WAREHAM FIRE DISTRICT
PLANNING, MATERIAL AND CONSTRUCTION SPECIFICATIONS
TABLE OF CONTENTS

1.0 PREFACE

The intent of these rules is to provide customers, contractors, engineers, developers and others with a uniform set of regulations and standards by which any proposed or actual water work must adhere to these standards. These specifications may be amended from time to time at the discretion of the Board of Water Commissioners or their designee. Failure to know of, or conform to these specifications shall not be considered reason for deviation from these standards. It is the equal responsibility of the property owner and contractor to ensure proper compliance with the specifications as prescribed at the time of the work.

Property owners and contractors are encouraged to arrange for on-site pre-design and pre-construction meetings with the Superintendent or designee (Ph: 508-295-0450) to determine compliance with these specifications. Exceptions to these specifications may be granted if the deviation is in the benefit of the Wareham Fire District - Water Department (WFD), and upon written approval from the Board of Water Commissioners or their designee. Failure to comply with these rules may result in the termination of service. Any rule, regulation, or standard previously adopted by the Board of Water Commissioners or by the District not specifically addressed in these rules shall be enforceable as if it is part of these rules.

2.0 DEFINITIONS

Board or BoWC– Board of Water Commissioners

Certificate of Acceptance – Written verification from the Board of Water Commissioners or their designee, that all water system work is complete and without any outstanding deficiencies. Certificates of acceptance shall be issued by no sooner than one year after substantial completion of the work as determined by the WFD, and only if all deficiencies have been corrected.

Curb Stop Fee – A minimum fee charged to all inactive accounts as provided for in the rate schedule. A curb stop fee shall apply only to those accounts which 1) the water meter has been physically removed and returned to the Water Department, and 2) the curb stop is shut off. Inactive accounts that do not meet both conditions shall be charged the minimum fee even if shut off at the curb stop. The curb stop fee shall be charge twice annually to each account of record until such time the service is physically removed from the water system at the corporation stop.

Development Fees – A system development fee shall be paid for each new connection to either an existing main or a new service. The fee shall be paid prior to the connection being made by each new water taker. The development fee shall be based on tap size as listed in the rate schedule at the time service is required.

Dig Safe - Dig Safe® is a not-for-profit clearinghouse that notifies participating utility companies of your plans to dig. In turn, these utilities (or their contract locating companies) respond to mark out the location of their underground facilities. Dig Safe is a free service, funded entirely by its member utility companies and can be found at http://www.digsafe.com/ or by calling 811. Note:

1. Dig Safe does not mark utility lines. Participating utilities mark out utility locations.
2. WFD is <u>not</u> part of Dig Safe. All mark out requests must be made separately to WFD.

District – The Town of Wareham, Massachusetts less the area served by the Onset Fire District.

Engineer - The Districts' Consulting Engineer or his designated representative.

Inspector - The WFD Superintendent or his designated representative.

Inspection Service Fee – Three percent (3%) of the calculated total worth of the improvement to be paid prior to the commencement of work or time spent on site by WFD personnel at the current labor rates, whichever is greater.

Lateral or Non-Metered Connection – A water connection to any and all detached residential dwellings or commercial buildings after a meter. Each building serviced off a single meter shall be counted as a lateral connection and charged as prescribed in the rate schedule. Lateral water usage shall be included in the metered service allowance per billing.

Lead Free - The District only accepts service material, fittings, and meters which are considered "lead free." Lead free is as defined in the latest laws and regulations promulgated as well as associated amendments by the United States Environmental Protection (e.g. Lead and Copper Rule, Lead Contamination and Control Act, PART 141- National Primary Drinking Water Regulations: Part I, etc.), or Massachusetts Department of Environmental Protection.

Fire Protection (District) – Includes only those fire hydrants owned by the WFD and which are located within the public right-of-way. The water department is responsible for the repair, replacement and maintenance of fire hydrants owned by the WFD.

Fire Protection (Private and Town) – Includes both sprinkler systems and hydrants that: (1) provides exclusive protection to public or private building or parcel; or (2) is located on private property. Each privately/Town owned sprinkler and hydrant shall pay an annual "readiness to serve" charge in lieu of usage as prescribed in the rate schedule. The WFD is not responsible for the repair, replacement or maintenance of any private hydrant or sprinkler service.

Minimum Fee – A fee as described in the rate schedule charged to all active and inactive service accounts that have a water meter installed, or that are charged a flat fee (i.e. permitted manufactured housing or non-domestic un-metered accounts). The minimum fee shall be charge twice annually to each account of record.

Outside Water Sale – Water purchased from the tap at the Water Office at 2550 Cranberry Highway or from a metered hydrant.

Private - The term private is used to denote features and items which are not owned or accepted by the WFD.

Retainage– A specified amount retained by the District as a non-interest-bearing receipt calculated as two percent of the total worth of the improvement payable on substantial completion. The minimum retainage held as security shall be not less than $2,000.00. Said retainage shall be released only upon receipt of a written certificate of acceptance from the WFD.

Service Call – A service call is any customer initiated request for service. Service calls include but are not limited to, turn on/off, final readings, missed meter appointments, missed service appointments, relocating or reinstalling remote reading devices and meters, seasonal installations, inspections, and damaged meter replacements. A separate charge shall be established for scheduled and un-scheduled service calls. An un-scheduled service call is one where the service is provided on the day it is requested.

Specifications- Wareham Fire District Water Department Standard Specifications, Rules & Regulations as published and amended from time-to-time by the Board of Water Commissioners or their designee.

Standards - As a default position, the WFD uses American Water Works Association (AWWA) Standards and manuals of practice as the basis for products and practices. Where not specifically referenced here within, it should be understood these are the standards for materials and practices the WFD adheres to for day to day operation. The WFD also adheres to other industry standards common in the industry such as the Ductile Iron Research Association (DIPRA), National Sanitary Foundation (NSF), American National Standards Institute (ANSI) standards or as specifically reference here within. Where there is a conflict in one of these standards, the stricter standard will be adhered to for the product or practice.

Substantial Completion - The point in the work at which the WFD determines the installation is complete and all noted deficiencies as of that date have been corrected. Substantial completion does not constitute final approval or acceptance of the work for the release of retained funds held by the District.

Superintendent - The Water Superintendent of the Wareham Fire District Water Department.

Warranty Deposit - Funds held for addressing improper road cut trench and subsequent repairs. If road cut is within the paved area of the road, a $1,000 deposit will be held for 365 days. If road cut is within shoulder of the road, a $500 deposit will be held for 180 days. A request at the end of the time period must be made to WFD to release funds. At this time the WFD will inspect the road cut and if found satisfactory will refund the deposit. If the road cut is unsatisfactory, the contractor shall make the necessary repairs. If the contactor refuses to make the necessary repairs, the deposit will be used to make necessary repairs. Any remaining deposit after repairs will be provided back to owner.

Water - Potable water produced and supplied by the WFD.

Water Department or WFD - The Wareham Fire District Water Department, (WFD)

Water System (System) - Any pipe, valve, meter, fixture, facility, apparatus, or appendage that is in any way associated with the production, storage, transmission, and/or use of municipal water. The water system also can be referred to as the treatment and distribution system.

Work - The furnishing of materials, equipment, labor, and all incidentals necessary for adherence to these specifications.

3.0 GENERAL NOTES

Contractors should contact the Superintendent or designee at (508) 295-0450 for a pre-construction meeting, and an estimate of inspection charges, warranty charges, retainage charges, or any other charges, at least ten business days before the scheduled start of work.

Phased installation of water mains shall not be permitted in any new development unless specifically approved by the BoWC. The District reserves the right to retain water related securities until such time the installation, testing, and final inspection of all work is complete and deficiencies corrected for a period of one year after substantial completion.

Department personnel shall inspect water system improvements during the installation. The contractor is responsible for notifying the WFD five days before any work is to take place. WFD inspectors must be on site for the following:

1. Test pits, taps, tie-ins, or the installation of mains, hydrants and services.
2. When crossing any culvert, drainage pipe, stream or obstacle requiring a change in pipe material, direction, elevation, or as deemed necessary by the Superintendent.
3. Flushing, pressure testing disinfecting operations, dechlorination, and acceptance sampling 24 hours and 48 hours after dechlorination.

The Superintendent shall issue a Notice of Completion to the contractor when the improvements reach the point of substantial completion and all fees due to the WFD are paid in full. A Notice of Completion provided to the contractor does not relieve the property owner from correcting items identified as deficient during later inspections. WFD policy requires additional inspections of system improvements until the improvement is fully accepted. The WFD shall note each deficiency and may retain water related securities until the deficiencies are corrected. Property owners are encouraged to coordinate with the Superintendent before making a request for refunding securities to avoid delays in the release of securities.

Only licensed persons in the employment of the WFD shall operate any gate valve, hydrant, or curbstop on any main or service for turning water on or off.

No water shall be sold or taken from any hydrant, blowoff, corporation, or curbstop for any construction, paving, dust control, or hydro-seeding, or any other purposes without the permission of the Superintendent. All non-account water sold shall be through a meter and backflow owned and supplied by the WFD. The

charge for water sold shall be at current water rates. Any unauthorized use of water shall be reported by the WFD to the police for prosecution.

4.0 WATER MAIN MATERIALS

All water main materials used within the WFD system shall conform to ANSI/AWWA standards, and where applicable, have National Sanitary Foundation approval. All material must be installed as to have no leakage under 150 pounds hydrostatic pressure. In general, the WFD has standardized on lead-free materials and ductile iron for pipe and fittings. Cast iron fittings shall not be accepted.

PIPE: All water main pipe shall be buried at a depth of no less than 4.5 feet and not more than 6 feet deep and conform to one of the following standards:

a) District owned water mains

i. Class 52 (or better) or pressure class 350 North American made cement lined ductile iron pipe. Pipes will be manufactured by McWane Ductile, US Pipe, American Pipe, or approved equal.

ii. Pipe shall meet the latest revision of the following standards:

ANSI/AWWA	C104/A21.4	Cement - Mortar Linings
ANSI/AWWA	C105-A21.5	Polyethylene Encasement for Ductile Iron Pipe
ANSI/AWWA	C110/ A21.10	Ductile-Iron and Grey-Iron Fittings, 3 Inch Through 48 Inch for Water
ANSI/AWWA	C111/A21.11	Rubber - Gasket Joints
ANSI/AWWA	C115/A21.15	Flanged Pipe
ANSI/AWWA	C150/A21.50	Design
ANSI/AWWA	C151/A21.51	Water Pipe
ANSI/AWWA	C153/A21.53	Fittings - Ductile Iron
ANSI/AWWA	C600	Installation

iii. All products shall be constructed of ductile iron. Cast iron products are only acceptable if written permission is provided by the WFD.

iv. Exterior of pipe shall be provided with zinc coating as follows:

i. Consists of a layer of arc applied or paint applied, 99.99% pure zinc coating having a mass of 200g/m².

ii. Has a finish layer of standard shop applied bituminous paint in accordance with AWWA C-104.

iii. Pipe markings shall include the word "Zinc" in the pipe markings or label required by AWWA C-151 and/or other markings as deemed appropriate by the manufacturer.

iv. Shall comply with all applicable parts of ISO 8179 for zinc coatings.

v. Minor scratches in the zinc coating will not need to be repaired due to the self-healing nature of zinc coatings but larger areas shall be repaired by field application of a zinc rich paint in accordance with ISO 8179.

b) **Private owned mains -** Beyond District owned gate valves:

i. Material listed in paragraph a) above or

ii. C-900 DR-14 PVC (Permitted only beyond District owned gate valves)

