109 WATER METERS

109.1 GENERAL

All meters to be used for billing purposes shall be provided by the Water Utility. The Water Utility reserves the right to read, inspect, test or replace the meter at any reasonable time or with such frequency as deemed necessary.

All water used shall be metered except:

109.1.1 Water authorized by the Water Utility for the use by other governmental agencies for the purpose of firefighting or street and sewer flushing. Non-emergency use shall be approved by the Water Utility.

109.1.2 Water used in flushing or maintaining new and existing mains under supervision of the Water Utility.

109.1.3 Water for special purposes or demonstrations when approved by the General Manager, or designated representative.

109.1.4 Water for construction purposes. All persons, firms, or corporations shall obtain a construction water permit from the Urbandale Building Department at the same time as the building permit is issued. See Appendix A – Fee Schedule for residential and commercial construction. No watering of grounds, including sod, seeding, or landscaping, will be permitted before the water meter has been set and the appropriate fees have been paid.

109.2 RESIDENTIAL

109.2.1 Each single-family dwelling shall have its own meter.

109.2.2 The piping used for meter settings shall be copper at both the inlet and the outlet side of the meter. The copper piping on the outlet side of the meter shall extend from the meter to the floor joist and securely fastened prior to transitioning to PEX piping

109.2.3 RESIDENTIAL FIRE SERVICE METERS

1) All residential fire sprinkler systems shall be metered.
2) All meters must be purchased from the Water Utility.
3) The service line shall be sized according to the combined total of the domestic, irrigation and fire system demands.
4) Provide the total of the irrigation and fire system demand to the Water Utility.
5) Irrigation/fire meters shall be installed no more than 4 feet from the domestic meter. There shall be a valve on each side of the meter.
6) The irrigation/fire demand shall be combined to utilize one water meter. The irrigation/fire meter shall be teed off the service line, after entering the building, so that the domestic and irrigation/fire systems are independently metered from one another.

7) All fire systems shall have an approved backflow prevention assembly as described in the Urbandale Rules and Regulations, Chapter 106. The backflow assembly shall be installed inside the house directly after the fire meter.
8) An initial test of the backflow device must be performed by a certified tester and a copy of the test results are delivered in an electronic format to its record keeping representative within fifteen (15) days after testing and/or repairs are completed.
9) For more information on the requirements for cross connection and backflow prevention, refer to Urbandale Rules and Regulation, Chapter 106.

109.2.4 CIRCULATING FIRE SYSTEM METERS

This system shall utilize one meter servicing both the domestic and fire demand. System demand shall not to exceed 50 gpm. (See B-15b)

109.2.5 NON-CIRCULATING FIRE SYSTEM METERS

1) The fire/irrigation demand shall be combined to utilize one water meter. The irrigation/fire meter shall be teed off the service line, after entering the building, so the domestic and the fire/irrigation systems are independently metered. (See B-15a)

2) A total of the irrigation and fire system demand must be provided to the Water Utility before a meter will be installed.

3) Irrigation/fire meters shall be installed not more than 4 feet from the domestic meter. There shall be a valve on each side of the water meter.

109.3 APARTMENTS, DUPLEXES, CONDOMINIUMS, AND INSTITUTIONS

109.3.1 Apartments, duplexes, condominiums, and other institutions with more than one building on the same property shall be master metered unless individual services are installed to each building. Individual water meters for each tenant may be installed providing there is an individual service and stop box from the main to each unit to be metered. For buildings not able to meet the meter location requirements, such as multiple story or multiple tenant, an exception may be allowed. In such cases, the building could be served by a single service line with all meters located in a common heated closet. The Urbandale Water Utility must be provided access to the closet. Any exemption or variance shall be granted by the Water Utility. Stop boxes shall be located and installed according the Standard Specifications.

109.3.2 All buildings shall be owned by one entity. If one of the buildings is sold, the Water Utility may require, at the owner's expense, installation of a separate service line to that building.

