉ No ○ N/A ○ (Temp. connections not allowed)

J. Backflow Prevention for Non-Residential Connections

For each category shown, indicate whether PWS has non-residential connections of that type and the **minimum** level of ***premises isolation*** backflow prevention required (whether or not PWS currently has that type of customer).

Type of Connection	PWS has Customers of this Type	Minimum Premises Isolation Backflow Prevention Required
Commercial	Yes ◉ No ○	Not Required ○ DCVA ○ RPBA ◉
Industrial	Yes ○ No ◉	Not Required ○ DCVA ○ RPBA ◉
Institutional	Yes ○ No ◉	Not Required ○ DCVA ○ RPBA ◉
Other connection types[1] :0	Yes ◉ No ○	Not Required ○ DCVA ○ RPBA ◉

K. Backflow Prevention for Wholesale Customers

Indicate whether the PWS requires backflow prevention at interties with wholesale customers (other PWSs).

Type of Intertie	PWS has Customers of this Type	Minimum Backflow Prevention Required (if prevention is required, indicate minimum level).	
Existing	Yes ○ No ◉	Not specified / Not required ◉ Always required ○ Required only if purchaser's CCC program is inadequate ○	Minimum required (if applicable): DCVA ○ RPBA ○
New	Yes ○ No ◉	Not specified / Not required ◉ Always required ○ Required only if purchaser's CCC program is inadequate ○	Minimum required (if applicable): DCVA ○ RPBA ○

L. Exceptions to Mandatory Premises Isolation

PWS's written CCC Program Plan *allows* system to grant exceptions to mandatory premises isolation per WAC 246-290-490(4)(b)(iii)	Yes ◉ No ○ Doesn't Address ○
PWS currently grants new Exceptions.	Yes ○ No ◉
PWS granted Exceptions in past reporting years.	Yes ◉ No ○

Part 2: CCC Program Record-Keeping Software

Indicate the type or name of computer software the PWS uses to track CCC records.

BPMS ○	**Cross-Track (BMI)** ◉	**Tokay** ○	**XC2** ○	**Custom developed for or by PWS**[1] ○
Other non-CCC software (e.g. Excel) ○	**Other commercial CCC software (specify)** ○	**None Used** ○		

[1] Do not include commercial CCC software customized for PWS. If PWS uses customized commercial software, check the box for the appropriate commercial software name.

Part 3: Comments and Clarifications

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe accomplishments made in this reporting year.
  - Identify challenges faced in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

Part #	Date Added	Comment
General	06-14-2016	Still getting use to BMI program .

Part 4: Report Certification and Contact Information

I,[Certified by], certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/19/2017	**All ASR Forms Certified/Submitted**	

Designated CCS/CCC Program Manager[1]					
Name	Jeffrey John Kobylk	**Title**	Water Quality Technician	**CCS Cert #**	011735
Email Address	jeff.kobylk@edmondswa.gov	**Phone**	425-275-4514	**Phone Ext**	1644

PWS Manager[2]					
Name	Jim Waite	**Title**	Water/Sewer Manager	**Operator Cert #**	3763
Email Address	jim.waite@edmondswa.gov	**Phone**	425-771-0235	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

Washington State Department of Health
Environmental Public Health
Office of Drinking Water

List of Exceptions to High-Hazard Premises Isolation Requirements Annual Summary Report for (ASR) for 2016

PWS ID: **22500U** PWS Name: **EDMONDS, CITY OF** County: **SNOHOMISH**

Designated Cross-Connection Control Specialist (CCS) Information

CCS Name	Jeffrey John Kobylk	CCS Phone	425-275-4514	CCS Cert. #	011735

Use the table below to:

- **Edit, Renew, or Cancel** a saved exception (depending on the buttons listed under Available Actions).
- **Print** any saved Exception form.
- Re-sort the Exceptions List by any column heading (except Available Actions). Click once to sort from A to Z. Click a second time to sort from Z to A.

Important Reminder! You must **Renew** or **Cancel** all ***expired*** exceptions to submit your ASR Forms Package.

#	Premises Name	Premises Type	Status	Expiration Date	Last Saved
3	A Kind Heart	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/19/2017 2:04 PM
4	Amazing Grace	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
5	Adult care in Edmonds	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
6	Amazing Grace AFH Inc II	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/14/2017	04/20/2017 1:04 PM
10	Golden Age 2	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
11	Golden Age 3	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
12	Happy days adult family home Inc	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
14	Helens AFH	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
15	Hope	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
16	Just like home	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
18	Morning glory adult FM home II	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
19	Olympic View home care	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
20	Orate Homecare Corp.	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
21	United Adult Family Home	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
22	Sarausad Homes Adult Family Homes	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
23	Rose Manor Inc	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
24	Rodicas Adult Family Home	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
25	Amazing Grace III	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
26	A Kind Heart Inc	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
27	Real Care AFH Inc	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
28	Gold Autumn 2 LLC	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
9	Horizon View Investment LLC	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		04/20/2017 1:04 PM
30	Emerald Hills AFH	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM
31	New Hope AFH Inc	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Renewed	11/15/2017	04/20/2017 1:04 PM

Chapter 7.20

BACKFLOW PREVENTION

Sections:

7.20.010 Definitions.

A. "Backflow" means a flow, other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply.

B. "Backflow prevention device" means a device approved by the state of Washington, Department of Social and Health Services or such other state department as has jurisdiction over the subject matter and by the American Water Works Association, used to counteract back pressure or prevent back siphonage into the distribution system of a public water supply.

C. "Cross-connection" means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains or may contain contaminated water, sewage or other wastes or liquids of unknown or unsafe quality, which may be capable of imparting contamination to a public water supply as a result of backflow. [Ord. 1711 § 1, 1974].

7.20.020 Cross-connections declared unlawful.

The installation or maintenance of a cross-connection, which, in the opinion of the director of public works or his designee, will endanger the water quality of the potable water supply of the city of Edmonds, is unlawful. [Ord. 1711 § 1, 1974].

7.20.030 Backflow prevention devices to be installed.

Backflow prevention devices, when required to be installed in the opinion of the director of public works or his designated representative, shall be installed and maintained by the service customer on any service connection to the city of Edmonds water supply system where the backflow prevention devices are necessary for the protection of the city of Edmonds' water supply. [Ord. 1711 § 1, 1974].

7.20.040 Private water supply systems.

Use or operation of a private water supply system, contrary to the provisions of the ordinances of the city of Edmonds, or the laws of the state of Washington or the rules and regulations of the State Board of Health regarding public water supplies where the private system is served by the city public water supply is unlawful. [Ord. 1711 § 1, 1974].

7.20.050 Adoption of state regulations.

The community services director or his/her designee is hereby authorized to develop rules and regulations based upon and including the requirements of the rules and regulations of the State Board of Health regarding public water supplies and the protection of such supplies from contamination entitled "Cross-Connection Control Regulations in Washington State," the provisions of WAC 246-290-490, and the American Waterworks Association, Pacific Northwest Second Edition of "Accepted Procedure and Practice in Cross-Connection Manual." The provisions of the Washington Administrative Code, the rules and regulations of the Department of Health set forth in the Cross-Connection Control Regulations in Washington State and the previously referenced Accepted Procedure and Practice in Cross-Connection Manual are hereby adopted by this reference as fully as if herein set forth in full. Any additional rules and procedures necessary to implement such regulations shall be developed by the community services director or his/her designee as appropriate. Such rules and regulations shall be kept on file along with copies

of the above referenced regulations and manuals in the office of the city engineer of the city of Edmonds. [Ord. 2956 § 1, 1993; Ord. 1711 § 1, 1974].

7.20.060 Abatement of unlawful cross-connections and installation of backflow prevention devices – Procedures.

Cross-connections declared in this chapter to be unlawful whether presently existing or hereinafter installed and/or services requiring backflow prevention devices and/or unlawful use or operation of a private water supply system served by the city public water supply are public nuisances and, in addition to any other provisions of this code or the ordinances of the city of Edmonds on abatement of public nuisances, shall be subject to abatement in accordance with the following procedure:

A. In the event that the director of public works or his designee determines that a nuisance as herein provided does exist, written notice shall be sent to the person in whose name the water service is established under the records of the city of Edmonds water division, or alternatively, a copy of such written notice shall be posted on the premises served.

B. The notice shall provide that the nuisance described herein shall be corrected within 30 days of the date the notice is mailed or posted on the premises.

C. In the event the nuisance is not abated within the prescribed time, water service to the premises shall be discontinued.

D. In the event that the nuisance, in the opinion of the director of public works or his designated representative, presents an immediate danger of contamination to the public water supply, service from the city water supply system to the premises may be terminated without prior notice; provided, however, notice will be posted on the premises in the manner heretofore provided at the time the service is terminated. [Ord. 1711 § 1, 1974].

7.20.070 Penalties.

In addition to the remedies set forth herein, any person found guilty of violating any of the provisions of this chapter shall be subject to the penalties as set forth in ECC 5.50.020. [Ord. 1711 § 1, 1974].

City of Edmonds

Water Production and Distribution

Cross-Connection and Backflow

What is a Cross-Connection?

A cross connection is any actual or potential physical connection between a “potable water” line and any pipe, vessel, or machine containing non-potable fluid, solid or gas allowing possible entry to the water system by backflow. This would include, but is not limited to, sewers, drains, conduits, pools, storage reservoirs, plumbing fixtures, or any other device. The non-potable or unproved water supply system may contain contaminated liquids, solids, or gases, of unknown or unsafe quality. Bypass arrangements such as jumper connections, removable sections, swivel or changeover devices are considered to be a cross connection.

What is Backflow?

Backflow is a flow in reverse from the normal direction of flow in a piping system. It occurs due to a differential pressure existing between two different points within a continuous fluid system: a fluid of higher pressures flowing to a fluid of lower pressure. Backflow may occur due to either “backsiphonage” or “backpressure.”

Irrigation Systems

If you have or are planning on installing an irrigation system, you must first comply with Washington State Law (WAC 245-290), and the City of Edmonds Ordinance Chapter 7-20. These Laws require that **all irrigation systems have approved backflow protection.** A plumbing permit is also required when installing an irrigation system.

Without proper backflow protection, your irrigation system could endanger the health of your family, neighbors, and others in the community who are using the public water system.

The following state approved backflow assemblies are required to be installed per the City of Edmonds Standards, and must be tested by a Washington State Certified Backflow Assembly Tester upon installation, repairs, relocation, and annually thereafter:

- Pressure Vacuum Breaker Assemblies (PVBA)
- Double Check Valve Assemblies (DCVA)
- Reduced Pressure Backflow Assemblies (RPBA)

The atmospheric vacuum breaker is the only backflow prevention device that does not require annual testing.

Improper installations of a State Approved Backflow Prevention Assembly or failure to have the backflow prevention assembly tested are grounds for termination of the water service.

On-site water wells

If you have an on-site well and would like the City of Edmonds water service, you must first comply to Washington State Law (WAC 173-160 and WAC 246-290), and the City of Edmonds Ordinance (Chapter 7-20), before the city can install the water service.

- **Installation of a State Approved Reduced Pressure Backflow Assembly:** If you elect to keep your well, you will need to install a State Approved Reduced Pressure Principle Backflow Assembly (RPBA) per City of Edmonds Standards above must be completed before the water can be turned on.
- **Abandonment of Your Well:** If you elect to abandon your well, it must be properly abandoned using a licensed well driller. The licensed well driller will abandon the well per Washington State Law (WAC 173-160).

Capping the well or pulling the pump is NOT proper abandonment; therefore the installation of a State Approve Reduced Pressure Backflow Prevention Assembly is required.

Improper installation of the State Approved Backflow Prevention Assembly or the improper abandonment of the well is grounds for termination of the water service.

If you have any questions concerning backflow installations, certified testers, or approved backflow prevention assembly, please call the Public Works Department at 425-771-0235, extension 1644 or by email Jeff.Kobylk@edmondswa.gov.

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APPENDIX I

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Chapter 19.25

FIRE CODE

Sections:

19.25.000 International Fire Code adopted.

Under the statutory authority of RCW 19.27.031 and 19.27.074, the International Fire Code (IFC), 2015 Edition, as published by the International Code Council including amendments set forth in Chapter 51-54A WAC, and subsequently revised by this chapter, is hereby adopted including reference standards of the National Fire Protection Association and Appendix Chapters B and C. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.005 Section amendments.

The following sections of the IFC have been added, amended, deleted or replaced as follows:

A. Chapter 1 Administration.

1. Section 102.5 Application of Residential Code. Adopted as originally set forth in IFC (notwithstanding revisions thereto by the state building code council).

2. Section 103.1-.2 Department of Fire Prevention. Replaced by ECDC 19.25.010.

3. Section 104.8 Modifications. Replaced by ECDC 19.25.030.

4. Section 104.10.1 Assistance from other agencies. Police and other enforcement agencies shall have the authority to render necessary assistance in the investigation of fires and enforcement and hazardous conditions of this code when requested by the fire marshal.

5. Section 105.1.1 Permits required. Replaced by ECDC 19.25.020.

6. Section 108 Board of appeals. Replaced by Chapter 19.80 ECDC.

7. Section 109.4 Violation Penalties. Replaced by ECDC 19.25.070.

B. Chapter 3, General Requirements.

Section 308.1.6.3 Sky Lanterns. Is amended to read: It is unlawful for any person to sell, use, transfer, discharge or ignite any sky lantern within the city limits.

C. Chapter 5, Fire Service Features.

Section 503 Fire Apparatus Access Roads. The following sections are adopted as originally set forth in the IFC with the exception of 503.2.2:

1. Section 503.1 Where required.

2. Section 503.1.1 Buildings and facilities.

3. Section 503.1.2 Additional access.

4. Section 503.1.3 High-piled storage.

5. Section 503.2 Specifications.

6. Section 503.3 Marking.

7. Section 503.4 Obstruction of fire apparatus access roads.

Section 503.2.2 is amended to read:

Authority. The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations, and the authority to decrease the minimum access widths where other fire protection features are provided.

D. Chapter 36, Marinas. Replaced in entirety by Chapter 19.65 ECDC.

E. Chapter 56, Explosives and Fireworks.

Section 5601.1.3 Fireworks. Replaced by Chapter 5.27 ECC.

F. Chapter 57 Flammable and Combustible Liquids.

Sections 5704.2.9.6.1 (outside) and 5706.2.4.4 (inside) Locations where above-ground tanks are prohibited. Class I and II flammable liquids in aboveground storage tanks are restricted for the protection of residential districts and shall be no more than 1,000 gallons capacity in residential zones designated by the city.

G. Chapter 61 Liquefied Petroleum Gases.

Section 6104.2 Maximum capacity within established limits. The maximum capacity for each installation is restricted for the protection of residential districts within the city and shall be no more than 500 gallons water capacity in residential zones designated by the city.

[Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.010 Department of fire prevention.

A. There is established in the city a department of fire prevention supervised by the fire marshal or deputy chief of fire prevention acting under the supervision of the fire chief. The function of the department shall be the implementation, administration and enforcement of the provisions of this code.

B. An annual report shall be provided to the mayor containing proceedings under this code, with other statistics as the fire chief and mayor wish to include. The fire marshal may also recommend any changes to the code. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.015 Definitions.

A. Whenever the term “fire code official” is used in the IFC, it shall mean the fire marshal or deputy chief of fire prevention.

B. Whenever the word “jurisdiction” is used in the IFC, it shall mean the city of Edmonds.

C. Whenever the term “legal representative of the jurisdiction” is used in the IFC, it shall mean the city attorney.

D. Whenever the term “police” is used in the IFC, it shall mean the city of Edmonds police department. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.020 Permits.

A. Operational permits required under the city’s fire code and regulated by the city shall be issued by the fire marshal. The application for the permit shall be accompanied by the full application fee in order to vest rights under the permit and to constitute a complete permit application. The permit fee shall be set by the city council annually by resolution or on such review cycle as the council, in its discretion, shall determine. All permits shall be renewed annually unless the specific time period is set forth when the permit is granted. No permit shall be transferable and each permit shall be issued on a single job, transaction, owner, or occupancy basis, except that the fire marshal is authorized to consolidate permits for a single location, building, or unit.

B. In the event that the activity, location or risk associated with the activity requires a fire safety inspection in excess of the time estimated within the permit fee (one hour) an inspection fee equal to the actual cost to the city of providing the inspection shall be charged pursuant to ECDC 19.25.025. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.025 Charges for fire review and inspection.