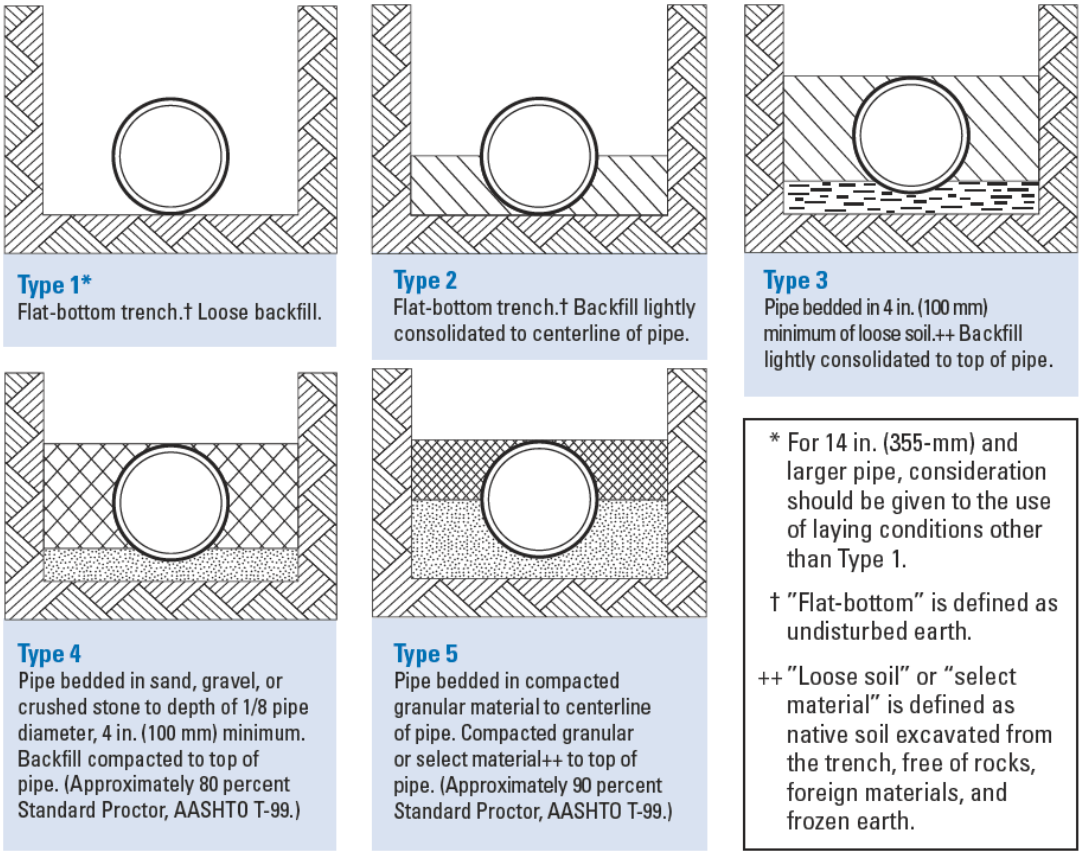
i. Where organic contaminants exist (e.g. petroleum) in the soil that are not compatible providing safe water with PVC pipe, PVC pipe shall not be used. In such situations only ductile iron pipe shall be acceptable.

iii. Fittings shall be ductile iron.

c) **Pipe Laying Conditions:** Pipe laying conditions shall be Type 5 (Table 1).

Table 1: Pipe Laying Conditions (Source: McWane Ductile)

LAYING CONDITIONS



Type 1*
Flat-bottom trench.† Loose backfill.

Type 2
Flat-bottom trench.† Backfill lightly consolidated to centerline of pipe.

Type 3
Pipe bedded in 4 in. (100 mm) minimum of loose soil.++ Backfill lightly consolidated to top of pipe.

Type 4
Pipe bedded in sand, gravel, or crushed stone to depth of 1/8 pipe diameter, 4 in. (100 mm) minimum. Backfill compacted to top of pipe. (Approximately 80 percent Standard Proctor, AASHTO T-99.)

Type 5
Pipe bedded in compacted granular material to centerline of pipe. Compacted granular or select material++ to top of pipe. (Approximately 90 percent Standard Proctor, AASHTO T-99.)

* For 14 in. (355-mm) and larger pipe, consideration should be given to the use of laying conditions other than Type 1.

† "Flat-bottom" is defined as undisturbed earth.

++ "Loose soil" or "select material" is defined as native soil excavated from the trench, free of rocks, foreign materials, and frozen earth.

Notes:
Consideration of the pipe-zone embedment conditions included in this figure may be influenced by factors other than pipe strength. For additional information on pipe bedding and backfill, see ANSI/AWWA C600.

American Association of State Highway and Transportation Officials, 444 N. Capitol St. N.W., Suite 225, Washington, DC 20001.

d) **Minimum Size**: The sizing of water mains shall be based on sound engineering principals. All water mains shall be minimum 8-inch nominal diameter. All hydrant connections shall be minimum 6-inch diameter.

e) **Minimum Length**: Pipe length for water mains shall be no less than 18 feet.

f) **Pipe Protection from Corrosion**: Where there is possible excessive corrosion due to corrosive soil conditions, a polyethylene encasement for ductile iron pipe shall be implemented per ANSI/AWWA C105/A21.5 or ASTM A674. Soil corrosivity testing shall be performed by a N.A.C.E. International certified personnel. All contractors installing pipe are required to perform this test and provide the results to the WFD.

g) **Restraining System:** All pipes shall be restrained. Restraints shall be provided by Sure Stop 350 gaskets for sizes 3 inch to 24 inches in diameter and TR Flex over 24 inches in

diameter or equal by approved manufacturers (Field Lok 350, Fast grip) . Where soil is believed to provide the necessary friction for restraint, permission shall be obtained by the WFD in writing and calculations by certified by a professional engineer in the state of Massachusetts shall be provided. Thrust blocks or mechanical joint restraints can be provided as described below are acceptable alternatives where appropriate.

h) **Water Body Crossing:** When it is necessary to cross a body of water requiring only a small deflection in the joints, restrained standard push-on or mechanical joint pipe can be used. If the water is deep and the angle of deflection in the joint necessary to follow the contour of the river bed is great, ball and socket pipe–with a deflection up to 15 degrees should be used. A combination of restrained and ball and socket joints shall be used.

i) **Gaskets**: Gaskets shall be used for appropriate application and contaminants present and meet AWWA standards. Nitrile gaskets shall be used where petroleum contamination exists. Manufacture recommended joint lubricants shall be used during assembly.

j) **Electrical Grounding**: No electrical grounds shall be made on water pipes, water services, fitting, water meters, or any other appurtenance. Electrical grounding shall be provided in accordance with the Massachusetts Electric Code.

k) **Looping**: Dead ends shall be minimized by looping of all mains when practical, from one part of the system to another. When dead end mains are allowed by WFD in writing, they shall be equipped with the means to provide adequate flushing which will give a velocity of 3.0 feet per second or greater in the main being flushed or provided with an automatic flushing unit at the discretion of the WFD. The WFD may also require a meter pit and meter associated with the automatic flushing unit.

PIPE FITTINGS: All pipe fittings shall be mechanical joint ductile iron class 350 conforming to AWWA standard C-153 and constructed of ductile iron. All mechanical joints shall be secured with a restraint as defined below.

All studs and bolts shall be provided with a sacrificial zinc end caps meeting ASTM B418-80 as manufactured by MARS (6 oz) of Ocala, Florida, Northtown Company of Huntington Beach, CA, or approved equal.

Exterior shall be provided with zinc coating as follows:

a. Consists of a layer of paint applied, 99.99% pure zinc coating having a mass of 200g/m².
b. Has a finish layer of standard shop applied bituminous paint in accordance with AWWA C-104.
c. Pipe markings shall include the word "Zinc" in the pipe markings or label required by AWWA C-151 and/or other markings as deemed appropriate by the manufacturer.
d. Shall comply with all applicable parts of ISO 8179 for zinc coatings.
e. Minor scratches in the zinc coating will not need to be repaired due to the self-healing nature of zinc coatings but larger areas shall be repaired by field application of a zinc rich paint in accordance with ISO 8179.

Similar to pipe, the fitting shall be wrapped in polyethylene if the soil conditions are found to be corrosive.

MECHANICAL JOINT RESTRAINTS: Retaining glands shall be provided wherever any water pipe is inserted into any valve, hydrant, or fitting, unless approved by WFD to do otherwise. Due to the varied pressures found in the system, the use of non-restraint type mechanical joint glands for the purpose of inserting pipe into any valve, hydrant or fitting is not authorized and will require replacement if used. The use of thrust blocking in addition to mechanical restraints is at the discretion of the contractor. The following retaining devices are approved for fittings, hydrants, and valves:

a. Mega-Lug® restraints
b. GripRing® restraints
c. or approved equal.

All studs and bolts shall be provided with a sacrificial zinc end caps meeting ASTM B418-80 as manufactured by MARS (6 oz) of Ocala, Florida, Northtown Company of Huntington Beach, CA, or approved equal.

VALVES: All gate, hydrant, and tapping valves shall open left and conform to AWWA Standard C-509 for resilient wedge valves constructed of ductile iron. The distance from the top of the valve nut to *final* grade should be no greater than six (6) feet. Valves buried greater than six (6) feet below *final* grade require an extension on the valve nut. Valves shall be operated through a 5¼ valve box. AWWA C515 - Standard for Reduced-Wall Resilient Seated Gate Valves for Water Supply Service shall only be acceptable if provided in writing by the WFD. Gate valves shall be constructed of ductile iron.

TAPPING SLEEVES: Tapping sleeves shall be full circumference shell and seal 316 stainless steel. Please note that for existing asbestos cement pipe that exists in the distribution system, contractors should determine the pipe Outside Diameter (OD) by test pitting before ordering the sleeve. Sleeves that do not properly fit the OD will be rejected.

AIR RELEASE VALVES: Air release valves are not permitted for use in the WFD system unless specifically approved in writing by WFD.

TESTING AND BLOWOFF ASSEMBLIES: Blowoff assemblies for air purging, pressure testing, and disinfection shall be temporary installations. The WFD requires a one (1) inch assembly consisting only of a tapping saddle, one-inch corporation, and HDPE tubing. Ten feet of tubing should remain above grade for pressure testing and disinfection purposes. Assemblies should be installed as close to the main line tap as possible, yet be safely out of the travel way. Consideration should be given to the need to re-excavate the corporation once testing is complete. Upon successful completion of required testing, the tubing will be removed from the corporation, and the corporation closed at the saddle. Hydrants located "in-line" at the end of any main may be used for flushing instead of a blowoff assembly.

FIRE HYDRANTS: All fire hydrants shall meet AWWA C502: Standards for Dry-Barrel Fire Hydrants. Hydrants shall be 5¼-inch diameter open left valve Mueller Super Centurion traffic model hydrants. All hydrants shall have a gate valve attached to an anchoring tee. Hydrants shall be painted in accordance with WFD color scheme. Steamer port shall be painted as to indicate main line diameter. The steamer port invert shall be 18 inches above *final* grade. Barrel risers will be installed as required.

VALVE BOXES: All gate and hydrant valves shall be operated through a North American made water valve box. The box shall consist of a cover marked “water”, a bell or flared base, and a 5¼-inch diameter top flanged sliding top. The valve box shall measure the length from the valve body to the finished grade plus six (6) inches. All valve nuts shall be centered and plumb in the box at a depth of between four and one half (4 ½) and six (6) feet below *final* grade. Valves buried greater than six (6) feet below *final* grade will require a centering extension rod drilled and tapped onto the valve nut.

VALVE BOX EXTENSIONS: Valve boxes may be brought to final grade utilizing 5¼ by 12 inch valve box flanged extensions. Pioneer style extensions are not acceptable for this application.

COUPLINGS: Couplings used in the installation, joining, or repair of water main pipe shall be "Dresser" style constructed of ductile iron. All couplings will be of the same nominal diameter as the pipe. Gaskets and end rings shall be sized to compensate for variations in pipe OD and materials.

PIPE REPAIR CLAMPS: Leaks along the longitudinal length of a pipe may be repaired in place using clamps. Repair clamps shall be full circumference shell and seal 316 stainless steel sized to properly fit the OD of the pipe being repaired.

BELL JOINT LEAK CLAMPS: Leaks from pipe bell joints may be repaired in place using joint clamps properly sized for the pipe.

5.0 WATER SERVICE MATERIALS

Water services shall be either one (1) or two (2) inch taps. All connections shall be compression type fittings with stainless steel inserts; flared fittings are not permitted. All material must be installed as to have no leakage under pressure. Water services shall be sized in accordance with AWWA M-22. The use of polyethylene pipe and tubing shall be used for water services 2 inches in diameter and smaller. Water services that are larger than 2-inches in diameter shall use cement lined ductile iron water pipe. The WFD has standardized on lead-free service connections manufactured by either Mueller or Ford.

No electrical grounds shall be made on water service pipes. Electrical grounding shall be provided in accordance with the Massachusetts Electric Code.

RESIDENTIAL METERS: Residential meters shall be 5/8" x 3/4" electromagnetic type capable of providing 25 gallons per minute maximum flow with an accuracy rating of >98.5 percent. Check with WFD on current makes and models accepted by the WFD. Meters, regardless of size, shall only be purchased from the WFD. All meters shall remain the sole property of the District. Requests for a meter larger than 5/8" x 3/4" will require the submission of a fixture analysis prepared in accordance with AWWA M-22 standards and Massachusetts Statutes and Regulations.

INDUSTRIAL/COMMERCIAL METERS: Industrial/commercial meters are 1 inch or greater in size and purchased through the WFD and installed by WFD or a licensed plumber. Check with WFD on current model(s).

The WFD shall inspect the installation before final approval.

SERVICE SADDLES: All water services shall be saddled. No direct service or blowoff taps are permitted. Saddles shall be CC threads with double anodized steel bands, and high strength ductile iron body sized to properly fit DI, PVC or AC pipe. Zinc caps shall be provided to protect steel bands.