109.3.3 If the premises to be served are multiple and one meter is to serve more than one tenant, it will be necessary for the owner of the premises or his/her authorized agent to apply for the meter.

109.4 SHOPPING CENTERS AND STRIP MALLS

109.4.1 Shopping center complexes and strip malls shall be master metered, providing the buildings are not separated by a thoroughfare.

109.4.2 Additional water meters may be purchased and installed by the owner for the tenants in the same building but may not be billed by the Water Utility.

109.5 INDUSTRIAL

Plants or industrial complexes shall be master metered providing the buildings are all required for central operation and are not separated by a public thoroughfare.

109.6 TYPES OF METERS

The types and makes of water meters used will be specified by the Water Utility. When a compound, turbine, fire, or special metering device is required for proper metering, special piping will be required to facilitate meter testing (see Appendix B, figures B-13 and B-14).

109.7 SIZE OF METERS

109.7.1 Water meter sizing shall be based on flow requirements only and not on pressure loss through the meter. The following information shall be supplied by the prospective user or his/her agent before a water meter can be sized.

1) Maximum rate of flow
2) Average rate of flow
3) Minimum rate of flow

Water meters 5/8" through 1" will be sized by the Water Utility based on the recommended applications listed below.

Meter Size	Recommended Applications
5/8"	Normal operating flow rate .11 to .35 gpm
1"	Normal operating flow rate .4 to 55 gpm

109.7.2 Water meters 1-1/2" and larger shall be sized by the Water Utility based on information provided by the owner.

109.8 INSTALLATION

109.8.1 All water meters will be installed by the Water Utility. 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.

109.8.2 Seals are placed on water meters at the time of installation. If a plumbing contractor or others finds it necessary to break the seal for any purpose, they shall notify the Water Utility.

109.8.3 Meters will be installed on a properly drained concrete floor since it is possible for water to escape at the time of a water meter change or from leakage. The drain shall be within 8' of the water meter setting with no obstructions.

109.8.4 All new water meter installations shall have a radio read device.

109.8.5 All residential and commercial buildings, shall install a ¾" flexible tubing conduit with a pull string from the meter setting on the inside of the building to within three feet of the gas meter on the outside of the building. It is the owner/contractor's responsibility to ensure wires can be run to the outside using the ¾" flexible tubing conduit.

109.9 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 installations is as follows (see Appendix B, figures B-2, and B-3):

Size of meter	Distance face to face of stops
5/8"	12"
1"	15"
1-1/2"	13"
2"	17"

109.9.1 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 Water Utility distribution system.

109.9.2 Not more than one shut-off will be allowed between where the service enters the building and the water meters (see Appendix B, figures B-2 and B-3).

109.10 METER LOCATION

109.10.1 All water meters installed within buildings shall be in a horizontal

position, at a minimum height of 12” from the floor where they may be easily maintained and as near as possible to the point where the water service enters the building. All water meters shall be an encoded water meter with an AMR. All AMR devices shall be installed on the exterior of the structure or at a location acceptable to the Water Utility.

109.10.2 Meters shall not be exposed to damage by freezing. After 2 meters have been removed due to freezing, corrections to prevent freezing will have to be made before the third meter will be installed.

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

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

The inlet valve for the meter setting shall not be more than 18" from the point where the service enters the building (see Appendix B, figure B-2).

109.10.5 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 (see Appendix B, figure B-3).

109.10.6 No devices or connections of any kind, such as regulators or check valves, shall be installed between the meter outlet and the test tee. There shall be no additional valves or appurtenances from the service inlet and the inlet valve to the meter.

109.11 METER PITS FOR 5/8” to 2" METERS

109.11.1 Meter pits for 5/8" to 2" meters may be required if unusual circumstances exist. If required, the meter pit shall meet the following requirements and be installed at the owner’s expense. Before an existing meter pit is reused or a new one is installed, the Water Utility shall inspect the proposed installation and determine if the meter pit is necessary to serve the customer.