A. Certain licenses and permits issued by the city include a fire department inspection. The cost of the permit may include an estimate of the normal time associated with the fire inspection. Where the permit does not include such an estimate, or when the estimate of time established within the ordinance is exceeded by the actual time spent inspecting a premises, location or activity, the actual cost of conducting the inspection shall be charged. The administrative services director is authorized to establish on an annual basis, in conjunction with or immediately following the budget process, a fee for the hourly charge associated with the provision of services by reasonable classifications of fire marshal and fire inspector.

B. The permittee shall pay the actual charges of inspection, in addition to the permit fee associated with such activity. Licenses and permits requiring the actual payment of inspection charges include, but are not limited to, public amusement licenses issued pursuant to Chapter 4.32 ECC, cabaret dance licenses issued pursuant to Chapter 4.48 ECC, adult entertainment facility licenses issued pursuant to Chapter 4.52 ECC, business licenses issued pursuant to Chapter 4.72 ECC, and aircraft landing licenses issued pursuant to Chapter 4.80 ECC.

C. No charge shall be levied against any department or agency of the city of Edmonds operating within the city’s general fund. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.030 Modifications, interpretations and appeals.

A. The fire marshal shall have the authority to modify any of the provisions of the IFC or this chapter on written application by the owner, lessee, or his duly authorized agent when there are practical difficulties in carrying out the strict letter of the code. Approved modifications, including alternative materials and methods, shall observe the spirit of the code, preserve fire- and life-safety, secure the public health, and do substantial justice. A signed copy of approved modifications shall be promptly given to the applicant.

B. Details of actions granting modifications and related interpretations shall be recorded and preserved in the records of the department of fire prevention to aid in conformance and uniform application of related codes, ordinances, and standards.

C. Whenever the fire marshal disapproves an application or refuses to grant a permit applied for, or when it is claimed that the provisions of the code do not apply or that the true intent and meaning of the code have been misconstrued or wrongly interpreted, the applicant may appeal from the decision of the fire marshal to the hearing examiner. Such appeals shall be governed by the procedures set forth in Chapter 19.80 ECDC. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.035 Automatic sprinkler systems.
An automatic sprinkler system shall be installed and maintained throughout every building constructed under the International Residential Code containing five or more attached dwelling units. Residential or quick response standard sprinkler heads shall be used in accordance with their approved listing in the dwelling. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.036 Dwelling fire sprinkler systems and connection fees.
A. Where dwelling fire sprinkler systems are required to be installed in a dwelling (building containing one or two dwelling units) constructed under the International Residential Code (IRC), a single water connection may provide fire protection and domestic services through combination water lines utilizing an integrated fire and plumbing flow-through piping system described in IRC Appendix R (WAC 51-51-60105).

B. Automatic sprinkler systems installed pursuant to subsection (A) of this section shall not be subject to the cost differential from general facility charges for connection to the public water system when an up-sized meter is required to meet the design flow rate for, and is solely attributable to, the installation of the automatic sprinkler system. All other costs, including the expense of a larger meter, a general facility charge attributable to the meter sized for the domestic service alone, and other permits and fees, shall remain the responsibility of the owner.

C. When automatic sprinkler systems designed for life safety and installed pursuant to subsection (A) of this section are integrated and dependent upon the domestic water supply of the residential dwelling unit, the property owner shall be responsible for maintaining the service connection and paying for an adequate supply of water to the residential dwelling unit. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3819 § 3, 2010].

19.25.040 Fire protection water supplies.
All fire hydrant, water main and appurtenance installations shall meet the provisions of this chapter as well as other applicable plans, standards and codes adopted by the city of Edmonds, as a condition of approval of subdivisions and building permits. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.045 Charges for water mains and hydrants.
A. For private development, owners shall be responsible for the replacement (upgrade) of the existing public main (including fire hydrants and appurtenances) to city standard when identified by the city engineer as a condition of development approval. The city will pay the difference in material costs only between six inches and the size that is required to be installed only when the existing system is a looped system.

B. A hydrant use permit issued by the public works director is required in order for any person or entity other than fire department personnel to draw water from any fire hydrant.

C. The installation of water mains, fire hydrants and appurtenances to properties not previously served shall be sized in accordance with the city's water comprehensive plan, built to city standard and shall be at the benefited property owner's or developer's expense.

D. Oversized water mains required for special use demands relating to a particular property or development shall be installed at the developer's or property owner's expense.

E. If the water mains installed pursuant to subsections (C) and (D) of this section provide service or benefits to properties other than owned by the water main installer, latecomer agreements may be arranged between the city and the installer for the construction and dedication of the water facilities pursuant to the provisions of Chapter 35.91 RCW. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.050 Mains and service lines.
A. All public hydrants in single-family areas shall be supplied by not less than six-inch looped water mains. All hydrants in areas other than single-family residential shall be supplied by not less than eight-inch looped water mains. Dead-end water mains to hydrants shall be at least eight inches in diameter, with the exception of mains up to 50 feet long which may be no less than six inches in diameter.

B. The service line from the water main to the hydrant shall be no less than six inches in diameter. Any service lines over 50 feet in length from water main to hydrant shall be no less than eight inches in diameter.

C. When city streets, or state highways having water mains in the public right-of-way, are improved to permanent street or highway improvement standards, any water mains in the public right-of-way of said streets or highways that are substandard as to size or material according to applicable city standards shall be replaced with ductile iron water mains conforming to applicable city standards and plans. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.055 Location of public hydrants.

A. Public hydrants are those owned by the city.

B. All public fire hydrants shall be installed at street intersections where possible. Public hydrant spacing shall be measured along vehicle access routes.

C. In areas zoned for single-family residential use, public hydrants shall be spaced no more than 600 feet apart. If dead-end streets, or driveways, singly or in combination, are over 300 feet long, additional public hydrants shall be installed so that the public hydrant spacing is not over 600 feet.

D. In areas other than single-family residential, public fire hydrants shall be spaced an average of 300 feet apart. If dead-end streets or driveways, singly or in combination, are over 150 feet long, additional public hydrants shall be installed so that the public hydrant spacing is not over 300 feet. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.060 Location of private hydrants.

A. A private hydrant is privately owned, but is subject to the use of the city for inspection and testing at reasonable times, and for fire suppression at any time. All private hydrants shall be connected to the city water main through a privately owned and maintained double detector check valve assembly.

B. All buildings except single-family dwellings that are located so that a portion is more than 200 feet from a street, as measured along vehicle access routes, shall have private fire hydrants located at the building. Single-family dwellings with a fire-flow calculation area greater than 4,800 square feet may require a private hydrant.

C. Buildings having required fire flows of 3,000 gallons per minute may have fire hydrants on one side of the building only. There shall never be fewer than two fire hydrants for any building larger than 5,000 square feet in the first floor area including covered parking and storage. When the required fire flow is 3,000 gallons per minute or greater, the fire hydrants shall be served by a looped main around the building or complex of buildings.

D. Fire hydrants shall be spaced on an average 300 feet around the perimeter line, 50 feet out of the buildings. All hydrants shall be placed in locations accessible to fire department vehicles adjacent to fire apparatus access roads. The fire marshal shall determine the location of fire hydrants depending on utility, topography and building location for maximum fire protection. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.065 Hydrant specifications.

A. The installation of flush type hydrants (hydrants entirely below grade) is prohibited.

B. Fire hydrants shall have two two-and-one-half-inch hose outlets and one four-and-one-half-inch pumper outlet. All outlets' ports shall have national standard thread. Additionally, the pumper outlet shall be provided with a four-inch Storz adapter. Fire hydrants shall meet the American Water Works Association Standard No. C-502 and current city standards.

C. Fire hydrants and appurtenances shall be installed in accordance with generally accepted engineering practices and city standards, and to the approval of the city engineer, who shall also approve the selection and use of all pipe fittings and valves. There shall be a foot valve installed between the service main and the hydrant sufficient to permit the repair and replacement of the hydrant without disruption of water service. The foot valve shall be installed to city standards. The location of all such valves installed shall be properly and accurately marked on as-built plans or drawings with generally acceptable engineering detail, two copies of which shall be furnished to the public works department. Valves shall be furnished with a standard valve box.

D. Hydrants shall stand plumb, be set to established street grade with the lowest outlet of the hydrant at least 18 inches above the adjacent finished grade and at least 36 inches of clear area around the hydrant for clearance of hydrant wrench on both outlets and on the control valve. The pumper port shall face the street, as determined by the fire marshal.

E. Where reasonably necessary to protect a hydrant from damage, the fire marshal may require hydrants to be protected by two or more posts, eight inches in diameter by five feet long, made either of reinforced concrete or steel.

F. If there presently exist fire hydrants which do not conform to these requirements, they shall be replaced with conforming hydrants upon redevelopment or the timetable established by the city's comprehensive plan.

G. No person shall plant any vegetation, erect any structure or perform any action which results in the obstruction of a fire hydrant for a distance of 50 feet along the immediate route of approach. The owner-occupant of any area in which a hydrant is located shall be responsible for removing weed and tree growth from around the hydrant for a distance of not less than five feet. The purpose of this section is to maintain clear approach and visual area around the hydrant.

H. The installation of the fire hydrants and mains may be accomplished by city capital contract, developers (as a condition of development) or public works department employees. All installations are to be approved by the city engineer.

I. Following the installation of fire hydrants, all pipes, valves and hydrants shall be pressure tested, purified, flushed and sampled to meet the requirements of the American Water Works Association Standard No. C-502. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

19.25.070 Penalties.

A. Any person who violates any of the provisions of the IFC including those standards of the National Fire Protection Association specifically referenced in the IFC as adopted and amended herein or fails to comply therewith, or who violates or fails to comply with any order made thereunder, or who builds in violation of any detailed statement of specifications or plans submitted and approved thereunder, and from which no appeal has been taken, or who fails to comply with such an order as affirmed or modified by decision of the city's board of appeals or by a court of competent jurisdiction, within the required time, shall severally for each and every such violation and noncompliance, respectively, be guilty of a gross misdemeanor, punishable as provided in ECC 5.50.020.

B. The imposition of one penalty for any violation shall not excuse the violation nor permit it to continue; and all such persons shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified, each day that prohibited conditions exist or are maintained shall constitute a separate offense. The application of the above penalty shall not be held to prevent the enforced removal of prohibited conditions. [Ord. 4029 § 1 (Att. A), 2016; Ord. 3926 § 1 (Exh. A), 2013; Ord. 3798 § 1, 2010].

APPENDIX J

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City of Edmonds
Public Works Department
7110 - 210th St. S.W.
Edmonds, Washington 98026
425-771-0235

POSTAL CUSTOMER

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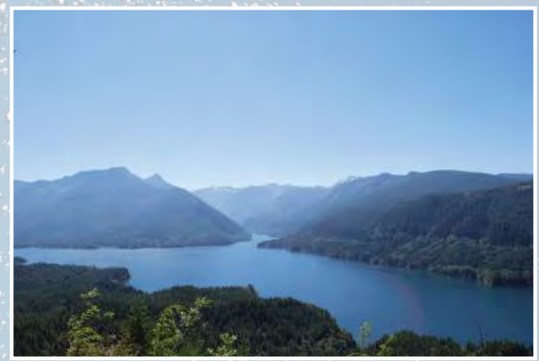
2015

Annual Water Quality Report

This report contains information about your drinking water, required by the Environmental Protection Agency (EPA)



The bottom line is this: Our water is safe to drink. Our water quality meets or exceeds state and federal standards.

Edmonds Water Source: Where our drinking water comes from

Along with most residents within the City of Edmonds, you receive your water from Everett's Spada Reservoir in the Sultan Basin, which is considered surface water. Our water source is disinfected with chlorine, which destroys Giardia, bacteria and viruses that may be present in the source water. Our water source also adds fluoride to prevent tooth decay.

Everett Surface Water Source

The Sultan Basin watershed, which fills Spada Reservoir, is protected and patrolled regularly. This watershed receives more than 160 inches of rain each year. Water from Spada Reservoir is routed by pipe to Chaplain Reservoir. There, this pristine high quality mountain water is treated at the City of Everett's filtration plant before being distributed for consumption. From the source, the greatest care is taken to ensure the water you use meets federal and state requirements as well as Everett's own high local standards.

Along its way to your tap, the water is tested frequently for microbiological and chemical quality to ensure you receive safe water each time you use your faucet. The City of Everett provides this water for their own customers and numerous other water utilities. The City of Edmonds purchases Everett's water through Alderwood Water District, Alderwood Water District also supplies several other water utilities within Snohomish county.

Edmonds Distribution System:

Within the City of Edmonds water distribution system, there are three 1.5 million gallon and one 3.0 million gallon reservoirs. There are numerous connections throughout the Edmonds water system to other water systems including Seattle, Lynnwood, and Olympic View Water and Sewer District in case additional water is needed.

The City of Edmonds water system identification number is 22500U, issued by the State of Washington Department of Health.

2014 Water Quality Monitoring

The 2014 water quality monitoring results listed in the following tables show no contaminants were measured at or above allowable levels. The sources of all drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, which can be vulnerable to contamination. In Edmonds water supply, these potential contaminants and their sources include:

- Microbial contaminants, such as viruses and bacteria, from wildlife;
- Inorganic contaminants, such as salts and metals, which are naturally occurring, and;
- Organic contaminants, which are by-products of the water chlorinataing processes.

Managing the Distribution System

A key to maintaining good water quality is effectively managing the water distribution system. It is important for water to remain fresh and retain sufficient chlorine for disinfection. The City has a flushing program and also has a cross-connection prevention program designed to keep any contaminants coming from homes and businesses from entering the drinking water system.

Please call us at 425-771-0235 if you would like more information on the water system.

CITY OF EDMONDS

APPENDIX K

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CITY OF EDMONDS

COLIFORM MONITORING PLAN

TABLE OF CONTENTS

COLIFORM MONITORING SUMMARY (IF SAMPLE TESTS POSITIVE)

General Information

Edmonds water system identification number is: 22500U

Address: 7110 210th St. S.W., Edmonds, WA. 98026

Phone: 425-771-0235

Emergency: 425-308-9867

Monthly samples required: 30

Monthly samples taken to represent the distribution system: 35

Laboratory name: Everett Environmental Laboratory

Laboratory Phone: 425-257-8230

Summary

Take 35 routine Coliform Bacteria water samples per month.

Routine sample results should show "**Satisfactory**" from the lab. If so, then no additional testing is needed.

Coliform Present

If laboratory calls and says the sample has "**Total Coliform Present"** but is waiting to see if sample has E. coli present then:

1. Notify Water Lead, Water Manager, Public Works Director, DOH
2. FLUSH and "Find and Fix" source of contamination.
3. Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg. 10, 15)

If sample shows "**Unsatisfactory, Total Coliform Present**" then:

1. Notify Water Lead, Water Manager, Public Works Director, DOH
2. FLUSH and "Find and Fix" source of contamination.
3. Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg.10, 15)

If all repeat samples test "**Satisfactory**", **negative** for total coliform, then no further samples are needed.

If 2 or more "**Total Coliform Present**" results in the same month:

Conduct an Assessment: (Treatment Technique Trigger)

Level l: A water system evaluation done by a knowledgeable operator to "Find and Fix" the contamination source. (see pg.11)

Level 2 (instead of Level 1): If a second Level 1 Treatment Technique Trigger happens within a 12 month rolling period. A water system evaluation done by a Water Distribution Manager 2 (WDM2) or higher, an Engineer, or Health staff, to "Find and Fix" the contamination source. (see pg.11)

Coliform and E. coli Present

If routine sample or repeat sample shows "**Unsatisfactory, Total Coliform Present" and "E. coli present"** then:

1. Notify Water Lead, Water Manager, Public Works Director, DOH
2. FLUSH and "Find and Fix" source of contamination.
3. Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg. 10, 15)
4. Conduct an Assessment: (Treatment Technique Trigger)

   Level 2 (instead of Level 1): A water system evaluation done by a Water Distribution Manager 2 (WDM2) or higher, an Engineer, or Health staff, to "Find and Fix" the contamination source. (see pg. 11)
5. Public Notification, within 24 hours if 2 related samples test positive for total coliform bacteria and there is E. coli bacteria in one or more of the samples. (see pg. 10)

If sample shows "**Unsatisfactory, Total Coliform Present" and "E. coli absent**" then:

Notify Water Lead, Water Manager, Public Works Director

FLUSH and "Find and Fix" source of contamination.

Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg. 10, 15)

Repeat until sample tests "Satisfactory"

CITY OF EDMONDS WATER SYSTEM OVERVIEW

City of Edmonds (COE) buys its water from Alderwood Water District. COE's service area is approximately 7.7 square miles and includes a population of approximately 30,354 with approximately 10,229 service connections. The service area is located in Southern Snohomish County. The surrounding purveyors include the City of Lynnwood, City of Mountlake Terrace, and Olympic View Water District. The City of Edmonds has interties with Lynnwood, Olympic View Water District and Seattle Public Utilities for use in emergency situations only.

COE has four reservoirs with a total volume of 7.5 MG in the direct service area to provide equalizing storage and fire flows.

COE has 36 sample stands for routine coliform compliance monitoring. Sample stands are used to overcome the problems of gaining daily access to public and private premises for water quality sampling. These stands are located to represent different population concentrations, sources of supply, pressure zones and storage facilities so that representative water samples can be collected. COE's distribution system is comprised of over 139 miles of water supply and distribution mains, nearly 1,086 hydrants and 22 pressure reducing stations.

REVISED TOTAL COLIFORM RULE

General Information

On April 1, 2016, the federal Revised Total Coliform Rule (RTCR) replaced the 1989 Total Coliform Rule (TCR). The Revised Total Coliform Rule requires systems vulnerable to contamination to "find and fix" problems and pathways that could allow pathogens to enter the distribution system. Routine coliform samples are to be collected from representative points in the distribution system at regular time intervals.

Public water systems are required to deliver safe and reliable drinking water to their customers 24 hours a day, 365 days a year. If the water supply becomes contaminated, consumers can become seriously ill. Fortunately, public water systems take many steps to ensure that the public has safe, reliable drinking water. One of the most important steps is to regularly test the water for coliform bacteria.

This coliform monitoring plan will enable water operators to use laboratory and economical tests to evaluate the microbial water quality of the water system. These tests help ensure the water provided to customers is free of disease-causing organisms.

BACTERIA

Coliform Bacteria

Coliform bacteria are organisms that are present in the environment and in the feces of all warm-blooded animals and humans. Coliform bacteria will not likely cause illness. However, their presence in drinking water indicates that disease-causing organisms (pathogens) could be in the water system. Most pathogens that can contaminate water supplies come from the feces of humans or animals. Testing drinking water for all possible pathogens is complex, time-consuming, and expensive. It is relatively easy and inexpensive to test for coliform bacteria. If coliform bacteria are found in a water sample, water system operators work to find the source of contamination and restore safe drinking water. There are three different groups of coliform bacteria; each has a different level of risk. The three groups are; total coliform, fecal coliform and E. coli.

Total Coliform, Fecal Coliform, and E. coli

Total coliform, fecal coliform, and E. coli are all indicators of drinking water quality. The total coliform group is a large collection of different kinds of bacteria. Fecal coliforms are types of total coliform that mostly exist in feces. E. coli is a sub-group of fecal coliform. When a water sample is sent to a lab, it is tested for total coliform. If total coliform is present, the sample will also be tested for either fecal coliform or E. coli, depending on the lab testing method.

Unsatisfactory Coliform Sample Result

Water systems are required to submit a water system assessment report to the Department of Health any time there is an unsatisfactory coliform sample result.

SAMPLES

Sampling Requirements

Population, reported on the Water Facilities Inventory (WFI) form, determines how many samples are taken per month. Edmonds has a population of 30,354, as of 2014.
Population from 25,001 – 33,000 requires a minimum of 30 routine coliform samples per month.

Source and Reservoir Samples

The Department of health recommends collecting samples from the source and the storage reservoirs on a regular basis. Be sure to mark these samples as “investigative”, they don’t count as compliance samples.

Selecting Sample Sites

When selecting sample sites, using a customer tap as a sample site may not accurately reflect conditions in the distribution system. During routine and repeat sampling it may be determined that a site no longer represents the conditions within the distribution system, simply remove this site from the Plan and replace it with a site that better represents the conditions within the distribution system.

Sample sites to avoid:

Swivel faucets

Hot/Cold mixing faucets, (faucets with a single lever)

Drinking fountains

Janitorial sinks

Frost-free hose bibs

Leaking or spraying faucets

Faucets below ground or near ground level

Faucets served by home filters or other home treatment systems

Fire hydrants

E. COLI PRESENT ROUTINE AND REPEAT SAMPLES

Responding to an E. coli-present Sample Result

The presence of E. coli bacteria in the distribution system will create significant challenges for us and our customers. We may be required or choose to advise our customers to boil their drinking water or use bottled water. Our customers may not be able to drink their tap water while we investigate the problem or pursue corrective action.

The Revised Total Coliform Rule requires immediate public notification (within 24 hours) when two related samples (a routine and one or more of its corresponding repeat samples) test positive for total coliform bacteria, and there is E. coli bacteria in one or more of the samples. The lab analyzes all unsatisfactory samples collected from the distribution system for the presence of E. coli bacteria.

E. coli Maximum Contaminant Level (MCL)

The RTCR calls the acute Maximum Contaminant Level (MCL) an "E.coli MCL". An E.coli MCL violation can occur four ways:

1. A total coliform-present repeat sample follows an E. coli-present routine sample.
2. An E. coli-present routine sample follows a total coliform-present routine sample.
3. The lab fails to test a total coliform-present repeat sample for E.coli.
4. A system fails to take 3 repeat samples following an E. coli-present routine sample.

Collection of Repeat Samples

The Revised Total Coliform Rule requires the collection of repeat samples within 24 hours when a routine distribution system sample is unsatisfactory.

3 repeat samples must be taken for each unsatisfactory routine sample.

- One from the same tap as the original unsatisfactory routine sample.
- One from an active service within five active connections upstream from the original routine sample.
- One from an active service within five active connections downstream from the original unsatisfactory sample location.

Or may use alternative sampling locations in lieu of the requirement to collect at least one repeat sample upstream and one downstream of the original sampling site. Repeat monitoring locations that are believed to be representative of a pathway for contamination into the distribution system may be used.

PUBLIC NOTIFICATION TIER 1, TIER 2, TIER 3

Public Notification Requirements

E. coli MCL violation – Issued within 24 hours (Tier 1)

Routine total coliform – positive; repeat E. coli – positive.

Routine E. coli – positive; repeat total coliform – positive.

Routine E. coli – positive; system fails to take all repeat samples.

Repeat total coliform – positive; sample not tested for E. coli.

Treatment technique violation – Issued within 30 days (Tier 2)

System fails to conduct a required assessment within 30 days of the treatment technique trigger.

System fails to correct a sanitary defect within required timeframe.

Monitoring violation – Issued within one year (Tier 3)

System fails to collect all required routine samples.

Routine total coliform – positive; sample not tested for E. coli.

Reporting violation – Issued within one year (Tier 3)

System fails to submit a monitoring report or completed assessment form in a timely manner.

System fails to notify DOH of an E. coli – positive sample in a timely manner.

TREATMENT TECHNIQUE TRIGGER AND ASSESSMENTS, LEVEL 1 & 2

Treatment Technique Trigger

A trigger occurs when there is a confirmed contamination – that is, two or more samples are positive for coliform bacteria. A treatment technique trigger is a situation that requires a water system to take action. RTCR requires water systems to conduct an assessment to "find and fix" any sanitary defects whenever a treatment technique trigger occurs. There are two assessment levels. Both evaluate the entire system from the sample collection point to the source of supply. We should anticipate that a treatment technique trigger might occur any time you collect routine and repeat samples. Therefore we should be ready to start a system evaluation as soon as the lab notifies us of total coliform-present.

Level 1 Assessment

A basic water system evaluation can be done by an owner, certified operator, or a knowledgeable person. A level 1 treatment technique trigger occurs any time a water system:

- Collects fewer than 40 routine samples a month and has 2 or more total coliform-present results the same month.

- Collects 40 or more routine samples a month and has total coliform-present results in more than 5 percent of its routine and repeat samples.

- Fails to collect 3 repeats for every total coli-form-present routine sample.

Level 2 Assessment

A complex evaluation that only a person with state-required qualifications, such as an engineer, certified operator (WDM2 or higher), or state of local health staff can do. A level 2 treatment technique trigger occurs when a water system has;

- An E. coli MCL violation

- A second Level 1 treatment technique trigger within a rolling 12 month period.

Three parts of an assessment include:

Investigation: Identify any defects that allow coliform to enter the distribution system.

Discussion: Evaluate what you identified during the assessment that might have allowed the contamination to occur and the corrective action needed to fix it.

Corrective action: Record the steps you took or will take to fix the sanitary defect that allowed the contamination to occur.

When correcting contamination problems The Department of Health uses two terms that should be defined, “sanitary defects” and “defects”.

Sanitary Defect: is a pathway for contaminants to enter the water system. This may be as simple as a missing reservoir vent screen or a poorly sealed hatch, or as substantial as a failing reservoir.

Corrective action for a sanitary defect could be as simple as installing a new screen on a reservoir vent or replacing the seal on a hatch, or as substantial as building a new reservoir.

Defects: are issues identified during an assessment that could have caused positive coliform samples such as an improper sampling technique such as rinsing out a bottle before collecting a sample.

Corrective action for a defect might be as simple as training on correct sampling techniques for the person who collects water samples.

PUMP STATION LOCATION

LOCATION	
Five Corners Pump Station	84th & Bowdoin Way

RESERVOIR LOCATIONS

Tank # (size)	Address	Inspected	Cleaning
Five Corners 1.5 mg	84th & Bowdoin Way	Weekly	Five Years
Five Corners 3.0 mg	84th & Bowdoin Way	Weekly	Five Years
Yost Park 1.5 mg	9601 Bowdoin Way	Weekly	Five Years
Seaview 1.5 mg	185th & 90th Ave	Weekly	Five Years

PRESSURE REDUCING VALVE (PRV) LOCATIONS

PRV STATION NO.	LOCATION	MAIN SIZE
1	72nd W & No Meadowdale	4
2	68th & No Meadowdale	4
3	7082 Meadowdale Bch Rd	6
4	74th & Meadowdale Bch Rd	4
5	Braemar Dr & 76th	6
6	176th & 76th	6
7	188th & 76th	6
8	80th & 184th St	8
9	84th & 184th St	4
10	88th & 185th St	6
11	8900 & 188th	6
12	89th & 192nd St SW	4
13	12th & Main St	6
14	Olympic & Main St	6
15	9th & Pine St	4
16	Alderwood Water meter vault	12
17	198th & 99	4

SAMPLE STAND LOCATIONS

Sample Stand #	Location	Sample Stand #	Location
101	7707 203rd St SW	201	242nd & 78th Pl W
102	7421 215th St. SW	202	7909 238th St SW
103	22814 75th Ave W	203	415 7th Ave No
104	7713 234th St SW	204	8th & Caspers St
105	CL2 Shack / faucet	205	1412 Olympic Ave
106	740 Elm St	206	1045 Daley St
107	"A" Ave & Pine St	207	401 12th Ave No
108	539 3rd Ave So	208	20709 Maplewood Drive
109	220 Railroad Ave	209	20408 86th Pl W
110	725 7th Ave No	210	21626 88th Ave W
111	1429 10th Pl No	211	20924 81st Pl W
112	8500 186th St SW	212	19921 81st Pl W
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114	18301 76th Ave W	214	19128 92nd Ave W
115	17812 72nd Ave W	215	18119 Andover St
116	6900 Meadowdale Bch Rd	216	7506 180th St SW
117	16510 72nd Ave W	217	6801 No Meadowdale Rd
118	16340 75th Pl W	218	6631 172nd St SW

Pressure Zone	Number of Sampling Sites	Est. Population Served Based on Demand
596	17	15,847
505	2	1,325
500	1	580
486	4	2,385
425	1	349
420	2	738
325	8	10,066
Total	**35**	**31,290**

REPEAT SAMPLE LOCATIONS

Sample #	Up Stream Location	Down Stream Location	Sample #	Up Stream Location	Down Stream Location
101	7819 203rd St SW	7623 203rd St SW	201	8009 242nd St SW	7625 242nd St SW
102	7515 215 St SW	7329 215 St SW	202	8101 238th St SW	23803 78th Ave W
103	7410 228th St SW	22916 75th Ave W	203	211 7th Ave So	701 7th Ave So
104	7731 234th St SW	23302 76th Ave W	204	720 Caspers St	1025 9th Ave No
105	9425 Bowdoin Way	1033 Walnut St	205	19808 Olympic Ave	1304 Olympic Ave
106	1132 8th Ave So	1126 8th Ave So	206	516 Olympic Ave	1009 Daley St
107	920 7th Ave So	1044 "A" Ave	207	541 12th Ave No	311 12th Ave No
108	507 3rd Ave So	709 3rd Ave S	208	20529 Maplewood Dr	8831 Main St
109	200 Dayton St	336 Admiral Way	209	20584 86th Pl W	8625 204th St SW
110	825 7th Ave No	617 7th Ave No	210	8910 216th St SW	8807 218th St SW
111	1521 10th Pl No	1402 10th Pl No	211	21003 81st Pl W	20832 82nd Ave W
112	18622 84th Ave W	8618 185th Pl W	212	19817 81st Pl W	8223 200th St SW
113	8200 Talbot Rd	8498 Talbot Rd	213	19025 84th Ave W	8223 Sierra Dr
114	18223 76th Ave W	18530 76th Ave W	214	9120 190th St SW	8921 192nd St SW
115	17618 72nd Ave W	18006 72nd Ave W	215	18013 Andover St	8133 184th St SW
116	6830 Mead. Bch Rd	17226 Mead. Bch Rd	216	7538 180th St SW	18003 74th Ave W
117	16419 72nd Ave W	16616 72nd Ave W	217	6802 162nd Pl W	16321 70th Pl W
118	16510 75th Pl W	16220 75th Pl W	218	7503 172nd St SW	17111 68th Ave W

KEY CONTACTS

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Kris Kuhnhausen (Water Lead)	425-771-0235 Ext. 1647 Cell 425-231-0324
Jeff Kobylk (Water Quality Technician)	425-771-0235 Ext. 1644 Cell 425-563-3114

Water Utilities

Alderwood Water/Sewer District	425-743-4605
Olympic View Water /Sewer District	425-774-7769
City of Everett	425-257-8878
Lynn Kirby (Water Quality Engineer)	206-684-0216

Department of Health

Northwest Region (Kent)	253-395-6750
DOH after hour Hotline	877-481-4901
Ingrid Salmon (Coliform Program)	253-395-6775
Carol Stuckey (Coliform Program)	253-395-6775
Erika Lyndsey, P. E. (Regional Engineer)	253-395-6766

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Swedish Edmonds Hospital	425-640-4190
Rex Kirby	425-640-4211

Public School Districts

Edmonds School District 15	425-670-7244

Private Schools

Edmonds Holly Rosary	425-778-3197

Laboratories

Everett Environmental Laboratory	425-257-8230
SPU Water Quality Laboratory	206-684-7404
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Media Contacts

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Radio Contacts

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KOMO (AM 1000)	425-443-4010

CITY OF EDMONDS

Coliform & E. coli Response Plan & Procedure

EDMONDS

COLIFORM AND E. coli RESPONSE PLAN AND PROCEDURE

General Information

Edmonds water system identification number is: 22500U

Address: 7110 210th St. S.W., Edmonds, WA. 98026

Phone: 425-771-0235

Emergency: 425-308-9867

Monthly samples required: 30

Monthly samples taken to represent the distribution system: 35

Laboratory name: Everett Environmental Laboratory

Laboratory Phone: 425-257-8230

Routine Samples

Routine sample results should show "**Satisfactory**" from the lab. If so, then no additional testing is needed.

Coliform Present

If laboratory calls and says the sample has "**Total Coliform Present"** but is waiting to see if sample has E. coli present then:

1. Notify Water Lead, Water Manager, Public Works Director, DOH
2. FLUSH water main and "Find and Fix" source of contamination.
3. Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg. 4, 5).

If all repeat samples test "**Satisfactory**", **negative** for total coliform, then no further samples are needed.

If 2 or more "**Total Coliform Present**" results in the same month:

Conduct an Assessment: (Treatment Technique Trigger)

Level l: A water system evaluation done by a knowledgeable operator to "Find and Fix" the contamination source.

Level 2 (instead of Level 1): If a second Level 1 Treatment Technique Trigger happens within a 12 month rolling period. A water system evaluation done by a Water Distribution Manager 2 (WDM2) or higher, an Engineer, or Health staff, to "Find and Fix" the contamination source.

