

## 509 WATER METERS

### 509.1 GENERAL

All connections to DMWW's water mains must be metered except:

- 509.1.1 Water authorized by the Des Moines Water Works for the use of other governmental subdivisions for the purpose of firefighting or street and sewer flushing.
- 509.1.2 Water used in flushing or maintaining new and existing mains under the supervision of the Des Moines Water Works.
- 509.1.3 Water for special purposes or demonstrations when approved by the CEO and General Manager, or designated representative.
- 509.1.4 If a straight connection is used in place of a meter for testing the plumbing, the straight connection must be removed before the Plumbing Contractor leaves the premises. If it is necessary to leave the straight connection in for any reason, it is the Plumbing Contractor's responsibility to call the Supervisor of Field Customer Service at Des Moines Water Works and request permission to do so. Failure to do so may result in a penalty levied against the customer.
- 509.1.5 Once a building is framed and sheeted the contractor is required to call Des Moines Water Works to have a construction meter set. This meter will be in place prior to any water being used. Once this meter is in place it may be used to settle ditches and foundations as well as being used for general purpose needs. Failure to do so may result in a penalty levied against the customer.

### 509.2 RESIDENTIAL

- 509.2.1 Each single-family dwelling must have its own meter.
- 509.2.2 Residential fire sprinkler lines must be metered using a UL listed, FM approved water meter accepted for use on fire services and domestic water lines.

### 509.3 MULTI-UNIT METERING (TOWNHOMES, CONDOMINIUMS, APARTMENTS, AND SHOPPING CENTERS)

There are four options for metering multi-unit properties, such as townhomes, condominiums, apartments, and shopping centers as follows:

- 509.3.1 Option 1. Install meters on each individual water service to each individual unit. When the individual water service option is utilized, no master meter will be installed. Each water service must comply with these Rules and Regulations for water service installation and Des Moines Water Works must be given legal access to the stop box and meter.
  
- 509.3.2 Option 2. Where only one stop box exists for multiple units, a meter manifold serving multiple units may be installed in a common room when all of the following conditions exist (Figures 12A & 12B):
  - 509.3.2.1 Meters must be installed in a restricted, permanently heated common room at ground level or in the basement with an outside wall and outside keypad access. Des Moines Water Works must be given and will retain on file the code to gain access. Keys and key cards will not be allowed.
  
  - 509.3.2.2 Each service must be permanently marked with its corresponding unit.
  
  - 509.3.2.3 If the property is a rental property when a tenant or customer finalizes their account, the unit will go back in the landlord, association, or property manager's name.
  
  - 509.3.2.4 If the property is a rental property the landlord or property manager must have on file with Des Moines Water Works a permanent indemnity and waiver agreement for water restoration covering all units. This agreement will allow Water Works to restore water at the tenant's request without verifying the tenant is home, and would further specify the owner assumes all liability for damages in conjunction with a potential burst pipe, open faucets, etc.

- 509.3.2.5 Individually metered accounts in multi-unit buildings will follow regular Des Moines Water Works collections policies, including the potential for service termination at the meter, or a lien on the property as allowed by Iowa law or both.
- 509.3.2.6 All meter settings in a multi-unit building are required to have a swinging check valve installed after the outlet valve. This will prevent the water meters from running backwards. Thermal expansion must also be addressed and installed if needed.
- 509.3.3 Option 3. Master meter the private water main, with the property owner responsible for all water charges on the master meter.
- 509.3.4 Option 4. Master meter the private water main and contracting with Des Moines Water Works to provide individualized unit billing and collecting of the rates and charges associated with that water main. Terms and conditions of such service shall be subject to negotiation, execution, and delivery of a mutually acceptable agreement. This arrangement requires that submeters are installed after the master meter. The Des Moines Water Works totals the water usage from those individual meters and subtracts it from the master meter. If a difference exists, the resulting balance will be billed to the owner of the private main. In addition, any unpaid balances on the submeters remaining at fifty (50) days after their rendering, including but not limited to bills for surcharges, shall be transferred to the master or owner's account and shall be paid by the owner in accordance with DMWW's normal collection terms. Any collection efforts with respect to individual units thereafter shall be made solely by the service main owner.