1) When required:
   a) When a location satisfactory to the Water Utility, is not available inside the building:
   b) When the building is more than 250' from the property line; such case shall be reviewed by the Distribution Manager.
   c) When the water service is installed within an easement and crosses property lines.
2) Location of pit:

Meter pits shall be located on private property as near as practical to the property line or the point of connection.

3) Pit requirements:
   See detail of Standard Meter Pit
   5/8” to 1”, see Appendix B, figure B-9.
   1-1/2” to 2”, see Appendix B, figure B-10.
4) Pit abandonment:
   When a meter is removed from a meter pit and the pit is not to be reused, 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 to grade with a substance approved by the Water Utility. Before the pit is filled, the property owner shall notify the Water Utility so that it may verify that the valves have been removed from the service line. The service line shall be capped at the main.

109.11.2 There shall be no additional valves or appurtenances from the service inlet and the inlet valve to the meter.

109.12 METER PITS FOR 3" METERS AND LARGER

Where unusual circumstances exist, an outside meter may be required. If required, the meter shall be installed in a pit constructed at the owner's expense to meet the following requirements.

109.12.1 The pit shall be reinforced concrete, pre-cast concrete, or concrete construction.

109.12.2 The pit shall not be less than 6, nor more than 8, feet in depth.

109.12.3 The sides of the pit shall be vertical.

109.12.4 The pit shall be rectangular.

109.12.5 The length and width of the pit shall be determined by the size of the pipe and the amount of piping to be installed.

1) The end walls shall be a minimum of 8" from the closest flange on any fitting installed inside the pit.
2) One sidewall shall be a minimum of 18" from the centerline of the nearest piping or a minimum of 10" from the widest portion of the meter, whichever is widest.
3) The other wall shall be a minimum of 2'6" from the centerline of the nearest piping or a minimum of 2'0" from the widest point of the meter, whichever is wider.
4) Minimum pit size shall be 4'0" wide by 5'0" long.

109.12.6 The pit shall have concrete roof and floor slabs.

109.12.7 The pit shall have a 24" by 24" square hatch with compression spring operators.

109.12.8 The pit shall have manhole steps placed at 16" on center, directly below the access hatch.

109.12.9 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.

109.12.10 There shall be a minimum distance of 10' between the meter pit and any hydrant or standpipe.

109.12.11 Meters 3" and larger shall be set level and in a horizontal position on a solid base not more than 24" high. There shall be at least 6' clearance above and not less than 12" behind the meter. Meters may be suspended or supported by piping. There shall be an adequate floor drain or pit within 8' 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 (see Appendix B, figure B-14).

109.13 METER BY-PASS

109.13.1 By-pass 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 by-pass line.

109.13.2 By-pass lines around meters 3" in diameter and larger shall be locked, with a lock supplied by the Water Utility, and sealed to prevent unauthorized usage.

109.13.3 By-pass lines shall be designed, valved and installed in accordance with these Rules and Regulations (see Appendix B, figures B-13 and B-14).

109.14 MAINTENANCE

The Water Utility will provide the following maintenance on the meter:

109.14.1 Residential:

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 on 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 the repairs (see Appendix A - Fee Schedule).
2) The Water Utility will test or exchange the meter periodically to ascertain its accuracy.

3) The Water Utility will test any meter upon application by the customer. If the meter test is found to meet applicable accuracy specifications in accordance with American Water Works Association, the customer will be billed a fee as established by the Water Board (see Appendix A - Fee Schedule).

109.14.2 Industrial and Commercial:

1) Meters 2" and smaller will be maintained in the same manner as residential meters.
2) 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.
3) The Water Utility will test any meter upon application by the customer. If the meter test indicates less than 2% fast, the customer will be billed a fee as established by the Water Board (see Appendix A - Fee Schedule).
4) Water meters shall be equipped with shut-off valves at each end. Water meters larger than 2" shall have shut-off valves 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 (see Appendix B, figures B-13 and B-14).