Coliform and E. coli Present

If routine sample or repeat sample shows "**Unsatisfactory, Total Coliform Present" and "E. coli present"** then:

1. Notify Water Lead, Water Manager, Public Works Director, DOH
2. FLUSH water main and "Find and Fix" source of contamination.
3. Take 3 repeat samples, (one from the same tap, one within 5 connections upstream, one within 5 connections downstream) (see pg. 4, 5)
4. Conduct an Assessment: (Treatment Technique Trigger)

Level 2 (instead of Level 1): A water system evaluation done by a Water Distribution Manager 2 (WDM2) or higher, an Engineer, or Health staff, to "Find and Fix" the contamination source.

5. Public Notification, within 24 hours if 2 related samples test positive for total coliform bacteria and there is E. coli bacteria in one or more of the samples.

PUMP STATION LOCATION

LOCATION	
Five Corners Pump Station	84th & Bowdoin Way

RESERVOIR LOCATIONS

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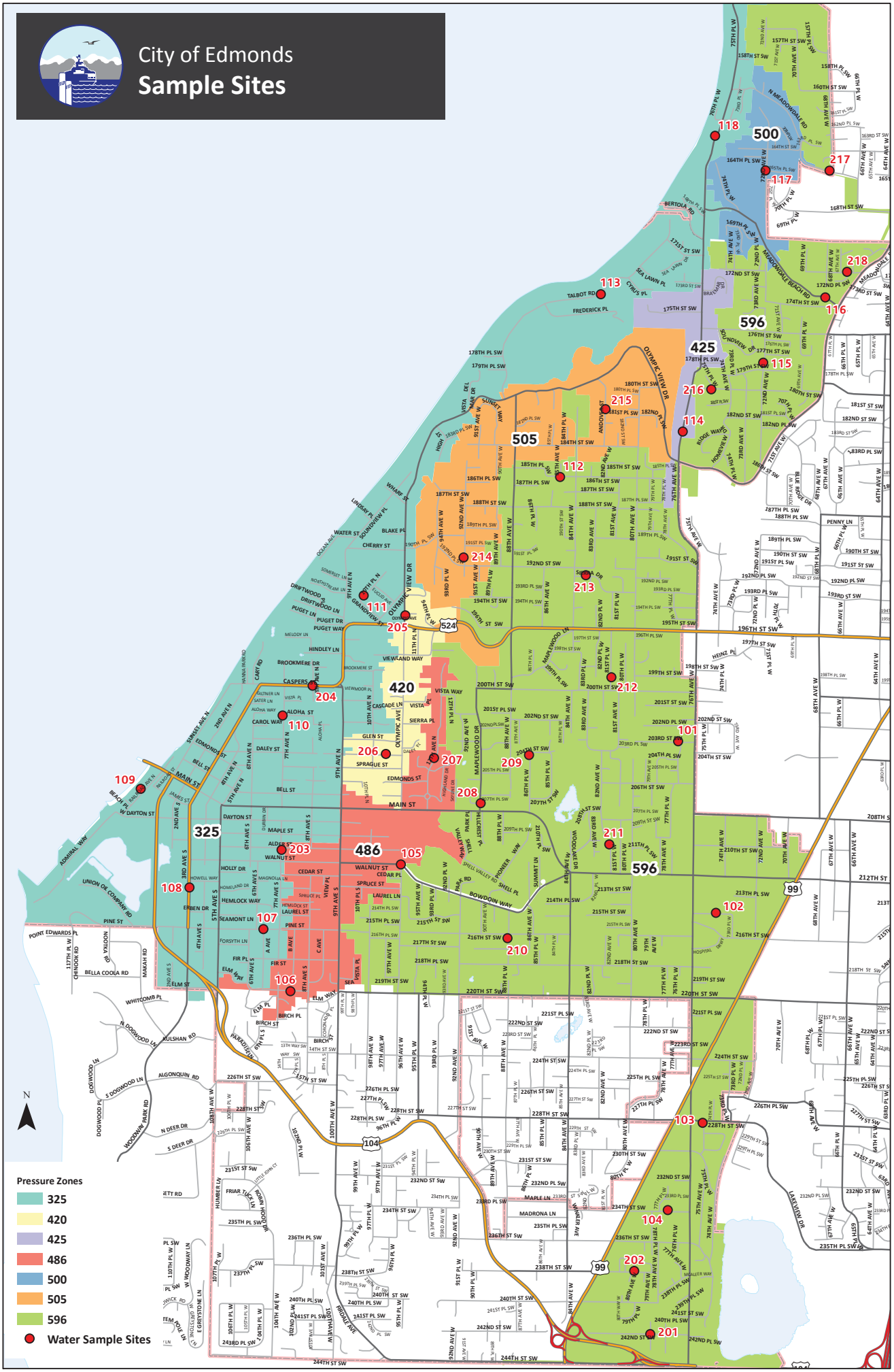
City of Edmonds
Sample Sites



October 2017

Bacteriological Sampling Procedures

1. Sample site addresses are in the Bac-T Sample notebook in the meter shop.
2. Sample bottles and chlorine field test kits are also located in meter shop. Gather proper amount of sample bottles
3. Inspect sample bottles and do not use if bottle has broken seal, cracks, etc. Store bottles in ice cooler as you move from site to site.
4. Insure field test kit has proper amount of free and total DPD pillows.
5. Take Seattle sample stand key to unlock Seattle sample stands.
6. Meter box sampling tube is located in meter shop. Inspect for damage.
7. Disinfect sampling tube with chlorine solution at the shop. Spray entire sample tube inside and out. Spray inside of bag with chlorine solution. Place tube inside new plastic bag while transporting.
8. Gather proper amount of DOH sample forms and fill out according to instructions on backside of forms.
9. Go to first location of sampling site.
10. Pull meter box cover and remove PVC cap off adapter on water meter. Place disposable rubber gloves on hands. Disinfect gloves with chlorine solution. Spray connections on meter and sample tube with chlorine solution. Connect sample tube to adapter on meter.
11. Let water run for at least two minutes or more.
12. Using chlorine test kit follow instructions accordingly:
    A. Fill the bottle to the 10-ml level on sample bottle in kit.
    B. Empty 10-ml DPD pillow (free) into bottle. Close lid. Shake until powder dissolves and wipe dry.
    C. Take blank sample bottle and insert into color meter test kit with white square pointing towards the front of the test kit and touch the zero button to zero out.
    D. Remove blank bottle and insert sample bottle with the DPD free pillow, white square pointing towards the front of the test kit. Touch read. This will tell you the free residual available in the water.
    E. Log this reading on the water sample Cl2 form.
13. Repeat procedures from #12 using the DPD (total) pillows to get the total residual results.

14. When taking a bacteriological sample:

    A. Disinfect rubber gloves with chlorine solution (while on hands).

    B. Remove sample bottle cap. Be careful not to touch the rim of the sample bottle or under cap. Keep all foreign items from entering sample bottle i.e.: dust, rain, dirt, etc. Take sample and quickly replace cap and record information on form.

    C. **DO NOT RINSE BOTTLE OR POUR OUT CONTENTS**. Bottle has a chlorine neutralizing chemical inside.

    D. Fill the sampling bottle to the shoulder (just below the neck) of the bottle or the 100-ml line, very carefully, and seal tightly.

    E. Remove sample tube from meter. Disinfect sample tube adapter and inside of plastic cap with chlorine solution. Place plastic cap on adapter.

    F. Fill out bacteriological form and rubber band form around bottle.

    G. Go to next location.

15. When done taking samples disinfect inside and outside of sampling tube with Cl2 solution at the meter shop. Hang on wall to air dry.

Repeat steps 10-14 for next address.

Note: In case of a bad sample. The following are instructions for taking repeat samples:

1. Go to site address where bad sample has been indicated by lab.

2. In the Bac-T sample notebook you will notice there are three sample sites in the gray shaded area under that site address. Those are the three site addresses where you will repeat the sampling procedures 1-13.

3. Takes samples to lab the same day the samples are taken.

City of Edmonds Media Release

Public Works and Utilities ~ 121 5th Ave N, Edmonds, WA

FOR IMMEDIATE RELEASE: 7 October 2016

To: Media

Contact: Phil Williams, Public Works and Utilities Director

Phil.williams@edmondswa.gov , (425) 771-0235

BOIL-WATER ADVISORY ISSUED FOR (–) WATER SYSTEM/NEIGHBORHOOD IN EDMONDS

Advisory Issued After Routine Testing Detects Unsafe Levels of (--) In Water; No Illnesses Reported

(Edmonds, WA) - The City of Edmonds in partnership with the Washington State Department of Health has issued a boil-water advisory today, October 7th, to some customers of the (location) neighborhood in Edmonds after potentially harmfully (E. coli) bacteria were detected in the water.

This water system, which is (location), serves about (number of) people (number of homes). However, the advisory is only for the approximately (number) homes in (location). Boil-water notices will be hand-delivered to each affected home.

"Quote from Public Works Director here (how/what was detected, how serious it is/any

illnesses/what concern to public is/what next steps are." (***Follow up releases should also address 'how did this happen/how can it be prevented from happening again?' Reassure public of processes in place to protect water supply.)

Customers in zones not affected by the boil water advisory (those whose homes are location) will not receive boil water notices, but may visit the water services' website for more information. A map showing the affected service area is available on the website.

Water Service Company name, which owns and operates the water system, is working closely with the Department of Health to track down the source of contamination.

"Quote from health official (level of health concern/what public should do to protect itself/any reports of illness/symptoms to watch for)"

The bacteria were found in routine water quality monitoring samples. E. coli can cause gastrointestinal illness. To kill the bacteria, the Department of Health recommends that residents boil tap water they'll use for drinking, brushing teeth, preparing food, making ice, and washing dishes. Water should be heated to a brisk boil for one minute and allowed to cool before use.

The advisory will remain in effect until the water meets safe drinking water standards. Customers with questions about their water quality can call (Washington Water Service at 253-851-4060 or toll free at 877-408-4060.) Updates can also be found on the City of Edmonds website (hotlink here) and Facebook page (hotlink here).

###

WARNING:
Do not drink tap water without boiling it first!

☐ **Fecal coliform**
☐ **E. coli bacteria**
☐ **Other:** _____

were detected in the water supply on:
(date) _____.

Boiling kills bacteria and other organisms in the water:

- **Bring water to a rolling boil for one minute**
- **Let water cool before using**

To avoid possible illness: use boiled or purchased bottled water for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice.

Contact your doctor, if you experience one or more of these symptoms: nausea, cramps, diarrhea, jaundice, headache and/or fatigue. People with chronic illnesses, infants and the elderly may be at higher risk and should seek medical advice.

Water System: _____
I.D.: _____
County: _____
Contact: _____
Telephone: _____
Date notice distributed: _____

What is fecal coliform and E. coli?

Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these waters can cause short-term effects, such as diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

How long will this warning be in effect?

We will consult with the Washington State Department of Health about this incident. We will notify you when you no longer need to boil the water.

Vea al reverso para la versión en Español.

October 2008

WARNING:
Do not drink tap water without boiling it first!

☐ **Fecal coliform**
☐ **E. coli bacteria**
☐ **Other:** _____

were detected in the water supply on:
(date) _____.

Boiling kills bacteria and other organisms in the water:

- **Bring water to a rolling boil for one minute**
- **Let water cool before using**

To avoid possible illness: use boiled or purchased bottled water for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice.

Contact your doctor, if you experience one or more of these symptoms: nausea, cramps, diarrhea, jaundice, headache and/or fatigue. People with chronic illnesses, infants and the elderly may be at higher risk and should seek medical advice.

Water System: _____
I.D.: _____
County: _____
Contact: _____
Telephone: _____
Date notice distributed: _____

What is fecal coliform and E. coli?

Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these waters can cause short-term effects, such as diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

How long will this warning be in effect?

We will consult with the Washington State Department of Health about this incident. We will notify you when you no longer need to boil the water.

Vea al reverso para la versión en Español.

October 2008

ADVERTENCIA:
¡No tome el agua de la llave sin antes hervirla!

☐ **Bacteria coliforme fecal**
☐ **Bacteria E. coli**
☐ **Otra:** _____

fueron encontradas en su sistema de agua:
(el día)_____.

Hervir el agua mata a las bacterias y otros organismos en el agua:

- **Ponga el agua en la estufa hasta que hierva y deje hervir el agua por un minuto**
- **Deje enfriar el agua antes de usarla**

Para evitar posibles enfermedades y hasta nuevo aviso: use agua hervida o agua potable embotellada para tomar, hacer hielo, limpiarse los dientes, lavar los platos y para preparar comidas.

Hable con su doctor si usted tiene uno o más de los siguientes síntomas: náusea, dolor estomacal, diarrea, ictericia, dolores de cabeza y/o cansancio. La gente con enfermedades crónicas, bebés y personas mayores de edad, pueden estar en situación de alto riesgo y deben consultar con su médico o proveedores de servicios médicos.

Sistema de agua: _____
I.D.: _____
Condado: _____
Contacto: _____
Teléfono: _____
Fecha de notificación: _____

¿Qué son las bacterias coliforme fecal y E. coli?

Coliformes fecales o E. coli son bacterias cuya presencia indica que el agua esta contaminada con desechos humanos o de animales. Microbios de esos desechos pueden causar diarrea, dolor estomacal, náusea, dolores de cabeza u otros síntomas. Pueden representar un peligro para la salud de bebés, niños y niñas de corta edad y personas con sistemas inmunológicos en alto riesgo.

¿Por cuánto tiempo va a estar en efecto esta advertencia?

Vamos a consultar con el Departamento de Salud del estado de Washington acerca de este incidente. Le vamos a notificar cuando ya no sea necesario hervir el agua.

See reverse side for English version.

ADVERTENCIA:
¡No tome el agua de la llave sin antes hervirla!

☐ **Bacteria coliforme fecal**
☐ **Bacteria E. coli**
☐ **Otra:** _____

fueron encontradas en su sistema de agua:
(el día)_____.

Hervir el agua mata a las bacterias y otros organismos en el agua:

- **Ponga el agua en la estufa hasta que hierva y deje hervir el agua por un minuto**
- **Deje enfriar el agua antes de usarla**

Para evitar posibles enfermedades y hasta nuevo aviso: use agua hervida o agua potable embotellada para tomar, hacer hielo, limpiarse los dientes, lavar los platos y para preparar comidas.

Hable con su doctor si usted tiene uno o más de los siguientes síntomas: náusea, dolor estomacal, diarrea, ictericia, dolores de cabeza y/o cansancio. La gente con enfermedades crónicas, bebés y personas mayores de edad, pueden estar en situación de alto riesgo y deben consultar con su médico o proveedores de servicios médicos.

Sistema de agua: _____
I.D.: _____
Condado: _____
Contacto: _____
Teléfono: _____
Fecha de notificación: _____

¿Qué son las bacterias coliforme fecal y E. coli?

Coliformes fecales o E. coli son bacterias cuya presencia indica que el agua esta contaminada con desechos humanos o de animales. Microbios de esos desechos pueden causar diarrea, dolor estomacal, náusea, dolores de cabeza u otros síntomas. Pueden representar un peligro para la salud de bebés, niños y niñas de corta edad y personas con sistemas inmunológicos en alto riesgo.

¿Por cuánto tiempo va a estar en efecto esta advertencia?

Vamos a consultar con el Departamento de Salud del estado de Washington acerca de este incidente. Le vamos a notificar cuando ya no sea necesario hervir el agua.

See reverse side for English version.

RTCR Level 1 Assessment Guidance Template

331-569, March 2016

Send your assessment to:

Eastern Region	16201 East Indiana Avenue, Suite 1500 Spokane Valley, WA 99216	Phone: 509.329.2100 Fax: 509.329.2104 Email: mark.steward@doh.wa.gov
Northwest Region	20425 72nd Ave. South, Suite 310 Kent, WA 98032-2358	Phone: 253.395.6750 Fax: 253.395.6760 Email: dw.nwro@doh.wa.gov
Southwest Region	PO Box 47823 Olympia, WA 98504-7823	Phone: 360-236-3030 Fax: 360-664-8058 Email: swro.coli@doh.wa.gov

Water System Name:	County:	Water System ID #:
Operator in Responsible Charge (ORC):	ORC Phone:	Water System Mailing Address:
ORC Address, City, State:		
Assessor Name:		
Assessor Address, City, State, Zip:		
Date(s) Assessment Completed:		

Your water system exceeded a treatment technique trigger for the Revised Total Coliform Rule. Assess the water system's condition and operation using this *Level 1 Assessment Template* as a guide.

Part A: Respond to each item below. Identify corrective actions taken to address the issue(s) found.
Part B: Summarize your findings and include an action plan with timetable for corrective actions not yet taken.

For parts A and B, include additional information (photos or other documentation) as needed to depict assessment findings and corrective actions that have been completed. All assessment elements listed in this template must be addressed in your assessment. Systems with multiple facilities such as wells or storage tanks may need to provide additional pages.