WATER SERVICE TUBING: All water service tubing shall be Copper Tube Size (CTS) Polyethylene (HDPE) tubing with a working pressure of no less then 200 PSI, conforming to AWWA C-901. Tracing wire on plastic tubing is required for locating the pipe. Tracing wire shall be 12 gauge wire or thicker.

CORPORATION STOP: Corporation stops shall be an open left Mueller style compression ball stops with a tapered CC thread and a compression pack joint (CPPJ) for CTS tubing conforming to AWWA C-800 standards. Corporation stop shall be manufactured by Mueller or approved equal.

STAINLESS STEEL INSERTS: Stainless steel inserts shall be compatible for use with 200 psi CTS HDPE flexible water service tubing and shall be used with all compression fittings.

CURB STOP: Curb stops shall be open left ball valve with Mueller style compression type pack joints (CCPJ) on both ends, and shall be compatible for use with CTS HDPE tubing. Curb stop shall be manufactured by Mueller or approved equal.

THREE PART UNION: This service fitting has a Mueller style compression type pack joints (CCPJ) on both ends and is compatible for use with CTS HDPE tubing.

MALE and FEMALE CPPJ X IP ADAPTERS: Adapters are to be used with CTS HDPE tubing having a Mueller style compression type pack joint on one end, and iron pipe thread on the other.

CURB BOX: All water service boxes shall be North American made "Buffalo" Style 2½ inch to include cover, slide top and base. The curb box shall measure the length from the curb stop to the finished grade plus six (6) inches. All curb stops shall be centered and plumb in the box at a depth of between four and one half (4 ½) and six (6) feet below ***final*** grade.

BACKFLOW DEVICES: A backflow device shall protect all services. A Watts #7 dual check valve shall protect residential services. A pressure vacuum breaker, reduced pressure zone device, or a testable double check valve shall independently protect irrigation systems. A device as specified by the WFD consistent with the hazard potential shall protect commercial and industrial services. A testable double check valve or reduced pressure zone device shall protect fire protection systems as specified by the WFD.

6.0 WATER SERVICE APPLICATION PROCEDURE

APPLICATION – The property owner or their designated representative shall complete a Water Service Application Card upon which the property owner or their designated representative shall receive a copy of the "RESIDENTIAL WATER SERVICE APPLICATION RULES". Applications are available at the Water Department. The system development fee shall be paid at the time the application is made. Building permit signoffs require completion of a Water Service Application Card. Note: Filing the application activates the account for billing.

Filing of Water Service Application shall include payment of all fees due and if deemed necessary shall include the cost for running a hydraulic model by the WFD engineer. Applications should be submitted ten (10) business days before the installation of the service. Application fees include a $5/8^{th}$ inch meter and initial turn on fee. Tapping fees are additional[1]. Meters larger than $5/8^{th}$ - inch shall be paid for in whole by the applicant. All meters regardless of size shall be purchased from the WFD.

SCHEDULING SERVICE TAP
Upon application, the owner/contractor can schedule the tap with the Operations Manager, (580) 295-0450. A pre-installation site visit is required. Owner is responsible for road cut, trenching, backfill, road repair, and traffic control within the right-of-way. Installers must be on WFD's approved contractor list which can be obtained from the District front office. Meter pits may be required depending on site conditions as determined by the WFD. On water services that are greater than 200 feet in length, the owner will be required to purchase and install a meter pit. The meter pit shall be as close to the road as possible and at the direction and approval of WFD.

Owner shall obtain all permits for the road cut, including:

1. Dig safe number
2. Wareham Municipal Maintenance Excavation Permit, which can be obtained for applicant by WFD
3. State Department of Transportation trenching permit (State Roads Only)

SERVICE LINE INSPECTION FROM CURB STOP TO FOUNDATION- Only licensed master plumbers or drain layers are permitted to install water service lines. Installers must be on WFD's approved contractor list which can be obtained from the District front office. Inspections shall be scheduled with the water department at 508 295-0450. Inspections must be scheduled before 2:00 PM on the workday before the actual installation. There is no charge for scheduled inspections. Requests for same day inspections require a $70.00 service fee.

Inspections must be done before backfilling the trench. Backfill shall be suitable material free of debris and stones greater than 4-inch in size. Inspection on backfilled lines requires a pressure test. A valve must be

[1] Tapping charge (if required) pays only for the equipment, material and labor for the water main tap to curbstop. No excavation or road repair work is included. Chargeable items include; tapping/boring machine, vehicles /equipment, corporation stop, PVC tubing; curb stop, 2 ½ inch curb box, and hours of total labor. Road boring costs for cross road services shall be additional. All additional material and labor costs incurred by the District because of owner or contractor inefficiency, delay, cancellations, or site conditions shall be charged to the owner. Police details, Town of Wareham Road opening permit (e.g. excavation permit), and all other permits required shall be paid for by the owner.

installed on the service line inside the foundation for the inspection to be performed. Owner shall be responsible for all costs associated with installing the service line from curb stop to meter.

Service lines shall be installed in Type 3 laying conditions (See Table 1).

METER INSTALLATION - The meter setup and backflow device must be installed according to WFD specifications before the meter can be set. Water meters shall be installed and water turned on only by water department personnel. Meter appointments shall be scheduled with the water department at (508) 295-0450. Meter installations must be scheduled before 2:00 PM on the workday before the actual installation. There is no charge for scheduled appointments. Requests for same day installations require a $70.00 service fee.

7.0 PLANS

SINGLE SERVICES - Plans for a single residential service shall be required. The proposed location of the water service shall be shown on plan in relation to the dwelling and roadway. The precise location of the water service may be altered in the field with the concurrence of the WFD. A detail plan may be required for installations >150 feet in length, that cross wet or wooded lots, are within 10 feet of a septic system, require a meter pit, or where a plan would benefit the WFD. No water service will be permitted to any building connected to a well and obtain water service from the well. Buildings on properties with wells may be serviced provided there is no physical connection between the well and the plumbing serviced by District water. If deemed necessary, the WFD may required a water model be run by the WFD's engineering to confirm water availability and pressure. Cost for this model shall be covered by the owner.

WATER MAINS - Requests for water mains must be pre-approved by the BoWC. The minimum main for sub-division greater than ten units shall be eight (8)-inch. Sub-divisions of less than ten units may install a six (6)-inch pipe if adequate fire flow is documented by hydraulic modeling by the WFD's engineer. The pre-approval of water mains requires the submission of plans prepared by a professional engineer. All plans shall contain the note: "Installation of all mains, valves, hydrants and services shall be in accordance with the latest published WFD Specifications and Rate Schedules". The WFD requires the submission of the following plans for approval.

1. **WATER MODEL PLANS** – Water availability models are required for all developments, unless chosen by WFD to do otherwise. Two (2) copies of modeling plans shall be provided directly to the Superintendent during the planning phase of the development. Modeling plans are conceptual in nature used to determine the District's ability to provide adequate fire flow (750 gpm or better) while maintaining residual system pressure (25 psi) under peak demand conditions. Modeling plans shall be prepared on **one (1) sheet** and contain both a plan and profile view of the proposed extension. The plan view shall include lot lines, and the pipe layout. The profile view shall show pipe depth in relation to existing and final grades. Both the plan and profile views shall depict stations at 100 foot intervals. Plans should be clearly delineate water assets. Plans, which contain excessive topographical, drainage, landscaping, roadway, or other non-water, related notes, details or drawings, will be rejected without review. A data block shall include sub-division name, developer and engineer contacts, lot numbers, average lot and dwelling sizes, type of development, connecting and proposed street names, pipe size and type and other necessary information.

2. **TECHNICAL REVIEW PLANS** - The technical review (TR) plan shall be similar to the model plan only in greater detail and without the profile view. TR plans shall indicate the general layout of the water improvements in relation to other underground utilities and lots. In place of the profile view will be the notes and details necessary for the Superintendent to review the plan. TR plans should be prepared on **one (1) sheet**. TR plans, which contain excessive topographical, landscaping or other non-water related notes, details or drawings, will be rejected without review. Two copies of the TR plan will be supplied directly to the WFD.

3. **FIELD PLANS** - Field plans are the TR plans except they contain the revisions noted during the review process. Field plans are used by the WFD during pre-construction and construction activities for planning and inspection purposes. Construction plans are not acceptable for use as field plans.

During pre-construction and construction activities, the Superintendent may agree to, or require, minor modifications to the field plan if the revision benefits the District. Field plans shall be prepared on **one (1) sheet** and contain no non-water related information. Two copies of the field plan will be supplied directly to the WFD before the pre-construction site meeting.

4. **AS BUILT PLANS** - As-Built plans shall be submitted to the District upon completion of the work. As-built plans shall accurately reflect the installation of the water main. As-built plans shall be clearly marked as such. As-built plans will be used in retainage reduction inspections of the completed work. Submission of as-built plans to the WFD is required before the release of any water related securities held by the District. As built plans shall be similar to field plans, but include the measurements, swing ties, depths and other information relating to the installation. As-built plans shall be prepared and stamped by a professional engineer or land surveyor in accordance with the requirements of the Superintendent.

8.0 INSPECTIONS, TESTS, PERMITS, AND RECORDS

Contractor shall coordinate with the Superintendent for inspections and the calculation of the inspection services fee. The contractor shall arrange and pay for all required tests. WFD must be present on-site at the initiation of the test for it to be validated by the Superintendent. The contractor is responsible for obtaining and having on site, excavation permits to include Digsafe, Wareham Municipal Maintenance Department or Mass DOT excavation road cut permits. No water work shall take place without the proper permits and or details in place. The property owner is responsible for keeping accurate records to produce "as-built" plans. Any fees required for obtaining permits are the responsibility of the contractor.

Inspection services provided by the WFD do not guarantee the quality of workmanship or the functionality of the improvement at the time of installation or thereafter. Inspections provided by the WFD are to determine that materials used and the installation procedure complies with these specifications. No District approval of the work, design, materials or installation is expressed or implied with an inspection.

9.0 EXCAVATIONS

Excavations shall follow all local, State, and Federal safety regulations. The following are specific rules and requirements for excavations within the WFD. Where there is a conflict here with the Wareham Municipal Maintenance Department rules and regulations for road, the guidelines from the Wareham Municipal Maintenance Department rules and regulations shall apply over the Water Department rules and regulations for road repairs.

a) Excavation Permits
    1. Excavation permits obtained by the WFD on behalf of another party shall require the posting of a cash deposit of $500.00 for unimproved roadway or shoulder excavations, and $1,000.00 for improved or paved road excavations. The deposit shall be retained without interest until a release of the permit is granted from the Town. Deposits are released upon written request and release.

b) No excavation shall remain open after working hours (7:30 a.m. to 4:00 p.m.) unless provided in writing by the WFD. All excavations shall be backfilled and paved, or covered with steel plates as approved by DPW at the end of work each day. During working hours, open excavations shall be attended to help prevent falls in unauthorized access.

c) The maximum length of open trench permissible at any time shall be two hundred (200) feet, and no greater length shall be opened for pavement removal excavation, construction, backfilling, repairing, or any other operation without the express written permission of the WFD.

d) Excavations across Town or State roadways will require the utilization of "trenchless technology" and/or the use of a “flowable fill” type material as discussed below. Deviations from this will be required in writing from the WFD.

e) Workmanship:
   1. The Contractor shall furnish all materials and conduct the job in an orderly, timely, quality-controlled manner.
   2. The Contractor shall keep a competent foreman and sufficient competent employees to carry on the work with proper speed and in accordance with the requirements of law and other public authorities and to the reasonable satisfaction of the WFD
   3. The Contractor shall conduct the work in a manner that will not unreasonably interfere with other work being done by the Town or WFD, by contract or otherwise. If deemed necessary by the WFD, the work done under these standards shall conform to the progress of said other work. The Contractor shall cooperate with the contractors or employees who may be doing work for the Town or WFD, and with public service corporations affected by the work in arranging for storage places, temporary support for structures, repairs, etc.
   4. All temporary repairs shall be properly maintained by the Contractor to assure good rideability conditions until the end of the guarantee period or until permanent restoration has been made, whichever first occurs.
   5. Permanent pavement restoration accomplished by utility companies shall be properly maintained to assure good rideability conditions until acceptance by the WFD and Town.

f) Removal of asphalt pavement:
   1. All initial excavations into paved street surfaces shall be precut in a neat line with pavement breakers or saws.
   2. Saw cutting is the preferred method for work done for the WFD. The use of hydro-hammers or heavy-duty pavement breakers for breaking pavement are limited on all streets unless written permission is granted by the WFD for their use after due consideration of the location, the condition of the street, and the depth of saw cutting required ahead of the use of the hammers.
   3. No irregular pavement cut shapes will be allowed. No shape will be allowed that would prevent compaction equipment from adequately compacting all of the area.
   4. The shape of pavement cutouts shall be rectangular, or a combination of rectangular and square shapes unless otherwise agreed to by the WFD and Contractor.
   5. Pavement edges shall be trimmed to a neat vertical face free of loose materials and neatly aligned with the centerline of the trench.
   6. Unstable pavement shall be removed over cave outs and overbreaks and the subgrade shall be treated as the main trench.
   7. The Contractor shall make every effort to avoid damage to existing pavement to remain. Any damage shall be promptly repaired by the Contractor.