#### 509.4 MANUFACTURED HOME COMPLEXES

There are two options to metering manufactured home complexes as follows.

509.4.1 Option 1. Install meters on each individual water service to each individual unit. Individual meters shall be installed in individual pits (Figure 16A or 16C). When the individual water service option is utilized, no master meter will be installed. Each water service must comply with these Rules and Regulations for water service installation and Des Moines Water Works must be given legal access to the stop box and meter.

509.4.2 Option 2. Master meter the private water main serving the complex.

#### 509.5 METERING OF DUPLEXES/FLATS

509.5.1 Metering of duplexes/flats with two separate water service lines shall be done with two separate water meters and the property owner may pay both bills; (Figure 5) or a tenant may have an individual account and pay his/her respective bill. If only one water service is installed, the property owner will be responsible for the water bill. (Figure 6)

#### 509.6 TYPES OF METERS

The type and make of meter used will be specified by the Des Moines Water Works. With the exception of irrigation only meters, when a compound, turbine, fire, or special metering device is required for proper metering, special piping will be required to facilitate annual meter testing. (Figures 17 & 18)

#### 509.7 SIZE OF METERS

509.7.1 Meter sizing shall be based on flow requirements only and not on pressure loss through the meter. The prospective user or his/her agent shall supply the following information before a meter can be sized.

- a. Maximum rate of flow
- b. Average rate of flow
- c. Minimum rate of flow

Meters, 5/8" through 1 1/2" will be sized by the Des Moines Water Works based on the recommended applications listed below.

Meter Size	Recommended Applications
5/8"	Demand flow rates 1/8 to 20 gpm Maximum continuous demand 10 gpm
3/4"	Demand flow rates 1/4 to 30 gpm Maximum continuous demand 15 gpm
1"	Demand flow rates 3/8 to 50 gpm Maximum continuous demand 25 gpm
1 1/2"	Demand flow rate 3/4 to 100 gpm Maximum continuous demand 80 gpm

509.7.2 Fire service meters and meters 2" or larger must be sized by the Des Moines Water Works based on information provided by the owner.

#### 509.8 OWNERSHIP

All water meters to be used for billing purposes must be provided by the Des Moines Water Works. The Des Moines Water Works reserves the right to read, inspect, or test the meter at any reasonable time or with such frequency as deemed necessary. Failure by the customer to allow reasonable access to the meter may result in termination of water service. For sewer deduct/irrigation meters see section 509.15.

#### 509.9 INSTALLATION

509.9.1 Water meters will be installed by the Des Moines Water Works without charge, except as otherwise provided in these rules or as otherwise provided under specific water or other service agreements. On all meter settings, a properly bonded ground consisting of a copper cable or wire not less than 1/8" diameter shall be installed across the meter setting to avoid electrical shock when the meter is removed. (Figure 13)

509.9.2 Meters will be installed on a properly drained concrete or dirt floor allowing water to escape or drain at the time of a meter change or from leakage without causing damage to finished areas.

509.9.3 All water meters will be sealed using an approved cable and locking device. Any meter found to have the sealing device altered or removed will be subject to penalty as outlined in the schedule of charges Section 511.12. "Charges for Unauthorized Use of Water/Meter Tampering".

#### 509.10 METER VALVES

Water meters shall be equipped with a shut-off at each end. Water meters larger than 3" shall have gate valves attached at each end. Spacing required between the inlet and outlet shut-offs for meter installation is as follows: (Figures 1 & 2)

<u>Size of Meter</u>	<u>Distance face to face of stops</u>
5/8"	11 3/4"
3/4"	13 3/4"
1"	15 3/4"
1 1/2" or 2" screw type	30"
1 1/2" flanged type	13 1/4"
2" flanged type	17 1/4"

509.10.1 When 1/4-turn ball valves or quick closing valves are used, they shall be operated in such a manner that pressure surges will not be transmitted to the Des Moines Water Works' distribution system.