Within 30 days of learning of the treatment technique trigger, submit completed assessment documentation to your regional office and keep a copy in your water system files.

Part A: Assessment		**Corrective action needed?**	**Corrective action(s) taken & date taken**
1. Site and Sampling Protocol 1a. Do you have a written coliform monitoring plan & sampling procedure that ensures samples are representative of the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
1b. Have there been any changes in sampling conditions or procedures that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
1c. Inspect the sampling sites: - Are the sampling locations free of potential sources of contamination? - Are the sampling taps in good condition? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
2. Distribution 2a. Do you have procedures in place to ensure proper maintenance of the distribution system, including: - Appropriate pipe replacement and repair procedures - Replacement and repair of other distribution system components - Regular flushing program - Routine vault inspections - Fully implemented cross connection control program - Maintain positive pressure in all parts of the distribution system	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2b. Has there been any recently reported low pressure (<20 PSI) or complete loss of pressure in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2c. Have there been any changes in distribution conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
2d. Inspect the distribution system: - Are there any visible line breaks or leaks? - Are there any observed unprotected cross connections? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
3. Storage Facilities 3a. Does your water system have a water storage tank? *If no, skip to Section 4.*	☐ Yes ☐ No		
3b. Do you have procedures in place for periodic inspection and maintenance of the exterior and interior of each storage facility?	☐ Yes ☐ No	☐ Yes ☐ No	
3c. Have there been any changes in storage conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
3d. Inspect the storage facilities: - Does the tank have any cracks or other openings? - Is the reservoir roof free of any unprotected openings? - Is the access hatch constructed and sealed to keep contaminants out? - If there is an air vent on the storage tank, is it constructed to prevent the entry of contaminants? - Is the overflow line constructed to prevent contaminants from entering the tank? - If the overflow line discharges into a storm drain, to surface water, or directly into a sanitary sewer, is it protected by a proper air gap? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
4. Source--Groundwater 4a. Does your water system have a well or spring? If no, skip to Section 6.	☐ Yes ☐ No		
4b. Do you comply with Sanitary Control Area requirements (WAC 246-290-135(2)?	☐ Yes ☐ No	☐ Yes ☐ No	
4c. Have there been any changes in source conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
4d. Inspect the source facilities: - Is the sanitary control area free of all potential sources of contamination? - Is the wellhead or spring box above grade with no potential for flooding? - Is the pressure tank water logged? - Is the well cap sealed and watertight, and the well casing free of unprotected openings? - (For springs) Is the spring box (structure, hatch, and overflow) free of any unprotected openings? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
5. Treatment--Groundwater 5a. Is any source continuously treated with a disinfectant? If no, skip to Section 6.	☐ Yes ☐ No		
5b. Do you have procedures in place for proper operation and maintenance of disinfection treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
5c. Have there been any changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
5d. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
6. Source—Surface Water Supply (watershed) 6a. Does your water system have a surface water supply? If no, skip to Section 8.	☐ Yes ☐ No		
6b. Do you comply with Watershed Control Program requirements (WAC 246-290-135(4)?	☐ Yes ☐ No	☐ Yes ☐ No	
6c. Have there been any changes within the watershed or in raw water conditions that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
6d. Inspect the surface water intake/headworks: - Is there evidence of problems at the intake? - Is there evidence of vandalism or other security breaches at the intake? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
7. Treatment—Surface Water 7a. Do you have procedures in place for proper operation and maintenance of surface water treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
7b. Have there been any changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
7c. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
8. Other assessment activities (describe):			

Part B. Assessment Summary and Action Plan with Timetable for corrective actions not yet taken

☐ ASSESSOR: CHECK HERE if you did not identify any issues that may have directly or indirectly caused or contributed to entry of coliform bacteria into the system.

Corrective Actions Completed: ASSESSOR: Summarize the issues found and the corrective actions that have been completed and date completed

Describe issue found	Describe corrective action taken and date completed

Corrective Actions Not Completed: ASSESSOR: Describe the issues for which corrective actions have not yet been completed. **Provide an action plan with timetable for completion.**

Describe issue found	Describe planned corrective action and timetable for completion.

Print Name of Assessor: _____ Signature of Assessor: _____ Date: _____

OFFICE OF DRINKING WATER USE ONLY

Regional Office Reviewer: _____ Date of Review: _____

Assessment sufficient? ☐ Yes ☐ No Likely cause determined? ☐ Yes ☐ No Sanitary defect(s) identified? ☐ Yes ☐ No

Corrective actions completed? ☐ Yes ☐ No Corrective action plan included? ☐ Yes ☐ No Corrective action plan approved? ☐ Yes ☐ No

Comments:

RTCR Level 2 Assessment Guidance Template

331-570, March 2016

Send your assessment to:

Eastern Region	16201 East Indiana Avenue, Suite 1500 Spokane Valley, WA 99216	Phone: 509.329.2100 Fax: 509.329.2104 Email: mark.steward@doh.wa.gov
Northwest Region	20425 72nd Ave. South, Suite 310 Kent, WA 98032-2358	Phone: 253.395.6750 Fax: 253.395.6760 Email: dw.nwro@doh.wa.gov
Southwest Region	PO Box 47823 Olympia, WA 98504-7823	Phone: 360-236-3030 Fax: 360-664-8058 Email: swro.coli@doh.wa.gov

Water System Name:	County:	Water System ID #:
Operator in Responsible Charge (ORC):	ORC Phone:	Water System Mailing Address:
ORC Address, City, State:		
Assessor Name:	Assessor is: ☐ WDM-2, 3, or 4 ☐ Engineer ☐ LHJ	
Assessor Address, City, State, Zip:		
Date(s) Assessment Completed:		

Your water system exceeded a treatment technique trigger for the Revised Total Coliform Rule. Assess the water system's condition and operation using this *Level 2 Assessment Template* as a guide.

Part A: Respond to each item below. Identify corrective actions taken to address the issue(s) found.
Part B: Summarize your findings and include an action plan with timetable for corrective actions not yet taken.

For parts A and B, include additional information (photos or other documentation) as needed to depict assessment findings and corrective actions that have been completed. All assessment elements listed in this template must be addressed in your assessment. Systems with multiple facilities such as wells or storage tanks may need to provide additional pages.

Within 30 days of learning of the treatment technique trigger, submit completed assessment documentation to your regional office and keep a copy in your water system files.

Part A: Assessment		**Corrective action needed?**	**Corrective action(s) taken & date taken**
1. Site and Sampling Protocol 1a. Do you have a written coliform monitoring plan & sampling procedure that ensures samples are representative of the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
1b. Do you have a program in place that ensures that all sample collectors are trained before being allowed to collect compliance samples?	☐ Yes ☐ No	☐ Yes ☐ No	
1c. Do you regularly monitor the condition of each routine and repeat sample site to ensure that no site will contaminate the sample?	☐ Yes ☐ No	☐ Yes ☐ No	
1d. Was the sample collected by a trained, qualified person?	☐ Yes ☐ No	☐ Yes ☐ No	
1e. Did the sampler follow your monitoring plan and sampling procedure?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
1f. Was the sample collected representative of the water in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
1g. Have there been any changes in sampling conditions or procedures that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
1h. Inspect the sampling sites: - Are the sampling locations free of potential sources of contamination? - Are the sampling taps in good condition? - Other: (describe) _____	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2. Distribution 2a. Do you have procedures in place to ensure proper maintenance of the distribution system, including: - Appropriate pipe replacement and repair procedures - Replacement and repair of other distribution system components - Regular flushing program - Routine vault inspections - Fully implemented cross connection control program - Maintain positive pressure in all parts of the distribution system	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2b. Following work done on the water system and following any pressure loss event, do you collect investigative coliform samples?	☐ Yes ☐ No	☐ Yes ☐ No	
2b. Has there been any recently reported low pressure (<20 PSI) or complete loss of pressure in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2c. Have there been any recent repairs or new construction in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2d. Are there any known pipe leaks that have not yet been repaired?	☐ Yes ☐ No	☐ Yes ☐ No	
2e. Has there been any recent use of fire hydrants such as hydrant maintenance or utility/FD flushing?	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
2f. If there are there any air-vacuum relief valve vaults in the distribution system, are any flooded?	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
2g. Has there been any recent report of a cross connection incident?	☐ Yes ☐ No	☐ Yes ☐ No	
2h. Have there been any off-normal events, such as discolored water, odd taste, or smell?	☐ Yes ☐ No	☐ Yes ☐ No	
2i. Have there been any other changes in distribution conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
2j. Inspect the distribution system: - Are there any visible line breaks or leaks? - Are there any observed unprotected cross connections? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
3. Storage Facilities 3a. Does your water system have a water storage tank? If no, skip to Section 4.	☐ Yes ☐ No		
3b. Do you have procedures in place for periodic inspection and cleaning of the interior of each storage facility including vent, roof hatch, and overflow?	☐ Yes ☐ No	☐ Yes ☐ No	
3c. Has there been any recent work done on a storage facility?	☐ Yes ☐ No	☐ Yes ☐ No	
3d. Are all storage facilities secured from unauthorized entry and vandalism?	☐ Yes ☐ No	☐ Yes ☐ No	
3e. Have there been any other changes in storage conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
3f. Inspect the storage facilities: - Does the tank have any cracks or other openings? - Is the reservoir roof free of any unprotected openings? - Is the access hatch constructed and sealed to keep contaminants out? - If there is an air vent on the storage tank, is it constructed to prevent the entry of contaminants? - Is the overflow line constructed to prevent contaminants from entering the tank? - If the overflow line discharges into a storm drain, to surface water, or directly into a sanitary sewer, is it protected by a proper air gap? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
4. Source--Groundwater 4a. Does your water system have a well or spring? If no, skip to Section 6.	☐ Yes ☐ No		
4b. Do you comply with Sanitary Control Area requirements (WAC 246-290-135(2)?	☐ Yes ☐ No	☐ Yes ☐ No	
4c. Are all sources protected from fecal contamination by appropriate placement and construction?	☐ Yes ☐ No	☐ Yes ☐ No	
4d. Have any unapproved sources recently been used?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
4e. Have there been any recent land use changes observed within a source sanitary control area, such as construction, farming, or dumping in the last month?	☐ Yes ☐ No	☐ Yes ☐ No	
4f. Has there been any standing water, heavy precipitation, or flooding around a source in the last month?	☐ Yes ☐ No	☐ Yes ☐ No	
4g. Has there been any recent work done on a well or spring box?	☐ Yes ☐ No	☐ Yes ☐ No	
4h. Has there been any recent failure of a source pump?	☐ Yes ☐ No	☐ Yes ☐ No	
4i. Has there been any recent maintenance performed on a source pump or other source component?	☐ Yes ☐ No	☐ Yes ☐ No	
4j. Are the source facilities secured from unauthorized entry and vandalism?	☐ Yes ☐ No	☐ Yes ☐ No	
4k. Have there been any other changes in source conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
4l. Inspect the source facilities: - Is the sanitary control area free of all potential sources of contamination? - Is the wellhead or spring box above grade with no potential for flooding? - Is the pressure tank water logged? - Is the well cap sealed and watertight, and the well casing free of unprotected openings? - (For springs) Is the spring box (structure, hatch, and overflow) free of any unprotected openings? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	 ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
5. Treatment--Groundwater 5a. Is any source continuously treated with a disinfectant? If no, skip to Section 6.	☐ Yes ☐ No		
5b. Do you have procedures in place for proper operation and maintenance of disinfection treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
5c. If a disinfection residual should be continuously maintained throughout the distribution system, was the measured free chlorine residual at the time of coliform sample collection below 0.2 mg/L?	☐ Yes ☐ No	☐ Yes ☐ No	
5d. Have there been any recent interruptions in any treatment process?	☐ Yes ☐ No	☐ Yes ☐ No	
5e. Has there been any recent maintenance performed on any treatment component?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
5f. Have there been any other changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
5g. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
6. Source—Surface Water Supply (watershed) 6a. Does your water system have a surface water supply? If no, skip to Section 8.	☐ Yes ☐ No		
6b. Do you comply with Watershed Control Program requirements (WAC 246-290-135(4)?	☐ Yes ☐ No	☐ Yes ☐ No	
6c. Has there been any recent spikes in raw water turbidity?	☐ Yes ☐ No	☐ Yes ☐ No	
6d. Have there been any land use changes within the watershed, such as logging, construction, or different farming practices in the past month?	☐ Yes ☐ No	☐ Yes ☐ No	
6e. Have there been any other changes within the watershed or in raw water conditions that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
6f. Inspect the surface water intake/headworks: - Is there evidence of problems at the intake? - Is there evidence of vandalism or other security breaches at the intake? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
7. Treatment—Surface Water 7a. Do you have procedures in place for proper operation and maintenance of surface water treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
7b. Have there been any recent interruptions in any part of the filtration or disinfection treatment process?	☐ Yes ☐ No	☐ Yes ☐ No	
7c. Are filtration and disinfection treatment facilities properly operated and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
7d. Has there been any maintenance performed on any treatment component in the past month?	☐ Yes ☐ No	☐ Yes ☐ No	
7e. Have there been any problems with a treatment process in the past month, such as high finished water turbidity, disinfection inactivation ratio <1, or changes in coagulation practices or filtration rate?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
7f. Have there been any other changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
7g. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
8. Other assessment activities (describe):			

Part B. Assessment Summary and Action Plan with Timetable for corrective actions not yet taken

☐ ASSESSOR: CHECK HERE if you did not identify any issues that may have directly or indirectly caused or contributed to entry of coliform bacteria into the system.

Corrective Actions Completed: ASSESSOR: Summarize the issues found and the corrective actions that have been completed and date completed

Describe issue found	Describe corrective action taken and date completed

Corrective Actions Not Completed: ASSESSOR: Describe the issues for which corrective actions have not yet been completed. **Provide an action plan with timetable for completion.**

Describe issue found	Describe planned corrective action and timetable for completion.

Print Name of Assessor: _____ Signature of Assessor: _____ Date: _____

OFFICE OF DRINKING WATER USE ONLY

Regional Office Reviewer: _____ Date of Review: _____

Assessment sufficient? ☐ Yes ☐ No Likely cause determined? ☐ Yes ☐ No Sanitary defect(s) identified? ☐ Yes ☐ No

Corrective actions completed? ☐ Yes ☐ No Corrective action plan included? ☐ Yes ☐ No Corrective action plan approved? ☐ Yes ☐ No

Comments:

APPENDIX L

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Chapter 7.10

WATER SERVICE

Sections:

7.10.010 Application for water use.

All applications for the use of water shall be made at the development services department by the owner, or by the owner's authorized agent, on printed forms furnished by said department for that purpose, and shall contain the name and description of the lot, block and addition. The applicant shall state the purposes for which the water is to be used and shall agree to conform to the ordinances, rules, and regulations, with modification which may be adopted, as a condition for use of water. [Ord. 3629 § 2, 2007; Ord. 2214 § 1, 1981; Ord. 2139 § 3, 1980; Ord. 413 § 9, 1929].

7.10.020 Accounts – Payments.

A. All accounts shall be kept in the name of the owner, and all charges shall be made against the property as well as the owner thereof. No change of ownership or occupancy shall affect the application of this section. All bills are payable within 25 days from the billing date. If water bills are not paid within a stated period, the water will be shut off. Water will be turned on after payment of the fees as set forth in ECC 7.10.070, in addition to the amount of delinquent charges.

B. At least 10 days before water is scheduled to be shut off, the administrative services director, or a designated city official, shall notify the owner and the occupant of the property. The owner shall be notified by mail at the address on the account, and the occupant shall be notified by mail, door hanger or other form at the property. Mailed notices shall be deemed received three business days after mailing. All notices shall contain the following:

1. Reason for water shut off;

2. Delinquent amount that needs to be paid to avert interruption in water service;

3. Instructions on scheduling a hearing to show that the account is not delinquent; and

4. The day on or after which water will be shut off.

C. After notification, the owner and the occupant shall be afforded the opportunity to present to the administrative services director, or a designated official, evidence that the delinquent charges have been paid. Such opportunity shall be afforded before the water is shut off; provided, that the owner or the occupant make a request for the same to the administrative services director, or a designated official, within three days of presumptive receipt of the notice. The burden shall be on the owner and/or occupant to prove that the delinquent charges have been paid.