g) Removal of concrete pavement:
   1. Sawcutting of reinforced Portland cement concrete is required with the depth of the cut being the full depth of the pavement unless otherwise directed by the WFD to retain reinforcement.
   2. Sawcutting may be required by the WFD outside of the limits of the excavation over cave-outs, overbreaks and small floating sections.
   3. Reinforced concrete pavement, to the extent possible, shall be removed without cutting the reinforcement. The bars or mesh, when cut, shall be severed as close to the center of the trench as practicable and bent back to permit accomplishment of the work. When the pavement is ready to be permanently replaced, the reinforcement shall be bent back into position and reinforced with other bars or mesh which shall overlap the ends of existing reinforcement not less than twelve (12) inches and be securely wired together.
   4. Contact faces between new and existing concrete pavement shall be bonded using an approved epoxy binding agent installed and applied in accordance with the manufacturer's instructions, unless otherwise directed by the WFD.

h) All material excavated from trenches and piled adjacent to the trench or in any street shall be piled and maintained in a manner that will not endanger those working in the trench, pedestrians or users of the streets, and so that as little inconvenience and obstruction as possible is caused to those using

streets and adjoining property. The excavated material shall be hauled away from the site by the end of each working day.

i) The Contractor shall secure the necessary permission and make all necessary arrangements for all required storage and disposal sites.

j) When excavated material is laid along the side of the trench, it shall be kept trimmed. Whenever necessary in order to expedite the flow of traffic or to abate the dirt or dust nuisance, toe boards or bins may be required by the WFD to prevent the spreading of dirt into traffic lanes. If any portion of the excavated material is allowed to be used as backfill, it shall be stockpiled separately from all other materials.

k) Sections of sidewalks and curbs shall be removed to the nearest real joint or scoreline.

l) Tunneling, boring or other methods may be required by the WFD to avoid or minimize pavement removal.

m) Special Condition(s)
    1. Traffic Management Plan
        i. The Contractor shall prepare, and submit to the WFD, a plan that shows the routing of traffic during construction. The plan shall show the area and dimensions of the roadway pavement available for traffic during each stage of the work. The plan shall include all temporary barriers, signs, pavement markings, drums and other traffic control devices required to maintain traffic together with the limits of temporary pavement and necessary steel plates. The plan shall include all the requirements by the Town of Wareham Municipal Maintenance for road openings, or MassDOT requirements.
    2. Steel Plates
        i. Design Requirements:
            1. The Contractor shall select and design the temporary steel plate and supporting system. The design calculations and Drawings shall be prepared, signed, and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts experienced in design of temporary traffic decking.
            2. Design shall be in accordance with Loads and Design Criteria standard to the industry for this type of work, and with the following requirements:
                a. For vehicular ramps, limit maximum grade to 5 percent.
                b. For pedestrian ramps, limit maximum grade to 8 percent.
                c. Conform with Americans with Disabilities Act Accessibility Guidelines (ADAAG) at all pedestrian traffic locations.
                d. Design of support members shall allow clearances for existing and relocated utilities.
                e. Provide access to utilities, fire hydrants, and other facilities requiring unique access. Requirements at each site shall be obtained from the respective agencies affected.
                f. Plates shall overlap the trench width by at least 2 feet on each side.
        ii. Construction Methods:
            1. Install and maintain the temporary steel plate systems only with express WFD approval.
            2. Not more than two (2) steel plates shall be used at any time.
            3. Steel plates shall not be used between November 15 and April 15 or at any time when snow is forecasted.
            4. Place 48” x 48” orange and black construction sign, stating “Steel Plates 100 feet” to provide drivers with advanced notice.

5. Provide wood wedges under plate edges at uneven surfaces to minimize movement.
6. Provide temporary asphalt at the plate edges to provide lessen impact to vehicle traffic or trip hazard to pedestrian traffic and to assist in holder plate in place.

iii. Maintenance:

1. Inspect the condition of temporary steel plates at least once a day. Continuously maintain plates to conform to design requirements and construction requirements. Immediately repair defects such as broken, bent, or loose plate members, and protruding fasteners. Patch adjacent paving as potholes develop, and immediately re-secure and bed loose transition members, plates, and ramps to the existing pavement.
2. Maintain steel plates free of accumulations of snow, ice, water, mud, and debris.
3. Perform maintenance, repair, or replacement whenever there is noticeable deterioration of any material or component from its original conditions

10.0 TRENCHING, BACKFILLING, and PAVING

The minimum depth of cover over the spring line, crown, or top of the pipe shall not be less than 4½ feet and no more than 6 feet at the time of installation. In such cases where 4 ½ feet of cover is not possible, the piping shall be appropriately insulated water pipe. Where there is a conflict here with the Wareham Municipal Maintenance Department rules and regulations for road repair (temporary and permanent), the guidelines from the Wareham Municipal Maintenance Department rules and regulations shall apply over the Water Department rules and regulations for road repairs.

The trench bottom and sidewalls shall be free of boulders, protruding ledge, stones larger than four inches, roots, trash, asphalt, debris or other unsuitable materials. Backfill shall likewise be free of boulders, ledge, stones larger than four inches, roots, trash, asphalt, debris, clay, fine sand or other unsuitable materials. Pipe laying shall be type 5 for water mains and type 3 for service lines (See Table 1).

The following are the rules and requirements for trenching, backfilling, and paving:

a) Trenching

1. Any trench or backfill that is unsuitable in the opinion of the WFD due to depth, stability, wetness or clay content shall be rejected for use.
2. Trench bottoms shall be at a uniform depth to grade at installation. Irregular trench bottoms may be made uniform using a bedding material six inches in depth. Bedding material shall meet the same standards as the backfill previously described. Pipes shall be installed only in dry trenches. All open ends of pipe shall be closed off to prevent water, dirt, animals, or other foreign substances from entering the pipe.

b) Backfill

1. Before backfilling, the Contractor shall notify the WFD for inspection. Backfilling shall not occur without WFD approval.
2. In unpaved areas, excavations shall be backfilled as directed by the WFD with approved material thoroughly compacted in layers not to exceed twelve inches (12 inches) in thickness until flush with the surrounding ground surface. If the backfilled material settles, additional approved materials shall be installed by the Contractor, as required, to keep the surface even. After settlement is completed, the excavated area shall be left by the Contractor in as good a condition as before the work was started.
3. Temporary sheeting and bracing used to support the side walls shall be removed, unless otherwise directed by the WFD, as backfilling progresses. When backfilling has reached the bottom of a brace, the latter and its horizontal ranger shall be removed, and this

procedure shall be repeated throughout the backfilling operation. The sheeting shall be pulled in short increments, care being taken to avoid significant lateral movements of the sides of the trench. During and after pulling the sheeting, the backfill in the space formerly occupied by the sheeting shall be compacted.

4. Whenever water is found standing in the excavation area, the water shall be removed by pump or other means before backfilling operations may commence.
5. Backfilling shall be performed as soon as practicable so that the least possible subsequent settling will occur. In most cases backfilling shall occur on the same day as the excavation was begun. If this is not feasible due to the complex nature of work, emergency, or unpreventable conditions, the Contractor shall notify the WFD that same day, if not sooner, and take appropriate measures to protect public safety and infrastructure until work commences again the following day.
6. Backfill in paved areas shall be granular gravel borrow, processed gravel, sand or crushed stone material (dependant on the specific utility) placed to a depth of 1 foot over the utility. In paved areas, trenches shall be backfilled in 12-inch lifts. Each lift shall be thoroughly compacted by means of a vibratory or mechanical compactor before the next lift is laid in place. The backfill shall be placed up to the pavement subgrade surface.
7. Broken pavement, large stones, roots and other debris shall not be used in backfill. Unused excavated material shall be removed from the jobsite and disposed of in a manner that will minimize interference and obstruction with pedestrian and vehicular traffic. No material shall be left within the right-of-way once the repair and/or installation is complete.
8. WFD may require the use of Excavatable Controlled Density Fill (CDF or Flowable Fill) during backfilling. Within the limits of the pavement, the trench shall be backfilled with Flowable Fill to an elevation of four (4) inches below the top of the paved surface. The following additional conditions must be met:
    a. Only Type IE, Excavatable Fill will be allowed.
    b. This material shall not be used for bedding material or in situations that will cause floating of the utility lines, or in the presence of cast iron or steel pipes.
    c. CDF placement in trenches shall be fully barricaded or police protected for a minimum of three (3) hours after the pour or until a set is reached that will prevent a hazard to animals or humans.
    d. CDF shall be separated from gas lines with a minimum of six (6) inches of sand cover over the lines.
    e. Excavations that cross or extend into the public right-of-way shall be saw cut and backfilled with a “flowable fill” type material to grade and allowed to cure for at least 24 hours before the application of the binder coat. Contractor is responsible for maintaining at least one lane of traffic flow using road plates or barricades as well as meeting all State and Federal safety requirements.

c) Temporary Pavement

1. Upon the completion of proper backfilling, the Contractor shall install temporary pavement. The Contractor shall take all reasonable measures to complete temporary pavement on the same day excavation work was begun. If same day paving is not achievable due to complexity of work, emergency, or unpreventable conditions, the Contractor must notify the WFD as soon as practicable that same day, if not sooner, and take appropriate measures to protect the public safety and infrastructure until work commences again the following day. The most stringent measures will be required on primary streets. Same day paving will typically be required if work is not expected to be continued the next day, regardless of location.
2. The Contractor shall notify the WFD 24 hours prior to beginning paving operations for inspection. All hot mixed asphalt paving must first be approved by the WFD as to depth and materials; this applies to both temporary and permanent paving activities.
    a. Notification of the anticipated timing of all paving activity must be acknowledged by the WFD. Any notification delivered by facsimile machine must be preceded or followed up by a telephone conversation to assure its proper and timely receipt.

b. Contractors shall endeavor to make a follow-up notification by 9:00 a.m. of each workday that paving is still anticipated. In the event of schedule changes or emergencies, the Contractor shall provide a minimum of one-hour notification to assure inspection availability.
c. If a WFD inspector is not able to be on site within 24 hours of the acknowledged anticipated start time of paving activity, the Contractor may be allowed to commence paving. Inspector may sample in-place material for specification compliance.
d. Contractors who do not provide proper notification of paving activities may be subject to required removal and replacement of pavement for the purpose of inspection.

3. All temporary pavement shall be hot mixed asphalt, conforming to MassDOT Standard Section 460, placed in one and a half (1.5) inch compacted courses to a total depth of three (3) inches. If a layer of concrete, cobblestone, granite pavers, or other supporting material also exists, the Contractor shall install concrete to match that depth prior to installing temporary pavement.
4. If excavation (or pavement damage) occurs at or within twenty four (24) inches of the edge of trench, the Contractor shall place temporary pavement to the edge of existing sound pavement.
5. Hot mixed asphalt paving of trenches deemed by the WFD to be major excavation shall be paver applied, unless otherwise authorized by the WFD.
6. The Contractor shall maintain the temporary pavement and shall keep the temporary pavement in acceptable condition until the end of the guarantee period, or until permanent pavement is installed. At this time, the temporary pavement shall be excavated to the required grade in order to place the permanent bituminous concrete pavement.
7. The Contractor shall perform any necessary restoration beyond the limits of the street pavement, including lawns, esplanades, shrubs, gardens, curbing, sidewalks, underdrains, separations fabrics, fences, walls, etc. if they have been damaged during their construction work. Upon completion of the permanent repairs outside the limits of the street pavement, the Contractor shall notify the WFD in writing that the permanent repairs and/or replacements have been completed, setting forth the date of completion. The Contractor shall maintain the repaired area outside of the pavement for a period of one (1) year after completion, with the exception that once proper horticultural growth has been established, no further horticultural maintenance will be required.
8. Refilling of bar holes made in the street or sidewalk shall immediately, upon completion of the work, be filled with compacted, granular material up to three (3) inches below the paved surface and the remaining three (3) inches filled with an approved asphalt plug.
9. All traffic control signs (i.e. STOP, YIELD, DO NOT ENTER, ONE WAY, NO PARKING, SPEED LIMIT, CURVE WARNINGS, etc.) approved by the WFD via the Municipal Maintenance Department for removal, relocation, replacement, etc. shall be immediately replaced by the Contractor, unless otherwise directed by the WFD. No such traffic control sign shall be removed, relocated or replaced without the express approval of the WFD.
10. All traffic devices, signs, pavement markings or traffic loops disturbed, damaged, altered or removed by the Contractor shall be promptly replaced by the Contractor, unless otherwise directed by the WFD, in accordance with Town and State of Massachusetts rules and regulations at the expense of the Contractor. The Contractor shall promptly repair all other damage caused by the work or activities. Street markings (centerlines, crosswalks, stop bars, lane markings, etc.) and traffic loops shall be replaced no later than thirty (30) days after completion of work or as may be directed by the WFD. If work disturbs centerlines or lane markings on primary streets, the Contractor shall place temporary reflective markers immediately after the pavement is placed.

d) Permanent Pavement

1. The existing pavement shall be sawcut a minimum of six (6) inches beyond the initial excavation limits to expose a six (6) inch width of undisturbed soil.