109.15 SEWER DEDUCT METERS

Sewer deduct meters are meters that measure water which has already been metered by another meter for billing purposes, for example irrigation water. The reading of these meters will be done as required by the Sanitary Sewer Districts that serve the City of Urbandale for the purpose of measuring water not returning to the sewer system. Meters shall be located within 4’ of the master meter. Sewer deduct meters shall be wired to an AMR and readings shall be received by the Water Utility in order to receive the sewer credit, a deduction of no larger than the current bill will be credited if regular readings are not provided. All maintenance, repairs, and testing of sewage deduct meters will be at the owner's request and expense.

109.16 NON-DEDUCTING SEWER METERS

Non-deducting sewer meters are used to measure water that is used but not returned to the sanitary sewer system. As of May 1996, all non-sewer use meters will be set up as a non-deducting system (see Appendix B, figure B-15a & 15b). The non-deducting meter will be branched off the service line separate from the house meter and placed within 4' of the house meter. The non-deducting meter shall be purchased from the Water Utility and, once installed, will be maintained by the Water Utility. The meter shall also be wired to the AMR. Non-deducting sewer meters will be subject to a service availability fee.

109.17 SUB-METERS

Sub-meters are meters installed by the customer to monitor water usage downstream of the master meter. Sub-meters are not read or billed by the Water Utility. Sub-meters may be repaired by the Water Utility's Meter Shop at the customer's/owner's expense, provided they are delivered to the Water Utility's Meter Shop (see Appendix A - Fee Schedule).

109.18 TEMPORARY METERS

Where a meter is required prior to completing the plumbing for a building, a temporary meter may be requested. (see Appendix A - Fee Schedule).

109.19 CHANGES IN LOAD

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

109.20 USES OF HYDRANT METERS

109.20.1 ELIGIBILITY

The Water Utility will issue hydrant meters to contractors or civic organizations, etc., when alternate methods of water supply are not available. 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.

109.20.2 APPLICATION & DEPOSIT

A deposit is required for a hydrant meter (see Appendix A - Fee Schedule). This deposit shall be paid at the time the meter application is made with a Customer Service Representative at the Water Utility located at 3720 86th Street, Urbandale, Iowa. This deposit will be held by the Water Utility until the meter is returned. Upon return of the meter and payment of the final bill, the deposit will be mailed to the applicant, less any outstanding charges due to the Water Utility.

109.20.3 METER PLACEMENT

Applicant is responsible for notifying the Water Utility for the placement and location or relocation of the hydrant meter.

109.20.4 DAMAGE TO WATER UTILITY PROPERTY

It will be the obligation of the applicant to protect the meter, hydrant, and other Water Utility property from damage due to weather or use of the

facility. The repair of any damaged property will be completed by the Water Utility and charged to the applicant.

109.20.5 METER READING

The Water Utility will periodically read the meter and water consumption will be billed accordingly.

109.21 AUTOMATED METER READING UNIT (AMR) & REMOTE METER INSTALLATION/REPAIR

109.21.1 If a customer does not permit the installation or repair of an AMR or remote reading device upon request, then the customer shall be notified that water service may be discontinued in accordance with the procedures then in effect.

109.21.2 All new water meter installations shall have a radio read device.

109.21.3 All residential and commercial buildings, shall install a ¾" flexible tubing conduit with a pull string from the meter setting on the inside of the building to within three feet of the gas meter on the outside of the building. It is the owner/contractor's responsibility to ensure wires can be run to the outside using the ¾" flexible tubing conduit.

109.22 AUTOMATED METER READING OPT OUT

If a customer requests to opt out of the AMR program, they will present their request to the Appeals Committee. If their request is granted they must sign and agree to the parameters of the Opt Out Agreement. An AMR opt-out agreement allows for the removal of radio frequency (RF) emitting equipment used for the purposes of collecting a meter reading at a premises and replacing it with non-RF equipment. (See Appendix A-Fee Schedule)