D. After reviewing the evidence by the owner and/or occupant, the administrative services director, or the designated official to whom the evidence was presented, shall decide whether or not the account remains delinquent. The owner and the occupant shall be notified of the decision, and this decision shall not be subject to further appeal. If the account is found to be delinquent and water has not been shut off, water will be shut off as previously scheduled or three days after final decision, whichever date is later. If the account is not found to be delinquent and water has been shut off, water will be turned on without being subject to turn on and turn off charges in ECC 7.10.070. [Ord. 3629 § 3, 2007; Ord. 2214 § 2, 1981; Ord. 2139 § 4, 1980; Ord. 1942 § 1, 1977; Ord. 1385 § 1, 1968; Ord. 1082 § 1, 1965; Ord. 821, 1960; Ord. 413 § 10, 1929].

7.10.025 Delinquency charge.
A charge equal to $25.00 shall be added as a fee to each delinquent utility bill, except in cases of extraordinary hardship as determined by the finance director or his/her designee. The decision of the finance director can be appealed to the Edmonds city council by filing an appeal with the city clerk no later than 14 days after the director's decision was mailed. The account shall be considered delinquent if full payment is not made within 35 days after the sending of the regular billing. Such delinquency notice and billing will be provided 35 days following the mailing of a regular utility bill. This charge shall be applicable to all delinquent utility billing accounts. In order to be considered delinquent the outstanding principal balance of an account must total at least $40.00, and no delinquency charge shall be levied against any account balance under $40.00. This delinquency charge shall be paid prior to the application of any payment against the fee or charge initially assessed and nothing herein shall be interpreted to limit the city's collection of its attorneys' fees and other reasonable costs and charges in the event it is forced to seek judicial remedy for collection. Nothing herein shall be interpreted to limit the city's ability to enforce a sewerage lien on properties for delinquent and unpaid sewerage utility bills, as authorized by RCW 35.67.200 through 35.67.290, including terminating water service until charges are paid and/or pursuing sewerage lien foreclosure. [Ord. 4000 § 1, 2015; Ord. 3629 § 4, 2007].

7.10.030 Suspension of water use – Procedure.
Should a customer desire to discontinue the use of water for a period of time, notice thereof must be given in writing to the utility billing department. The water will then be shut off and turned on again upon notice to the utility billing department. The customer shall be required to pay charges as set forth in ECC 7.10.070. [Ord. 3629 § 5, 2007; Ord. 1942 § 2, 1977; Ord. 1448, 1969; Ord. 413 § 17, 1929].

7.10.040 Access to buildings.
Employees of the water division shall have access during business hours to all parts of buildings to which water may be delivered from the city mains for the purpose of ascertaining the number of rooms and families in the house or inspecting the conditions of the pipes and fixtures and the manner in which water is used. [Ord. 413 § 19, 1929].

7.10.050 Access to curb cocks and meter covers.
The water division shall have free access to curb cocks and water meter covers. All persons are prohibited from piling rubbish, building, or other materials thereon. [Ord. 413 § 20, 1929].

7.10.060 Limitation on water use.
In the event that a supplier notifies the city of a shortage of water or the director reasonably determines such a shortage to be imminent, the community services director or his/her designee is authorized to implement the water shortage response plan in order to efficiently safeguard the safety and health of the general public or to provide for the public convenience. The use of water in the city, or in any portion thereof, for irrigation, cooling, sprinkling or other uses may be forbidden, restricted, or regulated and such regulations may be made effective as to all customers or as to particular classes of customers. Rationing may be imposed during any shortage of water, either in lieu of or in addition to other measures hereby authorized.

A. Upon receiving notification from a water supplier of an impending water emergency, the community services director will notify the mayor and city council within 24 hours or on the next business day that a water emergency will be or has been declared.

B. The mayor or community services director will issue a public notification of the declaration of water emergency and imposition of restrictions.

C. Restrictions will be in effect immediately upon issuance of the public notification. Restrictions and the amount of surcharge for violations of mandatory restrictions will be posted and published within seven days of declaration at least one time in a daily newspaper of general circulation. Notification will be delivered to television and radio stations to provide public information coverage.

D. For emergencies when restrictions may extend beyond 21 days, public hearing before the city council will be scheduled by the community services director within seven days following the declaration of emergency. [Ord. 2774 § 1, 1990].

7.10.061 Water restrictions – Powers of the city.

The community services director or his/her designee shall conduct public education efforts regarding the benefits and necessity of conservation by the public, and is authorized to promulgate such rules and regulations as may be necessary to implement water use restriction. The regulations will be on file with the city clerk, and the regulations and any amendment thereto shall be effective 30 days after said filing with the city clerk. The community services director or his/her designee is further authorized to make exceptions to such restrictions in specific cases as he/she finds reasonable which may in the director's discretion include, but are not limited to, watering newly seeded or sodded lawns, food sources, landscape ornamental plantings required by the architectural design board, when necessary to alleviate unnecessary economic hardship to commercial or industrial activities, or to prevent possible damage to health, safety or welfare. [Ord. 2774 § 2, 1990].

7.10.062 Water restrictions – Surcharge.

It is unlawful for any person to violate water use and restrictions and violation of these provisions shall be a misdemeanor punishable under the general penalty provisions of this code. In addition to other lawful remedies, the community services director or his/her designee is authorized to impose a surcharge for the first occurrence after a documented warning notice and each subsequent violation in which a customer's water usage practices exceed water conservation restrictions as provided for in this chapter. Said surcharge will be added to and become a part of the water bill for the customer in addition to any service rate amounts as set forth in Chapter 7.10 ECC. Prior to the imposition of the first surcharge, a public works division representative shall deliver in person or post a notice at the service address advising of the customer's water usage practices in excess of mandatory water shortage restrictions and advising that a surcharge may be imposed for any further violations. A copy of the violation notice shall also be mailed to the owner and/or occupant. The community services director shall promulgate regulations providing for appeal of any notice of violation. Appeals must be received within five working days of delivery of notice of violation.

A. Surcharges for violations of water restrictions in effect for the balance of 1990 and until thereafter adjusted shall be:

$25.00 for first violation;

$50.00 for each violation thereafter.

B. Surcharges for all customer classes will be reviewed annually based on actual or projected expenses of the water division necessary to maintain a water supply during an emergency. [Ord. 2774 § 3, 1990].

7.10.063 Enforcement.

A. The community services director, or his/her designee, including any employee of the city of Edmonds public works division, or field personnel of the community services department, or police officer of the city, shall have the authority to enforce the provisions of this chapter.

B. In addition to the surcharges provided in ECC 7.10.062, the community services director or his/her designee is authorized to install a water restricting device on the waterline or lines serving any person who commits a second or subsequent violation of any of the provisions of this chapter. Alternatively, after such notice of a violation as may reasonably be given based on the circumstances, the community services director or his/her designee may cause water service to be terminated for subsequent or continuing violation of water conservation restrictions. [Ord. 2774 § 4, 1990; Ord. 2214 § 3, 1981; Ord. 1942 § 3, 1977; Ord. 547, 1943; Ord. 413 § 21A, 1929].

7.10.065 Suspension of service – Failure to comply with sewer connection notice.

A. There exists within the city of Edmonds certain earth subsidence and landslide hazard areas, and other environmentally sensitive areas in which the discharge of sanitary waste from private septic tanks constitutes a hazard to the public health, safety and welfare of the city. Such areas may be designated by the city council or by order of the public works director. The Meadowdale landslide hazard area, as defined and described in documents on file with the city of Edmonds and available for inspection at the request of any individual, is hereby declared to be such an area. Failure of any owner or owners of residential or commercial structures located within such a designated area to connect with available sanitary sewers following notice given in accordance with RCW 35.67.190 is hereby declared to be a public hazard and nuisance.

B. When any owner or owners of property have failed to connect within the period established by written notification, the community services director or his designee shall cause a notification of shut-off of water service to be delivered to the owners of such properties by registered mail. The notice shall specify that water service shall be terminated by the city within 10 days of the date of notice unless:

1. The owner or owners shall cause the property to be connected to the public sewer within such period; or

2. The owner or owners shall apply for a building permit within said 10-day period and connect to the sewer line, present a written contract or adequate assurance between the owner and a licensed plumber evidencing an enforceable obligation and intent to connect to such line and provide a bond in an amount sufficient to fulfill the terms of such agreement in the event that the owner defaults thereon.

C. In the event the owner fails to connect to the sewer line within the 10-day period or to provide the adequate assurances required by subsection (B)(2) of this section, water service to such residential or commercial structures and to the property on which they are located shall be discontinued. Service shall not again be instituted until such time as the owner has connected to the sewer system, paid the actual costs of the city including, but not limited to, disconnecting, reconnecting, notifying the owner and otherwise taking action with respect to the requirements of this section. The actual cost thereof may vary, but the city council hereby establishes such reconnection fee to be $250.00; provided, however, that in the event the actual costs are greater, they may be imposed by written order of the community services director or his designee and the reconnection shall not be completed until such time such assessed costs are paid. In the event that the owner or owners believe that the reconnection charges are in excess of the amount actually incurred or which reasonably may be incurred the city, the owner or owners may appeal the set fee or additionally designated fee to the hearing examiner in the same manner as if it were a Type II decision (see Chapter 20.01 ECDC). [Ord. 3736 § 6, 2009; Ord. 2676 § 1, 1988].

7.10.070 Turn on and turn off charges.

The charge for turning off the water at the main shall be $20.00 and the charge for turning on the water at the main shall be $20.00 if done during regular working hours. If the water is turned on or off at any time other than during regular working hours, there shall be an additional charge of $125.00. [Ord. 4000 § 2, 2015; Ord. 3629 § 6, 2007; Ord. 2880 § 2, 1992; Ord. 2214 § 4, 1981; Ord. 2179 § 2, 1980; Ord. 2139 § 5, 1980; Ord. 1942 § 5, 1977].

7.10.080 Request for inspection of meters.

The water division, upon the request of any water user, shall inspect the water meter on the user's premises. A deposit of $20.00 shall be made with such request to cover the cost of such inspection. In the event such meter is found to be overregistering, such deposit shall be returned to the depositor; otherwise, said deposit shall be retained by the city. [Ord. 3629 § 7, 2007; Ord. 821, 1960; Ord. 413 § 22, 1929].

7.10.110 Charge and bill adjustments.

The administrative services director, or such authorized representative as he may designate, is authorized to make adjustments or corrections to billings for any charge for water service, including but not limited to connection

charges, minimum monthly billings, meter charges, penalty and special charges, improperly charged rates, and, subject to the city council's approval, the cancellation of uncollectible bills and accounts. [Ord. 3629 § 8, 2007; Ord. 2179 § 2, 1980].

7.10.120 Service connections.
A. All tapping of mains, installation of corporation cock, service pipe leading from the mains to the property line, as well as the turning on and off of the water shall be performed by the water division. All connections inside of the premises shall be made by the owner and at his expense.

B. In case of application for water service on premises not abutting upon a street upon which there is a city water main, the city will lay its connection from the main toward the premises for a distance equal to the distance from the main to the curbline, the distance in no case to exceed 40 feet, and permit connection therewith by means of a union, or may, at the discretion of the director of public works, upon advance payment of the estimated cost thereof, extend the service to the premises of the applicant, but shall not cross or enter private property. [Ord. 413 § 12, 1929].

7.10.130 Service pipe – Depth and size – Work left uncovered until inspected.
All pipes leading from the city's service connection shall be laid not less than 24 inches below the surface of the ground and no work shall be covered up until it has been inspected and accepted by the water division. No such pipes smaller than three-fourths of an inch shall be used. [Ord. 413 § 13, 1929].

7.10.140 Dormant services – Connections.
Any service connection which shall have been inactive, unused or abandoned for a period of 60 days or the house removed from the lot for at least one day shall be considered a dormant service and the meter shall be removed by the water division. If a service connection is subsequently desired for all or a portion of the premises or property previously supplied by a dormant service, the owner of the premises or property or his authorized agent shall make application and pay a service charge in the amount shown in ECC 7.10.090.

7.10.150 Service pressure corrections.
A. Where the water pressure at the main is 80 PSI or greater, the customer may install an approved type strainer and pressure regulator on his own premises in an accessible location. All costs of installation, operation, and maintenance shall be borne by the customer.

B. In services where the water pressure at the main is considered by the customer to be lower than the desired pressure, such customer may, after first requesting and receiving approval of the director of public works, install a pump and pneumatic tank, or by other approved means provide increased pressure to the premises. The location of such installation shall be on the customer's premises and he shall bear all costs of installation, operation, and maintenance thereof.

7.10.160 Stop and waste valves.
Customers shall, at their own expense, install and maintain all pipes, connections and fixtures from the meter placed by the city. All pipes must be provided with stop and waste valves, protected from freezing and accessible at all times to the customer. The valves shall be located in such manner that said pipes may be drained to prevent freezing and the water may be shut off to repair pipes, fixtures, and appliances, and also to safeguard premises from water damage in case the meter is accidentally turned on. Additional stop and waste valves shall also be placed at all low points in the pipes when they cannot be otherwise drained. The city shall refuse to turn on the water until the provisions of this section are complied with. The city shall not be responsible for freezing, accident or damage of any kind beyond the property line. [Ord. 2179 § 1, 1980; Ord. 413 § 14, 1929].

7.10.170 Water shut-off – Temperature relief valve, pressure relief valve, and check valve required.
A. The city may shut off water from the main at any time for the purpose of making repairs without giving advance notice to the property owner. The city shall not be responsible for any damage proximately caused by said shut-off or failure to give notice of said shut-off.

B. All persons having boilers on their premises for the purpose of heating with hot water or radiant heat are required to have installed, at their expense, a temperature relief valve, pressure relief valve, and a check valve. The owner of the premises shall be responsible to the city for any damages to city water meters caused by water from the owner's

premises. The city shall not be responsible for the safety of boilers, hot water tanks, piping or other similar apparatus on the premises of any water customer.

C. The provisions of subsection B shall apply to all boilers presently existing in the city and those installed in the future. All boilers not in compliance at the effective date of this section shall be brought into compliance within six months of the effective date of this section. [Ord. 2009 § 1, 1978; Ord. 413 § 15, 1929].

7.10.180 Unlawful acts.

It is unlawful for any person, corporation, or association to break, damage, or injure in any way any pipe, gate, meter or other water system appliance, or to interfere in any manner with the proper operation of any part of the water system of the city of Edmonds, or to make connection to or alterations in any pipe whereby water may be drawn from the city mains or to take water from any fire hydrant, bibb, pipe, or fixture of any kind, without first having secured a permit from the water division or proper city official. [Ord. 821, 1960; Ord. 413 § 16, 1929].

Chapter 7.20

BACKFLOW PREVENTION

Sections:

7.20.010 Definitions.

A. "Backflow" means a flow, other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply.

B. "Backflow prevention device" means a device approved by the state of Washington, Department of Social and Health Services or such other state department as has jurisdiction over the subject matter and by the American Water Works Association, used to counteract back pressure or prevent back siphonage into the distribution system of a public water supply.

C. "Cross-connection" means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains or may contain contaminated water, sewage or other wastes or liquids of unknown or unsafe quality, which may be capable of imparting contamination to a public water supply as a result of backflow. [Ord. 1711 § 1, 1974].

7.20.020 Cross-connections declared unlawful.

The installation or maintenance of a cross-connection, which, in the opinion of the director of public works or his designee, will endanger the water quality of the potable water supply of the city of Edmonds, is unlawful. [Ord. 1711 § 1, 1974].

7.20.030 Backflow prevention devices to be installed.

Backflow prevention devices, when required to be installed in the opinion of the director of public works or his designated representative, shall be installed and maintained by the service customer on any service connection to the city of Edmonds water supply system where the backflow prevention devices are necessary for the protection of the city of Edmonds' water supply. [Ord. 1711 § 1, 1974].

7.20.040 Private water supply systems.

Use or operation of a private water supply system, contrary to the provisions of the ordinances of the city of Edmonds, or the laws of the state of Washington or the rules and regulations of the State Board of Health regarding public water supplies where the private system is served by the city public water supply is unlawful. [Ord. 1711 § 1, 1974].

7.20.050 Adoption of state regulations.

The community services director or his/her designee is hereby authorized to develop rules and regulations based upon and including the requirements of the rules and regulations of the State Board of Health regarding public water supplies and the protection of such supplies from contamination entitled "Cross-Connection Control Regulations in Washington State," the provisions of WAC 246-290-490, and the American Waterworks Association, Pacific Northwest Second Edition of "Accepted Procedure and Practice in Cross-Connection Manual." The provisions of the Washington Administrative Code, the rules and regulations of the Department of Health set forth in the Cross-Connection Control Regulations in Washington State and the previously referenced Accepted Procedure and Practice in Cross-Connection Manual are hereby adopted by this reference as fully as if herein set forth in full. Any additional rules and procedures necessary to implement such regulations shall be developed by the community services director or his/her designee as appropriate. Such rules and regulations shall be kept on file along with copies

of the above referenced regulations and manuals in the office of the city engineer of the city of Edmonds. [Ord. 2956 § 1, 1993; Ord. 1711 § 1, 1974].