2. The temporary pavement, backfill and undisturbed soil shall be removed to the depth of the proposed pavement and disposed of off the site.
3. The permanent pavement shall be:
    i. Binder coat shall be a minimum of three (3) inches in depth set in place as to accommodate a minimum of two (2) inches of finished topcoat. Finished asphalt shall be rolled to a flat uniform surface. The Wareham Municipal Maintenance Department shall issue a road cut permit which may include additional conditions or requirements.
    ii. Binder shall be founded on 4 inches of Dense Graded Crushed Stone on 8 inches of Processed Gravel or Dense Graded Crushed Stone. This pavement structure shall be placed on the backfill.
    iii. If pavement depth is greater than 5 inches, the Contractor will be required to match the existing pavement thickness. Increased depths of pavement may be considered on a case by case basis.
4. Trench backfill shall be checked for compliance with 95 percent compaction requirement. If compaction is found to be less than 95 percent, trench shall be re- compacted before paving will be allowed.
5. Permanent pavement restorations shall not be allowed to commence until at least one freeze/thaw season has passed since the installation of approved temporary hot-mixed asphalt pavement.
6. In cases where the existing pavement adjoining a proposed excavation is in need of rehabilitation, the WFD and Contractor may enter into a mutual agreement such that the Contractor undertakes the pavement rehabilitation as part of their pavement restoration.
7. Contractor will not be required to repair or replace damaged pavement existing prior to commencement of the work unless excavation operations result in small, unstable sections. These shall be removed and replaced as part of the work.
8. Each course of hot-mixed asphalt shall be compacted separately, meeting the requirement of 92 percent minimum compaction of standard laboratory theoretical maximum density for the specific material.
9. Mechanical compactors will be permitted for repairs less than 10 square yards. Repairs exceeding 10 square yards shall be rolled with an appropriately sized, power-driven, steel-wheeled roller to obtain specification density.
10. Hot-mixed asphalt materials shall be laid upon an approved clean, dry, compacted surface, spread and struck off to the established grade and elevation, giving regard to the loss in depth between loose and compacted mixtures. Immediately after the hot mix asphalt mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted.
11. All sawcut vertical faces of existing pavement shall be neat, free of loose materials, and tack coated with an approved asphalt emulsion by applying the emulsion material in conformance with MassDOT Standard Specifications Section 460.62, to fully cover the surfaces prior to pavement installation.
12. A tack coat shall be applied to the sub-base surface, or previous course surface.
13. If two or more excavations are made for the same utility or client in the same construction season and are within six (6) feet of each other, edge to edge, they shall be permanently restored as one trench, including the pavement between excavations.
    i. Same requirement shall apply, if in a future season, an excavation for the same utility or client occurs within six (6) feet and the first has not yet been permanently restored.
14. If an excavation for the same utility or client falls within six (6) feet of another excavation already permanently restored, the permanent pavement of the second excavation shall include all surface pavement between both excavations.

e) Material Specification
    1. Granular gravel borrow and processed gravel material backfill shall conform to MassDOT Spec. M1.03.0, Gravel Borrow Type (b) and MassDOT Spec. 1.03.1, respectively or as amended.

2. Sand borrow shall conform to MassDOT Spec. 1.04.0 or as amended.
3. Controlled Density Fill (CDF) Type IE Excavatable shall conform to MassDOT Spec. 4.08.0.
4. Pavement structure subbase material shall be either MassDOT M1.03.1 Processed Gravel for Subbase or MassDOT M2.01.7 Dense Graded Crushed Stone for Subbase. The material shall be spread in layers not exceeding eight (8) inches in loose depth and compacted to no less than 95 percent of the maximum dry density of the material, ASTM D1557.
5. Temporary pavement shall be hot-mixed asphalt MassDOT Type I top course material conforming to MassDOT M3.01.0 and M3.11.07.
6. Steel Plates.
    i. Plates and supporting members shall be steel, either new or used.
        1. All materials shall be sound and free of damage or deterioration that would adversely affect functions.
        2. Load and deflection calculations shall be used on ASTM A36 / A36M steel unless Contractor provides evidence that all steel used for the plate systems will be a higher strength grade.
    ii. Steel plates in vehicular and pedestrian traffic areas shall be coated with an approved skid-resistant coating. Preparation of the surface and application of the coating shall be in accordance with all of the manufacturer's guidelines. Coatings shall be maintained on 100 percent of the surface of plates carrying vehicular and pedestrian traffic. Repairs shall be made to worn or deficient areas.
7. Permanent pavement materials shall conform to the same MassDOT Standard Specifications as required for temporary pavement.
8. Portland Cement Concrete shall conform to the requirements of Section M4 of the MassDOT Standard Specifications.
9. Reinforcing shall be FIBERMESH fibers (100 percent virgin polypropylene, collated, fibrillated fibers) at a rate of 1.5 lbs. per cubic yard of concrete will be allowed for non-structural reinforcement. Installation shall be per manufacturer's recommendations.
10. Loam shall conform to MassDOT Standard Specification Section 1.05, Loam Borrow. Loam shall have a finished depth of six (6) inches (minimum).
11. Seeding shall conform to MassDOT Specification Section M6.03. Contractors shall be required to continually seed and water areas of loam until a satisfactory growth of grass is established.
12. Filter fabric for underdrain shall be equivalent to Mirafi 140 by Fiber Industries.

f) References
    1. All materials and execution shall conform to the highest applicable standards. If there is a conflict between other standards and these Design standards, then the most stringent criteria shall be used.
    2. These standards draw and refer to the Commonwealth of Massachusetts Massachusetts Highway Department: Standard Specifications for Highways and Bridges (1995 et seq.) and the Commonwealth of Massachusetts - Massachusetts Highway Department: Construction and Traffic Standard Details (1996 et seq.). These two documents are referred to collectively as the MassDOT Standards. The latest revision of each standard shall be referenced.

11.0 PRESSURE, CHLORINATING, AND BACTERIA TESTING

Municipal Lines

Leakage Test: All pipelines shall be tested for leakage before the installation of service taps. Methods of testing and plans showing sections to be tested shall be submitted to the WFD for approval as requested All pressure testing must be in conformance to a written plan submitted to, and approved by, the WFD.

No more than 2,000 feet of water main shall be tested in a single test. During this test all hydrant laterals shall be in the open position. The Contractor will not perform a pressure test against existing valves unless authorized by the WFD.

Contractors will retain the WFD to conduct acceptance tests as prescribed in the rate schedule utilizing the following procedure:

1. Pipes will be filled slowly with water through valves operated by the WFD.
2. Hydrostatic testing is performed as follows using the bump test (see Appendix A for descriptions and forms):
    a. Internal pressure of the pipeline shall be gradually increased to a steady reading of the WFD choice (typically 50, 100, and 150-psi gage) on three separate tests.
    b. After the initial 30 minute sit period, repump the line to 50 psig and measure the amount of the water pumped into the system.
    c. Repeat the same 30-minute sit & recovery at 100 psi and 150 psi and record the results.
    d. If the recovery volume at these increasing pressures, whether its ounces or gallons, stays the same or decreases, the pipeline is tight and is not leaking water but simply compressing a contained air bubble, which expands when the pumps cease.
    e. Increasing recovery volumes at increasing pressures is a clear statement that trapped air is not affecting the pressure reading but a leaking valve, a leaking joint, a defective item, or some other issue that must be further diagnosed or repaired / replaced.
    f. Any loss of pressure at this phase of the test requires the termination of the test until the leak is located and repaired.
    g. All visible leaks shall be corrected regardless of results above.

All pipelines must pass the hydrostatic pressure test before initial flushing and the introduction of chlorine for disinfection.

The Contractor shall submit a written report to the WFD summarizing the results. The Contractor shall repair all leaks discovered under any of the required tests and retest the pipe. The WFD will not accept any installation where a final test has not been passed.

Disinfection Test: Disinfection shall meet ANSI/AWWA C651 - Disinfecting Water Mains. A written Disinfection Plan shall be provided by the Contractor. The Disinfection Plan shall summarize the intended type of chlorine dosage and the method for establishing that dosage. The disinfection may be accomplished by introducing into all the various parts of the new water mains a liquid solution in such volume that the rate of dosage to the water mains shall be at least 25 parts per million of available chlorine. The Disinfection Plan shall document the locations and methods for applying the chlorine into the pipeline as well as methods for dechlorination. Connections at cuttings shall be swabbed with a 50-PPM solution of chlorine at locations when other methods are not applicable. The Contractor shall not proceed with the disinfection procedures until the Disinfection Plan has been approved by the WFD. No more than 1,000 feet of water main shall be disinfected in a single test.

The WFD preference is for chlorine in the form of liquid or tablet (either sodium hypochlorite or calcium hypochlorite) applied at a minimum dosage of 25 parts per million. If gaseous chlorine is to be used, then a hazard mitigation plan and coordination with the fire department will be required. The WFD reserves the right to reject disinfection plans with gaseous chlorine if the WFD deems the hazard to the public to be too great. The pipeline shall remain chlorinated for at least 24 hours and maintain at least 80% of the starting residual at the end of the test.

All chlorinated water shall be de-chlorinated using a neutralizing agent to meet all State and Federal Standards (generally <0.02 ppm). Dechlorination shall take place at the point of discharge in a manner approved by the WFD. Tables are provided in AWWA C651 to guide the contractor in chemical dosing and removal.

All water used in de-chlorination process shall be charged at the base rate for 2,000 cubic feet per flushing event. If more volume then 2,000 cubic feet of water is used, then the current tier rate for that volume of water used above the base will be charged.

After each chlorine treatment the WFD will assist the contractor with dechlorination of the pipeline by operating the distribution valves. Dechlorination will continue until no measurable residual is detected.

Bacterial samples shall be collected both at 24 hours and 48 hours after the line is dechlorinated and delivered for analysis by the WFD by a State certified laboratory. Samples shall be obtained at the approved sampling sections of the main. New water mains will be required to be sampled for both bacteria and heterotrophic plate count (HPC) analysis.

The contractor is permitted to "split" the sample for independent analysis if desired. If any pipeline sample tests positive for bacteria, the entire site shall require additional chlorine disinfection. Flushing is not an acceptable means of removing bacteria from a pipeline. All costs associated with flushing, chlorinating, de-chlorinating and sampling shall be paid for by the contractor/owner. Water used for flushing shall be charged at the base rate for 2,000 cubic feet per flushing. If more volume then 2,000 cubic feet of water is used, then the current tier rate for that volume of water used above the base will be charged.

Fire Service Lines

Fire services lines will be disinfection in the same manner as municipal lines. Hydrostatic pressure tests for fire service lines shall be 100, 150, and 200 psig with no loss over 30 minutes using method described above). A test certificate for underground piping shall be provided to the Wareham Fire Department by the owner/tester.

12.0 METER SET-UP

The property owner shall pay for meters in accordance with the rate schedule at the time of service application. All meters shall be supplied and installed by the WFD. All meters shall be the sole property of the WFD and register in cubic feet. All services shall be fitted with a 5/8-inch meter. Requests for larger meters will be considered if documented by a fixture analysis per AWWA M-22 and/or State Statutes and Regulations. All meter set-ups shall include a quarter turn ball valve before and after the meter, meter couplings, meter, suitable backflow device, and a pressure-reducing valve if required. All fixtures, fittings, couplings, and piping from and including the curbstop connecting fitting (except the meter) shall be owned and maintained by the property owner. Meters shall be owned and maintained by the WFD. The property owner must keep meter on his/her premises easily accessible for reading and servicing at all times. The Water Department reserves the right to read, inspect or service the meter at any time (M.G.L. 165, paragraph 11D).

13.0 METERS REQUIRED

Meters shall be required to any building or parcel which takes water from the WFD for any use. All single family residential properties shall meter individually with a 5/8th inch meter. Managed residential multi-unit rental properties (i.e. duplex, apartments, and multi-family) shall have each building metered as one. Multi-unit non-managed, non-rental residential properties (i.e. condominiums, townhouses, dual owner duplex units) shall be metered individually. Commercial properties, other than manufactured housing, shall have individual meters for each building served with water for any use other than fire protection.

WFD owns to the service curb stop as well as the water meter itself. All other service material (e.g. isolation valves etc.) is owned by the property owner.

WFD retains the right to replace the water meter on a periodic basis (typically every 10-15 years), when the meter fails, or operating improperly. WFD retains the right to turn off the water service if reasonable access is not provided to read or service the meter.