509.10.2 Not more than 1 shut-off will be allowed between where the service enters the building and the meter. (Figures 1 & 2)

#### 509.11 METER LOCATION

509.11.1 All water meters installed within buildings shall be in a horizontal position, at a height where they may be easily maintained and as near as possible to the point where the water service enters the building.

509.11.2 Meters shall not be exposed to damage by freezing. After a meter has been removed due to freezing, the customer is responsible for making corrections to prevent freezing before a replacement meter will be installed.

509.11.3 Water meters shall be accessible at all times. No appliances or other fixtures can be built over or in front of the meter setting. If obstructions exist which interfere with meter reading or maintenance of the meter, water service may be terminated until the obstructions are removed.

509.11.4 Installation of a 5/8" through 1" meter shall be as follows:

A 3/4" Pex tubing conduit with pull string shall be installed from the meter to a location deemed appropriate for meter reading equipment, as determined by DMWW. It is the owner/contractor responsibility to ensure a wire can be run to the outside using the 3/4" Pex.

The inlet valve for the meter setting shall not be more than 18" from the point where the service enters the building. (Figures 1-2 & 7-10)

509.11.5 Installation of 1 1/2" to 2" meters shall be as follows:

The inlet valve for the meter setting shall not be more than 36" from the point where the service enters the building.

509.11.6 Meter pits for 5/8" to 2" meters may be required if unusual circumstances exist. If required, the meter pit must meet the following requirements and be installed and maintained at the owner's expense.

Before an existing meter pit is re-used or a new one installed, the Des Moines Water Works shall inspect the proposed installation and determine if the meter pit is necessary to service the customer. Existing meter pits to be reused must meet current meter pit requirements and must be safe to enter.

509.11.6.1 A meter pit is required:

- a. Where a location satisfactory to the Des Moines Water Works is not available inside of the building
- b. When the length of the water service on private property exceeds 250 feet. This does not apply to private water mains (see Section 505.9) or

- c. When the water service is installed within an easement and crosses property lines.
- d. In rural areas, where the roadway is constructed with a rural cross section (ditches on either side of the road with no curb), subject to the following provisions. A meter pit will not be required in rural areas where the roadway is constructed with an urban cross section. In these areas the meter must be set inside the building (provided the setback limit of 250' is not exceeded, in which case a meter pit will be required). (moved from previous Section 514).

#### 509.11.6.2 Location of pit:

- a. Inside City Limits in Des Moines Metro Area:

Meter pits shall be located on private property as near as practical to the property line.

- b. Location of pit Outside City Limits in Des Moines Metro Area:

The meter pit shall be located 10' from the water main when the water main is in easement and the property to be served is on the same side of the road as the water main. The meter pit shall be located 10' into private property when the water main is in the ROW or the property to be served is on the opposite side of the road as the water main. (See Figure 37). (moved from previous section 514).



### 509.11.6.3 Pit Requirements:

- a. Inside City Limits in Des Moines Metro Area:

5/8" through 1" meters can utilize a standard meter pit see figure 16 or a Mueller/Hunt Thermal-Coil meter pit see figure 16 C.

1 1/2" and 2" meters will require a standard meter pit see figure 16.

Under no circumstance will a Mueller/Hunt Thermal Coil meter pit be installed within 5 feet of a driveway, in a sidewalk or any portion of a roadway.

- b. Outside City Limits in Des Moines Metro Area (moved from previous section 514):

Meter pits shall be Mueller / Hunt Therman-Coil Meter Box, tandem set design for a water meter in position one and a pressure-reducing valve in position two. Provide 66" deep pit 15" diameter for 5/8" meters or 18" diameter for 3/4" or 1" meters. Provide meter pit with lock-wing angle ball valve inlet, Watts 5M3-Z6 or approved equal 3/4" pressure reducing valve, dual check valve meter outlet, 4" insulation pad, flat non-locking metal lid, and a second flat non-locking metal lid as the base.