7.20.060 Abatement of unlawful cross-connections and installation of backflow prevention devices – Procedures.

Cross-connections declared in this chapter to be unlawful whether presently existing or hereinafter installed and/or services requiring backflow prevention devices and/or unlawful use or operation of a private water supply system served by the city public water supply are public nuisances and, in addition to any other provisions of this code or the ordinances of the city of Edmonds on abatement of public nuisances, shall be subject to abatement in accordance with the following procedure:

A. In the event that the director of public works or his designee determines that a nuisance as herein provided does exist, written notice shall be sent to the person in whose name the water service is established under the records of the city of Edmonds water division, or alternatively, a copy of such written notice shall be posted on the premises served.

B. The notice shall provide that the nuisance described herein shall be corrected within 30 days of the date the notice is mailed or posted on the premises.

C. In the event the nuisance is not abated within the prescribed time, water service to the premises shall be discontinued.

D. In the event that the nuisance, in the opinion of the director of public works or his designated representative, presents an immediate danger of contamination to the public water supply, service from the city water supply system to the premises may be terminated without prior notice; provided, however, notice will be posted on the premises in the manner heretofore provided at the time the service is terminated. [Ord. 1711 § 1, 1974].

7.20.070 Penalties.

In addition to the remedies set forth herein, any person found guilty of violating any of the provisions of this chapter shall be subject to the penalties as set forth in ECC 5.50.020. [Ord. 1711 § 1, 1974].

Chapter 7.30

WATER RATES AND SEWER CHARGES

Sections:

7.30.010 Definitions.

A. “Dwelling unit” means a building or portion thereof providing complete housekeeping facilities for one family.

B. “Single-family residence” means a detached building containing one dwelling unit only.

C. “Duplex” means a building, occupying a lot, containing two dwelling units.

D. “Apartment houses” and other “multiple units” (except hotels, tourist courts, trailer parks, and motels) means a building or buildings used for and containing three or more dwelling units occupied on a weekly or monthly basis. Units rented on a weekly or monthly basis shall not be deemed to be tourist courts or motels.

E. “Hotels” means any place with individual rooms rented on a daily or weekly basis.

F. “Tourist courts” and “motels” means detached multiple units, occupied and paid for on a daily basis.

G. “Office buildings” includes all types of professional and business offices, including but not limited to architects, engineers, lawyers, doctors, dentists, real estate offices, etc.

H. “Commercial” and “retail buildings” mean all types of retail and commercial business establishments other than office buildings and other than industrial or manufacturing, and each such business shall be considered as a separate unit even though two or more may be in the same building.

I. In the event there is more than one type of operation in the same building, i.e., a professional office, a retail store, a restaurant, or an apartment, then in that case each separate category or type shall pay at the rate fixed under that particular category or type.

J. “Equivalent residential unit” or “ERU” means a sewer connection charge based upon the winter standard water consumption of a single-family residence of 7.07 per 100 cubic feet of water. [Ord. 3339 § 1, 2000; Ord. 786 § 1, 1959].

7.30.020 Separate single-family residence meters.

Each single-family residence building or structure served by water shall be provided with its own separate water meter. Prior to the time when such additional separate meters can be installed, water rates shall be applicable on the same basis as if the separate meters were actually installed. [Ord. 1449, 1969].

7.30.030 Water rates – Meter installation charges.

A. Base Rate. The bimonthly rates of water supplied through meters shall be fixed at the following levels:

	Current	1/1/2017	1/1/2018	1/1/2019
Single-family residence (per unit)	$28.68	$31.26	$34.07	$37.14
Duplex, apartment houses, condos and other multiunit residences (per unit)	$25.26	$27.53	$30.01	$32.71

All other customers:

Current	Meter	1/1/2017	1/1/2018	1/1/2019
$34.68	3/4"	$37.80	$41.20	$44.91
$70.60	1"	$76.95	$83.88	$91.43
$130.55	1 1/2"	$142.30	$155.11	$169.07
$199.04	2"	$216.95	$236.48	$257.76
$429.38	3"	$468.02	$510.15	$556.06
$608.22	4"	$662.96	$722.63	$787.66
$1,233.55	6"	$1,344.57	$1,465.58	$1,597.48

B. Variable Rate. In addition to the base rate set forth above, the customer shall be charged the following rate per 100 cubic feet of water consumed:

Current	1/1/2017	1/1/2018	1/1/2019
$2.99	$3.26	$3.55	$3.87

All water base rate and variable rate charges on water utility bills mailed on or after January 1st of each year shall be based on rates as reflected in this section corresponding with said time period.

C. Meter Installation Charges.

1. New service line and meter installation charges are fixed as follows:

a. 3/4" $550.00

b. 1" $800.00

2. The actual cost of street restoration (with regard to all surface streets) shall be added to any meter installation charge, if applicable.

3. When approved by the city engineer, new service lines installed by a developer on a plat shall be credited as follows:

a. 3/4" $175.00

b. 1" $200.00

D. All rates set forth in this section shall be exclusive of any applicable taxes.

E. *Repealed by Ord. 3618.* [Ord. 4052 § 1, 2016; Ord. 3945 § 1, 2013; Ord. 3903 § 1, 2012; Ord. 3802 § 1, 2010; Ord. 3618 § 2, 2006; Ord. 3616 §§ 1 – 3, 2006; Ord. 3400 § 1, 2002; Ord. 3339 § 2, 2000; Ord. 2974 §§ 1 and 2, 1994; Ord. 2898 § 1, 1992; Ord. 2880 § 1, 1992; Ord. 2657 § 1, 1988; Ord. 2361 § 1, 1983; Ord. 2339 § 2, 1982; Ord. 2305 § 2, 1982; Ord. 2255 § 1, 1981; Ord. 2211 § 1, 1981; Ord. 2197 § 1, 1981; Ord. 2139, 1980; Ord. 1963 §

1, 1977; Ord. 1898 § 1, 1977; Ord. 1709 § 1, 1974; Ord. 1457 § 1, 1970; Ord. 1385 § 2, 1968; Ord. 1263 § 1, 1967; Ord. 901, 1961; Ord. 786 § 2, 1959].

7.30.035 Water and sewer utility general facilities charges.

A general facilities charge (GFC) (formerly known as a "connection charge") shall be paid by each new customer connecting to the city's water or sewer system in accordance with the following requirements:

A. Sewer System GFC. The sanitary sewer GFC shall be paid by the applicant at the time and according to the date of side sewer permit issuance in an amount per equivalent residential unit (ERU) added as a result of the development as set forth in the table below; provided, that nonresidential building permit and business license applicants shall pay sewer system GFC when the proposed structure and/or business activity would generate additional probable sewer usage.

	2012 before effective date	2012 effective date forward	2013	2014 and beyond
Sewer GFC per ERU	$730.00	$2,573.50	$3,495.25	$4,417.00

1. A single-family residential applicant shall pay a GFC equal to one ERU per dwelling unit.

2. A multifamily residential applicant shall pay a GFC equal to 0.67 ERU per dwelling unit.

3. Applicants for nonresidential development shall pay a GFC equal to the ERU determination that is made by the public works director. This determination shall be made by estimating the probable sewer usage of the proposed development. In estimating the probable sewer usage, the public works director may consider, among other factors, the average winter water consumption for similar existing development in the city. If the applicant disagrees with the director's ERU determination, the applicant may submit additional information and analysis from a qualified engineer, with an additional $200.00 review fee, in support of a request for an alternate ERU determination. The director shall review the request for an alternate ERU determination and may accept the alternate calculation, revise the earlier ERU determination based on the new information, or uphold the earlier ERU determination. Once the director has made a final ERU determination, the applicant may pay the GFC under protest and appeal the determination, along with the underlying permit, to the hearing examiner.

B. Water System GFC. The water system GFC shall be paid upon, and according to the date of, application for water service, and based upon the size of the meter to be installed, as set forth in the table below:

Water Meter Size	2012 before effective date	2012 effective date forward	2013	2014 and beyond
3/4" meter	$908.00	$2,979.00	$4,014.50	$5,050.00
1" meter	$2,270.00	$7,447.00	$10,035.50	$12,624.00
1.5" meter	$4,540.00	$14,894.00	$20,071.00	$25,248.00
2" meter	$7,264.00	$23,830.50	$32,113.75	$40,397.00
3" meter	$14,528.00	$47,661.00	$64,227.50	$80,794.00
4" meter	$22,700.00	$74,470.00	$100,355.00	$126,240.00
6" meter	$45,400.00	$148,940.00	$200,710.00	$252,480.00
8" meter	$72,640.00	$238,304.00	$321,136.00	$403,968.00

C. No water connection charge shall be levied for connections to water mains installed pursuant to Local Improvement District Nos. 115, 146 and 152 by properties which participated in the establishment of said local improvement districts. [Ord. 3883 § 1 (Att. A), 2012; Ord. 3339 § 3, 2000].

7.30.036 Sewer special connection districts.

A. A connection charge shall be paid by each new customer connecting to the city's sewer system within the following described district(s). This special connection charge is based upon the actual cost of constructing improvements which relate directly and exclusively to homes within the district(s) and which are, because of the special nature of the construction, separate and distinct from the overall costs of the system paid by a customer pursuant to ECC 7.30.035. These charges shall be in addition to the charges paid by a new customer pursuant to ECC 7.30.035 and do not duplicate any costs contained in the underlying sewer utility connection charge.

B. 88th Avenue West Sewer Special Connection District.

1. Properties addressed as 21903, 21904, and 21911 88th Avenue West shown on Exhibit A attached to the ordinance codified in this section maintained on file in the city clerk's office and any subdivision, lot line adjustment or reconfiguration of the lots or the property represented by such addresses shall pay a special connection fee, to be paid in full at the time of connection to the sewer system, of $2,941.39 per lot.

2. Due to the significant additional sewer system construction that will be required at the property owners' expense to connect these properties to the sewer system after completion of the sewer project by the city, these properties may defer connection and shall not be required to connect to the sewer system within the time limit requirements of ECDC 18.10.010 and ECC 7.30.040.

3. The owner of any of these properties that does not connect to the sewer system within the time limits in accordance with ECDC 18.10.010 shall, upon connection to the sewer system, pay the above established special connection fee, increased based upon the Department of Labor Bureau of Labor Statistics Consumer Price Index for construction for the Seattle-Bellevue-Everett area from the effective date of the ordinance codified in this section to the time of connection to the sewer system.

C. Olympic View Drive Sewer Special Connection Districts.

1. Properties legally described, addressed and identified on the attached Exhibit A (maintained on file in the city clerk's office) as 7101, 7109, 7115, 7327, and 7333 Olympic View Drive, and 7530 184th Place SW/Olympic View Drive, or any subdivision, lot line adjustment, reconfiguration, or modification (including but not limited to legal description, address and other identification) of the lots or the property represented by those addresses shall pay, in addition to other connection charges and/or permit fees required by ordinance and/or resolution, a special connection fee, to be paid in full at the time of initial connection to the sewer laterals constructed in Olympic View Drive as identified on sheets 72-78 of the city of Lynnwood's construction drawings for the Olympic View Drive Phase 2 – 76th Ave W to 178th Place SW, as follows:

Address	Special Connection Fee
7101 Olympic View Drive	$4,015.85
7109 Olympic View Drive	$3,720.56
7115 Olympic View Drive	$3,569.45
7327 Olympic View Drive	$3,009.26
7333 Olympic View Drive	$2,939.29
7530 184th Place SW	$3,798.31

Upon declaration by the city that the aforementioned sewer laterals constructed in Olympic View Drive are operational, the properties in Exhibit A shall connect to the sewer system in accordance with the requirements of ECDC 18.10.010 and ECC 7.30.040; provided, that a four-month extension to connect shall be granted to any of said properties that is developed upon payment, before the expiration of the time limit to connect set forth in ECDC 18.10.010, of one-third of the respective special connection fee charged above.

Any of said properties that is undeveloped at the time the sewer laterals are declared operational shall be allowed to defer connection to the public sewer system until the time when the property is developed. The owner of a property with deferred connection shall pay, upon initial connection to sewer laterals in Olympic View Drive, the special connection fee as set forth above, increased by a cumulative multiple, to the extent permitted under RCW 35.92.025, equal to the Department of Labor Bureau of Labor Statistics Consumer Price Index for construction for the Seattle-Bellevue-Everett area from the expiration of the time limits to connect set forth in ECDC 18.10.010, which would then have applied had the property not been undeveloped, to the time of initial connection.

2. Properties legally described, addressed and identified on the attached Exhibit B (maintained on file in the city clerk's office) as 17632, 17708, 17626, 17806, 17810, 17910, and certain unaddressed property located between 17810 and 17910 Olympic View Drive and any subdivision, lot line adjustment, reconfiguration, or modification (including but not limited to legal description, address and other identification) of the lots or the property represented by such addresses shall pay, in addition to other connection charges and/or permit fees required by ordinance and/or resolution, a special connection fee, to be paid in full at the time of initial connection to the public sewer manhole and stub pipe located at the northwest corner of 180th St. SW and Olympic View Drive as identified on sheet 60 of the city of Lynnwood's construction drawings for the Olympic View Drive Phase 1 – 178th Place SW to 168th St. SW (public sewer manhole), of $4,932.85 per lot.

Due to the significant additional sewer system construction that will be required at the property owners' expense to connect to the above referenced public sewer manhole and stub pipe, the properties in Exhibit B, regardless of whether they are developed or not, may, notwithstanding the requirements of ECDC 18.10.010 and ECC 7.30.040, defer connection to the same.

The owner of a property that defers connection shall pay, upon initial connection to the public sewer manhole and stub pipe, the above established special connection fee, increased by a cumulative multiple, to the extent permitted under RCW 35.92.025, equal to the Department of Labor Bureau of Labor Statistics Consumer Price Index for construction for the Seattle-Bellevue-Everett area from the expiration of the time limits to connect set forth in ECDC 18.10.010 to the time of connection; provided, that if the property with deferred connection was undeveloped when the public sewer manhole and stub pipe were declared operational by the city, its owner shall pay, upon initial connection to the same, the above established special connection fee, increased to the extent permitted under RCW 35.92.025 by the aforementioned index from the expiration of the time limits to connect set forth in ECDC 18.10.010, which would then have applied had the property not been undeveloped, to the time of connection. [Ord. 3777 § 1, 2010; Ord. 3657 § 1, 2007].

7.30.040 Utility charges – Sanitary sewer.

The utility charges for sanitary sewer service set forth in this section shall be added to and made a part of the bimonthly or monthly rates for water supplied through the meters as set forth in ECC 7.30.030:

A. The following rates shall be charged on all billings after the effective date shown with respect to the following customers and/or service:

	Current	1/1/2017	1/1/2018	1/1/2019
Single-family residence (bimonthly per unit)				
Connected	$66.49	$72.81	$79.72	$87.30
Unconnected	$10.74	$11.76	$12.88	$14.10
Duplex, apartment houses, condos, and other multiunit residences (bimonthly per unit)				
Connected	$53.42	$58.49	$64.05	$70.14
Unconnected	$10.74	$11.76	$12.88	$14.10
Duplex, apartment houses, condos, and other multiunit residences (monthly)				
Connected	$26.71	$29.25	$32.03	$35.07

	Current	1/1/2017	1/1/2018	1/1/2019
Unconnected	$5.37	$5.88	$6.44	$7.05
All other customers (monthly)				
Fixed rate	$3.78	$4.14	$4.53	$4.96
Volume charge (per ccf)*	$4.28	$4.69	$5.13	$5.62

*per 100 cubic feet (1 unit) of metered water consumption

B. For customers who are not served by city waterlines but who are connected to city sewers, the charges shall be the same as set forth in subsection A of this section and its subparagraphs.

C. These rates do not apply to industries or manufacturing concerns which have industrial wastes. These, together with other activities not covered in this chapter, shall be dealt with on a special basis and have special rates set for the particular business by the water/utility administrative staff, subject to review and approval by the city council.