Lateral connections which exist prior to the adoption of these rules shall pay an "in lieu of meter" lateral connection fees as defined in the rate table.

14.0 METER PITS

The policy of the WFD is to discourage the use of meter pits. However where deemed necessary by the District, meter pits will be paid for, owned, installed and maintained by the property owner. Meter pits will only be required if, in the opinion of the WFD, it is in the best interest of the WFD (i.e. high ground water tables, excessive service length, lateral connections, seasonal services, no suitable inside meter location). All meter pits shall require the installation of a dual spring-check valve and ball valve.

Meter pits shall be required when the service line is greater than 200 feet. In these cases, the meter pit shall be installed as close to the start of the service line as possible. In cases where a meter pit/vault (or backflow prevention pit/vault) is considered by OSHA regulations to be confined space, the owner will provide a positive air flow system (e.g. fan) meeting OSHA requirements to allow entry as a remediated confined space entry. Owner will be responsible to maintaining the system in working order.

15.0 MANUFACTURED HOUSING - UNIT CHARGE and MASTER METERS

Manufactured housing parks shall be billed the minimum fee per billing for the total number of permitted units. The minimum fee shall be calculated as the minimum allowance per cubic feet (currently 2,000 cf) multiplied by the number of permitted units. The following also apply for manufactured housing parks:

1. Manufactured housing parks shall be master metered solely for paying any usage overage.
2. Usage overage will be charged at the current tier water rates.
3. Manufactured housing parks shall not be subject to lateral connection fees, but are subject to fire protection or other readiness to serve fees.
4. No credit will be provided for vacancies.
5. It should be noted that the WFD no longer provides service repair work on private water lines.

16.0 SERVICE INACTIVATION

All water accounts shall remain active for the payment of the "curb-stop" fee until such time the service is disconnected from the water main at the corporation. All costs associated with the removal of a service shall be the responsibility of the property owner.

17.0 BACKFLOW DEVICES

A backflow device shall protect all water services installed. A Watts #7 dual check valve shall protect residential services. A pressure vacuum breaker, reduced pressure zone device, or a testable double check valve shall independently protect irrigation systems. A device as specified by the WFD consistent with the hazard potential shall protect commercial and industrial services.

A testable double check valve or reduced pressure zone device shall protect fire systems as specified by the WFD. All water services requesting a change-in-use/ownership, building or other permits shall be retrofitted with a suitable backflow device as directed by the Superintendent prior to the WFD sign-off of the permit.

All installed testable backflow devices shall be tested by a WFD certified tester on an annual or semi-annual basis. In cases where the backflow is located in a pit/vault, and the location is considered by OSHA regulations to be confined space, the owner will provide a positive air flow system (e.g. fan) meeting OSHA requirements to allow entry as a remediated confined space entry. Owner will be responsible to maintaining the system in working order.

18.0 WATER SERVICE CONFLICTS WITH SEPTIC OR SEWER

Water mains and services should have a lateral separation of ten (10) feet. Should local conditions prevent a lateral separation of ten feet, a sewer may be laid closer than ten feet from a water main if:

- Approved by DPW in writing.
- The elevation of the top (crown) of the sewer will be at least 18 inches lower than the bottom (invert) of the water main. If the WFD has information or believes that the groundwater is elevated in the area of the sewer and water pipe such that a possible cross contamination could exist, the WFD reserves the right to have the water main sleeved or concrete encased.

Water services that fall within the minimum ten (10) foot setback from septic systems or the minimum ten (10) foot sewer setback that do not fall in the above categories must be sleeved or encased in concrete using the following guidelines:

1. Sleeve shall be at least twice the diameter of the water service pipe.
2. Sleeve shall be either SDR35 pipe with push on joints, or a continuous length of 200-psi HDPE tubing.
3. Any portion of the service installed within the ten foot separation limit shall be sleeved to a point at least five feet beyond the setback limit.
4. The sleeve shall extend through the building foundation to the curb stop if the above requirement cannot meet.
5. Sleeve shall be sealed at either end using an expanding foam type insulation sealant.
6. A backflow device on the service is required. In certain applications (i.e. high groundwater), the WFD may require the installation of a meter/backflow pit.
7. The installation must be inspected by the WFD before backfilling. One-day prior notice is required.

19.0 FIRE SERVICE

Fire services shall enter the building separate from the domestic service. Water taps that support both fire and potable water services shall be independently gated immediately outside the building so that neither gate operation will affect the other in use. The following apply to Fire Services:

1. The WFD does not require meters on fire services. All fire services shall pay an annual fee as described in the WFD fee schedule.
2. An approved fire service backflow device shall protect all fire service lines immediately after the point of entry to the structure.
3. Fire services that include an additive for corrosion or freeze protection shall require a reduced pressure backflow device.
4. An annual readiness to serve fee shall apply to all private fire sprinkler systems and private hydrants as prescribed in the fee schedule. This fee shall only provide for the availability of water at the shutoff valve and does not extend to repairs, replacement, painting, landscaping or maintenance associated with the fire protection system or hydrant. Nor does the fee grant to the taker any guarantees or warranties either specific or implied as to the adequacy or lack thereof of pressure, flow rate, and quantity of water available. The fee is billed once a year and is not pro-rated for the year.

HYDRANT PLACEMENT

The placement of fire hydrants within residential developments constructed shall be no more than 500 feet apart. The spacing of fire hydrants in commercial and industrial developments or at sites proposing a specific fire hazard shall be at the discretion of the Fire Chief or their designee, with high hazard areas requiring no more than 300 foot spacing.

For all new water/fire service mains a fire hydrant shall be placed at the point where the water/fire service line either terminates, or is at the maximum distance from an existing hydrant. The spacing of hydrants shall be determined beginning from the hydrant placement as prescribed in the preceding sentence. Cul-de-sacs hydrants may be installed “in-line” eliminating the need for the hydrant tee and blow off assembly.

PRIVATE HYDRANTS

Private hydrants will be assessed an annual readiness to serve charge. Inclusive of that charge shall be a requirement for the WFD to periodically flush, check for drainage, operability, and paint the hydrant, and make repairs to the hydrant equal to the value of the annual charge. The cost of repairs in excess of the value of the annual fee shall be paid by the owner. No water may be taken from any hydrant for purposes by any individual not approved to do so by the WFD.

20.0 IRRIGATION SERVICES

Water used for irrigation shall be an independent tap off the domestic service downstream of the meter. No independent meter for irrigation is required. A suitable backflow device as described in the state plumbing code shall independently protect all irrigation systems. Installation of irrigation requires a plumbing permit.

21.0 NON-PAYMENT SHUT OFF POLICY

All water bills are due and payable within thirty days. Water bills in arrears greater than thirty days are subject to a past due notice and interest charges as prescribed in the rate schedule. The following actions will be taken after the past due notice is provided:

1. If the bill is still outstanding after that notice's due date, a shut-off notice is sent.
2. If the bill is still outstanding 60 days after the original invoice and no contact is made to arrange for a payment plan, a letter of termination of water service is sent certified mail.
3. If payment is not received as previously described, service may be terminated on the first day after receipt of the certified mail return card or after fourteen days, whichever occurs first.
4. On the day the service is to be terminated, Water Department staff will attempt to provide verbal notice to any occupant of the premises (or a door tag will be left) that service is to be terminated.
5. A service charge as defined in the rate schedule shall be assessed for collection of payments made at the time of termination.

Any customer, prior to the termination of service, may agree to a written payment plan with the WFD. Any customer requesting a payment plan to avoid shut-off shall be afforded the opportunity to participate in a payment plan provided the account is not in default of a current payment plan.

22.0 PAYMENT PLAN POLICY

Notice of Termination for Nonpayment

When the WFD does not receive payment for bill, the WFD will provide a Notice of Termination. If no payment plan is established and the account reaches the termination level, but the water is not physically turned off, the customer must pay one-half of the termination amount due immediately to avoid termination. The remaining balance must be paid WITHIN two weeks of the first payment. If full payment not received within two weeks, the water will be turned off without further notice.

Restoration of water service to properties whose service is terminated for non-payment or default of a payment plan requires payment in full of all charges due the WFD on the date of termination and any other associated fees as outline here within.

Six Month Payment Plan

The WFD encourages customers to pay their water bills in full at the time they are due. However, in the event a customer is not able to pay the water bill in full, the WFD will allow the customer to pay the bill in installments of 1/6 the total bill plus finance charges for six months. Full payment can be made at any time during this period. If the bill is not paid in full by the end of the 6-month period, the account will move into termination phase.

The first payment shall be due on the first or fifteenth of the month (customer choice) following the execution of the re-payment plan agreement. If the business day is a Saturday, Sunday or a recognized national or state holiday, then the payment will be due of the next business day thereafter. Any customer who fails to comply with the terms of their re-payment agreement with the WFD including the terms and conditions set forth in

the preceding paragraph shall be considered in default and shall have their service terminated without the benefit of additional notice.

Any customer who is a party to a re-payment agreement with the WFD, who notifies the WFD in no less than five (5) calendar days in advance of the next payment due, of their inability to make such scheduled payment, shall not be considered in default for that payment, provided that payment is made in full prior to the next monthly payment date and the next month's payment is made in full. Customers who do not meet this requirement are considered in default and will have their service terminated without the benefit of additional notice.

Default Payment Plan (Only for those customers currently on Payment Plans as of December 2017)
The material terms of any repayment agreement with the WFD shall be one of the following:

A.) One-half (1/2) of the then current outstanding un-paid water balance and fees shall be payable in the form of a bank or treasurer's check drawn on a Massachusetts bank at the time of the execution of the agreement with the remaining balance apportioned in twelve (12) equal monthly installments including finance charges. Cash payment or money order is acceptable in lieu of treasurer's check. Additionally, the extended repayment agreement will provide as a material term thereof that all other subsequent water bills or fees be paid when due during the payment period.

B.) One-twelfth (1/12) of the balance on account paid monthly including finance charges. Additionally, the extended repayment agreement will provide as a material term thereof that all other subsequent water bills or fees be paid when due during the payment period.

The first payment shall be due on the first or fifteenth of the month (customer choice) following the execution of the re-payment plan agreement. If the business day is a Saturday, Sunday or a recognized national or state holiday then the payment will be due of the next business day thereafter. Any customer who fails to comply with the terms of their re-payment agreement with the WFD including the terms and conditions set forth in the preceding paragraph shall be considered in default and shall have their service terminated without the benefit of additional notice.

Breach of Repayment or Termination Bill
A breach of the repayment agreement either from the six-month payment plan or the default payment plan, or a bill associated with termination will allow the WFD: (i) exercise all legal rights and remedies available to the WFD and/or (ii) to cause a lien to be committed upon the property for collection that will incur statutory interest until paid in full.

Hardship
In cases where hardship can be demonstrated to the Board of Water Commissioners (e.g. hardship relief granted by the electric utility), the Board of Water Commissioners at their discretion, can modify the terms of repayment.

23.0 FINAL READINGS FOR PROPERTY TRANSFER

The WFD requires final meter reads for all property transfers. Failure of a prospective owner to obtain from an existing owner verification of a final reading and billing shall not be deemed as a means of relief from any charges due the water department prior to assuming ownership. A service charge for this service as defined in the rate schedule shall be charged to the account.

24.0 RETURN CHECK POLICY

Checks payable to the WFD for the purchase of water, materials, labor, fees, and/or services to any account to which the WFD is entitled payment shall be subject to the provisions of MGL c. 266 § 37. The return of any instrument from the institution on which it is drawn, shall require a cash payment of the debt in full, including any additional fees associated with the return of the instrument to avoid or reverse termination of service. Upon receipt of a returned instrument of payment, the WFD shall return said instrument to the drawer by certified mail. Included with the returned instrument of payment shall be a service termination notice. Service may be terminated on the first day after receipt of the certified mail return card or after fourteen days, whichever occurs first. A service fee as described in the rate schedule, and the cost associated

with the certified mail, shall be applied to the account for each occurrence an instrument of payment is returned.

25.0 CUSTOMER REQUESTS FOR METER TESTING OR REPLACEMENT

Customers may request that their water meter be tested. The request shall be in writing and state the reason for the test. If a customer believes a meter is over registering consumption, the period to which the over registering claim is made must be stated in the correspondence requesting the test. Failure to specify the period to which the claim is made, shall limit the claim to the last consumption billing period.

Meters found to be operating within two percent of the manufacture's specifications for accuracy shall be deemed accurate. If a meter tests either above or below the accuracy parameters by greater than two (2) percent an adjustment to the bill will be made for the period stated in the request for the meter test.

The WFD for a fee as described in the rate schedule shall test all meters. However, a customer may request that an independent testing company test the meter provided the customer pay for the independent test plus the service fee. A chain of custody shall accompany all meters to be tested.