See detail of Mueller/Hunt Thermal-Coil Meter Pit at Figure 16A.

#### 509.11.6.4 Pit abandonment:

When a meter is removed from a meter pit and the pit is not to be re-used, it is the responsibility of the property owner to see that the rim and lid are removed, the valves are removed from the service line and the pit filled in to grade with an appropriate substance. Before the pit is filled in, the property owner must notify the Des Moines Water Works so that it may verify that the valves have been removed from the service line.

509.11.6 For meters set inside of buildings, meters 3" and larger shall be set level and in a horizontal position on a solid floor or solid base not more than 24" high. There must be at least 6' clearance above and not less than 12" behind the meter. Meters may be suspended or supported by the piping. There shall be an adequate floor drain or pit within 5' of the meter setting for disposal of water. An outside test header will be installed in a suitable location so that the meter can be tested annually, with the exception of irrigation only meters. (See Bypass and Test Header Specifications, Figure 21)

509.11.8 No devices or connections of any kind, such as regulators or check valves, shall be installed between the meter outlet and the test tee.

#### 509.12 METER PITS FOR 3" METERS AND LARGER (Revised January 2024)

Where unusual circumstances exist, or the length of the water service on private property exceeds 250 feet, an outside meter will be required. If required, the meter must be installed in a pit constructed at the owner's expense to meet the following requirements. See figures 17-18.

509.12.1 The pit shall be of reinforced concrete, pre-cast concrete or concrete block construction. See Figures 17 – 18.

509.12.2 The pit shall be not less than six, or more than eight, feet in depth.

509.12.3 The pit shall have concrete roof and floor slabs.

509.12.4 The pit shall have a 48" X 48" square hatch with compression spring operators. If meter pit is in the Right of Way, a traffic rated lid is required instead of a hatch.

- 509.12.5 The pit roof slab shall be removable for meter installation or a secondary access large enough to allow the meter to be removed shall be provided directly over the meter setting.
- 509.12.6 There shall be a minimum distance of 10' between the meter pit and any hydrant or standpipe.
- 509.12.7 A 3/4" Pex tubing conduit with pull string shall be installed from the meter to a location deemed appropriate for meter reading equipment, as determined by DMWW. It is the owner/contractor responsibility to ensure a wire can be run to the outside using the 3/4" Pex.

#### 509.13 METER BY-PASS

- 509.13.1 Bypass lines for emergency service will not be permitted around meters 2" in diameter or less except in cases where the customer also provides a meter in the bypass line or when a turbine or compound meter is used.
- 509.13.2 Bypass lines around meters 3" and larger must be locked and sealed to prevent accidental usage.
- 509.13.3 By-pass lines must be designed, valved, and installed in accordance with these Rules and Regulations. (Figures 17-18 & 21). No bypass will be required on a 3" or larger meter if it is an irrigation only meter.

#### 509.14 MAINTENANCE

The Des Moines Water Works will provide the following maintenance on the meter:

- 509.14.1 Residential:
  - 509.14.1.1 Repair or replace the meter with a new or rebuilt meter of the same size if the meter becomes inoperative through no fault of the customer. If there is evidence of physical damage externally or to the interior of the meter from hot water, freezing, or other casualties, through carelessness or neglect by the customer, the customer will be billed for the cost of repairs.

509.14.1.2 The Des Moines Water Works may test or exchange the meter periodically to ascertain its accuracy.

509.14.1.3 The Des Moines Water Works will test any meter upon application by the customer. If the meter testing results fall within American Water Works Association (AWWA) standards, the customer will be billed a fee equal to one (1) hour of labor at the labor rate as established by the Board and provided in Section 511 of these Rules and Regulations.