D. All property owners within an area served by a sanitary sewer system in the city of Edmonds are hereby directed and compelled to connect their private drains and sewers to the city system. Failure to do so within 30 days of written notice to connect by the city shall subject the property owner to a monthly penalty equal to that charge imposed by subsections A, B, and/or C above. Said penalty shall be billed to the property owner, and they shall be subject to payment, collection and enforcement in all respects as though they were utility customers of the city. All penalties collected shall be considered revenues of the sewer utility system. [Ord. 4052 § 2, 2016; Ord. 3945 § 2, 2013; Ord. 3570 § 2, 2005; Ord. 3400 § 2, 2002; Ord. 3339 § 4, 2000; Ord. 3195 § 1, 1998; Ord. 2823, 1991; Ord. 2657 § 2, 1988; Ord. 2551, 1986; Ord. 2361 § 2, 1983; Ord. 2255 § 2, 1981; Ord. 2197 § 2, 1981; Ord. 2181 § 1, 1980; Ord. 2147, 1980; Ord. 2139, 1980; Ord. 1898 § 2, 1977; Ord. 1465, 1970; Ord. 1458 § 1, 1970; Ord. 1264 § 1, 1967; Ord. 1051, 1964; Ord. 786 § 3, 1959].

7.30.045 Special connection charge.

In addition to any other charges prescribed by this chapter, a special connection charge shall be paid by the owner of any property, residential dwelling unit, or other structure that may hereafter connect to the sanitary sewer improvements constructed by any local improvement district formed by the city and for which no assessment was imposed or charged under the said LID. The special connection charge for each property, residential dwelling unit, or other structure so connected shall be equal to the amount of the assessment that would have been levied against such property, residential dwelling unit, or structure under the final assessment roll of the appropriate LID if the said property, residential dwelling unit, or other structure had been so assessed, together with interest thereon at the rate established by the ordinance authorizing issuance of the bonds for said LID, from the time of such authorization until the time of connection. The special connection charge shall be paid in a lump sum prior to connection to the sanitary sewer. The special connection charge provided for in this section shall apply only where the debt used to finance the local improvements has not yet been fully retired through assessment payments. If such debt has been fully retired through payment of such assessments, the special connection charge shall not apply. [Ord. 3332 § 1, 2000].

7.30.050 Unauthorized use of water.

It is unlawful for any person, firm, corporation, or other organization of any type whatsoever to take, or allow to be taken, water from the Edmonds water system without a valid per-

mit issued by the Edmonds water division. Any person, including the officers and/or directors of any firm, corporation or other organization of any type, who shall take water from the Edmonds water system without such permit shall be guilty of a misdemeanor and subject to the penalties set forth in ECC 5.50.020. In addition to such penalties there shall be a charge by the water division for the taking of such water at a minimum of $100.00 plus $1.00 per 100 cubic feet of water taken. Said water charge may be charged against the premises from which the water was taken and enforced by available liens or, where applicable, against the individual, firm, corporation or other organization of any type, including the officers and directors thereof, who took or caused to be taken said unauthorized water. References herein to water permits shall include all permits required for water usage within the city of Edmonds, or from the Edmonds water system, as required by the Edmonds City Code. [Ord. 1562, 1971].

7.30.060 Severability.
Should any section, clause or provision of this chapter be declared by the courts to be invalid, the same shall not affect the validity of the chapter as a whole or any part thereof, other than the part so declared to be invalid. [Ord. 786 § 6, 1959].

7.30.070 Water, sewer and stormwater rate reductions for low income citizens.
A. Definitions. For the purposes of implementing water, sewer and stormwater rate reductions under the provisions of this section, the following words or phrases shall have the following definitions:

1. "Low income citizen" shall mean a person who has established Edmonds as their residence and whose total disposable income including that of his or her spouse or cotenant does not exceed the amount specified in RCW 84.36.381(5)(b) as the same exists or is hereafter amended.

2. The definition of terms such as "residence," "total disposable income," "combined disposable income," and other such terms used in this section shall be given those meanings established by RCW 84.36.383 as the same exists or is hereafter amended. In the event that any provision of the Revised Code of Washington incorporated by reference or implication in this definitional section shall be amended, such amendment shall be deemed to be incorporated within or utilized in interpretation of this section.

B. Low income citizens shall be given reductions in the water, sewer and stormwater rates as those rates are established from time to time by the city council:

1. A rate reduction of 30 percent shall be afforded those low income citizens who meet the qualifying income and asset levels established by RCW 84.36.381(5)(b)(i) as the same exists or shall hereafter be amended.

2. A 50 percent rate reduction shall be afforded those low income citizens qualifying under the provisions of RCW 84.36.381 (5)(b)(ii).

3. No rate reduction shall be afforded to any person shown as a dependent on the income tax return of any other individual, whether or not such person resides at the location for which the rate reduction is sought, unless the total combined disposable income of the applicant, along with their spouse, cotenant and all family members shown on the income tax return in which the applicant is shown as a dependent, meets the standards established by this section.

C. The administrative services director is authorized to establish an application for low income citizens rate reduction applications. The application shall be provided without cost by the utility billing division of the city and shall include such information as may reasonably be required by the administrative services director to verify eligibility. [Ord. 3629 § 9, 2007; Ord. 2807 § 1, 1990; Ord. 2805 § 2, 1990; Ord. 2777 § 1, 1990].

7.30.080 Reserved.
[Ord. 2777 § 2, 1990; Ord. 2773 § 1, 1990; Ord. 2440, 1984; Ord. 2198 § 2, 1981].

7.30.090 Penalties.
A. Any person knowingly making any false or misleading statement in any application and/or renewal for rate reduction to any city employee with intent to secure the rate reduction authorized herein shall be guilty of a misdemeanor and punished as set forth in ECC 5.50.020.

B. Further, in the event of any such misrepresentation, the water rate may be increased retroactively and assessed against the applicant and/or premises as may be allowable by law including but not limited to lien procedures. [Ord. 2198 § 3, 1981].

Chapter 7.40

FIRE PROTECTION WATER SERVICE

Sections:

7.40.010 Application – Information.

Water shall be supplied for fire protection purposes only after application has been made by the customer or his agent and approved by the water division and fire department. Sufficient information shall be supplied at the time of making application for service to enable the water division to fully determine the nature and extent of the proposed system. Detailed drawings of the proposed system shall be provided, which shall contain adequate information showing the locations and sizes of the system's piping and appurtenances. [Ord. 1561, 1971].

7.40.020 Ownership and costs.

All fire service connections shall be installed by and remain the property of the water division. The expense for all labor, materials and equipment rental, including street restoration required for tapping mains, making connections, placing valves, meters, or any other protective device deemed necessary by the water division to prevent the unauthorized use of water, including the testing of completed work, meter pits and/or vaults, shall be paid for by the customer. [Ord. 1561, 1971].

7.40.030 Fire service to be metered – Second service to premises.

Fire service connections shall be supplied only through an approved fire service meter or a detector check meter. In the case of premises for which both fire protection and other water service for such uses as domestic, commercial, industrial, or manufacturing purposes is supplied, there may be two service installations made to the premises: one for fire service only and one for other water service. These service functions may also be combined in a single service connection with the approval of the water division.

In the event two separate service connections are installed, the fire protection system so served shall consist of an automatic sprinkler system only, without additional outlets which could normally be used for other than fire suppression purposes. [Ord. 1561, 1971].

7.40.040 Fire service monthly service charges.

A. The monthly rates for inspection and maintenance of detector check systems are fixed as follows:

Fire Service or Detector Meter Size	Bimonthly Service Charge
Up to 4"	$12.34
6"	$21.59
8"	$30.81

Water used through the fire service line for fire suppression purposes and limited testing of the system will normally be furnished without any charge in addition to the bimonthly minimum charge set forth for fire service meter or detector check meter.

B. If a detector check meter proves, or proof is otherwise provided, leakage or unauthorized usage of water which is not for fire suppression purposes, the customer shall pay for all water used at the applicable metered rate. The rates for water so used are fixed as follows: at the time of first written notice from the city water division the applicable rate shall be the same as the domestic rate for comparable size of domestic water meter for unauthorized use over 100 cubic feet per month; in the event the unauthorized use again occurs after the period of time specified in the

written notice from the water division, the rate shall be double the domestic rate for a comparable size domestic water for such unauthorized use over 100 cubic feet per month.

C. References made by this chapter as to existing metered rates shall be to Chapter 7.30 ECC. [Ord. 3629 § 10, 2007; Ord. 3457 § 1, 2003; Ord. 1561, 1971].

7.40.050 Violation – Penalty.

In addition to all civil rights of collection, liens, shut-offs and other remedies available to the city of Edmonds as prescribed by statute and ordinance for unauthorized use and/or nonpayment of charges, any person, firm, corporation or other organization, including any officers, directors and managers thereof, who violate any provision of this chapter shall be guilty of a misdemeanor and subject to penalties as set forth in ECC 5.50.020. [Ord. 1561, 1971].

Chapter 7.60

COMBINED UTILITY

Sections:

7.60.010 Combination of combined water and sewer utility and stormwater management utility.
The city is maintaining and operating a combined water supply and distribution system and sanitary sewage disposal system and, by Chapter 7.50 ECC, has created a stormwater management utility. Pursuant to the provisions of RCW 35.67.331, the present combined water and sewer utility, and the stormwater management utility, together with all additions, extensions and betterments thereof at any time made, are hereby combined into a single utility; provided, that the accounting procedure for each system shall be kept separate as required by RCW 35.37.010. The combined water, sewer and stormwater management utility of the city, together with all additions, extensions and betterments thereof at any time made, shall hereinafter be called the "combined utility."

7.60.020 Separate rates – Accountability.
The council declares its intent to establish rates for the combined water and sewer utility and stormwater management utility. In order to better account for the costs of the respective components of the combined utility, the administrative services director is directed to maintain such separate funds and accounting structures as may be necessary to discretely account for the costs, expenses and revenues of each component utility. When the staff makes recommendations for the establishment, increase or decrease in any rate, it is directed to provide supporting data which separately reflects such costs, expenses and revenues for each component utility.

7.60.030 Utility assistance fund.
A. Purpose. The city council establishes the utility assistance fund in order to accept, hold and dispense funds contributed either from the city's general fund, from charitable and civic organizations or from individual rate-payers who have made donations for the assistance of a category of citizens known under Article 8, Section 7 of the Washington State Constitution as the "poor and infirm" and under other provisions of other state statutes and local ordinance as the low-income, elderly and disabled.

B. Disbursement. Such monies as are contributed shall be held and disbursed to persons qualifying for the assistance programs established by ECC 7.30.070 and the provisions of state law incorporated in that section. Disbursements may be made, to the extent of monies held within the fund, for utility charges, connection fees, and other exactments levied by the utilities which, taken as whole, constitute the combined utility. The monies may be expended for purposes which generally benefit the public health, safety and welfare or are designated by the donor of the fund.

C. The administrative services director or his/her designee is hereby authorized to adopt forms and procedures for the acceptance of contributions to the fund and for the disbursement of monies from the fund. [Ord. 3393 § 1, 2002].

APPENDIX M

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ALDERWOOD
WATER & WASTEWATER
DISTRICT

September 15, 2017

Mr. Marshall Meyer
murraysmith, inc.
2707 Colby Avenue, Suite 1110
Everett, WA 98201

RE: City of Edmonds Comprehensive Water System Plan, June 2017

Dear Mr. Meyer:

Thank you for the opportunity to review and comment on the City of Edmonds Water Plan. As noted in the Plan, the Alderwood Water & Wastewater District is a conduit of water from the City of Everett source to several wholesale customers, including Edmonds. Our District recognizes the important role it plays due to being located in between the main potable water source in Snohomish County and retail suppliers such as Edmonds, and we value the solid working relationship between ourselves and the City.

The City's Plan indicates that it will have minimal population growth over the next twenty years, and minimal growth in use of water. The volumes projected in the Plan through 2035 are clearly within our contractual and physical capacity to provide.

In sum, we saw no issues with the Plan as submitted.

Sincerely,

Jeff Clarke
General Manager

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

September 19, 2017

JIM WAITE
EDMONDS, CITY OF
7110 – 210TH ST SW
EDMONDS WA 98026-7219

RE: Edmonds, City of, ID# 22500
Snohomish County
Water System Plan – 2017
Submittal #17-0708

Dear Mr. Waite:

Thank you for submitting the Water System Plan (WSP) for the City of Edmonds (the City) received in this office on July 26, 2017. We have reviewed the plan and offer the following comments. These comments must be adequately addressed prior to approval of this WSP.

System Description

1. The City shows Lynnwood and Olympic View Water District as emergency use interties; these sources are not listed on the City's Water Facilities Inventory. Please update.

Basic Planning Data

2. The City is now at a point where more accurate water use data is beneficial. How will the City position itself to collect more accurate source data, max day demand data, and peak hour demand data in the future?

System Design & Analysis

3. During the preplan meeting Edmonds had indicated a desire to add additional emergency interties and include them in the submitted water system plan. Does the City still wish to do so or will they be separate project reports outside of the planning process?

Water Use Efficiency Program (WUE) and Water Rights Assessment

No comment

Source Protection

No comment

Operations & Maintenance

4. Does Edmonds have a distribution water quality analysis or strategy? Parameters such as pH, alkalinity, conductivity, chlorine residual, HPC, ORP and others that can be used to establish seasonal baseline data. This data is helpful in determining optimized corrosion control, informing O & M and asset management decisions and provide baseline water quality data with which to compare in an emergency contamination situation.

5. We recommend working with Swedish Hospital and developing a legionella emergency response before an issue is detected. Having the hospital know who to contact and what steps the water system will take can save valuable time during an event. Please contact our office for additional guidance.

6. Coliform Monitoring Plan (CMP):

   - Make the following change on p.11 of the CMP: Treatment Technique Trigger. A trigger occurs when there is a confirmed contamination – that is, two or more samples are positive for coliform bacteria.

   - Edmonds could improve the coliform monitoring plan by completing an *E.coli* response plan.

   - Excellent that Edmonds has 36 sample stands; samples stands provide the best method for control over the quality of sample location. It appears that coverage is good over the service area. However, it would provide additional valuable information if the plan listed pressure zones, number of people served per pressure zone and sample locations. This would help answer whether each pressure zone was adequately sampled. The southwest edge of the service area does not have a sample stand; this reviewer is not sure the impact this has on monitoring results.

   - DOH contacts: Delete Jim Nilson as regional engineer; add Erika Lindsey, P.E., 253-395-6766.

7. Please provide a status report of your current cross connection control program. Who is the Cross Connection Control Specialist and when was the plan last evaluated? How many Table 9 hazards are identified in the City's water service area? How many are protected? What is the annual compliance percentage of device testing? What additional implementation actions need to be taken during this planning period?

8. Have you adopted the Water Main Break Protocol for Chlorinated Systems? (DOH Publication 331-583 – 1/1/2017)

Standard Plans & Specifications

No comment

Capital Improvement Program

9. The City has four large reservoirs ranging in age from 38 years to 57 years. Has the City developed criteria in determining the end of useful life for these tanks? How will the City pay for a replacement if one is needed?

Financial Program

10. Consider adding discussion of how the water system plans to incorporate the goals presented in the Governor's Directive 16-06 (see attached). The Governor directed water utilities to locate lead service lines and lead components in the distribution system over the course of the next two years, and replace in the next 15 years. How does this change the capital improvement plan and financial plan?

Other Documentation & Miscellaneous Comment

11. Prior to DOH approval, the City's governing body must approve and adopt the WSP.

12. Please provide copies of any comments made by adjacent purveyors, along with your response to those comments.

13. Is the City a member of WAWARN?

We hope that you have found these comments to be clear, constructive and helpful in the development of your final draft WSP. We ask that you submit the revised WSP on or before **December 20, 2017**. In order to expedite the review of your revised submittal, please include a cover letter summarizing how each of the above comments was addressed in the revised WSP and where each response is located (i.e., page numbers, Appendices, etc.)

Regulations establishing a schedule for fees for review of planning, engineering and construction documents have been adopted (WAC 246-290-990). Please note that we have included an invoice in the amount of **$5484.00** for the review of the Water System Plan. This fee covers our cost for review of the initial submittal, plus the review of one revised document. Please remit your complete payment in the form of a check or money order within thirty days of the date of this letter in the enclosed envelope or send payment to: **DOH, Revenue Section, and P.O. Box 1099, Olympia, WA 98507-1099.**

Thank you again for submitting your revised Water System Plan for our review. If you have any comments or questions concerning our review, please contact me at (253) 395-6771.

Sincerely,

Richard Rodriguez
WSDOH Regional Planner

cc: Erika Lindsey, DOH
Snohomish County Planning and Development Services
Snohomish County Health District
Marshall Meyer, P.E., Murray Smith, Inc.

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www.murraysmith.us