Any customer requesting a replacement meter in lieu of testing may have a new meter of equal size for the cost of the new meter. A service fee as described in the rate schedule shall be assessed for the installation of the new meter. Meters replaced at the customer's request under this section, will not constitute a basis for an adjustment to charges.

26.0 STANDARD METER REPLACEMENT SCHEDULE

All water meters older than ten (10) years may be replaced at the discretion of the WFD. Costs associated with the replacement of meters shall be as prescribed. All 5/8 meters shall be replaced without cost to the customer. It is the policy of the WFD to reduce meter sizes whenever possible. If a meter is to be reduced in size, the WFD will supply and install the necessary fittings.

The standard meter for most residential and commercial use is 5/8-inch. Customers wishing to keep or install larger meters, may at their own expense, provide the Superintendent a fixture analysis prepared by a qualified professional engineer in accordance with AWWA M22 Standards. Based on the findings contained in the fixture analysis the Superintendent may provide a larger meter.

If, after notification by certified mail and/or door hanger a water taker refuses entry to read, inspect, repair, replace and/or install a meter the District may (1) terminate service, or (2) assess a five hundred ($530.00) annual service fee in addition to any water usage or other charges incurred by the taker.

27.0 UTILITY MARK OUTS

The WFD is neither required to be, nor is a member of Dig Safe. As such, any rules pertaining to the accuracy of marking utilities as prescribed by that organization do not apply to the Wareham Fire District. This rule is considered by the WFD to be notice to all persons doing any excavations that all water main and service utility markings provided by the WFD shall be considered a directive to the excavator to use all means of due diligence, to include hand digging, to positively locate all water services and mains when excavating. Any damages done to any water main or service as a result of an excavation other than by hand digging shall be recoverable by the WFD.

The owner or owner's representative shall be required to sign a Water Service Location Survey Waiver / Indemnity Release in which the Owner who receives this service fully understands that the WFD does not own complete surveyed record drawings delineating the precise location of water service lines and other underground lines and structures. As such, the actual location of the water service and other underground lines and structures is unknown. Nevertheless, as a courtesy to the community, the WFD has agreed to use common non-destructive techniques in an attempt to locate and mark out the location of the water service line.

28.0 SEASONAL DEMAND MANAGEMENT & SERVICE LINE LEAKS

Seasonal Demand Management Policy

The purpose of this section of these rules is to provide a means for conserving the water supply during the peak summer demand months and on those occasions of anticipated or actual shortages and when deemed necessary for the health or welfare of the WFD's customers. At a minimum, the WFD shall enforce demand management policies during the period of May 1st to September 30th on an annual basis. This timeframe may be modified and/or extended based on the drought status determined by the State of Massachusetts.

1. The duration of these mandatory restrictions for lawn and landscaping watering using sprinklers shall be for the period between May 1st and September 30th of each and every year. Irrigation of lawns, gardens, and landscaping by a sprinkler, be it either installed or by a hose, is limited to properties corresponding to the day of the month and said properties legal address as follows (e.g. ODD/EVEN authorized watering):
    a. Address ending in an even number or any fraction of a number or a letter may irrigate on even number calendar days from May 1st and September 30th on an annual basis.
    b. Address ending in an odd number may irrigate on odd number calendar days from May 1st and September 30th on an annual basis.

2. Owners of newly seeded or sod lawns may apply to the Superintendent for a twenty (20) day exclusion from this rule. A Notice of Exclusion shall be provided by the District. A service fee shall be charged for preparation of the Notice of Exclusion. Exclusions are not transferable, and the notice shall be displayed in a window of the property so as to be visible from the street. The twenty day exclusion shall be for a period not to exceed twenty consecutive calendar days. During drought periods as defined by the State, the WFD may elect not to issue these permits.

3. Enforcement: The BoWC through their designated representatives shall enforce the provisions of this rule. The BoWC shall for each and every violation of this section provide written notice of violation. Said notice shall be issued at the time the violation is observed by the BoWC or their designated representatives. Said notice of violation shall be given to an occupant of the property if one is present or left at the premises if no occupant is present to receive the notice. Said notice shall require the immediate termination of the violation. Advisory notices may be sent to properties reported to the WFD as being in violation of this section. An advisory notice shall not be counted as a violation for the assessment of a service fee.

4. Violations: Written notice of violation as described in the presiding paragraph for the first offense, and thereafter and subsequent violations as prescribed in the rate schedule.

5. The provisions of this section do not apply to watering of lawns, gardens and landscape, or any other water use by a hose held in the hand. Nor shall the provisions of this rule be enforced on the 31st day of any month except as provided for in paragraph (6). Nor shall these rules apply to any customer who uses a separate water supply such as a well or surface water for irrigation.

6. The BoWC, at their discretion, may impose temporary water use restrictions more stringent than those provided for in this section. Said temporary restrictions shall be imposed as the result of a declared water emergency and shall supersede any seasonal water demand measures in place at the time. A water emergency may be declared by the BoWC at any time during drought alerts or advisories issued by the State, or due to circumstances or conditions of a well, storage tower or the distribution system which warrant such a declaration. At a minimum, a declared water emergency shall prohibit the irrigation of lawns, gardens, and landscaping by a sprinkler, be it installed or by hose. Other water restrictive use measures may be imposed by the BoWC at any time during a declared water emergency if conditions warrant additional restrictions. A water emergency once declared by the BoWC shall remain in effect for no less than five days and until further notice is provided.

7. The provisions of this section shall not apply to independent sources of water used for lawn irrigation such as private wells, streams, or ponds.

Service Line Leaks

Notice of leaks on the service line owned by the homeowner shall be repaired by a WFD approved contractor within thirty (30) calendar days of receiving written notice by the WFD, or approved alternative timeline by the WFD in writing. Service lines which are not repaired in the timeline provided will be provided with a warning of shutoff. If no action occurs after seven (7) calendar days of receiving the shut off warning, the water will be turned off until such time the service line is repaired and inspected by the WFD.

29.0 RESIDENTIAL WATER SERVICE APPLICATION RULES

WATER SERVICE APPLICATION PROCEDURE – The property owner or their representative shall complete a Water Service Application Card at the Water Department. Applications should be submitted at least ten (10) days before the installation of the service. The system development fee shall be paid at the time the application is made. Building permit signoffs require completion of a Water Service Application Card. (Note: Filing the application activates the account for billing.) No water service will be permitted to any building connected to a well. Buildings on properties with wells may be serviced provided there is no physical connection between the well and the interior plumbing.

PLANS FOR RESIDENTIAL SERVICES – A simple plot plan is required for new installations. The plan shall show the proposed location of the water service in relation to the roadway and the dwelling. The plan does not have to be prepared by an engineer, unless the lot is to have a septic system. The location of the service may be altered in the field with the concurrence of the Superintendent or his designee. A detail plan may be required for installations greater than 150 feet in length, that cross wet or wooded lots, are within ten (10) feet of a septic system, require a meter pit, or some other condition exists where a plan would benefit the water department. Services installed under slab foundations shall be sleeved.

SCHEDULING SERVICE TAP - For new curb stops, the owner/contractor shall schedule the tap with the WFD. A plot plan is required. Owner is responsible for road cut, trenching, backfill, road repair, safety, and traffic control within the right-of-way. Meter pits may be required depending on site conditions. Owner shall obtain a Dig Safe number and all permits for State roads. The WFD will obtain excavation permits on behalf of the applicant for work with Town's right-of-way. Applicants should consult the WFD for a cost estimate for the tap work.

SCHEDULING SERVICE LINE INSPECTION FROM CURB STOP TO FOUNDATION - Inspections must be done before backfilling the trench. No inspections will be performed on service lines not connected to an active curb stop. A ball valve and trace wire must be installed on the service line inside the foundation for the inspection. Service lines installed within a slab foundation shall be sleeved. Owner shall be responsible for all costs associated with installing the service line from curb stop to meter. Inspection on previously backfilled or dry installed lines requires a pressure test. Inspections shall be scheduled before 2:00 p.m. on the workday before the actual installation. There is no charge for scheduled inspections. Requests for same day inspections require a $70.00 service fee.

WATER SERVICE MATERIALS - All residential water taps shall be one (1) inch. Service tubing shall be sized per AWWA M-22. All backfill shall be suitable material free of debris and stones greater than 4-inch in size. All connections shall be compression type fittings with stainless steel inserts; flared fittings are not permitted. All material must be installed as to have no leakage under pressure. All water service tubing shall be Copper Tube Size (CTS) 200 psi Polyethylene (HDPE) tubing conforming to AWWA C-901. Tracing wire on plastic tubing is required.

All curb boxes shall be North American made "Buffalo" Style 2½-inch to include cover, slide top, and base. The curb box shall measure in length from the curb stop to the finished grade plus six (6) inches. All curb

stops shall be centered and plumb in the box at a depth of between four and six feet below *final* grade. The owner is responsible for the final placement of the curb box.

SCHEDULING METER INSTALLATION **-** The residential meter setup, spacer bar, and backflow device must be installed before the meter can be set. Water meters shall be installed and water turned on only by water department personnel. Meter appointments shall be scheduled before 2:00 p.m. on the workday before the actual installation. Plumbers/owners may pick-up a spacer from the WFD. There is no charge for scheduled appointments. Requests for same day installations require a $70.00 service fee.

All meters shall be supplied, installed, and owned by the WFD. All services shall be fitted with a 5/8-inch meter. The meter set-up shall include a quarter-turn ball valve before and after the meter, meter couplings, meter, suitable backflow device, and a pressure-reducing valve if required. All fixtures, fittings, couplings, and piping from and including the curbstop connecting fitting (except the meter) shall be owned and maintained by the property owner. A Watts #7 style backflow device shall protect all services. **Please consult the local plumbing inspector for applicable codes.**

SCHEDULING OCCUPANCY PERMIT INSPECTION – Final inspections for occupancy permits shall be scheduled with the water department. Sign-off inspections must be scheduled before 2:00 p.m. on the workday before the sign-off is needed. It is strongly recommended that the sign-off inspections be requested 3-5 days prior to the need of the permit so that any noted deficiencies can be corrected. There is no charge for scheduled appointments. Requests for same day sign-offs require a $70.00 service fee. All noted deficiencies must be corrected prior to the sign-off of the permit.

30.0 PLUMBING FAILURE – ABATEMENT POLICY

Abatements shall be given at the discretion of the Board of Water Commissioner's based on the following criteria:

1. A written request submitted in a timely manner.

2. An abatement will not be provided if an insurance company has or can cover the bill.

3. The water leak must be repaired. Evidence that the repair has been fixed must be provided.

4. One abatement will be provided per property owner for the period of ownership of the house. The owner will be determined by the name on which the water service is assigned to in the billing software. If the owner changes, another abatement will not be allowed for a period of 10 years after the date of the previous abatement.

5. Calculate the abatement as follows:

    a. Deduct the allowance from the total consumption so that only excess consumption is left. The allowance in FY19 is 2,000 cubic feet.

    b. Determine the normal consumption by averaging the most recent four summer periods or four winter periods that match the period of the requested abatement. If no use is used during one of the seasonal periods (e.g. foreclosure, seasonal, etc.), the most recent season of use average will be utilized.

    c. Subtract the overage from the average overage consumption over the allowance for the period. This will be considered the excess water associated with the leak.

    d. Abate 50% of the excess water at the highest tier rate at which the water was billed.

6. This policy can be changed or revoked by the Board of Water Commissioners by an affirmative vote.

31.0 WATER METER TAMPERING POLICY

Meters will be supplied by the Water Department. All existing and supplied Water Meters are the property of the Water Department.

Any person employed by the Wareham Fire District, at the direction of the Water Superintendent, may at any time enter any premises supplied with municipal water for the purpose of examining or removing meters, pipes, fittings and works for supplying or regulating the supply of water and of ascertaining the quantity of water consumed or supplied in accordance with the Massachusetts General Laws and Board policies and regulations. (M.G.L. c. 165 § 11 et seq)

The Department reserves the right to remove, repair or replace any meter at any time as it deems necessary in its sole and absolute discretion. Meters shall be repaired and replaced from time to time as deemed necessary in order to ensure their accuracy in recording water usage at any facility serviced with municipal water.

If a meter fails to register or under-registers outside the manufacturer acceptable accuracy range for any cause other than tampering, the charge for the water shall be based on the average amount registered by the meter when in order for similar billing periods, using available billing records over the previous 5 years. Charges will be calculated covering the probable use period over which the meter was not registering correctly. Charges shall constitute water usage and as such, if not paid when billed, shall be committed as a lien to the Town Treasurer/Collector for real estate tax purposes consistent with applicable law.

All repairs or injuries to meters from freezing, hot water, or external causes shall be charged to the consumer.

No person shall change, or tamper in any way, with the water meter, including appurtenances. All settings and repairs will be made by the Water Department personnel. Tampering with a meter, such that said meter does not record the true and accurate water usage at a facility serviced with municipal water, will result in a $1,000 fine.