509.14.2 Industrial and Commercial:

509.14.2.1 Positive displacement meters 2" and smaller will be maintained in the same manner as residential meters.

509.14.2.2 Compound and Turbine meters 3" and larger will be repaired at no cost to the property owner providing there is no evidence of physical damage as described above.

509.14.2.3 Water meters shall be equipped with shut-off valves at each end. Water meters larger than 2" shall have shut-off valves attached at each end and the outlet end of the meter shall be provided with a 4" tee fitting for testing purposes. The branch of the tee shall face upwards and be provided with a 4" valve threaded cap and plug. (Figures 17, 18 & 21)

## 509.15 SEWER DEDUCT/WATER ONLY METERS

- 509.15.1 Sewer deduct meters are meters that measure a portion of the water which has already been metered by another meter for deduct billing purposes. The installation of these meters will be performed as permitted by the appropriate local ordinance for the purpose of measuring water not returning to the sewer system. Meters need not be located at or near the service entrance. Property owners are responsible to provide and install sewer deduct meters, but meters must be approved (manufacturer, make, and model) by DMWW in order to ensure they are readily compatible with DMWW's reading and billing systems. All maintenance, repairs, and testing of sewer deduct meters will be by the Des Moines Water Works, at the owner's expense. Sewer deduct meters apply to DMWW's service areas of City of Des Moines, City of Windsor Heights, City of Cumming, City of Runnells, and unincorporated Polk County. Sewer deduct meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter.
- 509.15.2 Water only meters are meters that have not had the water previously registered by another meter. The amount of water measured by the water only meter is added to the bill but is not charged sewer rates. Such meters are installed on a tee off the inlet service line right after the inlet valve. Water only meters must be approved (manufacturer, make, and model) by DMWW in order to ensure they are readily compatible with DMWW's reading and billing systems. Water only meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter. Water only meters are permitted only in the City of Pleasant Hill.
- 509.15.3 In cases where there is not a master meter, for multi-unit development, there must be a sperate tap and service line for irrigation that meet specifications in DMWW's Rules and Regulations.

## 509.16 SUB-METERS

Sub-meters are meters installed by the customer to measure water usage downstream of Des Moines Water Works' meter. Sub-meters are not read or billed by the Des Moines Water Works unless under contracted services. Sub-meters may be repaired by Des Moines Water Works at the owner's expense, provided they are delivered to Des Moines Water Works. All meter settings are required to have a swinging check valve installed after the outlet valve. This will prevent the water meters from running backwards. Thermal expansion must also be addressed and installed if needed.

## 509.17 CHANGES IN LOAD

In cases where changes in water consumption result in a meter being substantially undersized or oversized, Des Moines Water Works may need to install a larger or smaller meter. Any alterations required in the meter setting will be at the owner's expense.

## 509.18 HYDRANT METERS

### 509.18.1 ELIGIBILITY AND REQUIREMENTS

The Des Moines Water Works may issue hydrant meters to qualified contractors or civic organizations when alternate methods of water supply are not available. The Water Board reserves the right to decline hydrant meter service to any applicant not deemed qualified to meet the requirements of this rule. Meters shall be issued for a specified time period not to exceed eight (8) months. At the time of application, the applicant shall state the location and purpose for which the meter will be used, the name and telephone number of a contact person, and why water is not available from another source.

As used in this rule, "hydrant meter" shall mean and include a hydrant meter together with valves, fittings, and operational tools.

All hydrant meters will be handled on a first-come/first-serve basis. City, County, and State projects will be given higher priority.

Des Moines Water Works reserves the right to determine the proper size of the hydrant meter based upon the use and location of the hydrant meter.

Des Moines Water Works reserves the right to determine the use of a hydrant meter to serve a concrete batch plant. If a concrete batch plant is going to be in service for three (3) months or longer it will not qualify for a hydrant meter. It will be required to install an individual service line in accordance with section 503.1 of the Des Moines Water Works Rules and Regulations.