Should there be evidence of tampering which has resulted in reduced water bills, the Department shall calculate a charge based on the two highest uses for the winter and summer billing periods over the past 10 years, or available records, and adjust the bills to these usage amounts for the period of probable reduced water bills. The Water Department shall bill the amount so calculated as water usage, the non-payment of which when due and payable, shall be committed as a lien to the Town Treasurer/Collector for real estate tax purposes consistent with applicable law. In addition, the user will be charged for staff time and/or legal time spent to address the matter, the cost of a replacement meter if required, as well as a fine of $200 per billing cycle where meter tampering led to a reduced bill. Massachusetts law allows additional penalties for tampering with a water meter, including up to one year in prison, which the Board may pursue at its discretion.

32.0 SCHEDULE OF RATES, FEES & CHARGES

A. *DEFINITIONS*

BETTERMENT DEVELOPMENT FEE: Any lot having frontage on a public or private way that was part of a previous betterment project, annexation, or area of special assessment of the WFD that had not been previously assessed a betterment in that project will pay an amount equal to the per unit betterment charge assessed for that project and any cost to bring water service to that location. This betterment/assessment also applies to lots which may obtain an easement to water mains that were part of a bettered project area.

1. No amortization will be applied except for out of District properties.

WATER MAIN EXTENSION FEE: Water main extensions constructed by the WFD, which are tapped off of or otherwise extended from an existing water main, that was not installed under a betterment project and are intended to serve one or more properties will be assessed a water main extension fee.

The amount derived from the water main extension project undertaken by the WFD divided by the whole number of residential units then eligible to be connected to that individual project as determined in accordance with the provisions of G.L. c. 40 §§ 42 (G) – 42 (K).

1. All connection development fees shall be paid at the time of application in full to the WFD and are not refundable.

2. All work must be constructed completely by WFD approved contractors duly licensed and authorized to do such work at the applicant's sole cost and expense.

B. *WATER SYSTEM BETTERMENT OR EXTENSION FEE*

Residential:

1. **Existing Housing Units:** Any existing housing unit not previously serviced by municipal water having access to municipal water shall pay a connection development fee as set forth in Table No. 5 – New Service Development and Meter Charge, plus a water system development fee per unit of either the ***Betterment Development Fee*** per unit or ***Water Main Extension Fee*** per unit whichever is greater as those terms are hereinafter defined.

2. **New Residential Construction Units**: Newly constructed residential units with access to municipal water shall pay a connection development fee as set forth as set forth in Table No. 5 – New Service Development and Meter Charge plus a water system development fee per unit constructed of either the ***Betterment Development Fee*** per unit or ***Water Main Extension Fee*** per unit, whichever is greater as those terms are hereinafter defined.

Non-Residential:

Shall pay a connection development fee as set forth in Table No. 5 – New Service Development and Meter Charge plus a water system development fee per unit of either the ***Betterment Development Fee*** per unit or ***Water Main Extension Fee*** per unit whichever is greater as those terms are hereinafter defined.

In all cases, fees shall be paid in full at the time of application.

C. *CHARGES APPLIED BY THE WAREHAM FIRE DISTRICT*

The following tables are a listing of the rates, fees and charges applied by the WFD.

Table 1: Billing Rates

FISCAL YEAR BEGINNING 1 JULY	2020	2021	2022	2023
Water Consumption Bin	**$, Flat Fee**			
BASE RATE MINIMUM <2,000 CUBIC FEET	$ 120.00	$120.00	$120.00	
	$/Hundred Cubic Feet (HCF)			
OVER 2,000 TO 4,000 CUBIC FEET	$ 0.85	$ 0.85	$0.85	
4,001 to 10,000 CUBIC FEET	$ 3.40	$ 3.40	$3.40	
10,001 CUBIC FEET	$ 3.85	$ 3.85	$3.85	

Table 2: Capital Improvement Project (CIP) and Water Quality Management Fees

	$/ Hundred Cubic Feet (HCF)				
FISCAL YEAR BEGINNING 1 JULY	**2019**	**2020**	**2021**	**2022**	**2023**
CIP WATER TOWER/MIXER	$0.2566	$0.1915	$0.1542	$0.1497	
CIP WATER MAIN REPLACEMENT	$0.4319	$0.3217	$0.3122	$0.3026	
WATER TREATMENT PLANT	$ 0.7343	$0.9896	$1.2459	$1.5247	
CIP MAPLE PARK WELL	$0.4164	$0.5049	$0.4942	$0.4833	
GROUND WATER PROTECTION LAND	$0.1247	$0.2001	$0.1994	$0.1181	

Notes: Non-Metered CIP/WQMF Minimum: 2,000 cubic feet per rate schedule

Table 3: Miscellaneous Fees

Item	Cost
Non-Metered Active Lateral Service Fee	$20.00 per building
Hydrant Water Rentals	5/8 Meter/Backflow Device Rental of $20.00 per week or hydrant meter $55.00 per week plus; minimum for the first 100 cubic feet, plus; overage per 100 cubic feet additional.
Frozen or damaged meter replacement	List price of meter plus service call charges as required.
Certified Mail Notice	Mailing cost plus $2.10 administrative surcharge.
Interest	Fourteen percent (14%) semi-annually, compounded on outstanding balances thirty days past due.
Return Check Processing Fee	$30.00 plus postage and mailing administrative surcharge
Site Plan Review	
Single Residential Connection	No Charge
Up to Three Connections	$105.00
Up to Ten Connections	$210.00
Greater Than Ten Connections	$320.00
Commercial Site Plan Review	$380.00
Inspectional Services	
New Residential Scheduled Service Line Inspections	Included in the system development fee.

Item	Cost
New Residential Same Day or Unscheduled Service Line Inspections	$70.00
Commercial Development Inspection Services	Three percent (3%) of improvement or hourly on-site rate.
Outside Water Sales	
Water considered an outside water sale shall be charged the following:	
1. Administrative Labor Fee	
2. A flat fee for the first HCF of water	
3. Water after the first HCF will be billed at the tiered rates in Table 1	
Fire Protection Charges	
The Prudential Committee shall pay a fee equal to eleven (11%) of the total Water Department budget adopted at the annual District Meeting for each fiscal year**.**	

Table 4: Service Call Fees

Service Calls **During Non-Holiday Regular Business Hours.**	**Cost**
Scheduled Service Call (all categories except meter testing)	$45.00 each
Meter Bench Testing	$80.00 each
Out of Office Collection to avoid service termination	$45.00
Non-scheduled Service Calls	$70.00 each
Seasonal meter removal and install	$55.00 each
Service line locating main to curb box	No Charge
Service Calls – Other Than Regular Business Hours	
All after hour, weekend, holiday emergency service calls	$185.00 each
New Service Installation	
WFD shall make all taps for one and two-inch services. Tapping costs shall be job specific based on current material, labor and equipment charges. NOTE: Tapping charge pays only for the material and labor for the water main tap to curbstop. No excavation, road repair, permits, or a police detail is included. The Superintendent or designee will provide an estimate for taps on request.	
Water Conservation Fines [1]	
Sprinkler Non-Compliance 1st Notice	Written Warning Notice
Sprinkler Non-Compliance 2d Notice	$20.00 each
Sprinkler Non-Compliance 3d Notice	$40.00 each
Sprinkler Non-Compliance 4th and Subsequent Notices	$55.00 each
Sprinkler 20-Day Exclusion Notice	$25.00 each
Miscellaneous Service Charges	
Turn off of un-authorized turn on	$240.00 each
Backflow Inspections/Testing	$75.00 each
Fire Flow Test Technical Support	$160.00 each

Notes

1. The State Executive Office of Energy and Environmental Affairs has four levels of Drought: Advisory, Watch, Warning, and Emergency. During Emergency status, the Water Conservation Fines will double the values shown in Table 4 and no 20-day exclusion notice shall be provided. WFD reserves the right to turn off water for significant non-compliers during emergency drought events. More information on Drought status can be found under the State's drought monitoring webpage.

Table 5: New Service Connection Development Fees and Meter Charge

Service Tap or Meter	Development Fee
1-inch with 5/8 meter	$ 903.89
1 ½-inch	$ 1,255.64
2-inch	$ 2,141.97
3-inch	$ 8,124.71
4-inch	$10,340.81
6-inch	$15,510.81
8-inch	$21,419.69
12-inch	$35,721.37
Fire Service 4-inch or less	$ 1,477.22
Fires Service > 4-inch & hydrants	$ 2,954.44

Notes
* Charged per billing.
** Included in minimum fee.

Table 6: Meter Maintenance Charge (Billed Every Billing Period - Currently Every 6 Months)

Meter Size	Fee
5/8- inch	N/A
3/4-inch	$18.30
1-inch	$19.40
1 ½-inch	$37.00
2-inch	$45.90
Sizes 3 -inch and above	TBD for project

Table 7: Fire Protection Readiness to Serve Charge (Private/Town)
Readiness to serve charge includes usage required for fire suppression and testing.

Fire Line Size[2]	Multiplier (2-inch equivalent)	Annual Readiness to Serve Charge
2-inch	1.0	$56.42
3-inch	2.8	$157.98
4-inch	5.7	$323.86
6-inch	11.2	$631.93
8-inch and larger	32.0	$1,805.51
Hydrants	2.5	$141.06

[2] As measured on diameter of rise pipe when it first comes through floor or slab of the building

APPENDICES

Appendix A: Hydrostatic Testing Procedure and Associated Forms

Appendix B: Commonly Asked Questions

1. Why do I receive a charge for our fire suppression system?
    a. Fire lines typically are not metered. This charge is a readiness fee to provide the necessary water to the premises for fire suppression.

2. Why do I receive a charge for non-metered active lateral service fee?
    a. Early in the history of the Wareham Fire District, it was not uncommon for buildings on the same grounds to have a lateral line run to another building which was not metered. This is a practice we no longer allow, but for those buildings which were grandfathered, this fee will show up on your bill as a flat fee for water consumed.

3. What does the new service connection development fee cover?
    a. The purpose of this fee is to cover the cost of the infrastructure that has already been built to provide you water.

4. How do I find out where my water service line is located?
    a. You can call the Water Department and we will come out to mark out the approximate location(s) of your water service line.

5. Who owns the water service line?
    a. The WFD owns to the curb stop isolation valve. The homeowner owns from the curb stop to the water meter. See Figure in Appendix C.

6. Why do I need to use a WFD approved contractor to repair or update my water service line?
    a. Since the WFD does not own the service line between the curb stop and water meter, the WFD wishes to ensure that contractor performing the work is qualified and installs the service line within the guidelines and rules and regulations of the WFD. Service lines installed incorrectly have a greater propensity to leak which is lost water. Lost water increases the cost of the water to you.

7. I do not understand how my water bill is calculated.
    a. Your bill can be broken down into five main categories of charges:
        i. Flat fee charged for up to 2000 cubic feet of usage. See Table 1.
        ii. There are three bins set up for water consumption over 2,000 cubic feet at an increasing rate. The purpose of these bins is to encourage water conservation. See Table 1.
        iii. Capital Improvement Project or CIP fees used to recover the cost from rehabilitating projects or projects improving the water system. See Table 1
        iv. Late charge fees.
        v. Service fees or miscellaneous fees as noted.
    b. An example bill that has been marked-up is provided below. An individual account uses 4,000 cubic feet (cf) of water over a 6-month period. The consumption is broken down as 1.) 2,000 cf flat fee of $120 and 2.) 2,000 cubic feet (i.e. 4,000 minus 2,000 cf) at the step one usage of $0.85/100 cf or $17.00. The total consumption portion of $137.00. The CIP fee (FY19) is $2.2078/100 cf. For 4,000 cubic feet of usage yields a CIP bill of $88.31. The total water bill would then be $137.00 + $88.31 = $225.31.

8. How many gallons are in 1 cubic foot?
    a. There are approximately 7.48 gallons in 1 cubic foot of water.

9. Why do I pay for a backflow testing fee or for installing a cross connection device?
    a. A cross connection is defined as a physical connection between water that is portable with water that is not potable. Under 301 CMR 22.22 - Cross Connection Distribution System Protection, the state requires the WFD to test the cross-connection systems. As such, the WFD charges for these cross-connection tests to recoup the cost to have staff to maintain these systems per State Law.

10. Why do I pay a meter maintenance fee?
    a. The purpose of this fee is two-fold. The first is to encourage users to obtain the smallest water meter. Generally, the smaller water meters are more accurate at metering smaller flows. The second reason is to recoup the cost of the meter replacement when the meter is replaced. The District does not charge for replacement meters at the time of installation and as a goal replaces meters at an age of 10 to 12 years old. The water meters and associated components cost (2019 dollars) the following:
        i. ¾ inch meter: $360
        ii. 1-inch meter: $382
        iii. 1.5-inch meter: $729
        iv. 2.0-inch meter: $903

Appendix C: Profile of Service Line and Demarcation of Ownership

Note Water Meter Owned by WFD.