All hydrant meters issued from Des Moines Water Works shall be used only in the areas served directly by Des Moines Water Works. Des Moines Water Works' hydrant meters may NOT be used in other suburbs or areas that provide their own hydrant meters.

Des Moines Water Works reserves the right to inspect and test hydrant meters at its discretion. The applicant must make the hydrant meter available within 48 hours of any inspection request.

It is the responsibility of the applicant to use the hydrant meter in a safe and proper manner and to keep the hydrant meter secured at all times, even when it is not in use. Unsecured hydrant meters may be repossessed by Des Moines Water Works.

#### 509.18.2 DEPOSIT AND AGREEMENT

A deposit, as established by the Board, must be paid at the time a hydrant application is made with Des Moines Water Works at 2201 George Flagg Parkway. Des Moines Water Works will hold this deposit as security for the full performance of the applicant's obligations until the applicant returns the hydrant meter to Des Moines Water Works. Upon return of the hydrant meter, and payment of the final bill, the deposit will be mailed to the applicant upon request, less any outstanding charges due to Des Moines Water Works.

A hydrant meter shall at all times remain the property of the Des Moines Water Works and shall be issued to the applicant under the terms of a bailment and temporary water service agreement, which must be signed by the applicant before the hydrant meter is issued.

509.18.3 OBTAINING HYDRANT METER

To reserve a hydrant meter, arrangements should be made by calling Des Moines Water Works at 515-283-8700. It will be the responsibility of the applicant to pick up the meter according to the instructions provided by Des Moines Water Works. Meters can be obtained from 8:00 a.m. to 3:00 p.m., Monday through Friday, except holidays.

509.18.4 DAMAGE TO DES MOINES WATER WORKS PROPERTY

It will be the obligation of the applicant to protect the hydrant meter, hydrant, and other Des Moines Water Works' property from damage due to weather or use of the facility. The repair of any damaged property will be completed by Des Moines Water Works and charged to the applicant.

509.18.5 METER READING

The applicant shall report a monthly hydrant meter read to DMWW according to the instructions provided.

509.18.6 HYDRANT METER TESTING

After 8 months of use or at the request of the Des Moines Water Works, whichever is first, the meter shall be returned to Des Moines Water Works according to the instructions provided. The applicant will be notified when the testing has been completed and whether the hydrant meter can be picked up.



#### 509.18.7 CHARGES AND FEES

The following charges and fees will apply as outlined in Section 511, Schedule of Charges:

- a. A monthly hydrant meter availability fee will be charged based on the size of the hydrant meter.
- b. If the applicant fails to call in a monthly meter read, a daily fee will be assessed for each a read is not called in.
- c. If the applicant fails to return the assigned hydrant meter on or before the agreed date, a daily late fee will be assessed.

Rates for water consumption will be applied according to the Inside City of Des Moines water rate structure as defined by the Des Moines Water Works Board of Trustees.

#### 509-18.8 FILLING OF SWIMMING POOLS

Hydrant meters will not be provided to individuals or businesses for the purpose of filling swimming pools. If a customer wants their pool filled, Des Moines Water Works will supply the materials and labor to fill a swimming pool at the current hourly rate (labor, vehicle, and water) as specified in the Schedule of Charges section of the Des Moines Water Works Rules and Regulations. A 24-hour advance notice will be required to allow for proper staffing for this task.

#### 509.18.9 DISQUALIFICATION

Failure to comply with Section 509.18 of these Rules and Regulations shall be grounds for the applicant to be immediately disqualified from continued use of a hydrant meter. Future use of a hydrant meter may also be forfeited. Upon disqualification, the meter will be surrendered to the Des Moines Water Works and deposit retained as liquidated damages.

## 509.19 REMOTE METER INSTALLATION/REPAIR

- 509.19.1 If a customer does not permit the installation or repair of our meter reading equipment upon request, then the customer shall be notified that water service will be discontinued in accordance with the procedures then in effect.